GIÁO TRÌNH

MÔN HỌC: TIẾNG ANH CHUYÊN NGÀNH

NGÀNH/NGHỀ: CÔNG NGHỆ THÔNG TIN

TRÌNH ĐỘ: CAO ĐẲNG

*Ban hành kèm theo Quyết định số: /QĐ-...   ngày…….tháng….năm ………
……….............. của……………………………….*

LƯU HÀNH NỘI BỘ

Đà Lạt, năm 2017.

TUYÊN BỐ BẢN QUYỀN

LỜI GIỚI THIỆU

Giáo trình tiếng Anh chuyên ngành dùng để giảng dạy cho sinh viên trình độ Trung cấp – Cao đẳng Nghề công nghệ thông tin.

Giáo trình này gồm 7 chương có nội dung như sau:

Chương 1: Computers today

Chương 2: Input/output devices

Chương 3: Storage devices

Chương 4: Basic software

Chương 5: Creative software

Chương 6: Programming

Chương 7: Computers tomorrow

Đà lạt, ngày 7 tháng 7 năm 2017

Tham gia biên soạn

Chủ biên: Phan Ngọc Bảo

MỤC LỤC

GIÁO TRÌNH MÔN HỌC

Tên môn học: TIẾNG ANH CHUYÊN NGÀNH

Mã môn học: MH12

Vị trí, tính chất, ý nghĩa và vai trò của môn học:

- Vị trí: Môn học được bố trí sau khi học sinh, sinh viên học xong các môn học: Anh văn cơ bản.

- Tính chất: Tiếng Anh chuyên ngành là môn học chuyên môn nghề.

- Ý nghĩa và vai trò của môn học: Môn học này trang bị cho sinh viên những kiến thức cơ bản về Tiếng Anh trong ngành Công nghệ thông tin.

Mục tiêu của môn học:

- Về kiến thức:
    - Trình bày được các từ vựng và ngữ pháp cơ bản của Tiếng Anh chuyên ngành Công nghệ thông tin;
    - Giải thích được một số thuật ngữ liên quan đến chuyên ngành máy tính;
    - Về kỹ năng:
    - Đọc được một số tài liệu kỹ thuật để nghiên cứu và phát triển nghề nghiệp;
    - Đọc hiểu, dịch được một số tài liệu tiếng Anh chuyên ngành Công nghệ thông tin (ứng dụng phần mềm);
    - Đọc hiểu thông báo của hệ thống và một số phần mềm ứng dụng khi khai thác và cài đặt;
- Về năng lực tự chủ và trách nhiệm:

    - Có khả năng tự nghiên cứu, tự học, tham khảo tài liệu liên quan đến môn học để vận dụng vào hoạt động học tập.

    - Vận dụng được các kiến thức tự nghiên cứu, học tập và kiến thức, kỹ năng đã được học để hoàn thiện các kỹ năng liên quan đến môn học một cách khoa học, đúng quy định.

Nội dung của môn học:

Chương 1:Computers today
Mã chương: MH12-1
Giới thiệu: Chương 1 trình bày về máy tính trong thời đại hiện nay.
Mục tiêu:

– Trình bày được các từ, cụm từ mô tả cấu trúc, cấu hình máy tính;

– Trình bày được các đơn vị đo thông tin trong máy tính;

– Dịch được thông tin hiển thị bằng tiếng Anh trong máy tính;

– Có khả năng quan sát, so sánh, phân tích.

Nội dung chính:

1. Unit 1   *Computer applications*
1   Match the pictures
A   Computers have many applications in a great variety of fields. Look at these photographs of different computers and match them with Texts 1-4 below.

1   Computers can help students perform mathematical operations and solve difficult questions. They can be used to teach courses such as computer-aided design, language learning, programming, mathematics, etc.
PCs (personal computers) are also used for administrative purposes: for example, schools use databases and word processors to keep records of students, teachers and materials.
2 Race organizers and journalists rely on computers to provide them with the current positions of riders and teams in both the particular stages of the race and in the overall competition.
    Workstations in the race buses provide the timing system and give up-to-the-minute timing information to TV stations. In the press room several PCs give real-time information on the state of the race. Computer databases are also used in the drug-detecting tests for competitors.
3   Computers store information about the amount of money held by each client and enable staff to access large databases and to carry out financial transactions at high speed. They also control the automatic cash dispensers which, by the use of a personal coded card, dispense money to clients.
4 Airline pilots use computers to help them control the plane. For example, monitors display   data about fuel consumption and weather conditions.
In airport control towers, computers are used to manage radar systems and regulate air traffic.
On the ground, airlines are connected to travel agencies by computer. Travel
 agents use computers to find out about the availability of flights, prices, times, stopovers and many other details.

B   Match these captions with the pictures.

Using an automatic cash dispenser ,
In education, computers can make all the difference
Organizing the Tour de France demands the use of computer technology
Controlling air traffic

C   When you read texts like these, you don't always need to understand every word. But there are words which you can guess from the context. Look at these words. Are they nouns, verbs or adjectives?

    1 workstation   2 data   3 perform   4 automatic   5 monitor   6 financial
    7   store   8 connected   9 word processor   10 large

Now find these words in Texts 1—4, and match them -with the meanings below:

a) information   g) self-acting, mechanical
b) 'execute (do)   h) screen
c) connected with money   i) powerful computer usually connected to a network
d) keep (save)

e) massive   j) program used for text manipulation   .
f) linked

D   Refer back to Text 1 and discuss these questions.

1 How are/were computers used in your school?
2 What other areas of study would benefit from the introduction of computers?

Unit 1   *Computer applications*

2 Listening

Listen to these people talking about how they use computers at -work and write each speaker's job in the table.

electrical engineer   secretary   accountant   librarian   composer

Speaker	Job	What he/she uses computers for
1		
2		

3		
4		

Now listen again and write what each speaker uses his/her computer for.

4 Reading

A Write a list of as many uses of the computer, or computer applications, as you can think of.

B Now read the text below and underline any applications that are not in your list.

What can computers do?
Computers and microchips have become part of our everyday lives: we visit shops and, offices which have been designed with the help of computers, we read magazines which have been pro- duced on computer, we pay bills prepared by computers. Just picking up a telephone and dialling a number involves the use of a sophisticated computer system, as does making a flight reservation or bank transaction.

   We encounter dayly many computers that spring to life the instant they're switched on (e.g. calculators, the car's electronic ignition, the timer in the microwave, or the programmer inside the TV set), all of which use chip technology.

   What makes your computer such a miraculous device? Each time you turn it on, it is a tabula rasa that, with appropriate hardware and software, is capable of doing anything you ask. It is a calculating machine that speeds up financial calculations. It is an electronic filing cabinet which manages 20 large collections of data such as customers' lists, accounts, or inventories. It is a magical typewriter that allows you to type and print any kind of document - letters, memos or legal documents. It is a personal communicator that enables you to interact with other computers and with people around the world. If you like gadgets and electronic entertainment, you can even use your PC to relax with computer games.

5 Language work: The present simple passive

Look at the grammar hints in the box below and then read the sentences, rill m the blanks with the correct form of the verbs in brackets.

Example: Homes (design)..with the help of computers.

Houses are designed with the help of computers.

1   Various terminals (connect)..
to this workstation. :

2   Microcomputers (know)............ as
'PCs'. -

3   Magazines (typeset)...................................
computers.

4. When a particular program is run, the data (process)
.... by the computer very rapidly.

5   Hard disks (use)   for the.
permanent storage of information

6   The drug-detecting test in the Tour de France (support).....................
by computers.

7   All the activities of the computer system (coordinate)...   by
the Central Processing Unit.

8   In some modern systems information (hold)..................... in optical
disks.

5 Other applications

A   In small groups, choose one of the areas in the diagram below and discuss what computers can do in this area.

Formula 1 cars

factories and industrial processes

entertainment

hospitals and medical research

Useful words:
Formula 1: *racing car, car body, design, mechanical parts, electronic components, engine speed* Entertainment: *game, music, animated image, multimedia, encyclopedia* In factories: *machinery, robot, production line, computer-aided manufacturing software* In hospitals: *patients, medical personnel, database program, records, scanner, diagnose, disease, robot, surgery*

Useful constructions:
Computers are used to ... ,', A PC can also be used for...
, Computers can help ... make ... control... store ... keep ... provide ... manage ... give ... perform ... measure ... test... provide access to ..
.

B   Now write a short paragraph summarizing your discussion. Then ask one

person from your group to give a summary of the group's ideas to the rest of the class.
Examples:
In business, computers are used for financial planning, accounting and specific calculations. In the office, computers are used to write letters and keep records of clients, suppliers and employees.

2. Unit 2   *Configuration*
1   Warm-up

In pairs, label the elements of this computer system. Then read the text in Task 2 and check your answers.
CPU (inside)

2   Reading

Read the text and study the diagram.

What is a computer?
Computers are electronic machines which can accept data in a certain form, process the data and give the results of the processing in a specified format as information.
Three basic steps are involved in the process: *First,* data is fed into the computer's memory. *Then,* when the program is run, the computer performs a set of instructions and processes the data. *Finally,* we can see the results (the output) on the screen or in printed form (see Fig. 1 on p. 8).
Information in the form of data and programs is known as **software,** and the electronic and mechanical parts that make up a computer system are called **hardware.** A standard computer system consists of three main sections: the Central
Processing Unit (CPU), the main memory and the peripherals.
Perhaps the most influential component is the **Central Processing Unit.** Its function is to execute program instructions and coordinate the activities of all the other units. In a way, it is the 'brain' of the computer. The **main memory** holds the instructions and data which are currently being processed by the CPU. The **peripherals** are the physical units attached to the   computer. They include storage devices and input/output devices.
Storage devices (floppy or hard disks) provide a permanent storage of both data and programs. **Disk drives** are used to handle one or more floppy disks. **Input devices** enable data to go into the computer's memory. The most common input devices are the **mouse** and the **keyboard. Output devices** enable us to extract the finished product from the system. For example, the computer shows the output on the **monitor** or prints the results onto paper by means of a **printer.**
On the rear panel of the computer there are several ports into which we can plug a

wide range of peripherals — modems, fax machines, optical drives and scanners. These are the main physical units of a computer system, generally known as the **configuration.**

input
processor
output
Expenses
(e.g.payroll, services, publicity)
Income
(e.g. sales,
stocks,
interest)

Data
Figure 1
processingkkllllll
Result
on the monitor or in printed form
Use the information in the text and the diagram to help you match the terms in the box with the appropriate explanation or definition below.

software *peripheral devices* MONITOR
floppy disk HARDWARE *INPUT* **port**
OUTPUT Central Processing Unit

1 The brain of the computer.
2 Physical parts that make up a computer system.
3 Programs which can be used on a particular computer system.
4 The information which is presented to the computer.
5 Results produced by a computer.
6 Hardware equipment attached to the CPU.
7 Visual display unit.
8 Small device used to store information. Same as 'diskette'.
9 Any socket or channel in a computer system into which an input/output device may be connected.

3 Read and guess

Read these slogans or quotations, and say -what computer element they refer to.

1 a) 'Point and click here for power.'
    b) 'Obeys every impulse as if it were an extension of your hand.'

1   a) 'Displays your ideas with perfect brilliance.
    b) 'See the difference - sharp images and a fantastic range of colours.'

2   a) 'I love this drive. It's quiet and fast.'
    b) 'With this it's easy to back up your data before it's too late.'

3   a) Tower and speed on the inside.'
    b) 'Let your computer's brain do the work.'

4   a) '... a big impact on the production of text and graphics.'
    b) 'Your choice: a laser powerhouse.'

5   a) 'Your fingers will hardly know they're working.'
    b) 'Choose a full 105-key layout, and type with efficiency.'

4   Get ready for listening

Before listening, answer these questions.

1   Have you got a computer at home, school or work? What kind is it?
2   How often do you use it? What do you use it for?
3   What are the main components and features (the configuration) of your
    computer system?

3   Listening

**A   Listen to a short lecture given by John Griffiths, an expert on computer
systems. As you listen, label the pictures on the next page •with these words:**
microcomputer (portable)   microcomputer (desktop PC) mainframe
minicomputer

B **Listen again and put a tick next to the correct answer.**

1   According to the speaker:
a) a mainframe computer is less powerful than a minicomputer.
b) a mainframe is more powerful than a minicomputer.
c) a mainframe is not very powerful but can execute jobs very rapidly.

2   Mainframe computers are used by:
a) students and teachers in schools.
b) executives and businessmen.
c) large organizations that need to process enormous amounts of data.

3   'Multitasking' means:
a) access to a minicomputer through terminals.
b) doing a number of tasks at the same time.
c) connection to a 'host' computer by a network so that many users have access to data and programs.

4 The most suitable computers for home use are:
a) mainframes.
b) minicomputers.
c) microcomputers (PCs).

5   The smallest and least powerful computers are known as:
a) minicomputers.
b) desktop PCs.
c) laptops and notebook computers.

4   Follow-up: Minis and micros

Complete the text below with the words in the box.

systems   memory   task   terminals   desktop.   CAD
applications

The   first   microcomputers,   also   known   as
(1)'.......................................' PCs, were for single users
only, and this clearly distinguished them from minicomputers. Another important difference was that 'minis' were much more powerful than 'micros': they could execute more than one
(2) .... simultaneously and were
used as file servers for (3) .... and
workstations.
However, modern microcomputers have operating
(4) .... and network facilities that
can support many simultaneous users. Today, most personal computers have enough
(5).................................... to be used for word processing and business
(6).................................... . Some PCs
can   even   handle   multitasking   and (7).....................................
applications. As a result, the division between 'minis' and 'micros' is now disappearing.

3. Unit 3   *Inside the system*
1   Warm-up

A Read the advertisement and translate the technical specifications into your own language.

- Intel 150 MHz Pentium microprocessor.
- 16 megabytes of RAM, upgradable to 72.
- 850 MB hard disk.
- Comes with Microsoft Windows.

B Try to answer these questions. (If necessary look at the Glossary.)

1 What is the main function of a microprocessor?
2 What is the unit of frequency which is used to measure processor speed?
3 What does 'RAM' stand for?

2 Reading

A Read the text below and then sentences 1-8 on page 13. Decide if the sentences are true or false, and rewrite the false ones to make them true.

What's inside a microcomputer?

The nerve centre of a microcomputer is the Central Processing Unit, or CPU. This unit is built into a single microprocessor chip — an integrated circuit — which executes program instructions and supervises the computer's overall operation. The unit consists of three main parts:

i)   the **Control Unit,** which examines .the instructions in the user's program, interprets each instruction and causes the circuits and the rest of the components - disk drives, monitor, etc. - to be activated to execute the functions specified;

ii)   the **Arithmetic Logic Unit** (ALU), which performs mathematical calculations (+, —, etc.) and logical operations (and, or, etc.);

ii)   the **registers,** which are high-speed units of memory used to store and control informa-
tion. One of these registers is the Program Counter (PC) which keeps track of the next
instruction to be performed in the main memory. Another is the Instruction Register (IR)
which holds the instruction that is currently being executed. (See Fig. 1.)
One area where microprocessors differ is in the amount of data — the number of bits — they can work with at a time. There are 8, 16, 32 and 64-bit processors. The computer's internal architecture is evolving so quickly that the new 64-bit processors are able to address 4 billion times more
30   information than a 32-bit system. (See Fig. 2.)

The programs and data which pass through the central processor must be loaded into the **main memory** (also called the **internal memory) in** order to be processed. Thus, when the user runs
an application, the microprocessor looks for it on secondary memory devices (disks) and transfers a copy of the application into the RAM area. RAM (Random Access Memory) is temporary, i.e. its information is lost when the computer is turned off. However, the ROM section (Read Only Memory) is permanent and contains instructionsneeded by the processor.
Most of today's computers have internal **expansion slots** that allow users to install acceleration cards or co-processors. As the word implies, an **acceleration card** is a board that increases the processor speed. A **co-processor** is a silicon chip that performs precise tasks and mathematical operations at a very high speed.
The power and performance of a computer is partly determined by the speed of its microprocessor. A **clock** provides pulses at fixed intervals to measure and synchronize circuits and units. The clock speed is measured in MHz (megahertz) and refers to the frequency at which pulses are emitted. For example, a GPU running at 50 MHz (50 million cycles per second) is likely to provide a very fast processing rate and will enable the computer to handle the most demanding applications.

Organization of a simple computer
The CPU is built into a single microprocessor chip
bus

Figure 1
The new generation of processors:
• Figure 2 shows the 200 MHz Alpha AXP DECchip microprocessor, with a 64-bit RISC implementation (Reduced Instruction Set Computing) architecture, providing lightning-fast performance.

Figure 2
Other popular platforms are:
• Intel's Pentium
• Apple, IBM and Motorola's PowerPC
• Sun's SuperSPARC
• Silicon Graphics/Mips R4000

1   The GPU directs and coordinates the activities taking place within the computer system.
3   The Arithmetic Logic Unit performs calculations on the data.
4   The Arithmetic Logic Unit performs calculations on the data/
5   32-bit processors an electronic device composed of silicon elements containing a set of integrated circuits.

6   RAM, ROM and secondary memory are the components of the main memory.
7   Information cannot be processed by the microprocessor if it is not loaded into
    the main   memory.
8   Permanent information is provided by RAM (Random Access Memory).
9   The speed of the microprocessor is measured in megahertz. One MHz is
    equivalent to one
      million cycles per second.

Contextual reference

B   What do the words in bold print refer to?
1 ... which executes program instructions and supervises... (line 4)
2 ... the instruction **that** is currently being executed, (line 22)
3 ... the amount of data — the number of bits — **they** can work with at a time, (line 25)
4 ... when the user runs an application, the microprocessor looks for **it** and ... (line 35)
5 ... its information is lost when the computer is turned off. (line 39)
5   A co-processor is a silicon chip **that** performs precise tasks ... (line 48)

4   Language work: Relative clauses

We can define people or things with a restrictive (defining) relative clause. Look at these sentences:
a) *The teacher -who is responsiblefor the computer centre has just arrived.*
b) *The microprocessor is a chip which processes the information provided by the software.*
c) *The computer we saw in the exhibition runs at 100 MHz.*
In (a) we use the relative pronoun *who* because it is the subject and because it refers
back to a person. We could also have used the pronoun *that.* In (b) we use *which*
because it refers back to a thing, not a person. We could also have
used *that.* In (c) the relative pronoun is not necessary. A relative pronoun can be omitted when it
is not the subject of the relative clause.

Complete these sentences with suitable relative pronouns. Give alternative options if possible.
1   That's the CPU ....I'd like to buy.
2   The microprocessor is a chip .... processes data and instructions.
3   The microprocessor coordinates the activities .... take place in the
    computer
      system.
4   Last night I met someone .... works for GM as a computer programmer.
5   Some Intel 80386 processors have an expansion socket............... allows us to

install a maths co-processor 80387.

6   A co-processor is a silicon chip .... carries out mathematical operations at a

very high speed.

6   A megahertz is used to measure processor speed.

8   Here's the floppy disk .... you lent me!

5   Listening

A   Label this diagram with the correct terms.

B   Compare your answers with a partner.

C   EIII Listen to the cassette and check your answers.

6   Reading

A   Read the text and complete it with the phrases in the box.

- All the information stored in the RAM is temporary
- Microcomputers make use of two types of main memory
— ROM chips have 'constant' information
— the size of RAM is very important

Main memory: RAM and ROM
The main memory of a computer is also called the 'immediate access store', as distinct from any storage memory available on disks. (1) ....: RAM and ROM, both contained in electronic chips connected to the main board of the computer.
RAM stands for 'Random-Access Memory' and is the working area of the computer, that is, the basic location where the microprocessor stores the required information. It is called 'random access' because the processor can find information in any cell or memory address with equal speed, instead of looking for the data in sequential order.
(2)...,
so it is lost when the machine is turned off. Therefore, if we want to use this information later on, we have to save it and store it on a disk. When running an application, the microprocessor finds its location in the storage device (the floppy or hard disk) and transfers a temporary copy of the application to the RAM area. Consequently, (3) ....
…………………………………………………………………. if we want to increase
the performance of a computer, when several applications are open at the same time or when a document is very complex.
The RAM capacity can sometimes be expanded by adding extra chips. These are

usually contained in Single In-line Memory Modules or SIMMs, which are installed in the motherboard of the computer.

We can designate a certain amount of RAM space as a **cache** in order to store information that an application uses repeatedly. A RAM cache may speed up our work, but it means that we need enough internal memory or a special cache card.

ROM is an acronym for 'Read-Only Memory', which implies that the processor can read and use the information stored in the ROM chip, but cannot put information into it. (4)................................ including instructions and routines for the basic operations of the CPU. These instructions are used to start up the computer, to read the information from the keyboard, to send characters to the screen, etc. They cannot be changed and are not erased when the power is turned off. For this reason, the ROM section is also referred to as **firmware.**

There are different RAM configurations depending on how many SIMMs we use and on the density of the RAM chips installed in the SIMMs

B   As we have seen, there are three types of memory used by computers: RAM, ROM and storage memory. Look through this list of features and decide which type of memory they refer to.

1   Any section of the main memory can be read with equal speed and ease.
2   It is available in magnetic, optical and video disks.
3   A certain amount of this memory can be designated as 'cache' memory to store information in applications that are used very frequently.
4   It stores basic operating instructions, needed by the CPU to function correctly.
5   Memory which can be expanded by adding SIMMs of 1 MB, 2 MB, 4 MB or other major increments.
6   Information is permanent and cannot be deleted.
7   You can save and store your documents and applications.

7   Vocabulary quiz

In groups of three, write answers to these questions. The winners are the group that answers the most questions correctly in four minutes.

1 What are the main parts of the CPU?
2 WhatisRAM?
3 What memory section is also known as 'firmware'?
4 What information is lost when the computer is switched off?
5 What is the typical unit used to measure RAM memory and storage memory?
6 What is the meaning of the acronym SIMM?
7 What is a megahertz?   j
8 What is the ALU? What does it do?
9 What is the abbreviation for 'binary digit'?

10 How can we store data and programs permanently?

8 Your ideal computer system

A Make notes about the features of the computer that you would like to have.
CPU: ....Speed............
Minimum/maximum RAM:.. Hard disk:....................
Floppy disk drives:......
Monitor: ....
Software: ....

B Now describe it to your partner. Useful expressions:
It has got...
It's very fast. It runs at...
The standard RAM memory is ... and it is expandable ...
The hard disk can hold...
As for the disk drive, ...
I need a SuperVGA monitor because ....

4. Unit 4 *Bits and bytes*
1 Reading

A With a partner, try to answer these questions.

I How many digits does a binary system use? What is a 'bit'?
2 What is the difference between binary notation and the decimal system? Give some examples.
3 What is a collection of eight bits called?
4 One kilobyte (IK) equals 1,024 bytes. Can you work out the value of these units? I megabyte
  = ... bytes/I,024kilobytes   *(kilo-:* one thousand)
  I gigabyte = ... bytes/1,024 megabytes   *(mega-:* one million)
  (giga-: one thousand million)
6 What does the acronym 'ASCII' stand for? What is the purpose of this code?

B Now read the text to check your answers or to find the correct answer.

Units of memory
Bits — basic units of memory
Information is processed and stored in computers as electrical signals. A computer contains thousands of electronic circuits connected by switches that can only be in one of two possible states: ON (the current is flowing through the wire) or OFF (the current is not flowing through the wire). To represent these two conditions we use **binary notation** in which 1 means ON and 0 means OFF. This is the only way a computer can 'understand' anything. Everything about computers is based upon

this binary process. Each 1 or 0 is called a **binary digit,** or **bit.**

Bytes and characters
Is and Os are grouped into eight-digit codes that typically represent characters (letters, numbers and symbols). Eight bits together are called a **byte.** Thus, each character in a keyboard has its own arrangement of eight bits. For example, 01000001 for the letter A, 01000010 for B and 01000011 for C.

The ASCII code
The majority of computers use a standard system for the binary representation of characters. This is the American Standard Code for Information Interchange, known popularly as ASCII' (pronounced 'ask-key'). There are 256 different ways of combining 0 and 1 bits in a byte. So they can give us 256 different signals. However, the ASCII code only uses 128 bytes to represent characters. The rest of the bytes are used for other purposes.
The first codes are reserved for characters such as the Return key, Tab, Escape, etc. Each letter of the alphabet, and many symbols (such as punctuation marks), as well as the ten numbers, have ASCII representations. What makes this system powerful is that these codes are standard.

Kilobytes, megabytes and gigabytes
In order to avoid astronomical figures and sums in the calculation of bytes we use units such as kilo- bytes, megabytes and gigabytes. One kilobyte is 1,024 bytes (2^{10}) and it is represented as KB, or more informally as K. One megabyte is equivalent to 1,024 kilobytes, and one gigabyte is 1,024 MB.

We use these units (KB, MB, GB) to describe the RAM memory, the storage capacity of disks and the size of any application or document. For instance, the text of this book contains roughly 1 MB of information.

2   Word building

A   Prefixes are often used in computer science. Knowing the meaning of the most common prefixes can help you understand new words. Look at the prefixes in this table.

Prefix	Meaning	Examples		
deci-	ten	*decimal*	*decimalize*	*decibel*
hexadeci-	sixteen	*hexadecimal*		
kilo-	one thousand (1,000)	*kilocycle*	*kilogram(me)*	*kilowatt*

	(1,024 in binary: 2^{10})			
rnega-	large one million	*megahertz*	*megalith*	*megaton*
giga-	very large one thousand million	*gigantic*	*gigabyte*	
mini-	small	*minibus*	*minimum*	*minimize*
micro-	very small	*microfilm*	*microphone*	*microwave*
bi-	two	*bidirectional*	*bidimensional*	*binary*
tri-	three	*tripartite*	*tricycle*	*trilingual*
Multi-	many	*multi-racial*	*multi-user*	*multitasking*
Mono-	one	*monologue*	*monosyllable*	*monolingual*

B   Explain the meaning of these expressions taking into account the value of the prefix and the sense of the base form.

Example: the binary system
The binary system is a notation which uses two digits, 0 and 1.

1 a minicomputer
2 a microcomputer
3 the decimal system
4 the hexadecimal notation
5 a multi-user configuration
6 a bidimensional chessboard
7 a tricycle
8 a monochrome computer
9   a CPU with 8 megabytes of RAM

10 a document of 3 kilobytes

3 Bits for pictures

A Read the questions and text and study the diagrams. Did you know that...

1 bits can also be used to code pictures?
2 the information displayed on the computer screen corresponds, dot by dot, with bits held in the main memory?
4 on colour systems, if you have 8 bits per primary colour, the palette of your computer can obtain 16.7 million colours?

Each tiny dot on the screen of a computer is called a picture element, or **pixel.**
Images and text are formed by combining a large number of pixels.
In a bit-mapped display, the dots displayed on the screen correspond, pixel by pixel, with bits in the main memory of the computer. The bits are held in an area of the memory called the 'refresh buffer' and are stored in groups that represent the horizontal and vertical position of the pixels on the screen and whether the pixels are on or off.
On monochrome systems, one bit in this 'map' represents one pixel on the screen and can be either 'on' or 'off' (black or white).

0	0	0	0	0	0	0	0	0	0
0	1	1	1	1	1	1	1	1	0
0	1	0	0	0	0	0	0	1	0
0	1	0	0	0	0	0	0	1	0
0	1	0	0	0	0	0	0	1	0
0	1	0	0	0	0	0	0	1	0
0	1	0	0	0	0	0	0	1	0
0	1	0	0	0	0	0	0	1	0
0	1	1	1	1	1	1	1	1	0
0	0	0	0	0	0	0	0	0	0

Refresh buffer (memory)

On colour systems, each pixel is a certain combination of the three primary colours: red, green and blue. The total number of colours which can be shown on the screen is called the colour palette. The size of this palette depends on the graphics adaptor, a separate video card that converts the bits into visual signals. A graphics adaptor with 1 bit per primary colour can generate up to 8, or 2^3, colours, as you can see from the table below. A graphics adaptor with 8 bits per primary colour can generate 16.7 million, or $(2^3)^8$ colours.

One bit per primary colour

Colour	*Red* 0	*Green* 0	*Blue* 0
black			
blue	0	0	1
green	0	1	0
cyan	0	1	1
red	1	0	0
magenta	1	0	1
yellow	1	1	0
white	1	1	1

B   Using the information in the passage and the illustrations, match the terms in the box with the appropriate explanation or definition.

pixel   bit   bit-mapped display primary colours   palette

1 The menu of colours available on a graphics system; its size depends on the hardware.
2 Red, green and blue (RGB) in computers.
3 The smallest element of a display surface.
4 A display on the screen which corresponds, pixel by pixel, with bits stored in memory cells.
5 The acronym for 'binary digit'; one of the digits (0 and 1) used in binary notation.

C   Translate the last paragraph (starting from 'On colour systems,...) into

your language.
Do you understand the calculations made to obtain a palette of 16.7 million colours? (If you don't, ask a partner to explain them to you.)

5. Unit 5 *Buying a computer*
1   Before you listen

Name eight different items you can buy in a computer shop.

2   Listening

A   You are going to hear two people making enquiries in a Macintosh computer shop. The shop assistant is telling them about the two models below. Listen and fill in the missing information.

Macintosh LC 475
Processor speed   25 MHz
Processor speed
RAMstandard
Hard disk capacity
Price

Power Macintosh 6100
Processor speed
RAMstandard
Hard disk capacity
Price

B   *m* Now listen again and fill in the gaps below.
Assistant: Do you need any help?
Paul: Urn yes, we're looking for a personal computer
Have you got any fairly basic ones?
Assistant: Yes, sure. If you'd like to come over here Paul:
What different (1).............................. are there?

Assistant: At the moment we've got these two models: The LG 475, which has a
(2)............................ operating at 25 megahertz, and the PowerMacintosh
6100 which has a processor (3)............................ at 60 megahertz.
Sue: So the Power Macintosh is the (4)............................ one. And which
one has the most memory? I mean - which has the most RAM?
Assistant: Well, the LC 475 has 4 megabytes of (5)..........................., which can
be (6)............................ up to 36, and the Power Macintosh has 8
megabytes which can be expanded up to (7).............................. It all

depends on how much memory you think you're going to need.

3   Role play

Work with a partner. One of you wants to buy a computer, the other is the sales assistant. Ask and answer questions, using the information and instructions below to help you.

Products available	Processor/ Speed	Minimum/ Maximum RAM	Hard disk	Disk drives	Monitor	Price
Portable	486dx 66 MHz	4 MB expandable to 32	500MB	3.5" drive	colour LCD	£999
IBM Aptiva	Pentium Pro 166 MHz	16 MB expandable to 128	1.6GB	3.5" drive CD-ROM	Super VGA	£2,800
HPVectra	Pentium Pro 150 MHz	1 6 MB expandable to 256	2GB	3.5" drive CD-ROM	VGA Plus	£2,850
Compaq	Pentium 120 MHz	8 MB expandable to 128	1 GB	3.5" drive CD-ROM	SuperVGA	£1,430
Sunrise	PowerPC 133 MHz	8 MB expandable to 64	850MB	3.5" drive CD-ROM	Sony Multiscan	£1,710

Shop assistant   **Customer**

Greet the customer and offer help.
                        Ask to see some computers.
Show the customer some models.
                        Ask for details: processor, RAM, etc.
Describe the speed in megahertz and the main memory.

Ask about the hard disk.
Give explanations (MB storage capacity, etc.).
Ask about the monitor and other features.
Give the required information.
Ask the price.
Give the price and explain different ways of paying.
Decide to buy one/ to think about it. Thank
the shop assistant and leave the shop.

4 Read and talk

A Read the descriptions of the four people and the four computers below and on the next page. With a partner, choose the most suitable computer for each person. Give reasons for your choices.

1   Daniel is a history student. He needs a computer to write essays, assignments
    and letters.
2   Sarah is the manager of an advertising company. She needs a powerful system
    which will work with optical disks and multimedia applications, integrating
    text and pictures with animation and voice annotations. Digitized images and
    sound occupy a lot of disk space.
3   Andy is a CAD engineer. His job involves computer-aided design, simulations
    and three-dimensional modelling. These applications require a lot of memory
    and a large drive.
4   Tanya is a sales representative. She needs a lightweight machine with which
    she can process orders and communicate with head office while she is on
    the road.

DEC workstation Alpha AXP
- DECchip 21064 processor at 133 MHz
- 128 MB RAM expandable up to 512 MB
- Disk capacity: 2.1 gigabytes
- Supports several graphics formats
- Lets you attach peripherals and link up to nearly any network
- Allows you to handle your toughest technical, commercial, scientific and
business-critical applications

- System software: OpenVMS AXP, DEC OSF/1
- £5,049

Amstrad PC
- Intel 386sx main board. IBM AT-compatible
- Running at 16 MHz
- A full 1 MB of RAM upgradable to 16 MB
- High density 3.5", 1.44 MB floppy disk drive
- 4 expansion slots and room to add extra floppy disk drives
- 80 MB fast-access hard disk
- MS-DOS and Windows
- £700

Compaq Centura Notebook
- 486sl 25 MHz processor
- 4 MB RAM (expandable to 20 MB)
- 120 MB fixed disk
- 3.5" 1.44 MB floppy disk drive
- 9" colour VGA display
- Compaq trackball mouse
- Slot to add a modem, or a network card
- The battery provides over three hours of continuous use
- Weighs only 6.2 Ib
- Windows and MS-DOS come pre-installed
- £1,799

Power Macintosh Audiovisual 7100/80
- PowerPC processor at 80 MHz
- 8 MB of RAM expandable to 136 MB
- 2 MB of video RAM memory
- 350 MB or 700 MB hard disk
-   3.5", 1.44MBSuperDrive
- Comes with sound board and built-in microphone
- Includes CD-ROM optical drive
- Macintosh operating system and QuickTime (a system extension that lets you play the video on the computer)
- £2,790

B   Look back at the notes you made for Task 7 in Unit 3 (page 16) about your ideal computer system. What did you want?

Read the descriptions of these computers again and choose the one that is closest to your ideal. Explain the reason for your choice.

5 Vocabulary tree

Designing vocabulary trees or networks can help you build up your own mental 'maps' of vocabulary areas. Look at the list of terms in the box and put each one in an appropriate place on the vocabulary tree below. The first one has been done for you.

megahertz
kilobyte
ASCII code
SIMMs
bit-mapped display
permanent internal memory
immediate access store
maths co-processor gigabyte firmware megabyte binary digit basic instructions
computer 'brain'
expandable memory binary system cache memory clock speed pixel processing
rate

6 Writing

A friend has -written to you asking you to recommend a computer that suits his/her needs.   Write a letter in reply, describing its technical features, and saying why you recommend it.

Input/output devices

Mã chương: MH12-2

Giới thiệu: Chương 2 trình bày về thiết bị nhập, xuất.

Mục tiêu:

–   Trình bày được ý nghĩa, công dụng của các thiết bị vào ra trong máy tính;

–   Phân biệt được thiết bị vào và ra;

–   Trả lời chính xác các bảng liệt kê cấu hình và công dụng của các thiết bị;

–   Sử dụng đúng cú pháp trong việc mô tả các thiết bị vào ra;

–   Có khả năng quan sát, so sánh, phân tích.

Nội dung chính:

1. Unit 6   *Type and click!*

1   Interacting with your computer

Input devices are the pieces of hardware which allow us to enter information into the computer. The most common are the keyboard and the mouse. We can also interact with a computer by using one of these: a lightpen, a scanner, a trackball, a graphics tablet, a joystick, or a voice recognition device.

Look at the illustrations and see if you can name them.
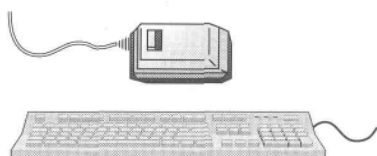
2   Listening

A   ЁЭ Listen to these descriptions of three input devices. What are they?

1 ....

2 ....

3 ....

B   Check your answers with a partner.

3 Language work

In Task 2 the mouse was described like this:
1   *This is a device for controlling the cursor and selecting items on the screen.*

We could also describe it like this:
2 *A mouse is a device which controls the cursor.*
3 *A mouse is a device which/that is used to control the cursor.*
4 *A mouse is a device used to control the cursor.*

From these examples you can see that we can describe the function of an object in several ways:
1 *for + ing (for controlling]*
2   relative pronoun + verb *(which controls]*
3   relative pronoun + *is used + to* + infinitive *(which/that is used to control]*
4   *used + to* + infinitive *(used to control)*

Use these notes to write a similar description of a joystick.
Input device
Use: play games
The user takes hold of a lever to control/move the cursor around the screen

4 Speaking

Work in pairs. Student A: turn to page 137 and Student B: turn to page 141.

5 About the keyboard

A   Look at the picture of a PC-compatible keyboard and identify these groups of keys.

1   Alphanumeric keys: arranged in the same order as a typewriter.
2   Function keys: used by various programs to instruct the PC to perform specific tasks, such as Save, Copy, Cut, Paste, Help, etc.
3   Numeric keypad: set of numeric or editing keys. The Num Lock key is used to switch from numbers to editing functions.
4   Editing keys: cursor and other keys usually used within word processors to page up and down in a long document or to edit text (using Insert or Delete keys).
5   Special keys: used to issue commands or to produce alternative characters in key,   combinations, for example, the Alt key.

A PC-compatible keyboard

B   Match these descriptions with the names of keys on the right. Then find them on the keyboard.

1   A long key at the bottom of the keyboard. Each time it is pressed, it produces a blank space. (= ....*)*

2   It moves the cursor to the beginning of a new line. It is also used to confirm commands. (= ....) |

3   It stops a program without losing the information from the main memory. Sometimes its use depends on the application. (...................................)

4   It works in combination with other keys to produce special characters or specific actions.
        (= ....)

5   It removes the character on the left of the cursor or any selected text.

6   It produces UPPER-CASE characters (or the upper-case character of the key). (=...................................)

7   It produces upper-case letters, but it does not affect numbers and symbols. (=...................................)

8   It moves the cursor horizontally to the right for a fixed number of spaces (in tabulations and data fields).

9   They are used to move the cursor, as an alternative to the mouse (=)

C   Computer systems may have different keyboard options. Here is an example. If we enter the Key Caps menu on a Macintosh in Courier and then press the Option key, we obtain the following symbols on the screen:

Identify these symbols on the keyboard.

1 slash   5 yen sign
2 not equal to   6 copyright
3 plus and minus   7 number
4 trademark   8 registered trademark

6 Reading
A   Try to answer these questions.

1 How is the mouse connected to the computer?
2 What does the mouse pointer look like on the screen?
3 What are the functions of the mouse buttons?
4 What are the advantages of a computer mouse over a keyboard?

Read the text *to* check your answers or to find the right answers.

Point and click!

Typically, a mouse is a palm-sized device, slightly smaller than a pack of cards. On top of the mouse there are one or more buttons for communicating with the computer. A 'tail' or wire extends from the mouse to a connection on the back of the computer.

The mouse is designed to slide around on your desktop. As it moves, it moves an image on the screen called a **pointer** or **mouse cursor.** The pointer usually looks like an arrow or I-bar, and it mimics the movements of the mouse on your desktop.

What makes the mouse especially useful is that it is a very quick way to move around on a screen. Move the desktop mouse half an inch and the screen cursor will leap four inches. Making the same movements with the arrow keys takes much longer. The mouse also issues instructions to the computer very quickly. Point to an available option with the cursor, **click** on the mouse, and the option has been chosen.

Mice are so widely used in graphics applications because they can do things that are difficult, if not impossible, to do with keyboard keys. For example, the way you move an image with a mouse is to put the pointer on the object you want to move, press the mouse button and **drag** the image from one place on the screen to another. When you have the image where you want it, you release the mouse button and the image stays there. Similarly, the mouse is used to **grab** one corner of the image (say a square) and stretch it into another shape (say a rectangle). Both of these actions are so much more difficult to perform with a keyboard that most graphics programs require a mouse.

The buttons on the mouse are used to select items at which the mouse points. You position the pointer on an object on the screen, lor example, on a menu or a tool in a paint program, and then you press the mouse button to 'select' it. Mice are also used to load documents into a program: you put the pointer on the file name and **double-click** on the name - that is, you press a mouse button twice in rapid succession.

(Adapted from *Your First Computer,* A. Simpson, Sybex, 1992) i

B   Here are some basic mouse actions. Match the terms in the box -with the explanations below.
click   double-click   drag

1 Position the pointer on something, then rapidly press and release the mouse button twice. (You do this to load a program, open a document or select text or graphics.)
2 Position the pointer on something, hold down the mouse button and move the

mouse to the desired position, then release the button. Do this to move an image to a new location on the screen.

3 Position the pointer on something, then press and release the mouse button. (You do this to place the insertion point, to choose an option, or to close a window.)

2. Unit 7 *Capture your favourite image*
1 Scanners: The eyes of your computer

Use the information in the text and the illustration to help you answer these questions.
1 What is a scanner? Give a definition in your own words.
2 How does a colour scanner work?

What does a scanner do?
A scanner converts text or pictures into electronic codes that can be manipulated by the computer.
In a flatbed scanner, the paper with the image is placed face down on a glass screen similar to a photocopier. Beneath the glass are the lighting and measurement devices. Once the scanner is activated, it reads the image as a series of dots and then generates a digitized image that is sent to the computer and stored as a file. The manufacturer usually includes software which offers different ways of treating the scanned image.
A colour scanner operates by using three rotating lamps, each of which has a different coloured filter: red, green and blue. The resulting three separate images are combined into one by appropriate software.

What do you think are the benefits of using scanners in business?

scanner
A scanner 'sees' images and translates them into a form that can be understood by the computer

2 Listening

Listen to the conversation between Vicky Cameron, an Information Technology (IT) **lecturer, and one of her students, and complete these notes.**
1 The technology used in scanners is similar to that used in
....
2 A laser beam reads the image in
....
3 The image is
then...
4 Text is scanned

with..

5 Black-and-white scanners work best with

....

6 Greyscale scanners have been designed to work with

....

7 Colour scanners produce lovely images on screen but

....

3 Facts and opinions

A   Read the advertisements and underline what you think are facts and circle the opinions. Then write them in the table on the next page.

Facts are 'real', objective information. *Opinions* usually include emotive words, positive/negative phrases and subjective (persuasive) statements.

HELP box
• dpi: dots per inch.
• 9" x 15": scanning area measured in inches.
• JPEG: Joint Photographic Experts' Group - a standard format in image compression. With JPEG, your images can be compressed to 1/50th of normal size, resulting in a substantial saving of disk space and time.

ColourScan XR from Sunrise
The ColourScan XR from Sunrise is a flatbed scanner with 600 dpi of resolution and 9" x 15" of scanning area.
Think of the possibilities.
You can enter data and graphic images directly into your applications - word processors or databases. You can get crisp, clean scans for colour compositions, video and animation work.
It comes complete with its own image-capture software which allows for colour and grey retouching. And it's easy to use. What more could you want for only £616? It couldn't be cheaper.
In the field of flatbeds, the ColourScan XR is a clear winner.

ScanPress 800
The ScanPress 800 is a self-calibrating,
flatbed scanner with 800 dpi of resolution. You can scan from black and white to 24-bit colour. The package includes a hardware accelerator for JPEG compression and decompression. JPEG
technology saves disk space by compressing images up to 50 to 1.
In creating ScanPress 800, the manufacturers have chosen the highest technology to give you the best scans with the least effort. It produces images
with high colour definition and

sharpness. And it comes with OCR
software and Adobe Photoshop, so you
can manipulate all the images you
capture.
This is a fantastic machine you will love
working with. And at only £1,037 it is an
excellent investment.

	(1) *ColourScan XR*	*(2) ScanPress 800*
FACTS	— Flatbed scanner - 600 dpi of resolution	— Self-calibrating, flatbed scanner
OPINIONS	- You can get crisp, clean scans	— The highest technology

B   In small groups, compare your answers and decide:
1   which text has got more persuasive language?
2   which text is more factual or objective?

4 Language work: Comparatives and superlatives

Apart from catchy slogans and other persuasive techniques, advertisements often use the comparatives and superlatives of adjectives and adverbs. Read the following examples from advertisements. What can you say from these examples about how comparatives and superlatives are formed?
1 .. .only ten times faster.
2 It couldn't be cheaper.
3 The manufacturers have chosen the highest technology ...
4 The cleverest personal scanner ...
5 The most revolutionary computer peripheral ...
6 The best scans with the least effort ...
7 Flatbed scanners are more accurate than ...
8 Now you can edit your documents more easily than ever, and they'll look better than ever too with .

5 Word building

The class of a word can often be changed by adding a suffix. For example, if -

er **is added to the verb** *scan* **(and the 'n' is doubled) we get the noun** *scanner.*

Common adjectival suffixes are: *-ing, -y, -able, -ible, -ive, -al, -ed, -ful.*
 Common noun suffixes are: *-er, -or, -ion, -turn, -ation, -ment, -ness, -ity, -ant, -logy.*

Put the words in the box into the correct column below.

computer   self-calibrating   easy   resolution   sharpness
information printed   personal   capable   compression   technology
calculator useful   assistant   expensive   possibility   reducible
investment

Adjectives   *Nouns*

6 Advertisement: A hand-held scanner

The advertisement below is persuasive, but some adjectives and adverbs have been left out. Read it and complete it with words from the box.

easy   revolutionary   unique   cleverest   neatly   amazing
effortlessly

Typist

Typist, the most (1).................................... computer
peripheral since the keyboard. The Typist from Caere is the world's
(2).................................... personal scanner.
It will revolutionize your life, because Typist can actually read. Fitting (3)
....................................in the hand, it can read over 500 words or numbers per
minute and enter them directly into your word processor or spreadsheet as if
you had typed them yourself -only ten times faster.

Most (4) .... of all is that Typist
is capable of reading any printed text, regardless of type style, font size or column
format. Available for PC or Macintosh, the Typist is your very own personal
assistant. It transfers any business information from page to computer screen,
 (5) .... The Typist
makes it(6).......................................simply
improving your personal productivity. A (7)................................. hand-held
scanner!

3. Unit 8   *Viewing the output*

1 Read and think

We interact with computers by entering instructions and data into them. After this information has been processed internally, we can see the results on the visual display unit or VDU. To obtain a permanent copy of these results, we can use plotters, printers or video recorders. In this interactive process with the computer, the screen plays an important part.
Describe the screen of your computer to another student. Use these questions to help you.

• Is it a monochrome or a colour monitor?
• What size is it?
• Does it produce a high quality image?

2 Reading

A   Read the text and try to guess the meaning of any new words in the box below. Refer to the Glossary on pages 145—50 if necessary.

dot   pixel   display   resolution   cathode ray tube   electron beam
scan (verb)   hertz   refresh rate   flicker   bit-mapped   visualize

The monitor

The characters and pictures that we see on the screen are made up of dots, also called picture elements (pixels). The total number of pixels in which the display is divided both horizontally and vertically is known as the **resolution.** If the number of pixels is very large we obtain a high
resolution display and therefore a sharp image. If the number of pixels is small, a low resolution is produced.
Typical resolutions are 640 X 480, or 1024 X 768 pixels. The diagrams below show how pixel
density affects the image: a larger number of pixels gives a much clearer image.
The cathode ray tube of the monitor is very similar to that of a TV set. Inside the tube there is an electron beam which scans the screen and turns on or off the pixels that make up the image. The beam begins in the top left corner, and scans the screen from left to right in a continuous   sequence, similar to the movement of our eyes when we read, but much faster. This sequence is repeated 50, 60 or 75 times per second, depending on the system. If the rate of this repetition is low, we can perceive a flickering, unsteady screen, which can cause eye fatigue. However, a fast-moving 75 Hz 'refresh rate' eliminates this annoying flicker.
What we see on the screen is created and stored in an area of RAM, so that there is a memory cell allocated to each pixel. This type of display is called **bit-mapped.** On monochrome monitors, bits 0 are visualized as white dots, and bits 1 as black dots.

On colour displays, there are three electron guns at the back of the monitor's tube. Each electron gun shoots out a beam of electrons; there is one beam for each of the three primary colours: red, green and blue. These electrons strike the inside of the screen which is coated with substances

called phosphors that glow when struck by electrons. Three different phosphor materials are used - one each for red, green and blue. To create different colours, the intensity of each of the three electron beams is varied.

The monitor is controlled by a separate circuit board, known as the display adaptor, which plugs into the motherboard of the computer. Different boards drive different types of displays. For example, the VGA (Video Graphics Array) card has become a standard for colour monitors.

Portable computers use a flat **Liquid-Crystal Display,** instead of a picture tube. An LCD uses a grid of crystals and polarizing filters to show the image. The crystals block the light in different amounts to generate the dots in the image.

pixel
Each dot on the screen is a pixel

B   Read the text again and answer these questions.

1 According to the writer, what is the importance of'pixel resolution'?
2 Which unit of frequency is used to measure the refresh rate of a monitor?
3 In the writer's opinion, why can a low refresh rate produce eye fatigue?
4 What substance is hit by electrons in a monitor?
5 What is the standard display system for many PCs?
6 What does 'LCD' stand for? What type of computers use LCD displays?

3 Writing

A   Tables often include abbreviations and technical words that are not easy to understand. Look at this table and
the explanation of Monitor A's specifications.

	CRT size	*CRT face*	*Pixel res.*	*Visual display*	*Refresh rate*	*Tilt-and-swivel*	*Other features*
Monitor A Supervie w	16"	flat	870 x 640	256 shades of grey	60 Hz	/	anti-glare filter
Monitor B Paintvie	19"	flat	1024 X768	32,000 colours	75 Hz	/	video card

w							

The specifications of Superview (Monitor A) may be explained like this:

1 This monochrome monitor has a 16-inch screen.
2 This display system has a resolution of 870 X 640 pixels that gives you enough quality for graphics.
3 It offers 256 shades of grey.
4 It has a 60 hertz refresh rate. (This is quite low, so it will probably produce a flickering, unsteady image.)
5 A tilt-and-swivel stand is used to move the monitor up, down and around so that the angle can be adjusted for each user.
6 The anti-glare filter helps eliminate eye fatigue and electromagnetic radiation.

B   Use this example to help you describe Monitor B.

4 Listening

 Tony Clark, a lecturer in computer ergonomics, is talking to some students about health and safety in a computer classroom. Listen and complete the sentences below. Then decide where they should go in the pictures on the next page. Write the number of each in the correct place.

1 You should get agood chair, one that
....
2 Position the keyboard
....
3 Position the monitor .... eye level, or
just...
4 A tilt-and-swivel display lets you
....
5 You should stay an arm's length away from
....
6 If you work in a room with a lot of computers,
sit..

5 Language work: Instructions and advice

A   Look at these sentences from Task 4:

1 Position your keyboard at the same height as your elbows.
2 Don't use a monitor that is fuzzy or distorts the image.

What verb form is used to give instructions or -warnings?

B Another -way of giving advice or a warning is to use the modal auxiliary verbs *should* or *ought to*.

1 You should position your keyboard at the same height as your elbows. = You ought to position ...

2 You shouldn't use a monitor that is fuzzy or distorts the image. = You ought not (oughtn't) to use ...

What form of the verb is used after *should* or *ought to*?

Rewrite these sentences about what you should do to protect your eyes, using a modal auxiliary verb.

1 Do not stare at the screen for long periods of time.

2 Avoid placing the monitor so that it reflects a source of bright light, such as a window.

3 Keep the screen clean to prevent distorting shadows.

4 If you work in an office with a large number of computers, don't sit too close to the sides or   backs of the monitors.

5 Buy a protective filter that cuts down the ELF (Extremely Low Frequency) emissions.

4. Unit 9   *Choosing a printer*

1 Reading

A   How many kinds of printers can you think of? Make a list. B   Read the text below and label these types of printers.

dots

characters
hammer
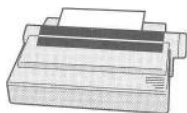
This impact printer works rather like a typewriter hooked up to the computer

1 ....
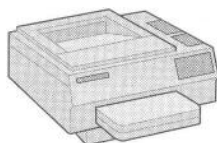
Provides high quality output - a resolution of 300/600 dots per inch (dpi) 3 ....

Produces the highest resolution - more than 2000 dpi

4 ....:............

The resolution depends on the number of pins (9 or 24.) 2 ....

Provides high quality for
linework (like lines and
curves)
5 .... :

Types of printers

Printing is the final stage in creating a document. That is the purpose of the printers joined to your computing equipment. *Since* the results you can obtain with different types of printers will vary substantially, here is a guide to help you decide which one is most suitable for your needs.

To begin with, it must be taken into account that printers vary in cost, speed, print quality and other factors such as noise or compatibility. In fact, printing technology is evolving so quickly that there is always a printer for every application or personal requirement.

Daisywheel printers were very common a few years ago. They used a sort of wheel with solid characters which rotated and hammered against the ribbon, but they couldn't print pictures or diagrams, and were very slow and noisy.

Dot-matrix printers use pins to print the dots required to shape a character. They print text and graphics and nowadays some of them can print up to 450 characters per second (cps); *however,* they produce relatively low resolution output — 72 or 144 dots per inch. This level of quality, *while* suitable for preliminary drafts, is not recommended for reports or books that have a wide audience. They are slower than laser printers *but* much cheaper.

One common type of non-impact printer is an **ink-jet** printer. It operates by projecting small ink droplets onto paper to form the required image. This type of printer is quite fast, silent *and* not so expensive as a laser printer. *Nevertheless,* you can expect high quality results *because* there are some ink-jet printers on the market with a resolution of 360 dpi.

Laser printers produce output at great speed and with a very high resolution of 300/600 dpi. They scan the image with a laser beam and transfer it to paper with a special ink powder. They are constantly being improved. In terms of speed and image quality they are preferred by experts for different reasons: they have a wider range of scalable fonts, they can emulate different language systems, they can produce graphics, and they have many other advantages. It goes without saying that they are still expensive.

We must not forget to mention **thermal** printers. They use heat, a special kind of

paper and elec-trosensitive methods. They are silent and are considered to be inexpensive. However, some colour models that emulate HP (Hewlett Packard) plotters cost too much to be included in the same category.

Photosetters can be regarded as an attractive alternative. They do not print on regular paper, *but* on photographic paper or microfilm. They can produce output with a resolution of over 2000 dots per inch. *In addition,* they are extremely fast. *Although* they produce the highest quality output, they have one important drawback: they are the most expensive.

Finally, **plotters** are a special kind of printer. Plotters use ink and fine pens held in a carriage to draw very detailed designs on paper. They are used for construction plans, engineering drawings and other technical illustrations.

Read the text again and complete this table with the most relevant information. Then compare your notes with a partner.

Type of printer	*Technical specifications and other features*
Daisywheel	
Dot-matrix	
Ink-jet	
Laser	
Thermal	
Photosetter	
Plotter	

2   Discourse cohesion
3
Reference signals
A   Read the first three paragraphs of the text (taken from Task 1) and say what the [boxed] words refer to.

Printing is the final stage in creating a document. |That| is the purpose of the printers joined to your computing equipment. Since the results you can obtain with different types of printers will vary substantially, here is a guide to help you decide which [one] is most suitable for your needs. To begin with, it must be taken into

account that printers vary in cost, speed, print quality and other factors |such| as noise or compatibility. In fact, printing technology is evolving so quickly that there is always a printer for every application or personal requirement.

Daisywheel printers were very common a few years ago. I They | used a   sort of wheel with solid characters | which | rotated and hammered against the ribbon, but | they | couldn't print pictures or diagrams, and were very slow and noisy.

Linking devices

B   In pairs, look at the text in Task 1 again and put the words in *italics* into one of the columns in the table below.

Indicating addition	*Contrasting*	*Sequencing*	*Reason /cause*

C   Write a short text about the pros and cons of a printer or printers you use. Use some linking devices from the list above.

Write about these aspects: type, cost, speed, noise, output quality, resident fonts.

3 Listening

A   *1^1* Listen to the radio interview and decide whether these statements about ink-jet printers are true or false.

1   InkJet printers are quieter than dot-matrix printers.
2   InkJet printers are cheaper than dot-matrix printers.
3   It is unlikely that ink-jet printers will ever become real competition for laser printers.
4   Ink-jet printers can easily print on envelopes, labels and transparencies.
5   Ink-jet colour printers use four inks: magenta, yellow, cyan and black.
6   Only large businesses can afford colour ink-jet printers.

B   1^4 Listen again and, with the help of a partner, correct the false statements.

An ink-jet printer

4 Scan reading: Quiz

Read the advertisements for printers below, and then, with your partner, answer the questions. See who in your group/class can finish first.

1   How many laser printers are advertised here?
2   Which technical term refers to the capability of choosing and imitating the appropriate printer control language?
3   Is there a printer that emulates five different printer control languages?
4   Which one is the most expensive?
5   Which one would you recommend to a friend who does not have much money?
6   Can you find three different interface facilities (the facilities that allow printers to communicate with computers)?
7   Is there a printer that operates by spraying ink droplets onto paper?
8   Which one has most internal fonts?
9   A very common feature in advertisements is the use of abbreviations and acronyms. Find the acronyms for these expressions: *dots per inch, characters per second, Hewlett-Packard, Small Computer System Interface* and *Interface Converter.*

5   Language work: Revision of comparison

A   Study the sentences below and do the following:
— draw a circle around comparatives and a rectangle around superlatives.
— identify two special cases.

1 Dot-matrix printers are cheaper than laser printers.
2 A photosetter is the fastest output device.
3 A colour ink-jet printer is more expensive than a monochrome laser printer.
4 The Micro Laser XT is the most reliable of all.
5 Personal laser printers cost less than ordinary laser printers. They also weigh less and require less space.
6 My printer has more resident fonts than yours.
7 This printer offers laser quality at a lower price.
8   Monochrome printers operate faster than colour ones.
9   Daisywheel printers are too slow.
10 Daisywheel printers are not quick enough.

B   Refer back to the advertisements on page 43 and compare the printers. Talk about their: speed, memory, fonts, emulations, resolution, service, price, noise. You can use adjectives from this box.

fast   slow high/low quality   noisy   quiet   cheap
expensive easy   difficult   simple   powerful   reliable
adaptable expandable   compatible with

6 Describing your ideal printer

Describe to your partner the characteristics of the printer you would like to use. Give reasons. r

Giới thiệu: Chương 3 trình bày về các thiết bị lưu trữ.
Mục tiêu:

−   Trình bày được các từ vựng để mô tả về các thiết bị lưu trữ trong máy tính;

−   Mô tả được đoạn văn để diễn tả các thiết bị lưu trữ;

−   Trả lời chính xác các bảng liệt kê cấu tạo và công dụng của các thiết bị lưu trữ ;

−   Sử dụng đúng cú pháp trong việc mô tả các thiết bị lưu trữ.

−   Có tính cẩn thận, cần cù, khoa học.

Nội dung chính:

1. Unit 11   *Floppies*
1   Warm-up

Look at the photograph and answer the questions.
1   What is the person doing?
2   What do people use floppies (also called 'diskettes') for?

2   Protect your floppies

A   Match the instructions to the pictures.

1   Protect your floppies against high temperatures.
2   Remember to block the disk if you want to be sure that information is not changed or erased by accident.
3   Do not put heavy objects on top of the disk.
4   Magnetic fields can damage the information stored on disks. Don't leave them near the telephone.
5   Keep disks away from water and humidity.
6   Do not touch the magnetized surface under the metallic cover.
blocked

B   In pairs, tell each other what you must/mustn't do to protect your disks.

Example: *You mustn't leave them on top of your computer.*
1 in a protective case.
2 into the disk drive very carefully.
3 near strong magnetic fields.
4 at a temperature of between 10°C and 52°C.
5 bend or fold the disk.   .   .

3 Listening

IsJ Sue is in a shop. Listen to the conversation and answer these questions.

1 What type of disks did Sue want to buy - hard or floppy?
2 Did she mention a particular make of disk?
3 What size disk did she ask for?
4 How much information can be held in the high density disks mentioned in the conversation?
5 How much was a pack often high density disks?
6 How much did she pay altogether?

4 Types of disks

Look at the illustrations and find out:

1   the two standard disk sizes (dimensions) used with PCs.
2   the meaning of the abbreviations 'DS', 'DD' and 'HD'.
3   the storage capacities of double density and high density disks (5.25 inch and 3.5 inch).
4   the external features of double density and high density disks.
5   the storage capacity of the floppy disk that is made of barium ferrite.

Check your answers with a partner.

5.25-inch diameter disk
Small,flexible magnetic disk •supplied within a plastic nvelope.
 Options: a) 360 KB, double density
          b) 1.2 MB, high density

3.5-inch micro-floppy disk, DS, DD
Double-sided, double density. 720/800 KB
 capacity. Conventional disk with ferrous (iron) oxide surface

3.5-inch floppy disk 2HD
Double-sided, high density. 1.44 MB capacity.
Conventional disk

3.5-inch microdisk
Extended density. 2.88 MB capacity. Recording
material: bariumferrite

5 Reading

A   Read the text and look at the diagrams.

Technical details

Information stored in the RAM is lost when the computer is turned off. Because of this data and applications are stored in either hard or floppy disks which provide a more permanent backing store.

Floppy disks are so called because they consist of flexible plastic material which has a magnetizable surface. Sizes vary, but 5.25-inch and 3.5-inch diameter disks are the most popular.

The surface of a floppy disk is divided into concentric circles or 'tracks', which are then divided into 'sectors'. When you insert a blank disk into a disk drive, it must be 'initialized', or formatted,
before information can be recorded onto it. This means that magnetic areas are created for each track and sector, along with a catalogue or 'directory' which will record the specific location of files.

When you save a file, the operating system moves the read/write heads of the disk drive towards empty sectors, records the data and writes an entry for the directory. Later on, when you open that file, the operating system looks for its entry in the directory on the disk, moves the read/write heads to the correct sectors, and reads the file into the RAM area.

Disk drive: the electronic mechanism that accepts,
 reads and writes data on a disk

Match the words and expressions on the left with those on the right.
1 backing store
2 floppies
3 disk drive
4 formatting
5 directory
6 read/write heads

         a)   a catalogue of where each piece of data is stored and how to find it

         b) recording heads

         c)   secondary memory

         d) diskettes

         e) initializing; setting tracks and sectors on magnetic disks

f) a peripheral which spins disks and contains a read/write head

B   Look at the illustration
Identify some tracks and sectors.

6 Word building

A   From the noun *magnet* we can form other words:

1 magnetic   2 magnetically   3 magnetism   4 magnetize 5 magnetizable
6 magnetized   7 magnetizing

Decide which part of speech each word is. Then complete these sentences with some of the words.

8   .... is the science of magnetic phenomena and properties.
9   Floppy and hard disks are considered as.................................... storage devices.
10   Information is recorded on a disk in the form of.................................... spots called bits.

B   From the verb *record* (pronounced /n'koid/) we can build up other words:
recorder   recording   recorded

Complete these sentences with the correct words.

1   All disks must be initialized before information can be ....
onto
them.
2   The .... heads follow the tracks and magnetize the coating along each track.
3 A disk drive works very much like a tape .... that can both play
and record.

7 **The parts of a floppy**

Take a *real* 3.5" disk and check the details of this drawing. Then read the technical description and list any new words.

1   Rotation hole. The drive shaft fits into this hole and spins the disk.
2   Sliding shield (protective metal cover).
3 Access window. This allows the recording heads to have access to the disk.
4 Write-protect notch. This can be blocked or unblocked:
a) Blocked: This prevents the drive from changing the data on it and, thus,

accidentally deleting data. (However a write-protected disk can still be 'read'
b) Unblocked: You can read and 'write' information. You can read and record information.

2. Unit 12 *Hard drives*

1 Before you read

Try to answer these questions.

1   What is the main function of a hard disk?
2   Which unit is used to measure hard disk capacity?
3   Can you think of one advantage that hard disks have over floppies?'

A hard disk spins at about 3,600 revolutions
per minute —12 times the speed of a floppy disk drive

2 Reading

A   Read the text quickly to find out if you were right in Task 1.

B   Read the text again and make a list of the technical aspects that you should consider when buying a hard disk.

When buying a hard disk ...

Hard disks have important advantages over floppy disks: they spin at a higher speed, so you can store and retrieve information much faster than with floppies. They can also hold vast amounts of information, from 20 MB up to several gigabytes. Apart from this, both types of disks work in the same way. To access directly the necessary information, the read/write heads of rigid disks seek the required tracks and sectors, and then transfer the information to the main memory of the computer or to another form of storage, all of which is done in a few milliseconds (ms).

Bearing in mind that you always need disk storage, it is good sense to ask yourself some vital questions: What size capacity do I need? What speed can I use? What kind of storage device is the most suitable for my requirements? If you only use word-processing programs, you will need less storage capacity than if you use CAD, sound and animation programs. For most users, 500 MB on the hard disk is enough.

Now let's turn our attention to speed. Access times vary from 10 ms to 28 ms.

Access time' - or seek time — is the time it takes your read/write heads to find any particular record. You have to   distinguish clearly between seek time (e.g. 20 ms) and 'data transfer rate' (the average speed required to transmit data from a disk system to the RAM, e.g. at 10 megabits per second). Remember that the transfer rate depends also on the power of your computer.

When buying a hard disk you should consider the kinds of drive mechanisms and products available. There are 'internal' and 'external' drives which are both fixed hard drives, i.e. rigid disks sealed into the drive unit, either within or attached to the computer. A third type of hard drive, known as 'removable', allows information to be recorded on
'cartridges', which can be removed and stored offline for security purposes. These systems provide 80 MB to I GB transportable cartridges, so if you can afford it, a removable drive gives you a great deal of extra storage capacity.

Finally, a few words about 'optical' technology: erasable optical disks and CD-ROM drives are gaining popularity very quickly. Unlike the magnetic hard disk, the CD-ROM disk (which is optical) is not used for personal data storage but for recording huge amounts of information such as a dictionary or encyclopedia.

HELP
• ms: milliseconds (thousandths of a second).
• CAD: computer-aided design. ,
• **CD-ROM:** acronym for Compact Disk-Read Only Memory. The development of optical technology has resulted in mass storage media such as CD-ROM drives and erasable optical disks.

disk tracks

disks

access arms read/write heads

A hard disk can hold large amounts of information because it uses multiple disks, or platters, stacked on top of one another

C   Now read the sentences and say if they
are true (T) or false (F). ,

1   Hard disks use rigid rotating disks.
2   'Seek time' refers to the average time required for the recording heads to move and access data.
3   If you use multimedia applications you need the same storage capacity as required for word processors.
4   'Access time' and 'data transfer rate' mean the same.

5   Optical disks are magnetic.
6   Removable cartridges are not transportable.
7   CD-ROM disks are used for storage of massive amounts of information.

Check your answers with another student.

3 Vocabulary

The phrase *hard disk* consists of the adjective *hard* and the noun *disk*. Make other phrases or -words by combining *hard* and *disk* with the -words below. Give the meaning of each phrase or word in your own language. (Use your •dictionary if necessary.)

copy
worker internal
compact currency
sell
drive
hard | disk
ware
drugs optical
magnetic labour
time
capacity directory

4 Listening

In a fragmented disk, a file is stored in non-contiguous sectors

In a defragmented disk, a file is stored in neighbouring sectors

lᵗiᶠ±^i **Look at the diagrams of two hard disks and try to answer the questions. Then listen to Vicky Cameron, the IT lecturer from Unit 7, talking to her students, and check your answers.**

1   Which is more efficient: a new hard disk or one that has been used for a few months? :
2   How does a hard disk store information, if possible? In contiguous or non-contiguous sectors?
3   How does fragmentation affect a computer's performance?
4   How does a defragmenting program help restore a fragmented disk to a better state of health?

A typical fragmented disk: the free space is spread all over the drive

5 Follow up: A hard disk advertisement

Complete the advertisement for the hard disk MegaMind with the -words in the box.
megabytes   drive   compatible   highest protection   secure   write
multimedia   time

**Today's personal computers are very powerful, but to handle large
applications like databases, (1) .... DTP publishing and CAD, you
need to have more than 20 (2) .... in
your hard disk. That's where MegaMind 400x comes in. A reliable hard (3)
.... with
400 megabytes of capacity; with 12 ms average seek (4) .... and 13
mbits/sec average
data transfer rate; with a 3.5'' drive unit and a five-year warranty.
You also receive software utilities that let you easily manage and (5)
.... your data.
Our software provides formatting, partitions, disk optimization and password
(6) ....
MegaMind 400x is (7) .... with IBM
PCs as well as Macintosh computers. As with every MegaMind product - hard
disk or optical, 20 megabytes to a gigabyte - the 4OOx gives you the (8)
.... performance. So call us today
on (903) 796 0402. Or (9) .... to
MegaMind, PO Box 673, London, N22 1XB.**

3. Un**it 13**   *Optical breakthrough*

1 Warm-up

Before listening try to answer these questions.

1   What is this a picture of?
2   What kind of technology is used by CD-ROM disks and drives?
3   What does 'CD-ROM' stand for?
4   How do you say these expressions in your language?
- compact disk   - CD-ROM disk drive
- laser technology   - erasable optical disk

2 Listening

Paul (see **Unit** 5) **is now interested in CD-ROMs. He has gone back to his local computer shop to ask for some information.**

Read the sentences below, and as you listen put a cross next to those which contain a technical mistake. Then listen again and rewrite these sentences with the correct information.

1   A CD-ROM disk is very different from a compact music disk.
2   You need a hard disk drive to read CD-ROM disks.
3   The data on a CD-ROM is read with a laser beam.
4   A typical CD-ROM disk can hold 100 MB.
5   The data on a CD-ROM can be changed or 'written' to.
6   A CD-ROM is a good way of storing large amounts of information (images, sounds, applications, etc.).
7   CD-ROM drives cannot play audio CDs.

A CD-ROM

4   Reading

Read the passage and note in the table the points for and against the three main types of optical disks. Then make notes about their use.

Optical disks: pros and cons

All the signs say that optical technology has become a reality. Optical storage devices give us immediate access to an enormous amount of information. Hundreds of megabytes of software, images, animation and digitized sound can be recorded on one light, durable optical disk.

Basically, there are three main types of optical disks: WORMs, CD-ROMs and erasable optical disks.
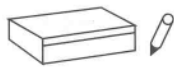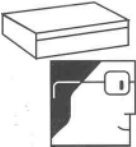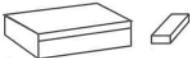
WORM stands for 'write once, read many'. WORM disks are so called because they are indelible, i.e. they cannot be erased. For this reason, they can last 100 years, and this technology is very useful for 'permanent' archiving of important documents in fields like medicine, law or history. Each WORM disk can hold one gigabyte of information.

CD-ROM systems offer everything, from enormous shareware collections to large dictionaries, from multimedia databases to font families and graphics. Companies and government agencies have discovered that CD-ROM is the most economical way of sharing information. In fact, one CD-ROM disk (650 MB) can replace

300,000 pages of text (about 500 floppies), which represents a lot of savings in distributing materials and corporate databases. In addition, disk formats and interfaces have been standardized by the ISO (International Standards Organization), so manufacturers can exchange disks and cartridges. Furthermore, CD-ROM readers can double as audio-CD players.

Yet CD-ROM technology has some disadvantages. You cannot write anything onto a CD-ROM disk, nor can you change what is imprinted on it. You can only 'read' it, like a book. Another reason why CD-ROM is not widely used for 'personal' data storage is that CD-ROM drives are slow. They are fast enough for reading CD-ROM disks and audio CDs but are too slow when compared with hard drives. While there are hard drives with an average access time of 10 ms, most CD-ROM drives have a seek time of 200-300 ms.

Erasable optical disks usually hold between 120 and 1,000 MB of data in 3.5" or 5.25" disks. Unlike CD-ROMs and WORMs, erasable optical disks (EOD) are rewritable, i.e. we can write on them in the same way as a hard disk. They are mainly used as secondary storage devices, functioning as file servers or as a second storage unit, accompanying hard disks. EODs have two important advantages over hard disks: they are not affected by magnetic fields, and they have a longer data life. However, optical drives are slower than hard drives.

	Pros	*Cons*	*Use/Purpose*
WORM			
CD-ROM			
Erasable optical disks			

4 Discourse cohesion

Reference signals

A   Read these sentences and clauses and look back at the text in Task 3 to find out what the words in bold refer to.

1   WORM disks are so called because **they** are indelible... (line 11)
11 **..., which** represents a lot of savings in distributing materials and corporate databases, (line 25)
3 You cannot write anything onto a CD-ROM disk... (line 34)
4 You can only 'read' it... (line 36)
5 ... we can write on **them** in the same way as a hard disk, (lines 47-8)

Connectors and modifiers

B   Look at the expressions in *italics* in these sentences and clauses.

1 *For this reason,* they may last 100 years ...
2 *In addition,* disk formats and interfaces have been standardized...
3 *Furthermore,* CD-ROM readers can double as audio-CD players.
4 *Another reason why* CD-ROM is not widely used for 'personal' data storage...
5 *While* there are hard drives with an average access time of 10 ms, most...
6 EODs ... are not affected by magnetic fields, *and* they have a longer data life.
7 *However,* optical drives are slower than hard drives.

They have one of the following functions:

a) showing contrast
b) explaining causes and results
c) adding new ideas

Put each expression (in 1—7) into the right category: a, b or c.

5 Speaking

Which of the products in the box opposite would be most suitable for the purposes below? Discuss the pros and cons with a partner.
1 To store data and programs at home.
2 To hold large amounts of information in a big company.
3 To store an illustrated encyclopedia for children.
12 To hold historical records in the National Library.

Useful expressions:

For personal use, I would recommend... because ... I agree / disagree with you.
CD-ROMs . In a big company, it would be a good idea to ...   Besides, ...
However, ... is good for an encyclopedia because ... Well, that depends on ...

Products available **CD-ROM drive**
Each CD disk holds 650 MB.

Removable cartridge drive
When you need additional storage you simply add another 45 or 88 MB transportable hard disk enclosed in a plastic cartridge.

Hard disk drive
Superfast 12 ms hard drive. Capacity ranges from 40 to 500 MB.

Erasable optical disk system
Two options:
- Erasable optical-magnetic 5.25" cartridges with 600 MB of storage capacity. Can be erased and written on like a hard disk.
- Rewritable 3.5" floptical disks with a storage capacity of 128 MB.

DAT Data tape drive
Digital audio tape drives to store computer data. Used for back-up purposes. Slow access. Huge amounts of information (about 2.3 gigabytes).

5   Crossword

Read the clues and complete the crossword.

Across
I Acronym for ' light amplification by stimulated emission of radiation'. (5)
13 A microcomputer. (2)
6 To write information on a disk, magnetic tape or film.(6)
10 To record and keep for future use. (5)
 12 Abbreviation of 'binary digit'. (3)
14 Thousandth of a second.(11)
15 The type of computer with a 286 processor introduced by IBM in 1984. (2)
17 Concentric ring marked on the surface of a disk when the disk is formatted. (5)
18 Prefix meaning'very large'or 'one thousand million'.(4)
20 Read-Only Memory. (3)
22 The physical mechanism that accepts, readsand writes data on a disk. (5)

23 These optical disks are rewritable, (abbreviation) (3)

Down
1 Acronym for'Local Area Network'. (3)
2 Opposite of'indelible'. (8)
3 Abbreviation of'high density', or'hard disk'. (2)
5 Way of storing a lot of information in a removable form. (9)
7 Abbreviation of'optical character recognition'. (3)
8 All disks must be 'initialized' or .... when used for the first time. (9)
9 Indelible optical storage device: 'write once, read many'. (4)
11 Not cheap. (9)
13 A flat circular surface used to hold computer data. (4)
16 Opposite of'soft'. (4)
19 Disk that holds music. (2)   .
21 A thousand kilobytes. (2)   ,   .

Chương 4: Basic software
Mã chương: MH12-4

Giới thiệu: Chương 4 trình bày về phần mềm cơ bản.

Mục tiêu:

− Biết danh sách các từ vựng để mô tả về các phần mềm, các menu, thanh công cụ, các cửa sổ, các giao diện người dùng;

− Trả lời chính xác các bảng liệt kê các thao tác sử dụng phần mềm, các giao diện chuẩnSử dụng đúng cú pháp trong việc mô tả các thao tác phần mềm;

− Có tính cần cù, khoa học, tỉ mỉ.

Nội dung chính:
1. Unit 14   *Operating systems*
1   Warm-up

A   Look at the diagram. What is the function of the operating system?
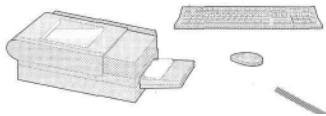
peripherals (printer, mouse, keyboard, etc.)

computer (CPU, main memory)

operating system

applications/programs   **user**
(word processors,
databases, etc.)

B   Read the text below and complete it with the phrases in the box.

applications software   operating system   software   system software

Information provided by programs and data is known as
(I).. .
Programs are sets of instructions that make the computer execute operations and tasks. There are two main types of software:
— The (2) .... refers to all the programs which
control the basic functions of a computer. They include operating systems, system utilities (e.g. an anti-virus program, a back-up utility) and language translators (e.g. a compiler - the software that translates instructions into machine code).
- The (3) .... refers to all those applications -

such as word processors and spreadsheets - which are used for specific purposes. Applications are usually stored on disks and loaded into the RAM memory when activated by the user.

The (4) .... is the most important type of system

software. It is usually supplied by the manufacturers and comprises a set of programs and files that control the hardware and software resources of a computer system. It controls all the elements that the user sees, and it communicates directly with the computer. In most configurations, the OS is automatically loaded into the RAM section when the computer is started up.

2 **Reading**

Read the text and find:

1 the operating system delivered with most PCs.
2 the relationship between MS-DOS and Windows 3.x.
3 the function of the Finder in Macintosh computers.
4 the meaning of 'multitasking'.
5 the function of the Communications Manager in the OS/2 operating system.
6 the operating system which is written in C language and has been adopted by many corporate   installations as the standard operating system.
7 two operating systems used by VAX computers.

Operating systems

MS-DOS

This is the Disk Operating System developed in 1981 by Microsoft Corp. It is the standard OS for all IBM PC compatibles, or clones. In this text-based operating system, you communicate with the computer by typing instructions (commands) that exist within its library. For example, some basic DOS commands include: DIR (shows a list of all the files in a directory), COPY (makes a duplicate of a file), DEL (deletes files from your disk).

WINDOWS 3.x
 (Microsoft)

This is a graphical environment that runs on top of the MS-DOS operating system. Microsoft Windows enhances MS-DOS with many Macintosh-like features and provides a graphical environment for managing files and starting programs.
Its toolbox contains the Program Manager, the File Manager, the Print Manager, a task list, and various accessories (a calculator, calendar, notepad, Paintbrush, Windows Write, etc.). Buttons and scroll bars in Windows have an attractive,

three-dimensional look.

WINDOWS '95   This is a bootable operating system in its own right, with a new graphical interface.

)
Macintosh
(Apple)
JL

Apple Computer

Most of the Macintosh OS code is in the ROM chips. These contain hundreds of routines (sequences of instructions) which perform such tasks as starting up the computer, transferring data from disks to peripherals and controlling the RAM space.
Large parts of the Macintosh OS are also inside the System file and the Finder, kept in the System folder. The content of the System file is loaded automatically at start-up, and contains important information which modifies the routines of the OS in the ROM chips.
The Finder is the application that displays the Macintosh's desktop and enables the user to work with disks, programs and files.
The Macintosh OS allows multitasking.

OS/2 (IBM)

This is the PC world's most technically sophisticated operating system. It provides true multitasking. In a nutshell, it allows an application program to be divided into 'threads', many of which can run at the same time. Thus, not only can numerous programs run simultaneously, but one program can perform numerous tasks at the same time.
The OS/2 package includes a Communications Manager that ensures easy access to networks via modems.

Unix

AT&T
This operating system, designed by Bell Laboratories in the USA for minicomputers, has been widely adopted by many corporate installations. From the very first it was designed to be a multitasking system. It is written in C, a high-level program-

ming language.

It has become an operating environment for software development, available for any type of machine, from IBM PS/2s to Macs to Cray supercomputers. Unix is the most commonly used system for advanced CAD programs.

Today it is almost impossible to find a computer that cannot run a version of Unix. Graphical interfaces for Unix and its various versions include X-windows, Motif, and the NexT user interface (NextStep).

OpenVMS

The OpenVMS operating system is Digital's popular general-purpose OS for all (DEC corp.) VAX computers. It provides data and access security. OpenVMS supports all types of Digital and multivendor networks.

Digital UNIX
(DEC corp.)
This is Digital's operating system based on Unix. It provides compatibility between VAX   and DEC-system computers.

3 Basic DOS commands

Match the DOS commands on the left -with the explanations on the right. Some commands are abbreviations of English words.

1 FORMAT
2 CD(orCHDIR)
3 DIR
4 MD(orMKDIR)
5 DISKCOPY
6 BACKUP
7   REN (or RENAME)
8 DEL

a) erases files and programs from your disk.
b) copies all files from one floppy disk to another.
c) changes your current directory.
d) initializes a floppy disk and prepares it for use.
e) displays a list of the files of a disk or directory.
f)   changes names of your files.
g) creates a subdirectory.
h) saves the contents of the hard disk on floppy disks for security purposes. This command checks the disk space on floppies and splits the files as necessary to use the space efficiently.

4 Listening

<u>1^4</u> **Read the information in the box and then listen to four advertisements from a radio programme about computers.**

System utilities are small programs which improve a system's performance and help users take advantage of the computer's capabilities. They are often desk accessories that can be called up while you're working in another application. They can also be INITs - i.e. system
extensions which are activated when you turn on the computer; control devices which you adjust in the control panel, or even stand-alone programs that run when you need them. Utilities are available for back-up, file search, virus protection, disaster recovery, and so on.

Number the system utilities below in the order in which you hear them.

Π screen saver

Π virus detector

Π crashed disk rescuer and data recovery

Π printing aid

B   _r^A_ Listen again. Which utility would you use for each of these requirements?

1 To work on one document while another is printing.
2 To diagnose and repair damaged disks.
3 To automatically blank out the screen after a specific interval of inactive time (so that the image does not burn into the screen).
4 To protect your system against computer viruses.

5 Quiz

Work -with a partner. Try to answer as many questions as possible. (Use **the Glossary at the back of the book if you
need to.**)

1 What name is given to the set of programs that interface between the user, the applications programs and the computer?
2 What type of programs are designed for particular situations and specific purposes?
3 What does 'MS-DOS' stand for?
4 What is the basic DOS command for copying a file?

5 The Macintosh operating system is kept in various locations. Where exactly are these?

6 Can you give a synonym for the term 'routine'?

7 What is the abbreviation for 'International Business Machines'?

8 Which company developed Unix?

9 Which operating system designed by DEC Corp. is based on Unix? 10 What are the effects of computer viruses?

2. Unit 15   *The Graphical User Interface*

1 A user-friendly interface

The picture below illustrates a user interface based on graphics.

Read the definitions in the Help box and then find the following interface elements in the picture:

1   Window boxes
2   Scroll bars
3   Menu bar
4   Pull-down menu
5   Pointer
6   Icons:
  a)   documents
  b)   applications
  c)   wastepaper basket *(trash* in American English)
  d)   disks
  e)   printer
  f)   folders

HELP
• **window:** a viewing area less than or equal to the screen size. By using different windows you can work on several documents or applications simultaneously.
• **pull-down menu:** a menu that the user 'pulls down' from a name in the menu bar at the top of the screen by selecting the name with the mouse.
• **the pointer:** an arrow, controlled by the mouse, that allows you to move around the screen or to scroll up and down through the document or to give commands.
• **icons:** graphic images (or intuitive symbols) used to represent an object or task.
• **folders:** containers for documents and applications. They are similar to the subdirectories of a PC platform.

2 Reading

A   Read the article below and decide -which of the expressions in the box best describe a Graphical User Interface.

user-friendly   slow   attractive   text-based   complex   graphics-based

GUIs

The term **user interface** refers to the standard procedures the user follows to interact with a particular computer. A few years ago, the way in which users had access to a computer system was quite complex. They had to memorize and type a lot of commands just to see the content of a disk, to copy files or to respond to a single prompt. In fact, only experts used computers, so there was no need for a user-friendly interface. Now, however, computers are used by all kinds of people and as a result there is a growing emphasis on the user interface.

A good user interface is important because when you buy a program you want to use it easily. Moreover, a graphical user interface saves a lot of time: you don't need to memorize commands in order to execute an application; you only have to point and click so that its content appears on the screen.

Macintosh computers — with a user interface based on graphics and intuitive tools — were designed with a single clear aim: to facilitate interaction with the computer. Their interface is called WIMP: **Window, Icon, Mouse** and **Pointer** (as shown in Fig. 1) and software products for the Macintosh have been designed to take full advantage of its features using this interface. In addition,
the ROM chips of a Macintosh contain libraries that provide program developers with routines for generating windows, dialog boxes, icons and popup menus. This ensures the creation of applications with a high level of consistency.

Today, the most innovative GUIs are the Macintosh, Microsoft Windows and OS/2's graphical Presentation Manager. These three platforms include similar features: a desktop with icons, windows and folders, a printer selector, a file finder, a control panel and various desk accessories. Double-clicking a folder opens a window which contains programs, documents or further nested folders. At any time within a folder, you can launch the desired program or document by double-clicking the icon, or you can drag it to another location.

The three platforms differ in other areas such as device installation, network connectivity or compatibility with application programs.

These interfaces have been so successful because they are extremely easy to use. It is well known that computers running under an attractive interface stimulate users to be more creative and produce high quality results, which has a major impact on the general public.

B   Look at the text again and guess the meaning of these words in your own

language.

user interface (line 1)   commands (line 6)   tools (line 21)
program developer (line 29)   platform (line 36)
desktop (line 36)   file finder (line 38)   nested folders (line 41)

C   Find answers to these questions.

1 What does the abbreviation 'GUI' stand for?
2 What is the contribution of Macintosh computers to the development of graphic environments?
3 What does the acronym 'WIMP' mean?
4 What computing environments based on graphics are mentioned in the text?
5 How do your run a program on a computer with a graphical interface?
6 Can you give two reasons for the importance of user-friendly interfaces?

3 Listening

ËËY Listen to this radio interview with Bill Thompson, a program developer. He is talking about Microsoft Windows operating systems. Complete this fact file.

Publisher	*Mainfeatures*	*The Windows family*	*What you need to use Windows*	*Windows applications (examples)*
Microsoft Corp.	•(!).......................	• Windows for desktop PCs and portables.		•(7)................ ....
	Interface, friendlier than (2)	•(3)	• RAM memory: (6)..................	for Windows. Lotus 1-2-3 for
		for small groups		
	• Dynamic Data Exchange: 'hot links'	(networks). • (4)	• 80 MB hard disk • VGA monitor	
	(connections)	....	•i	•r-.

	.... for		
between common data in different programs.	high-performance workstations and servers.		

4 Writing

Summarize the text in Task 2 in 70—75 words. You may like to follow these steps.

1 Read through the whole text again and think of a suitable title for it.
2 Make sure you understand all the main points. Go through the text and **underline** the relevant information in each paragraph.
3 Make notes about the main points.
- Omit repetitions and unnecessary phrases.
- Leave out details, such as examples, e.g. Notes on the first paragraph:
- *In the past only experts used computers. But now, emphasis on user-friendly interfaces.*
4 Make sentences from the notes and connect the sentences by using **linking** words *(and, but, also, because, that's why, in fact, therefore,* etc.). Write your **first draft.**
5 Improve your first draft by **reducing sentences.** (See box below.)
6 Check grammar, spelling and punctuation. Write the **final version** of your summary.
Ways of reducing sentences
• Transforming a relative clause into an *-ing* participle clause e.g. *Icons are graphic images that represent tasks ... — Icons are graphic images **representing** tasks.*
• Taking out relative pronouns where possible e.g. *The software (that) we bought last year ...*
• Omitting qualifying words (adjectives or modifying adverbs) . e.g. *(quite) complex/(very) similar.* \
• Taking out *that* in reported speech or thought e.g. *It is well known (that) computers ... I think (that) there's something wrong with this program.*
• Cutting out unnecessary phrases
e.g. *Macintosh computers were designed with a clear aim: to facilitate the user's interaction*
with the computer.
= Macintosh machines were designed to facilitate the user's interaction with the computer.

3. Unit 16 *A walk through word processing*

1 Before you read

Try to answer these questions.

1   What is a word processor?
2   What makes word processors superior to traditional typewriters?
3   Make a list of the most
important features offered by word processors.

2 Reading

A   Read the text and underline any word-processing capabilities that you did not list in

Task 1.

A sample screen from Microsoft® Word for Macintosh® with pull-down menus (format and font menus shown here). Word for Windows (PCs) offers similar capabilities. WordPerfect, AmiPro and WordStar also have multiple typefaces, windows, menus and other graphical tools

Word-processing facilities

Writing letters, memos or reports are the ways most people use computers. They manipulate words and text on a screen — primarily to print at some later time and store for safe keeping. Computers alleviate much of the tedium associated with typing, proofing, and manipulating words. Because computers can store and recall information so readily, documents need not be retyped from scratch just to make corrections or changes. The real strength of word processing lies in this ability to store, retrieve and change information. Typing is still necessary (at least, for now) to put the information into the computer initially, but once in, the need to retype only applies to new information.

Word processing is more than just typing, however. Features such as **Search** and **Replace**
allow users to find a particular phrase or word no matter where it is in a body of text. This becomes more useful as the amount of text grows.
Word processors usually include different ways to view the text. Some include a view that displays the text with editor's marks that show hidden characters or commands (spaces, returns, paragraph endings, applied styles, etc.). Many word processors include the ability to show exactly how the text will appear on paper when printed. This is called WYSIWYG (What You See Is What You Get,

pronounced 'wizzy-wig'). WYSIWYG shows **bold,** *italic,* <u>underline</u> and other type style characteristics on the screen so that the user can clearly see what he or she is typing. Another feature is the correct display of different typefaces and **format** characteristics (margins, indents, super- and subscripted characters, etc.). This allows the user to plan the document more accurately and reduces the frustration of printing something that doesn't look right.

Many word processors now have so many features that they approach the capabilities of **layout applications** for desktop publishing. They can import graphics, format multiple columns of text, run text around graphics, etc.

Two important features offered by word processors are **automatic hyphenation and mail merging.** Automatic **hyphenation** is the splitting of a word between two lines so that the text will fit better on the page. The word processor constantly monitors words typed and when it reaches the end of a line, if a word is too long to fit, it checks that word in a hyphenation dictionary. This dictionary contains a list of words with the preferred places to split it. If one of these cases fits part of the word at the end of the line, the word processor splits the word, adds a hyphen at the end, and places the rest on the next line. This happens extremely fast and gives text a more polished and professional look.

Mail merge applications are largely responsible for the explosion of'personalized' тай. Form letters with designated spaces for names and addresses are stored as documents with links to lists of names and addresses of potential buyers or clients. By designating what information goes into which blank space, a computer can process a huge amount of correspondence substituting the 'personal' information into a form letter. The final document appears to be typed specifically to the person addressed.

Many word processors can also generate tables of numbers or figures, sophisticated indexes and comprehensive tables of contents.

(Adapted from *Understanding Computers,* N. Shedroff *et al.* Sybex, 1993)

B   Look at the words in the box and complete the folio-wing sentences with them. Use the information in the text or Glossary if necessary.

type style   WYSIWYG   *format*   **indent font menu**   justification
mail merging

1 .... stands for 'What you see is what you get'. It means that your
printout will precisely match what you see on the screen.
2 .... refers to the process by which the space between the words in
a line is divided evenly to make the text flush with both left and right margins.

3 You can change font by selecting the font name and point size from the
....
4 .... refers to a distinguishing visual characteristic of a typeface;
'italic', for example is a .... that may be used with a number of typefaces.
5 The .... menu of a word processor allows you to set margins,
page numbers, spaces between columns and paragraph justifications.
6 ....,.............:.. enables you to combine two files, one containing names and
addresses and the other containing a standard letter.
7 An ...'................................ is the distance between the beginning of a line and the left
margin, or the end of a line and the right margin. Indented text is usually narrower than text without.................................... .

C Find the words and expressions that mean the same.

Retrieve
footer
sub-scripted character
hyphenation   a) text printed in the top margin
header   b) recover information from a computer system
                 c) letter, number or symbol that appears below
               the baseline of the row of type;   commonly used in
               maths   formulas
               d) text printed in the bottom margin
               e) division of words into syllables by a short dash or
hyphen
               f) styles for a set of characters; sometimes called fonts

3 Listening

Two friends are talking about how to move text by using the 'Cut and Paste' technique. Read the conversation and complete it -with words from the box.

finally   command   first   Edit now   mistake   next   insertion

A Do you know how I can move this paragraph? I want to put it at the end
of this page.

B Er ... I think so. (I).................................... you use the mouse to select the text
that you want to move ... and then you choose the Cut (2)............................
from the Edit menu ...

A Like this?

B Yes. The selected text disappears and goes onto the Clipboard. And (3) .... you find where you want the text to appear and you click to position the (4) .... point in this place.

A Mm... is that OK?

B Yes, if that's where you want it. (5)................................... choose Paste from the (6)................................... menu, or hold down Command and press V (7)................................... check that the text has appeared in the right place.

A What do I do if I make a (8)................................... ?

B You can choose Undo from the Edit menu which will reverse your last editing command.

A Brilliant! Thanks a lot.

B That's OK.

\^A Now listen to check your answers.

B Look at the Edit menu above and translate the commands into your own language.

4 Writing

**Moving text is a process of cutting and pasting, as if you -were using scissors and glue. The picture below is an
attempt to represent this process. Write a short description of the process.**

5 Writing tools

**A Three major features that word processors offer are spell checkers, online thesauruses and grammar checkers.
Read the descriptions of these features and match them with the windows or dialog boxes.**

1 Spell checkers can be used to compare words in the program's dictionary to those used in the user's document. The spell checker points out any words it cannot match, notifies the user, and allows him or her to make any changes; it sometimes even suggests possible correct spellings.

Like a conventional thesaurus, this database of words contains definitions and suggestions of words with similar and opposite meanings. A word may be spelled correctly but still be wrong *(too* instead of *two,* for instance). This is a good first step at proofing a document because it can find many common errors, but users will still need to proofread documents to ensure complete accuracy.

2 Many word processors include an **online thesaurus** with which users can look up different words to use in similar instances. Their . power comes not from knowing every grammatical rule, but from questioning the writer about certain parts of the text. Some even include information about pronunciation and histories of evolving meaning.

3 Grammar checkers are applications that attempt to check more than just spelling. They count words in sentences to flag possible run-on sentences. They look for words that show possible conflicts between verbs and subjects and they offer advice about corrections. Grammar checkers are a step beyond spell checkers, but they are still not a substitute for a human editor. However, this does not mean that all of the words in the document are spelled correctly. This gives the writer another chance to think about what he or she has written; the computer can alert writers to problems that wouldn't be obvious to them otherwise.

(Texts adapted from *Understanding Computers,* by N. Shedroffe/ a/. Sybex, 1993)

B   Read through the descriptions again. There are three sentences •which have been printed in the -wrong position. Decide which are the intruding sentences and where they should go.

6 Speaking

Work in pairs. Read the table below which is a summary of the most relevant features of two -word-processing programs. The characteristics of each program are marked with a tick *(/).* **Student A has Printext and Student B has Publisher. Explain to your partner why your program is better.**

Example:
A With Printext I can ... - . -
B Yes, but you can't ...
A However, it is possible to ... whereas with Publisher you can't ...
B Yes, but don't forget that with Publisher you can ... Moreover, ...
A OK. I understand what you mean, but what about... ?

Characteristics	Student A Printext	Student B Publisher
1 Instantaneous WYSIWYG and editing.	/	/
2 Variety of font types, styles and size.	/	/
3 Editing facilities: Copy, Cut, Paste, Undo, Select All.	/	/
4 Centring and indenting paragraphs. Special column		
Formats. Hyphenation and justification of text with optimum	/	/
Line-breaking.		
5 Spell checker, grammar checker, and thesaurus.	/	/
6 Non-contiguous text selection permits you to collect portions		
Of text at random and bring them together on one of eight		/
Editable clipboards.		
7 Can find and replace words even in unopened files.	/	
8 Automatic numbering of chapters and sections. Automatic		
Generation of indexes and tables of contents. Cross-reference		/
Facilities.		
9 Allows you to generate maths formulas, and diagrams.		/

10 Graphics tools: You can have the text wrap around the graphic		
Or flow through it. You can scale and rotate graphics.	/	
1 1 Import and export facilities. You can transfer files to other	,/	
IBM PCs and Macintosh applications.		
1 2 You can record voice annotations to insert comments into		
a document.		/

4. Unit 17 *Spreadsheets*

1 Looking at a spreadsheet

Look at Figure 1 and try to answer the questions.

1   What is a spreadsheet? What is it used for?
5   *In a* spreadsheet, there are 'columns', 'rows' and 'cells'. Give an example of each from
     Figure 1.
6   What type of information can be keyed into the cell?
7   What will happen if you change the value of a cell?

	A	B	C	|	D	E
1		"1993"	"1994" !			
2	Sales	$390	$982!			
3	Stocks/shares	487	760!			
4	Interest	182	324!			
5	Total Reuenue	1559	2066!			

6			
7	Payroll	894	904!
8	Publicity	399	451 |
9	Services	438	372!
10	Total Enpenses	1731	1727!
1 1			
12	TOTAL	-172	339!
13			
14			

Figure 1
This spreadsheet shows the income and expenses of a company.
Amounts are given in ^millions

2 Listening

A   I^PI Listen to Lucy Boyd, a software developer, talking about spreadsheet programs and Figure 1 and check your answers to Task 1.

B   _h^A_ Listen again and mark the boxes right *(</)* **or wrong** (X).

1   A spreadsheet program displays information in the form of a table, with a lot of columns and rows.
2   In a spreadsheet you can only enter numbers and formulas.
3   In a spreadsheet you cannot change the width of the columns.
4   Spreadsheet programs can produce visual representations in the form of pie charts.
5   Spreadsheets cannot be used as databases.

C   Look at the spreadsheet in Figure 1 again and mark the boxes with a У or an X.

6   The value of the cell C12 is the result of applying the formula 'C5 - CIO'.

7 The cell B5 is the result of adding the values of the cells B2 and B3.
8 If you type the value '800' in C3, the values in cells C5 and C12 will be recalculated.

Check your answers with another student

3 Vocabulary

Match the terms in the box with the explanations below.

formula   cell   sales   payroll   share(s)   revenue   interest   expenses

1   A sum of money that is charged or paid as a percentage of a larger sum of money which has been borrowed or invested, e.g. *High ~ rates. / 7per cent ~ on a loan.*
2   The intersection of a column and a row in a spreadsheet, e.g. *the ~ B2.*
3   The quantity sold, e.g. *The ~ of PCs rose by 10 per cent last year.*
4 The income — or money — received by a company or organization, e.g. *The annual ~ of this multinational company is...*
5   A ~ in a company is one of the equal parts into which the capital of the company is divided, entitling the holder of the ~ to a proportion of the benefits, e.g. *£10 ~s are now worth £11.*
6 Financial costs; amounts of money spent, e.g. *Travelling ~s.*
7   A function or operation that produces a new value as the result of adding, subtracting, multiplying or dividing existing values, e.g. *If we enter the ~ B5—B10, the program calculates ...*
 8   1 A list of people to be paid and the amount due to each. 2 Wages or salaries paid to employees, e.g. *He was on the company's ~.*

4 Graphic representation

A   Look at the graph on the next page and, with the help of a partner, check that it is an exact visual representation of the spreadsheet in Figure 1. The values are expressed in millions of dollars.

B   Can you calculate the net profits of this firm during the period 1993-94?

C   What type of image is this: a pie chart, a column graph, an area graph or a line graph?

D   What is the advantage, if any, of displaying information as a graph, rather than as a spreadsheet?

5 Extension

A   Spreadsheet programs are also used to make out invoices. Look at the invoice below and fill in the blanks with the right words from the box.

Quantity   Description   Price   VAT (Value Added Tax) Reference
TOTAL   Address   Company

Name.	Redwood Comprehensive bcnool Invouce			
Telephone: 436171				Date: 12 May 1 995
				Total
|	1 1	1 !	I I	
Ulysses Classic	8 Mb RAM, 230 Mb HD	12	£ 1,050	£ 12,600
RGB Monitor	Colour 1 6"	9	225	2,025
Video Card	8 bits, 256 colours	5	316	1,580
Portable Ulys	4Mb RAM, 80 Mb HD	3	1,190	3,570
Laser SAT	PostScript. 5 emulations	1	825	825
Scanner JUP	Flatbed. Includes OCR	2	675	1,350
			Subtotal	£ 21,950
			I ——— i	3,841

1 _____ 1	|	£ 25,791
	____ 11 7. 5 %	
Ulysses Computers, Ltd.	I I	

B   Have you got a spreadsheet program at work or school? If so, try to produce a similar invoice.

5. Unit 18   *Databases*

1 Warm-up

Companies often use databases to store information about customers, suppliers and their own personnel. Figure 1 shows a 'record' from one company's 'Employee' file. Study it and then try to answer these questions.

1   What is a database?
2   Which tasks can be performed by using a database? Make a list of possible applications.
3   What do these terms mean in your language: **file, record, field?**

Figure 1 Record from Employee file in database. This record holds ten fields (the illustration is one)

Figure 2 A database file stores information in fields grouped on records

2 Reading

A   Here is part of an article about databases. First, read it all the way through. Underline the basic features of a database and compare your ideas with a partner.

Basic features of database programs

With a **database** you can store, organize and retrieve a large collection of related information on computer. If you like, it is the electronic equivalent of an indexed filing cabinet. Let us look at some features and applications of a computer database:

• Information is entered on a database via **fields.** Each field holds a separate piece of information, and the fields are collected together into **records.** For example, a record about an employee might consist of several fields which give his/her name, address, telephone number, age, salary, and length of employment with the company. Records are grouped together into **files** which hold large amounts of information. Files can easily be updated: you can always change fields, add new records or delete old ones. With the right database software, you are able to keep track of stock, sales, market trends, orders, invoices and many more details that can make your company successful.

• Another feature of database programs is that you can automatically look up and find records containing particular information. You can also search on more than one field at a time. For example, if a managing director wanted to know all the customers that spend more than
£7,000 per month, the program would search on the name field and the money field simultaneously.

If we had to summarize the most relevant advantages of a database program over a card index system, we would say that it is much faster to consult and update, occupies a lot less space, and records can be automatically sorted into numerical or alphabetical order using any field.

The best packages also include networking facilities, which add a new dimension of productivity to businesses. For example, managers of different departments can have direct access to a common database, which represents an enormous advantage. Thanks to security devices, you can share part of your files on a network and control who sees the information. Most aspects of the program can be protected by user-defined passwords. For example, if you wanted to share an employee's personal details, but not his commission, you could protect the commission field.

Other features like mail merging, layout design and the ability to import and export data are also   very useful. In short, a database manager helps you control the data you have at home, in the library or in your business.

B   Now, make a list of the words you don't understand. Can you guess their meaning? Compare your ideas with other students.

C   Using the information in the text, complete these statements.

1 A database is used to
....
2 Information is entered on a database via
....
3 Each field holds
....

4 'Updating' a file means
....
5 The advantages of a database program over a manual filing system are
6 Access to a common database can be protected by using
....

3 Puzzle

Complete the sentences by using a term from the list. Then write the words in the crossword to find the hidden message.

databas ' field layout   merging   record   sorted   updated
e

1   In order to personalize a standard letter you can use 'mail...............................' (a technique which consists of combining a database with a document made with a word processor).
2   Records can be automatically .... into any order.
3   You can decide how many fields you want to have on a ....
4   Files can easily be .... by adding
new information or deleting the old one.
5   A .... program can be used to
store, organize and retrieve information of any kind.
6   The .... of the records can be
designed by the user.
7   Each piece of information is given in a separate ....

4 Language work: Plurals

A   Write the plural of these words:

1 slot
2 key
3 directory
4 businessman
5 fax
6 mouse
7 floppy
8 virus

B   Refer back to the text and find six plurals pronounced /iz/.

Plurals

• In most cases, the plural in English is written with an 's'. *record —> records*
- The plural is written with 'es' after's', 'sh', 'x', or 'ch'. *address -> addresses   box -> boxes*
- With nouns which end in a consonant + 'y', the 'y' becomes 'i' and 'es' is added. *technology -> technologies*
- But if the 'y' follows a vowel, only 's' is added. *day —> days*
• **Special plural forms:**
man **-> men**
child —> children
analysis -> analyses
formula -» formulae/formulas
• **Pronunciation of the 's'.**
- /s/ after one of the sounds /p/, /t/, /k/, /f/ or /6/. *chips, amounts*
- /iz/ after one of the sounds /s/, /z/, /J/, /tj/, /ds/. *processes, cartridges*
- *Izl* in most other cases. *drives, customers, files*

Put these plurals in the correct pronunciation column. Then listen and check your answers.

passwords   laptops   budgets   images   fields   taxes   graphics   expenses
folders   interfaces   disks   pixels

/s/   /IZ/
/z/

5 Listening

A   **Listen to Helena Davies, an IT trainer, explaining how to use mail merging to some employees. Number these steps in the order that you hear them.**

- Activate the Mail Merge command (Print Merge in some programs). This combines the main document and the data document.
-   Click 'Print' and the program generates a single letter for each record in the data document.
-   Create the data document with a database program or with the right spreadsheet software. This document contains rows with names, addresses and other information that will be merged with the standard letter.
- Create the main document with a word processor. Type the standard letter and insert the appropriate field names into it.

B   **Look at the illustration of mail merging and identify the three types of documents involved in this example of mail merging.**

The data document contains thefields and the information that is different in each version ofllie teller

«DATA Mailing»
«Title» «First name» «Last name»
«Street»
«City» «Postcode»
Dear **«Title» «Last name»,**
We are pleased to inform you that an updated version of Top Project is now available. To obtain your copy, simply call us and we'll send you, absolutely free, the new version of the program.
We also enclose a catalogue with the new range of SunRise machines and the latest software products. There are special offers for all our clients, including a book about budgeting and balancing. To order by phone, call 01332 8430477.
Yours sincerely,

Barry Stephens, Sales Manager, Sunrise Computers, 19 Park Avenue, Derby
The main document contains the standard letter

Mr Fred Jones 15, The Calls Leeds LS2 6JU

Dear Mr Jones, We are pleased to i updated version o now available. To < simply call us anc absolutely free, th the program.
We also enclose a < new range of SunRi the latest software are special offers 1 including a book and balancing. To call 01332 843047
Yours sincerely,

Barry Stephens, Sales Manager, Sunrise Computers, 19 Park Avenue, Derby

Mrs Diana Read 18, Union Street Glasgow Gl 3TA

Dear Mrs Read, We are pleased to i updated version o now available. To < simply call us and absolutely free, thi the program.

We also enclose a c new range of SunRi the latest software are special offers f including a book i and balancing. To call 01332 843047

Yours sincerely,

Barry Stephens, Sales Manager, Sunrise Computers, 19 Park Avenue, Derby

Ms Carol Taylor 75, Windmill Street London W1P1HH

Dear Ms Taylor, We are pleased to inf updated version of now available. To ofc simply call us and \ absolutely free, the the program.

We also enclose a ca new range of SunRis^ the latest software n are special offers fo including a book aИ and balancing. To o call 01332 8430477

Yours sincerely,

Barry Stephens, Sales Manager, Sunrise Computers, 19 Park Avenue, Derby

Mr Jack Gordon 7, Piccadilly Street York Y01IPN

Dear Mr Gordon,

We are pleased to inform you that an updated version of Top Project is now available. To obtain your copy, simply call us and we'll send you, absolutely free, the new version of the program.

We also enclose a catalogue with the new range of SunRise machines and the latest software products. There are special offers for all our clients, including a book about budgeting and balancing. To order by phone, call 01332 8430477.

Yours sincerely,

Barry Stephens, Sales Manager, Sunrise Computers, 19 Park Avenue, Derby

Merging the main document and the data document generates personalized versions of the letter

6 Writing
Imagine that you are Barry Stephens, the sales manager of Sunrise Computers. Write a standard letter to your clients about 'New software products on the market' and offer them a free demonstration disk.

6.Unit 19 : *Face of the internet*

INTRODUCTION

TO THE
INTERNET

Joyce Betz
Jackson District Library
244 W. Michigan Ave.
Jackson, Mi 49201
517-788-4099 ext 260
www.myjdl.com

November   2010

Introduce yourself to the class, Tell them a little bit about your experience
Have them introduce themselves Ask them what they want to learn from this class. If you have a board or easel available write them down.
(They will say things like everything. How to cut and paste how to type a résumé – Point out that you only have an hour and half, and they need to learn the basics first. Then tell them what your goals for the class are.
I usually ask them if this is what they were looking for, most of them will indicate it is then I say "Good I don't have to go home."
CLASS OBJECTIVES

By the end of the session participants will
- Use a Web browser
- Be introduced to and use a Tool Bar
- Be introduced and use a search engine
- Know how to set bookmarks or favorites
- Complete a search and find usable information.

What is the Internet

Show them this description, It is not necessary to read it, Tell them they can take it home and read it at their leisure.

In short, the Internet is a worldwide network of smaller networks. A network is basically a group of computers agreeing to talk to each other over some son of wire, electromagnetic wave, or fiber optic cable. Physically, computers in a network are connected together by cables that allow the computers to share information. Computers can communicate with each other if all speak the same language. Computers that are "on the Internet" all use the same protocols to send information back and forth. As long as a computer uses these protocols, it doesn't matter what type of hardware or software it uses. In addition, every computer that is attached to the Internet also has an address that helps other computers locate it.

The Internet is a worldwide network of computers, and the World Wide Web is the most popular way of using the Internet to organize and link information. The Web uses hypertext to link documents with a graphical "point-and-click" interface. Other ways of using the Internet include e-mail, file transfer protocol (FTP), Telnet, and Usenet.

The Internet began as a project of U.s. Department of Defense called ARPANET. The goal of this project was to design a nationwide computer network that could withstand major disasters. If one part of the network is destroyed, the other parts would be able to stay up due to the decentralized structure of the network. At the very beginning, there were four computers in the U.S. attached to the network; today, there are millions all over the world.

In the Internet's early days (the 1960s and 70s), only government, military, and educational institutions had computers connected to the Internet. The Internet was originally intended to be used for research and scholarly communications. But as it grew, the Internet began to be used for informal communication, entertainment, and eventually commercial purposes with the connection of businesses in the 1990s. Now requests for information, such as product availability or credit status, can be made and results returned in a few seconds, even though the message may have traveled thousands of miles over the Internet.

At the center of the Internet are the servers. Servers are computers that store lots of information for other computers to download and view. When you look at a Web page, you are a client and the computer you look at is the server, sending its Web page to you over a tangle of wires, routers, and switches.

Today's Internet is a web of connectivity including telephone service providers, regional Internet Service Providers (ISPs), local ISPs, and millions of end users who access the information or post sites on the Internet via an ISP. The telephone companies or other large providers sell connectivity

What is the Internet? (Continued)

to Regional ISPs who lease part of their own connectivity to local ISPs or end

users. The local ISPs then also sell pan of their connectivity to other end users. Needless (to say, this can lead to a lot of ISPs-by 1997 there were over 5,000 ISPs in the United States alone. And some of the large providers, like AOL and CompuServe, sell access directly (0 end users.

The Internet works smoothly because all the companies involved have agreed to exchange traffic (data) with one another. An end user (like a library in Alabama or a person with a home computer) is part of a local ISPs network, which is part of a regional ISPs network, which is part of an even larger U.S. network, which connects to a worldwide network and all these networks talking to each other over the globe are the Internet!

Explain the following page- the different parts of the internet

IRC stands for Instant relay chat, Sometimes have chat rooms where you can talk to several people at once.
You "chat" text, with someone on the computer, Now days they use the phone,

USENET is like a bulletin board- a board for almost any subject. Kayaking, snowboarding, mountain climbing, Child care, education, quilting Etc. You post something, someone or many others answerit.

Email – Short for electronic mail. Send to people all over the world.

FTP, Gopher and Telnet are also parts of the internet,

The World Wide Web is just part of the internet,   When most people talk about the internet what they are really talking about is the World Wide Web, That is what we will be talking about today.

The backbone of the Internet are the large communications companies.
From there you Have Internet Service Providers (ISP) you pay them a monthly fee, to use their equipment and expertise.
There are different types of connections.
- Dial –up through your phone line- cannot receive phone calls when using Internet. Least cost
- DSL (Direct Service Link) still through phone line, but can still use phone. Faster connection intermediate cost
- Cable like your cable TV, faster more expensive
- Satellite- like Satellite TV. Most expensive.

IRC

This illustrates how the World Wide Web is one of many Internet applications.

THE INTERNET

World Wide Web

Usenet

E-mail

Gopher

FTP

Telnet

Other Applicatio ns

ISP (like AOL, PSI, Compuserv e)

Network

Backbone

Service

(such as MCI, ATT,

US West)

Network

Backbone

Service

(such as MCI, ATT,

US West)

ISP (like AOL, PSI, Compuser ve)

ISP (like AOL, PSI, Compuserv e)

ISP (like AOL, PSI, Compuserve)

ISP (like AOL, PSI, Compuserve e)

ISP (like AOL, PSI, Compuserv e)

Network

Backbone

Service

(such as MCI, ATT,

US West)

Network

Backbone

Service

(such as MCI, ATT,

US West)

ISP (like AOL, PSI, Compuserv e)

ISP (like AOL, PSI, Compuserv e)

Users

ISP (like AOL, PSI, Compuserv e)

Users

Go over each item quickly,
Internet Glossary
Browser *(short for web Browser) You may get questions about the difference in a web browser and a search engine.*

A type of software program that allows users to find and connect to Web pages. Two of the most popular browsers are Netscape Navigator and Microsoft Internet Explorer. These allow the user to move back and forth between pages through links.

E-mail *(short for Electronic Mail)*
The transmission of messages electronically. E-mail can be limited to a single computer system or network, or can allow much broader connectivity. Most e-mail systems allow you to send the same message to one or many people.

FTP *(File Transfer Protocol)*
A standard protocol used to send files from one computer to another on the Internet.

Home Page
The opening page of either a personal, commercial, or institutional Web site.

Hot Links *(or Links)*
In hypertext systems, such as the World Wide Web, links allow you to move from one document page to another. When you click a link, you access another Web document.

Hypertext
A special type of database system in which objects (text, videos, audio, graphics) are linked to one another. In a hypertext, system movements by the user are not linear or predetermined. Rather movements between objects of various forms are chosen uniquely by the user. For example, while reading a document chronicling the Seattle Mariners 1997 season, a user can click the words Ken Griffey Jr. and retrieve a graph of Junior's batting statistics for the season. The user can then click the link Home Runs and see a video of Junior's famous swing.

HTML (Hypertext Markup Language) Show them HTML source for a webpage. So they can see how complicated it is.
The language used to create a Web document.

HTTP *(Hypertext Transfer Protocol)*
An agreed upon format (protocol) used on the World Wide Web to retrieve HTML documents. Also the first part of many URLs.
Copyright © 2000 Bill & Melinda Gates Foundation

Internet
A global "network of networks" connecting more than 1 million computers and supporting more than 58 million computer users worldwide. See the Handout: "What is the Internet?"

ISP *(Internet Service Provider)*
An ISP is a company or organization that provides Internet access to individuals and institutions, usually for a fee. The service provider gives you a software package, user name, password, and access phone number. With a modem, a user can log on, browse the World Wide Web, and communicate with others through Usenet and e-mail.

Modem *(Acronym for Modulator-Demodulator)*
A modem is a device attached to a computer or a program within the computer that allows the computer to transmit data over a phone line. Computer information is stored digitally while information transmitted over the phone line is sent in the form of analog waves. The modem converts from digital to analog when information is sent and from analog to digital when information is received.

Online Services
A business that provides its users with a wide variety of access to data transmitted over the phone lines. These service providers create an infrastructure with which a large number of users can communicate with one another via e-mail, chat groups, and access to the World Wide Web. Three of the largest online services are American Online, Compuserve, and Microsoft Network (MSN).

Search Engine   *You may get questions about the difference in a web browser and a search engine.*
A tool to find documents on the Web. At great speeds, the search engine will search through millions of Web pages and select those with specific words and phrases as chosen by rhea user. Popular search engines include Aha Vista, Excite, InfoSeek, and Harbor.

URL *(Universal Resource Locator)*
A document address. For example: http://www.techresource.org. The URL tells the computer how and where to look for a document.

Internet Glossary (continued)

Us
en
et
A worldwide bulletin board that can be accessed through the Internet or an online service.
The Usenet contains newsgroups that form to discuss every topic you can imagine and even
more than you've never thought of. It is accessed by millions of people each day around the world.

World Wide Web
A system of linked comparers that support specifically formatted documents that include links to other documents as well as graphics and audio and video clips. When linked to the World Wide Web you can jump from one document to another simply by clicking the hour links. The World Wide Web is the most popular part of the Internet as seen in billboards, commercials, bus advertisements, and even a banner at the Kingdome that begins with the letters "WWW."

Ask participants what they think the best thing about the internet is, most of them will say information.

Tell them the best thing about the internet is that anybody can put anything on the internet. No one owns it. That is how all that information gets there.

Ask what is the worst thing about the internet- Many of them will say, pornography, some will say identity theft .

This is where , I talk about filters and pop up blockers and anti-virus software. I have been using the Internet for over 15 years and I have accidently gotten to something disturbing about 3 times.   Usually you have to be looking for it.

We need to be aware of and watch what our children are doing. http://www.youtube.com/watch?v=kxmG6VeNSuQ Howard Reingold, out of 1,000, 000 children on the internet 5 of them are molested by someone they met on the Internet.   50,000 are molested in their home, a neighbor or a family member, someone they know. Yes we should be concerned,   Biography on WikiPedia http://en.wikipedia.org/wiki/Howard_Rheingold So yes we should be concerned about Childrens safety but we need to keep it in perspective.

The worst thing about the Internet is that anybody can put anything on the Internet and we need to know how to evaluate it.
Ask them what they did before the Internet if they heard about a product or political candidate). on the radio or TV.

Point out each tool and explain briefly what it does. If you hold your mouse over it for a second it will tell you.

The Tool Bar

Title Bar

Menu Bar

Tool Bar

Address Bar
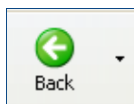
 Click to move back to last view screen
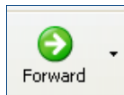
 Imagine the pages you view as a continuum. If you backtracked to a previously viewed page the forward button will move you forward along the continuum.

 Click the stop button to discontinue a search. Useful if the page seems to be taking too long to appear.
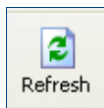
 Click refresh when viewing pages that are updated frequently; stock quotes, traffic and weather reports, CNN.

 Click Home to go to the pre-selected Home page in this case the library's home page.

The Address Bar

Address | http://www.jackson.lib.mi.us/ | Go
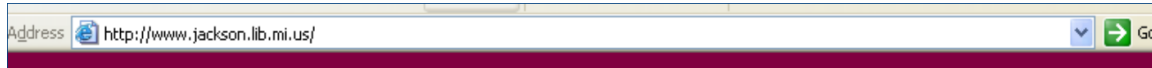
Address bar: The Website Address or URL is entered here.
- Erase the address that is currently showing by
  - clicking in the white space this will highlight the current entry, OR
  - use the backspace or delete keys to erase the current address,

Begin typing the new address,
- **usually this starts with www,** but you don't need to type it .
- **almost always uses all lower case letters**
- **no punctuation except, dots and slashes**

Use the mouse to click the go button OR
Press the Enter key on the keyboard.

DOMAINS

Domain Name: A domain name is a company's unique identity on the worldwide
                Internet.

Types of Domain

.edu an educational institution

.gov government

.org usually a non-profit organization

.com a business or company

.net an internet server

.mil Military

Domain types can help determine the validity of information.   For Example: .com sites are commercial they are probably going to try to sell you something. The following guidelines were "borrowed from Foote Hospital. They refer to Medical sites but the points are still valid

Tips From The Foote Hospital

Health Education Resource Center:

Evaluating Information From The Internet

Check The Source Of Information. If the source of a health or medical Web site isn't readily obvious, proceed with caution. Good sites provide e.xtensive information about who's behind the content and what their mission is. Does the information come from a government agency, a hospital or university? If so, it is more likely to be legitimate.

Be Suspicious Of Any Site That Tries To Sell A Product. Be particularly cautious when a site promotes specific products or uses testimonials as evidence. Be suspicious of sites that dismiss mainstream science, contain statements that attack well-established medical policy, or offer a diagnosis.

The Site Should Give Varied Opinions. A good site will give different options and will be a link to other related Internet sites. Be wary of sites that only -- promote one course of treatment.

Information Should Be Current. If a site hasn't been updated in several months, the information may no longer be accurate. A quality site updates at least monthly. An indication of stale content is error messages stating that the links followed are outdated.

There Should Be A Way To Contact The Site's Content Provider. The site should provide an e-mail address to give feedback or request more information. At the very least, an address and phone number should be listed. .

The Information Should Be Easy To Understand. The language from a Web site should not be filled with medical terminology or written in a manner that leaves the reader confused.

The Site Should Be Easy To Navigate. The features of the Web page should be logically organized and well defined. The most useful sites are those that are simple and rich in content, going so far as to offer a text-only version for nongraphic browsers.

- Any information found on the Internet should not be a substitute for a medical professional. Take the information back to your doctor to discuss your medical history and treatment options

Foote Hospital

Health Education Resource Center
787-0319
Tell students, If you know the web address you Simply type the address in the address bar.

Start by going to a few sites of interest.

I use mackinacbridge.org. look at the various views of the bridge and note the weather and road condition advisory,.

I have used HGTV.com when they have the dream house so they can see how to link to various rooms and views.

Use whatever sites you find fun or informative.

The idea is to give them a few sites to type into the address bar and see what kinds of sites are there.
Point out that if you know the name of a company you can probably figure out the web address.
For example Kelloggs.com , or pepsi.com or cocacola.com.

Remind the students that there are NO spaces in Web Address.

"If you don't know the web address, you can use a search engine"

 Using Search Engines (Tools to find documents on the Web, see glossary)

http://www.ask.com
http://excite.com
http://infoseek.go.com
http://www.looksmart.com
http://www.lycos.com
http://www.teoma.com/
http://www.37.com/
http://www.dogpile.com/
http://www.altavista.com/
http://www.google.com

We are going to use Google today. We may try some of the others later.
Type google.com in the address bar.

Search box

Type the subject or phrase you want to search in the search box.

Use real words, and spaces.
- *Example*:   border collie, not bordercollie.

Spelling must be correct:
- you will not find what you are looking for if you type berder collie

Point out that the listings tell something about the site, they should be able to tell if it is likely to give them the information they need or want.
As an example I use (we had a huge bunch of gourds in our garden one year and decided to decorate the. So we dried them. Did you know gourds got fuzz mold on them when they dried? I had no idea how to clean them so I went to the Internet.

I typed Gourds – one of the things I came up with was a band call the gourds. And a lot of other information.

Point out how Google shows how many websites it found.

You may or may not find what you are looking for.

Go back to Google. Enter cleaning gourds. Point out how the sites found are better for what you are looking for.

Try a few other searches. – ask the class what they want to search for or come up with something of your own.

Point out that you can do a broad search or a more specific. If one doesn't work try the other.

I sometimes have them search for their names- first and last. Some people who think they have a common name are amazed that there is nothing listed others

100

are amazed at how many there are and even find a relative.

Show them how to limit the search by using quotation makes (it searches for that particular phrase.   (John smith will look for anything with john or smith or smith john, quotations marks will look only for john smith.

.

Show them how to set a bookmark or a favorite, following the steps below point out that the directions a re in the hand out and they can follow them when they get home.

Set the bookmark – go to the home page,, go to bookmarks and click on the one they just set.

How to set Favorites

Favorites or bookmarks- help you mark a web page you would like to return to without having to remember the long or complicated web address.

When you have found web site you like.
Click the Favorites Menu in the Menu bar
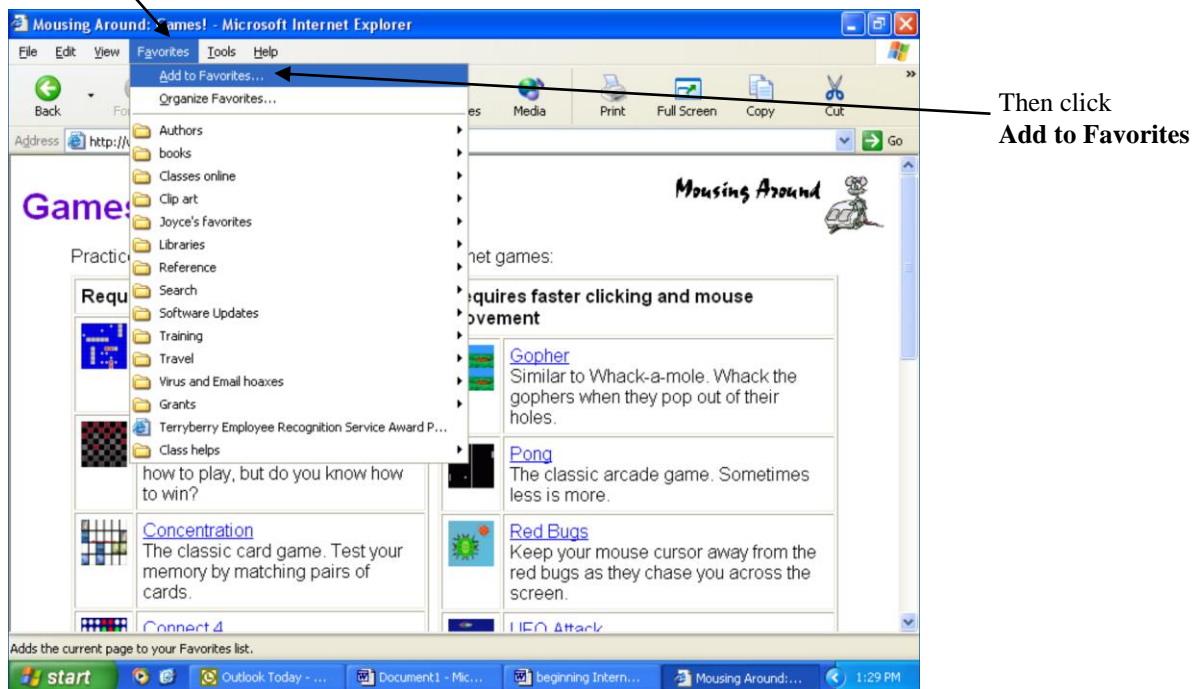
Then click
Add to Favorites

This Add Favorite Box will appear. Click OK
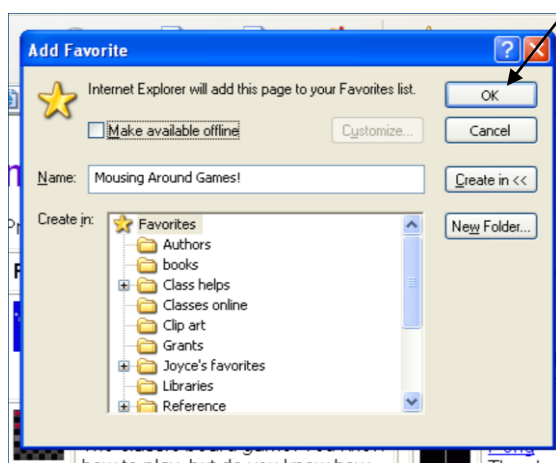
The title of the web page will then appear at the bottom of the Favorites menu. You can return to the web page any time you are online, by click on the title.
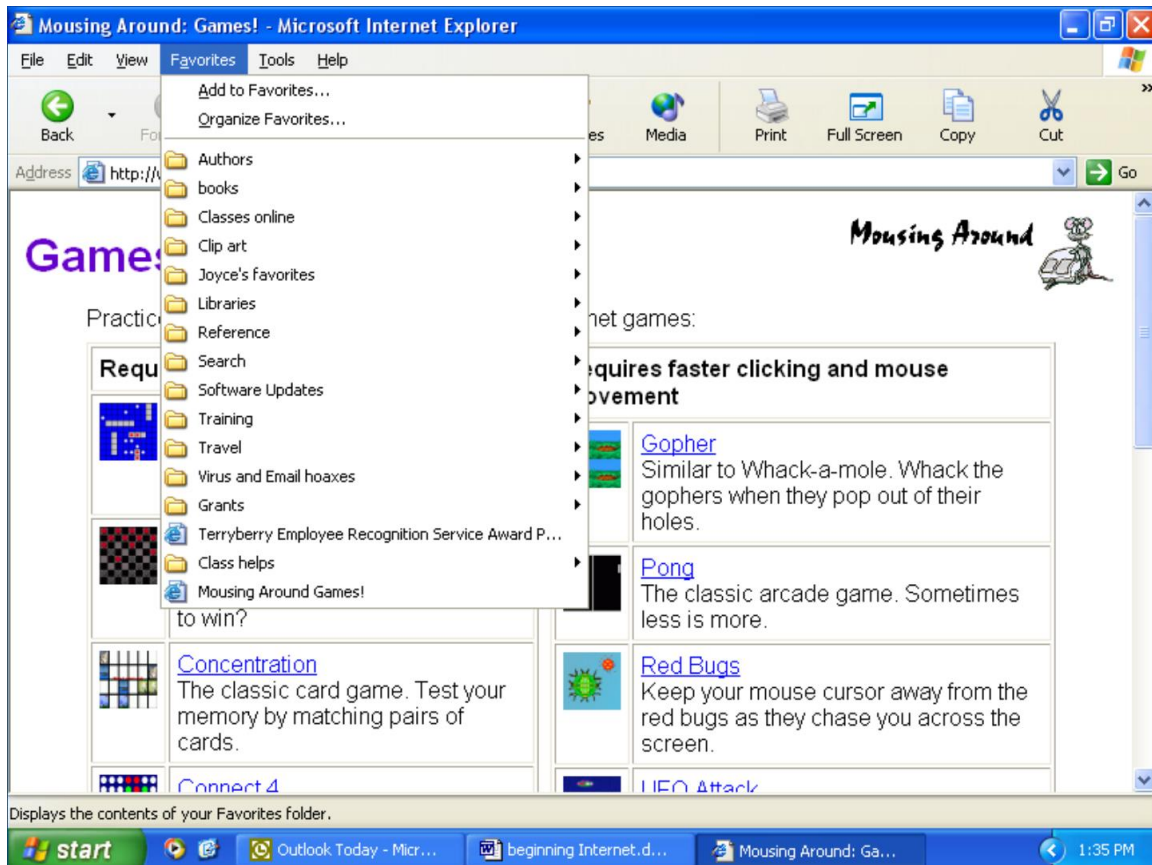
Give the sometime to practice. Walk around the room in case someone needs help.
Some of them may want to look for travel reservations. I usually point out that that would be covered in a different class. Some are looking for people and get to sites that want to charge them for information.

I have had people ask how all of this information gets on the Internet. Is it just floating around out there, where it is.

Others are amazed that they cannot find what they are looking for, like that long lost cousin

The sites on the next page may be something they would like to try.

The Michigan Electronic Library
http://mel.org

Yahoo
http://www.yahoo.com

The Internet Public Library
http://www.ipl.org

Yahoo Finance
http://quote.yahoo.com

Encyclopedia Britannica
http://britannica.com

Travel
  Travelocity
    www.travelocity.com/
 Orbitz
   http://www.orbitz.com/
Mapsonus
  http://mapsonus.com/
MapQuest
  http://www.mapquest.com/

The Internet Movie Database
http://imdb.com

CNN Interactive
http://www.cnn.com

Information Please
http://www.infoplease.com

The Switchboard
http://www.switchboard.com

Web museum
http://sunsite.unc.edu/louvre
http://www.ibiblio.org/louvre/

The Weather Channel

http://www.weather.com

Job Search and Employment
http://www.michworks.org/
mtb/user/MTB_EMPL.Entr
yMainPage

Amazon.com
http://www.amazon.com

Michigan Government
http://michigan.gov/

Classmates.com
http://www.classmates.com/pr
ofile/home.html:

E-Bay
http://www.ebay.com/

Patron Workshop Evaluation Form

Workshop   Date
Title   _____   _____

Held   Instructor
at   _____   _____

Please rate each question below by circling the desired response- 1 being the least favorable and 5 being the most favorable.

1. The material was presented clearly and understandably.   1   2   3
    4   5

2. The objectives of the workshop were clearly stated.   1   2   3
    4   5

3. The workshop met the stated objectives.   1   2   3
    4   5

4. The handouts were helpful and informative.   1   2   3
    4   5

5. How did you learn about this program?

    ☐ Newspaper   ☐ Flyer   ☐ Radio   ☐ TV   ☐ Friend   ☐ Other

If other, please
explain

Which branch(es) do you
normally use   _____

Comments or suggestions:

Would you like more information about this and other library programs? Please give us your name, address, phone number, and e-mail address.

Chương 5:
Creative software
Mã chương: MH12-5

Giới thiệu: Chương 5 trình bày kỹ thuật thiết kế phần mềm.

Mục tiêu:

– Trình bày danh sách các từ vựng để mô tả về các phần mềm, các kỹ thuật thiết kế phần mềm, các kỹ thuật chế bản và xuất bản phần mềm;

– Trả lời được các bảng liệt kê các thao tác thiết kế phần mềm, các giao diện chuẩn;

– Sử dụng đúng cú pháp trong việc mô tả các công nghệ phần mềm;

– Có tính cần cù, khoa học, tỉ mỉ.

Nội dung chính:

1.Unit 20   *Graphics and design*

1 Warm-up

1 Look at the pictures above which were all created on computer. Which ones are three-dimensional? Are there any advantages of creating three-dimensional images?

2 From the pictures, can you suggest which people might use computer graphics professionally? What would they use them for?

3 Can you think of other professionals who use computer graphics? How do they use them?

2 Reading

Read through the text and find the answers to these questions.

1 What are 'computer graphics'?
2 What do the acronyms 'CAD', 'CAE', 'CAM' stand for?
3 What are the benefits of using computer graphics in the car industry?
4 What are the benefits of using graphics in business?
5 What is 'computer animation?'

Computer graphics

Computer graphics are pictures and drawings produced by computer. A graphics program interprets the input provided by the user and transforms it into images that

can be displayed on the screen, printed on paper or transferred to microfilm. In the process the computer uses hundreds of mathematical formulas to convert the bits of data into precise shapes and colours. Graphics can be developed for a variety of uses including presentations, desktop publishing, illustrations, architectural designs and detailed engineering drawings.

Mechanical engineers use sophisticated programs for applications in computer-aided design and computer-aided manufacturing. Let us take, for example, the car industry. CAD software is used to develop, model and test car designs before the actual parts are made. This can save a lot of time and money.

Computers are also used to present data in a more understandable form: electrical engineers use computer graphics to design circuits and people in business can present information visually to clients in graphs and diagrams. These are much more effective ways of communicating than lists of figures or long explanations.

Today, three-dimensional graphics, along with colour and animation are essential for such applications as fine art, graphic design, computer-aided engineering and academic   research.   Computer animation is the process of creating objects and pictures which move across the screen; it is used by scientists and engineers to analyse problems. With the appropriate software they can study the structure of objects and how it is affected by particular changes.

Basically, computer graphics help users to understand complex information quickly by presenting it in a clear visual form.

2   Listening

K^Л **Read the passage below and complete it. Then listen and check your answers.**

A basic tool palette

A graphics (1) p.................................... is the software that enables you to draw and
manipulate objects on a computer. Each graphics package has its own facilities, plus a wide range of basic drawing and (2) p.................................... tools. The collection of tools in a package is known as a palette.
The basic shapes which are used to make (3) g.................................... objects are called 'primitives'. These are usually geometric, such as lines between two points, arcs,
 (4) c.................................... polygons, ellipses and even text. You can choose both the primitive you want and where it should go on the screen.

Moreover, you can specify the (5) 'a....................................' of each primitive,

such

as its colour, (6) l.................................... type, fill area, interior style and so on. The various tools in a palette usually appear together as pop-up

(7) i.................................... in a menu. To use one you activate it, by

(8) c.................................... on it. For example, if you want to draw a rectangle, you

activate the rectangle tool and the pop-up options allow you to choose the origin of the rectangle (using the insertion point as its centre or corner) and the possibility of

(9) d.................................... a rectangle with rounded corners.

B   Look at the functions represented by the icons in the tool palette below and match them \vith the definitions on the right.

Tools

Definitions

a) This is used to scale the view. Similar to the command 'Zoom in/out'.

b) This is used to delete the part of the picture you drag it over. It is known as 'Eraser'.

c) This is used to type text.

d) This draws a straight line between two points.

e) This is a paintbrush used to add colour and patterns. It often comes in different shapes.

f)   This is used to draw polygons with irregular sides.

g) This is used to draw thin, free-form lines.

h) These are used to select text and images.

i)   This draws an arc, or part of a circle.

j)   This draws curved, free-form shapes.

k) This is used to draw a circle with two foci, known as an ellipse.

1)   These two are used to draw all kinds of rectangles, even ones with rounded corners.

m)This is used to draw a circle.

n) This is used to draw polygons with equal sides.

4 More about graphics

A   Graphics programs have several options that work in conjunction •with the tools menu to enable the user to manipulate and change pictures.

Look at the facilities in column A and match them with the definitions in column B.

B

1 The patterns menu   a)   Turning an image round.

2 Scaling   b)   A tool which lets you scale the 'view' of a

picture and edit a small portion of it as if you were working under a magnifying glass. It is very useful for doing detailed work as you can edit the picture one dot at a time.

3 Rotating	c) Making the object larger or smaller in any of the horizontal, vertical or depth directions.
4 Inverting	d) A shading technique where two different colours are placed next to each other; the human eye blends the colours to form a third one. It is also used to show shading in black and white.
5 Zoom	e) A palette from which you choose a design to fill in shapes.
6 Slanting	f) Reversing the colour of the dots in the selected part of a picture, so that white dots become black and black dots become white.
7 Black-and-white dithering	g) Inclining an object to an oblique position.

B   Look at the pictures and label them -with the facility that has been used to change the original.

5 Language work: Gerunds (-ing nouns)

A   Read the passage below. Underline the gerunds and decide -whether they function as the subject, the subject complement, the object of a verb, or the object of a preposition.

You cannot create a picture simply by specifying primitives. Instead, you must specify the primitives and their attributes, then transform them by specifying where and how you want them placed on the screen so they create your picture. Transformation means moving or otherwise manipulating the object by translating, rotating and scaling the object.
Translation is moving an object along an axis
to somewhere else in the viewing area. Rotation is turning the object around an axis. Scaling is making the object larger or smaller in any of the horizontal, vertical or depth directions (corresponding to the x, y and z axes). The term rendering describes the techniques used to make your object look real. Rendering includes hidden surface removal, shading, light sources and reflections.

(from *Introduction to Computer Graphics,* ©Hewlett-Packard Limited, 1989)

B   Complete the sentences by using an appropriate gerund from those in the box.

creating   adding   clicking processing   printing   rendering

1   Graphic artists like .... colour and
depth to their drawings and designs.
2   A 32-bit painting program has a complete palette of tools for
.... images from scratch.
3   The speed of a microprocessor is important in .... information.
4   Before .... a document, the user
should decide on the layout.
5   You can open the colour palette by
.... on the corresponding pop-up

Gerunds
Gerunds are nouns formed by adding *-ing* to verbs. A gerund usually functions as:
• the subject of a verb, e.g. *Smoking is bad for your health.*
• the object of a verb, e.g. She *has never done any computing.*
• the object of a preposition, e.g. *CAD programs are very fast at performing drawing functions.*
• the complement of the subject, e.g. *His favourite pastime is playing computer games.*
make realistic images.
refers to the techniques used to

Rendering shows differences in light and shade

6 Speaking

Work in pairs. Student A: turn to page 137 and Student B: turn to page 141.

2.Unit 21   *Desktop publishing*
1 Warm-up

Look at the illustration below and, -with a partner, write down some answers to these questions.

1   What types of files are combined in desktop publishing?
3   What kinds of documents can be produced with desktop publishing software?

lype specs...   ~t Paragraph...
Normal Tight Very tight
Jndentsftabs... Hyphenation... "H
In the past, muc
of published ma
by hand. Today
, .Define styles... "j are created with a uesKtop
Publishing (DTP) package

DTP started in the early 1980s when four products were available at the same time: the Apple Macintosh, the laser printer, the <u>PostScript language, and a</u>

A screen from PageMaker, a kading DTP package. Another program often associated with DTP is QuarkXPress

2 Reading

A Read the text and check your answers to Task 1.

What is 'desktop publishing'?

'Desktop publishing' refers to the use of personal computers to design, implement and publish books, newsletters, magazines and other printed pieces. Desktop publishing is really a combination of a few different processes including word processors, graphic design, information design, output and pre-press technologies, and sometimes image manipulation. There are also many applications that support these processes, including font creation applications (that allow users to design and create their own typefaces, called fonts) and type manipulation applications (that allow users to modify text in visually creative ways).

Desktop publishing centres around a **layout application.** A layout application is used to import text from word processing applications, graphics from paint and drawing applications and images from scanning or image manipulation applications, and to combine and arrange them all on a page. They typically can bring in or import many different types of files. It is this ability to manipulate so many different items and control how they are used that makes layout software so popular and useful. This software is usually the last stop before a document is printed. Once composed and designed, these files can be printed onto film by high quality devices, called **image- setters,** and printed on a traditional printing press.

Because imagesetters are expensive devices, most people cannot afford to buy their own. There are, however, companies called **service bureaus** that specialize in printing other people's files on imagesetters, just like copy stores make copiers available to others. Service bureaus can offer a variety of equipment and services. Some offer imageset output, laser printer output, colour laser printer output and even slide or film recorder output. In addition, some have colour scanning equipment.

(Adapted from *Understanding Computers,* N. Shedroff и а/. Sybex, 1993)

B Read the text again and complete these sentences.

1 A page layout application can import and combine ....
2 Font creation software enables users to ....

3 Imagesetters are used to ....
4 Service bureaus offer services such as ....

3 Word building

Look at the box on the right which lists ways of forming new words in English. Then in pairs, look at these words and decide:

- **which process of word formation has been applied.**
- **what part of speech each word is.**
- **\vhere the stress falls in each word. Underline the stressed syllable(s).**

1 upgrade
2 imprint
3 printed
4 print-out
5 interactive
6 printing press
7 pre-press
8 creative
9 manipulation
10 publishing
11 publisher
12 newsletter
13 visually
14 typeface
15 professional
16 imagesetter

Word formation
New words are formed in three main ways in English:
1 Affixation
a) adding a prefix to the base: *print —> reprint*
b) adding a suffix to the base: *print —»printer*
2 Conversion, i.e. assigning one class to another: *print* v -н> *print* n.
3 Compounding, i.e. adding one base to another: *finger + print -» fingerprint.*

4 Listening

K^A **Listen to this radio interview with Ros Jackson about the importance of fonts and typography in desktop publishing. Tick *(•/}* the correct answer to each question.**

1 What does Mrs Jackson do?
a) She's an advertiser.

b) She's a font software designer.
c) She's a DTP professional.
    5   Fonts refer to:

a) the style of a typeface.
b) the size of a typeface.
c) the style and size of a typeface, for example

Helvetica italic in 12 point.

3   According to Mrs Jackson, fonts and other type characteristics:

a) don't make any difference to a message.
b) are important in order to communicate a message clearly and make it look attractive.
c) help designers scale and rotate type and text.

4   Scalable fonts are stored as:

a) a whole image made up of dots, which cannot be changed.
b) an outline which can be changed.

5   PostScript fonts were created by:

a) Apple and Microsoft.
b) Bitstream.
c) Adobe Systems.

Some different fonts

Bookman ati2pt
Courier
(Symbol)
(Dingbats)
Palatine *Helvetica Italic* ***Times Bold Italic***
ZapfChancery
Chicago ati2pt
Old **Dread£d** Drbit-B
ИOШEE
?ta.7
<?>
Cairo

5 Computers for newspapers

A   The letter below is from a group of students asking for information about the hardware and publishing software used by the newspaper *El Independiente*.

Read it and note:

**• the form and
position of the
addresses.**

• the polite forms of asking for cooperation:
- We would be very grateful if you could ...
— Could you also ...

• the ways in which the letter begins and ends.

B   Work in pairs.
Student A: turn to page 138 and Student B: turn to page 142.

C   Write a letter to the *Morning Nevus* asking for information about the hard-ware and page-layout soft-ware used in its production. Use the letter on the right to help you.

<div align="center">

Rhondda
Comprehensive School,

</div>

The Editor, 27th October 1995
El Independiente,
c/ Moratin, 7
28006 Madrid,
Spain

Dear Sir /Madam,

We are writing to ask if you can help us with our school project. We are doing a survey of the major newspapers in the European Union to find out which computer systems and desktop publishing programs they use.

We would be very grateful if you could tell us which hardware and software you use at *El Independiente*. Could you also tell us whether you intend to change either of them in the near future? Thank you very much.

We look forward to hearing from you.

Yours faithfully,
Katherine Powell Student representative

The Editor,   Your address
Morning News,
14, Pennington Street,
 London EC1 6XJ

3.Unit 22   *Multimedia*

1 Multimedia is here!

Look at the advertisement for Encarta '95. What types of data are integrated in multimedia applications?

2 Listening

A   l£^3 A sales assistant is explaining the components of a multimedia system to a customer. Listen and complete this diagram.
I
hardware
I processor
RAM peripherals memory
I software
I
I I data: system software:
music
Г
high-quality
colour
monitor
——————————I sound capabilities:
.... speakers.

Compare your answers with another student.

B   *К^л* Now listen again and answer these questions.

1 What is multimedia?
2 What is the advantage of computer multimedia presentations over TV and video?

3   Which system software is designed by Apple for multimedia work?
a) Windows with Multimedia Extensions.
b) QuickTime.
4   Can an existing PC be adapted for multimedia applications?

3   Reading

A   Read the texts and match them with the headings in the list.

• Sound, Music, MIDI
• CD-ROM is more than just heavy metal
• CD-ROM titles full of pictures, action and sound!
• The potential of using multimedia

Multimedia magic!
1   ....
Until now multimedia applications have been used mainly in the fields of
information, training and entertainment. For example, some museums, banks and
estate agents have information kiosks that use multimedia. Several companies
produce training programmes on optical disks, and marketing managers use
presentation packages (like Microsoft PowerPoint or Lotus Freelance Graphics for
Windows) to make business presentations. All these people have found that
moving images, sound and music involve viewers emotionally as well as inform
them, and make their message more memorable.

2   ………………………………………………………………
Sound is an important component of the multimedia approach. The effective use of
sound can be used to grab the attention of the participant, set the mood or
underscore a point. The most popular way of delivering sound is the hardware
sound board. Such boards offer two important capabilities. The first of these is a
built-in stereo synthesizer complete with a built-in audio amplifier. Just connect a
set of speakers and you've got instant sound, music and speech capabilities. The
second capability is the Musical Instrument Digital Interface, or MIDI. This is a
specialized serial interface that allows an electronic musical instrument to
communicate with other MIDI-equipped instruments or PCs.

3   ………………………………………………………………..
Between 80 and 90 per cent of all multimedia applications are distributed on CD-
ROM, some just on CD, some on several media (as with Autodesk's Multimedia
Explorer, which comes with both a CD-ROM and diskettes). The reasons for CD-
ROM's popularity in multimedia is simple - a single CD can contain 660 MB of
data. That's over 500 floppy disks' worth of programs, sound and graphics. The
newest CD-ROM standard, CD-ROM XA (for eXtended Architecture) uses data
compression to fit even more on these shiny discs. Many XA drives are also
compatible with Kodak's PhotoCD technology, that digitizes photographs and

places them on a CD-ROM.
Musicians can compose, mix and edit music electronically by connecting a computer to special MIDI instruments

4 …………………………………………………………………………………..
Electronic encyclopedias integrate text, pictures and sound, and usually have a video section with a full motion video window. *The Compton's Multimedia Encyclopedia* enables you to read about whales, look at photos of whales, listen to whale songs and view an animated sequence showing whale movements
through the ocean. Similarly, the *GroHer Encyclopedia* lets you read about birds, view pictures of birds, and listen to recordings of their songs.
Another interactive CD-ROM is *Cinemania* from Microsoft. This has information on thousands of films and photographs, reviews, biographies and even dialogues from films.

(Sections 2 and 3 adapted from 'Upgrading to multimedia' in *PC Upgrade, June* 1993)

B   Read the texts again and correct these statements. There is a technical mistake in each of them.

1   Multimedia applications do not use huge amounts of data.
2   PCs usually include a built-in sound card/board, so you don't need to add sound capabilities to run multimedia applications.
3   Most multimedia software is distributed on magnetic disks.
4 Kodak's PhotoCD technology is not compatible with many CD-ROM drives.
5   Microsoft's *Cinemania* is an electronic encyclopedia.

C   Match these terms with the explanations (a)—(e).

1 Computer animation
2 Video computing
3 MIDI interface
4   CD-ROM player
5   Multimedia system extension

a) An operating system designed for multimedia work.
b) A code that describes musical information so that both computers and musical instruments can understand the same instructions.
c) A drive used to handle CD-ROM disks.
d) Manipulating and showing moving images
recorded with a video camera or captured from a TV or video recorder.
e) Moving images on the screen that have been collected and combined from many sources.

Conditional clauses

When you want to talk about a possible situation and its consequences, you use a conditional sentence. Here we examine two types of conditionals:

4 Language work: /f-clauses

A   Read the information in the box and look at these sentences. Identify the tenses used in the if-clause and in the main clause.

1   If you upgrade your PC, you'll be able to run multimedia applications.
2   If the marketing manager had a multimedia system, she could make more effective presentations.
First conditional (possible situation) If A happens B will happen, present simple *will* + verb e.g. *If you **click** on the speaker icon, you'll get a piece of dialogue from the movie.*
In the main clause we can also have a modal (can), an imperative, or *a* present tense verb.
Second conditional (unlikely situation) If A happened B would happen, past simple *would* + verb e.g. *If I had the money, **I would** (I'd) **invest** in a multimedia upgrade kit.* Other modals *(could, should, might)* may appear in the main clause.

B   Put the verbs in brackets into the correct form.

1   If I (get) a sound card, I'll be able to create my own music with a MIDI.
2   If the system (have) a SuperVGA card, we would obtain a better resolution.
3   You won't be able to play CD-ROM disks if you (not have) a CD-ROM drive.
4 If you (come) to the annual computer exhibition, you could see the new Audiovisual Macs.
5   If the computer (have) a built-in microphone, you can include voice annotations in your documents.
6   If I could afford it, I (buy) a Multimedia PC.

5 Listening

F?l Look at the list of software products and number the items in the order in -which you hear them described.

Software	*1-7*
Graphics and design	
Multimedia application	

DTP	
Database program	
Integrated package	
Educational software	
Musical software	

8 Writing

You -work in the marketing department of Creative Media, a multimedia production company. In groups, write a leaflet advertising your products.

You may like to follow these steps.

1 Emphasize the benefits of using multimedia in business presentations, training programmes, advertising, etc.
Multimedia presentations can help you ...
 Sound can be used to ...

6 Offer solutions to upgrade their PCs into Multimedia PC systems.
    To upgrade your existing PCs you can add a ... and ...

3 Inform them about the hardware and software products sold by your company. Be persuasive.
   AudiovisualPC is a new multimedia computer which ...
   The program will allow you to ...

Chương 6: Programming

Mã chương: MH12-6

Giới thiệu: Chương 6 trình bày về xây dựng chương trình.

Mục tiêu:

−   Trình bày được danh sách các từ vựng để mô tả về các ngôn ngữ lập trình, các kỹ thuật lập trình, các kỹ thuật về đa phương tiện;

−   Thao tác, sử dụng ngôn ngữ lập trình, các cách sử dụng công cụ đa phương tiện.

−   Có tính cần cù, khoa học, tỉ mỉ.

Nội dung chính:

1.Unit 23   *Program design*

1 Warm-up

A   In pairs, try to think of an answer for this question:

Look at the definition on page 104. Is it similar to yours?

B   Complete the following definitions with the words and phrases in the box.

the various parts of the program   may occur in programs   language binary numbers   a given problem

1 algorithm The step-by-step specification of how to reach the solution to ……………………………………………………………………

2 flowchart A diagram representing the logical sequence between ……………………………………………………………………

3 coding The translation of the logical steps into a programming ……………………………………………………………….

4 machine code The basic instructions understood by computers. The processor operates on codes which consist of ....

5   debugging The techniques of detecting, diagnosing and correcting errors (also known as 'bugs') which ....

2 **Reading**

Read the text and find answers to these questions.

1   Do computers understand human languages?
2   What are the differences between low-level and high-level languages?
3   What is an assembler?
4 What is the function of compilers?
5   What do you understand by the terms **source program** and **object program?**
6 What do you infer from the text about the possibility of programming a
computer in Spanish, French or Japanese?

Instructions are written in a high-level language
(e.g. Pascal, BASIC, COBOL, Ada, C, Lisp).
This is known as the source program.

Compiler
Compilers translate the
original code into a
lower-level language or
machine code so that the
CPU can understand it.

Instructions are compiled and packaged into a program. The software is ready to
run on the computer.

Programming languages

Unfortunately, computers cannot understand ordinary spoken English or any other
natural language. The only language they can understand directly is called
machine code: central processors operate on codes which consist of a series of
binary digits (Is and Os). In this form, the instructions are said to be in machine
code.

However, machine code as a means of communication is very difficult to write.
For this reason, we use symbolic languages that are easier to understand. Then, by
using a special program, these languages can be translated into machine code. For
example, the so-called **assembly languages** use abbreviations such as ADD, SUB,
MPY to represent instructions. These mnemonic codes are like labels easily
associated with the items to which they refer.

Basic languages, where the program is similar to the machine code version, are
known as **low-level languages.** In these languages, each instruction is equivalent to
a single machine code instruction, and the program is converted into machine code

by a special program called an **assembler.** These languages are still quite complex and restricted to particular machines.

To make the programs easier to write and to overcome the problem of intercommunication between different types of machines, higher-level languages were designed such as BASIC, COBOL, FORTRAN or PASCAL. These languages are all problem-oriented rather than machine-oriented and can all be converted into the machine codes of different types of computers. Programs written in one of these languages (known as **source programs)** are converted into a lower-level language by means of a **compiler** (generating the **object program).** On compilation, each statement in a **high-level language** is generally translated into many machine code instructions.

People communicate instructions to the computer in symbolic languages and the easier this communication can be made the wider the application of computers will be. Scientists are already working on Artificial Intelligence and the next generation of computers may be able to understand human languages.

3 Word building

A   Look at the groups of-words and decide what part of speech each word is. Then complete the sentences with the correct word.

compile   compiler   compilation

1   Programs written in a high-level language require .... , or
translation into machine code.
2   A .... generates several low-level instructions for each source language statement.
3   Programmers usually .... their programs to create an object program and diagnose possible errors.

program   programmers   programming   programmable

4 Most computer .... make a plan of the program before they write it. This plan is called a flowchart.
5   A computer .... is a set of instructions that tells the

computer what to do.
6   Converting an algorithm into a sequence of instructions in a programming language is called ....

bug   debug   debugger   debugging

7 New programs need ..'... to make them work properly.

8 Any error or malfunction of a computer program is known as a

9 The best compilers usually include an integrated ....
which detects syntax errors.

B   In the word *debug* the prefix *de-* is used. This prefix means 'to reverse an action'. Here are a few more examples:

defrost   debrief   declassify   decode   decompose   decentralize

Write down the base form of each verb. What do the verbs mean in your language? And what do the verbs with *de-* mean?

Can you think of any more verbs with *de-* in English?

4 Language work: Infinitive constructions

A   Make sentences as in the example.

Example: not easy / write instructions in PASCAE *It is not easy to write instructions in PASCAL.*

1 advisable / test the program under different conditions
2 expensive / set up a data-processing area
3 unusual for a program / work correctly the first time it is tested
4 difficult for students / learn FORTRAN
5 important / consider the capabilities of the programming language
6 quite easy / write instructions in BASIC

Infinitive constructions
The infinitive is used:
• after adjectives
- ***It* is *difficult to use*** machine code.
• after modal verbs with to: *ought to, used to*
- ***I ought to make*** *a back-up copy.*
- *Using a computer is much easier than it **used to be.***
• after modal and auxiliary verbs without *to: can, could, may, might, shall, should, will, would, would rather, would sooner*
- *Unfortunately, computers **can't understand** English.*
- ***I'd rather buy*** *a game than a spreadsheet.*

B   Read the information in the box and then look again at the reading passage in Task 2. Underline the infinitive constructions after modal verbs.

Example: Unfortunately, computers <u>cannot understand</u> ordinary spoken English...

C   Look at these pairs of examples and decide where there is an 'important' change in meaning.

1 a) I remember shutting down the computer before I left the room. b) Please remember to buy the new program.
2 a) They stopped to look at the flowchart. b) They stopped looking at the flowchart.
3 a) I like studying C language, b) I like to study C language in the evenings.
4 a) It has started to rain. b) It has started raining.
5 a) He needs to work harder. b) This hard disk needs repairing.

5 Listening

A   _r^A_ Listen to Lucy Boyd, a software developer, explaining to a friend how a program is produced. Arrange these steps in the order you hear them.

- Provide documentation of the program.
- Understand the problem and plan the solution.
- Test and correct the program.
- A 'ake a flowchart of the program.
- Write the instructions in coded form and compile.the program.

B   _1*^1_ Listen again and take notes. Use your notes to explain -what each step means.

6 Flowcharts

A   Read the paragraph below and look at the diagrams. Look carefully at the symbols and their corresponding functions.

When planning a program programmers usually draw a map or diagram which shows the successive logical steps of the program. This technique, known as flowcharting, can be very helpful because it guides the development of the program and ensures that all requirements are met. In a flowchart, each step is written inside a specially shaped box which represents a particular function.

(   ) **Terminal:** a symbol representing a terminal point: start, interrupt, end.
\   \   **Flowlines:** these join boxes, showing the flow or direction of actions.
Decision: diamonds are used for tests such as 'if information X is true, then take action A, else B'. A decision has to be made.
Process: a rectangle is used for commands or executable statements.
Input/Output: a parallelogram represents input or output functions.
Study the following problem and how it is solved.
There are two errors in the flowchart. See if you can find them.

Employees in a food company work a certain amount of hours per week (H). Their pay is £7 an hour. But for every hour over 40, they get overtime pay (OT) at £12. The flowchart shows the logical path the computer will follow in executing the program. The program calculates the total pay (T) for every employee.

Let P = 7*40
Overtime Pay OT = 12*(H-40)
Calculate TOTAL Pay (T) T = P - OT

B   Look at the program below for the flowchart in A.

1   Find the statement in the box that tells the program to choose one branch (path) or another, according to different circumstances.
2   Which command in the box forces the program to jump from one statement to another?

```
CLS
10    REM Food corp.
20    PRINT "Weekly wage"
30    INPUT "Number of hours"; H
40    IF H >40 THEN GOTO 60
50    LET T=7*H:GOTO 90
60    LETP=7*40
70    OT=(H-40)*12
80   T = P+OT
90    PRINT "TOTAL PAY ......... ";T;
"pounds".
100 END
```

Example of output:
Weekly wage
Number of hours 47
TOTAL PAY 364 pounds

HELP
CLS erases the screen.
REM is *a* remark about the program.
INPUT waits for you to enter data from the keyboard.
IF - Line 40 means 'If H is greater than 40 then jump to line 60'. If H is not greater than 40, the computer just moves to the next line (50), and continues with the program.
LET gives a value to a variable.
GOTO directs the program to a line number.

PRINT displays the result on the screen.

C   Draw a flowchart for this program.

10 REM Income Tax.
20 INPUT "Annual SALARY ....";S
30 IF S < 15000 **THEN P=17:GOTO** 70
40 IF S > 15000 AND S < 22000 **THEN P=19:GOTO** 70
50 IF S > 22000 AND S < 30000 **THEN P=24:GOTO** 70
60 IF S > 30000 **THEN P=30**
70 T = (S*P)/100
80 **PRINT** "INCOME TAX ....";T; "pounds".
90 END

S means Salary, P Percentage and T Tax

D   If you know how to write in BASIC, produce a program to calculate hotel bills.

2.Unit 24   *Languages*
1   Warm-up

A   Make a list of as many programming languages as you can think of.

B   Study this table about the programming language BASIC and answer the questions below.

Language	Date	Uses	Characteristics
BASIC	1964-65	- General-purpose language	- High-level programming language
(Beginner's			
All-purpose		- To teach programming	— Interactive
Symbolic			— Easy to learn
Instruction			— Displays error messages that
Code)			help users to correct mistakes

			- Has a large number of 'dialects'

1 What does 'BASIC' stand for?

7   When was BASIC developed?

8   What is BASIC used for?

9   Is BASIC easy to learn? Give reasons for your answer.

2 Language work: The passive

A   You form the passive voice with the verb _to be,_ in the correct tense, and the past participle of the main verb.

Example: _Instructions **are processed** by the CPU._

Read the sentences below and fill in the blanks with the correct passive form of the verbs in brackets.

1   COBOL (use)... for business applications.
2   Original programs (write).. in a high-level language.
3   All computer languages (must translate).. into binary commands.
4   The ADA language (develop).. in 1979.
5   In the seventies, new languages (design).. for research into Artificial Intelligence.
6 A new version of TurboPascal (release).. just
7   In the next century, computers (program). natural languages like English or French.

B   How do you say the sentences in A in your language? How do you make the passive in your language?

6   Speaking

Work with a partner. Student A: turn to page 139 and Student B: turn to page 143.

4 A short description of BASIC

Read the passage and complete it -with the verbs in brackets in the correct form.

BASIC is a general-purpose high-level programming language, originally designed to (1) (develop)....................programs in conversational mode. The name BASIC (2) (stand)...................... for Beginner's All-purpose
Symbolic Instruction Code. This language is (3) (find) .... on most microcomputers because it (4) (be)...................... user-friendly and easy to learn.

BASIC (5) (consist)...................... of two main parts: the
source language statements - the instructions which form the program - and the **system**
commands which (6) (allow)...................... us to control
and edit a program.

BASIC enables the user (7) (interact)...................... with
the program while it is being (8) (execute)......................
which means that data can be (9) (input)......................
while the program is running. Each instruction is (10) (give)...................... a line number which defines the logical sequence of statements within the program. Some well-known system commands in BASIC are: RUN, which executes a program (11) (hold)...................... in a BASIC file; LIST, which prints a listing of a program on the screen; and DELETE, which (12) (remove)...................... a program
from a file.

A large number of PC manufacturers adopted BASIC. At present, however, there (13) (be)...................... so many versions and extensions that programs written for one
type of PC are not directly portable to another.

5 Listening

A   \f^A Listen to Vicky Cameron, the Information Technology (IT) lecturer from Units 7 and 12, talking to her students about C language. Complete the table with the relevant information.*

Developed by	Date	Characteristics	Uses	Extensions
		Created to replace		C++ and
at			o J	

....			
	The language is small, ...		languages.
		Today it is used to	

B   Now write a paragraph describing C. You can start like this:

C is a high-level programming language developed ...

```
#include <stdio.h>
 main()
printf("good morningXn");
```

This C program tells the computer to print the greeting (good morning'

3.Unit 25   *Jobs in computing*
1   Reading

**Look carefully at the job advertisements and discuss -with another student
\vhat personal qualities and professional abilities you -would need for each
job. Tick (/) the most important qualities in this list. Then add some more of
your own.**

logical reasoning
imagination
physical fitness
 efficiency
 self-discipline
ability to lead a team
patience and tenacity
 ability to draw well

being good with figures
willingness to take on responsibility

required by **DIGITUM.a** leading
 supplier of business systems
to the insurance industry.

You will be able to work on the
 full range of development
activities - analysis, design,
coding, testing and
implementation. At least two
years' experience of COBOL is
necessary.

As we are active in Europe,
fluency in French, Italian or
another European language is
desirable.

Don't miss this opportunity
to learn new skills and develop your
career.
DTP
Operator
required
for a leading financial magazine. We are looking for a bright, competent
QuarkXPress operator with at least three years' experience in design and layout.
Skills in Photoshop, Freehand or Illustrator an advantage. Ability to work in a team
and to tight deadlines is vital.

**Please apply in writing, with CV and samples of your work, to Tom Parker,
Production Manager, Financial Monthly, Stockton Street, London, EC 1
4WW.**

B   Would you like to apply for one of these jobs? Why?

**C   Study the personal profile of Charles Graham. Which is the most suitable
job for him?**

Charles Graham
- 35 years old. Married.
— Education: 3 A-levels.

- In-depth knowledge of Apple Macintosh equipment.
— Course in graphic design and page-layout applications from Highland Art School.
— Proficient in Aldus PageMaker and SuperPaint. Diploma in word processing. Wide experience in MS Word and WordPerfect.
- Present job: Computer operator for PromoPrint, a company specializing in publishing catalogues and promotional material.

2 Language work: Past activities

A   Read the examples and then complete the sentences below with/or, *since* **or** *ago*.

Examples:

We've used Word for Windows for two years. I've been a programmer since 1993. I left university seven y ears ago.

1 I've been looking for a job .... April.
2 They've used a fax machine .... the past two years.
3 Kate Jackson studied 'computer sciences'................ three years.
4 I got married six years.................
5 She's been working for this firm .... 1990.

What is the difference in meaning between these two sentences?
a) I've worked for a year as a senior programmer.
b) I worked for a year as a senior programmer. .

B   Sarah Brown is one of the applicants for the job of Senior Programmer advertised in Task 1. Read her letter of application and put the verbs in brackets into the correct tense.

19 Sandford Street, London NW74HH
• 2 March 1995
Mr Scott, -   •   ;
Personnel Manager,
Digitum,
75 Parkhill Street, ᵛ ⁞ .
London SW23DE .   ;

Dear Sir,
I am writing to (1) (apply)................................ for the position of Senior Programmer which (2) (advertise) .... on 28 February in *The Times.*

I (3) (work)................................. as a computer programmer for the last three years. After graduation I (4) (work) .... for a year with NCR and (5) (be)................................. now................................. with Intelligent Software for two years. I design systems in COBOL for use in large retail chains. These have been very successful and we (6)(win)................................. several new contracts in the UK and Europe on the strength of my team's success.

Last year I (7) (spend)................................. three months in Spain testing our programs and also (8) (make) .... several short visits to Italy so I have a basic knowledge of Spanish and Italian. I now feel ready for more responsibility and more challenging work and would welcome the opportunity to learn about a new industry.

I enclose my curriculum vitae and look forward to hearing from you. Yours sincerely,

Sarah Brown

3 Listening

A   **\^JI Listen to part of Chris Scott's interview with Sarah Brown and complete his notes.**

B   **Γ^A Listen again and check your answers. Then compare your answers with a partner.**

4 Writing

Maria Quintana, from Spain, is interested in the job of computer operator as advertised below. Use her notes to -write a letter applying for the job. You can start like this: *I'm writing to apply for ...*

INTERNATIONAL MERCURY
***COMPUTERS* requires Computer Operators**

We have vacancies for experienced operators to work on their own initiative in a busy company. You will be responsible for the day-to-day running of our data-processing equipment.

You must be highly communicative and have good problem-solving skills. We can

offer an excellent salary, training and good promotional prospects to the right candidate.

Send your CV and a covering letter to
James Taylor, International Mercury Computers,
37 Charles Place, London, SW10 6XX
FAX 0171-323-05712.

Chương 7:Computers tomorrow
Mã chương: MH12-7

Giới thiệu: Chương 7 trình bày về thế hệ máy tính tương lai
Mục tiêu:

– Trình bày được danh sách các từ vựng để mô tả về các các công nghệ của máy tính trong tương lai, các vấn đề liên quan đến máy tính có khả năng ứng dụng trong tương lai, các công nghệ mới;

– Đọc hiểu được 1 số đoạn văn mô tả máy tính theo các công nghệ mới.

– Có tính cần cù, khoa học, tỉ mỉ.

Nội dung chương:

1.Unit 26   *Electronic communications*

1   Before you read

Try to answer these questions.

1   How can a PC be connected to another computer?
2   What data communication systems can you think of? Make a list.

2   Reading

A   Which data communication services would you use for each of these requirements?

1   To send a personal message to a
friend who is at a different workstation.
2   To send a copy of a paper document -for instance, a scientific article - from Trento University to Cambridge University.
3   To access massive databases containing all kinds of information, or to be connected with an airline reservations service.
4   To receive shareware and public domain programs from a user group.
5   To find out weather forecasts and sports information from the television.

a) fax
b) electronic mail (e-mail)
c) teletext
d) local bulletin board
e) commercial online service

Read the text and check your answers.

Channels of communication

What you need to telecommunicate

In the modern world, some companies are finding it more efficient to have certain employees stay at home and do all of their work on their home computers. Then, using telecommunications, they transmit their work over a modem into the office where it is printed and distributed.

Telecommunications are used now for hundreds of different applications. Investors routinely check their stock market holdings, pilots file flight plans and get weather briefings, and shoppers compare and purchase merchandise on their computers. National and international electronic mail is sent and received with local phone calls, and electronic bulletin boards are used for everything from selling used cars to finding dates.

Telecommunicating is accomplished by linking your computer to telephone lines and contacting someone through a device called a modem. But with whom will you communicate? Of course,

A modem
Your PC is a digital device (it works with strings of Is and Os). However, the telephone connection is an analogue device, designed to transmit the sounds and tones of the human voice. That's why we need a modem — a bridge between digital and analogue signals.

The word 'modem' is an abbreviation of MOdulator/ DEModulator. When a modem modulates, it sends very rapid on/off pulses. The computer on the other end translates (demodulates) those signals into intelligible text or graphics.

Modem transmission speeds are measured in baud, roughly equivalent to bits per second (bps). Typical speeds are 14400, 28800 and33600 bps you can call up an individual who owns a modem and talk to him or her, but generally, you will communicate with bulletin boards and online services.

Local bulletin boards
Bulletin boards are frequently free because they are maintained by community-

minded computer enthusiasts. There are local bulletin boards sponsored by user groups, individuals and businesses. How do you find a bulletin board? Ask the salesman at your local computer store or a friend who   is involved in telecommunications. If the bulletin board requires registration, you will be subjected to a friendly interrogation and be required to enter your name, address, telephone number and other information such as the kind of computer and modern you are using. Then, the system operator (called a sysop - pronounced SIS-op) will contact you over the telephone to assure him/herself of your identity.

Once you are in telephone contact with the board, you can download (receive) artwork, games and useful programs; or you can play games or 'talk' to the other people online. If you upload (send) programs, make sure that those programs are shareware or public domain programs — those that specifically permit public access.

E-mail
Electronic mail requires some special software. You type a message onto your computer screen, click a Send button and it pops up on the recipient's screen — provided that he/she is connected to your computer via a network like the Internet. Voice-mail is similar to e-mail except that it includes sending recorded sound in addition to text

Commercial online services
A commercial online service differs from a local bulletin board in two key ways: (1) they are larger and more comprehensive, and (2) they are operated to make a profit. On a commercial online service, you will find such diverse services as a low-cost stock broker, an airline reservations service, technical support personnel for hardware and software manufacturers, and access to massive databases containing all kinds of information.

Two popular commercial services are CompuServe and Prodigy. Among Compu-Serve's many services are the following: news, electronic mail, telex, games, airline reservations, online shopping, conferences and special interest groups.

Prodigy's services are aimed particularly at shoppers and the needs of drildren. For adults, Prodigy provides the whole range of services from banking to shopping, as well as helpful document files from experts on managing money, cooking and other useful information. For children, there is an online encyclopedia, as well as adventure, science and entertainment features.

A stand-alone fax service *is a facsimile machine which transmits copies of original documents. It operates by scanning pictorial or textual documents so that the image is converted into electrical signals which are sent to and used by a receiving machine that produces a copy of the original*

A fax-modem *is a modem with software and hardware which can emulate a fax machine. This allows you to receive a fax directly into your computer, where you can read it or print it onyour printer. To send a fax you prepare the document on your computer —for example, by using a word processor*

Teletext on ITV and Channel Four *is an information service in Britain which broadcasts a database alongside the TV signal. It provides constantly updated and real time information*

(Adapted from *Your First Computer,* A. Simpson, Sybex, 1992)

B   Read the text again and match the following words with their definitions.

1 computer communications
> 7   a modem
> 8   electronic mail

11 bulletin board

12 shareware

a) a hardware device that converts digital signals from computers to analogue signals for transmission through the telephone system, and vice versa
b) the process of sending and receiving private messages via computer
c) the process of transferring information from one PC to another via modems and telephone lines
d) programs that are distributed free, via electronic bulletin boards or on diskette from user groups
e) an electronic online service that allows users to send and receive messages, retrieve programs, request information and communicate with other people, using a computer, a modem and the telephone line

C   Match and link the pairs of expressions that have the same meaning.

file of structured data   **sysop**   *bits per second*
BBS   **facsimile machine** system operator   **MODEM**   phone network   **fax**
database   *Bulletin Board System* Modulator/Demodulator   **baud**
telephone wires
3Word building

A   In pairs, look at the words below and decide:

— what part of speech each word is.
— where the stress falls on each item.

If you are not sure, look them up in a dictionary.

tele- means 'at/over a distance'

1 telegram	5 teletype	9 telegraphic
2 telephoto	6 teletext	10 telegraphically
3 televise	7 telegraph	11 telepathy
4 television	8 telegrapher	12 telepathic

13 telescope
14 telescopic
15 telephonist

B   Now write down some words formed by adding these prefixes.

1 *auto-* (means 'self')
2 *trans-* (means 'across, from one place to another')
3 *inter-* (means 'between', 'among')

4 Listening

A   *К^Л* Listen to this interview with David Collins, the president of I Videotex Link. He is explaining videotex systems to a journalist. Complete the journalist's notes.

5 Hackers!

Read the text on the next page in order to find the answer to these questions.

1   What is a 'hacker"?
10 Which hacking case inspired the film "War Games"?
1988?
11 Why was Nicholas Whitely arrested in 1988?
12 How old was Nicholas Whitely that cracked the US defence computer in
     October 1989?
5   Who was known as "Dark Dante" on the networks? What was he accused of?

hacker   a person who obtains illegal access to computer data; **hacking** the act of obtaining unauthorized access to programs or data held on a computer

A brief history of hacking

Sep 1970
 John Draper, also known as Captain Crunch, discovers that the penny whistle offered in boxes of Cap'n Crunch breakfast cereal perfectly generates the 2,600 cycles per second (hertz) signal that AT&T used to control its phone network at the time. He starts to make free calls.

Aug 1974
Kevin Mitnick, a legend among hackers, begins his career of hacking into a variety of computer systems, including entering banking networks and destroying data, altering credit reports of his enemies, and disconnecting the phone lines of celebrities. His most famous exploit — hacking into the North American Defence Command in Colorado Springs — inspired *War Games,* the 1983 movie.

Jul 1981
 lan Murphy, a 23-year-old known as Captain Zap on the networks, gains instant notoriety when he hacks into the White House and the Pentagon.

Sep 1987
German Chaos Computer Club hacks NASA network.

Dec 1987
IBM international network is paralysed by hacker's Christmas message.

May 1988
 Kevin Anderson is convicted of selling hacking information to the Russians.

Jul 1988
Union Bank of Switzerland 'almost' loses £32 million to hacker-criminals.
Nicholas Whitely is arrested in connection with virus propagation.

Oct 1989
Fifteen-year-old hacker cracks US defence computer.

Feb 1990
US hacker obtains credit card by hacking.

Nov 1990
Hong Kong introduces anti-hacking legislation.

Aug 1991
Israelis arrest 18-year-old for hacking foreign banking and credit card networks.

Jul 1992

In New York, five teenagers are charged with breaking into computer systems at several regional phone companies, large firms, and universities.

Dec 1992
Kevin Poulsen, an infamous hacker known as 'Dark Dante' on the networks, is charged with stealing tasking orders relating to an Air Force military exercise. He is accused of theft of US national secrets and faces up to ten years in jail.

6 Language work: The past simple (revision)

Refer back to the text in Task 5 and put it into the past.

Example: *In September 1970, John Draper discovered that the penny whistle ... generated ... He started to make free calls.*

7 Discussion

In small groups try and answer these questions.

1   What sort of problems are caused by hackers? (Refer back to the text for help.)
2   What measures could be taken by governments against computer crime (hacking, software piracy, virus propagation, etc.)?
3   Can you think of any ways to make computer networks more 'secure'?

2. Unit 27 Internet Issue

Fix web compatibility issues using document modes and the Enterprise Mode site list

The Internet Explorer 11 Enterprise Mode site list lets you specify document modes for specific websites, helping you fix compatibility issues without changing a single line of code on the site. This addition to the site list is a continuation of our commitment to help you upgrade and stay up-to-date on the latest version of Internet Explorer, while still preserving your investments in existing apps.

5   What does this mean for me?

Enterprises can have critical apps that are coded explicitly for a specific browser version and that might not be in their direct control, making it very difficult and expensive to update to modern standards or newer browser versions. Because you can decide which URLs should open using specific document modes, this update helps ensure better compatibility, faster upgrades, and reduced testing and fixing costs.

6 How does this fix work?

You can continue to use your legacy and orphaned web apps, by specifying a document mode in the centralized Enterprise Mode site list. Then, when IE11 goes to a site on your list, the browser loads the page in the specified document mode just as it would if it were specified through an X-UA-Compatible meta tag on the site. For more information about document modes and X-UA-compatible headers, see <u>Defining document compatibility</u>.

Important
Enterprise Mode takes precedence over document modes, so sites that are already included in the Enterprise Mode site list won't be affected by this update and will continue to load in Enterprise Mode, as usual.

When do I use document modes versus Enterprise Mode?

While the `<emie>` functionality provides great compatibility for you on Windows Internet Explorer 8 or Windows Internet Explorer 7, the new `<docMode>` capabilities can help you stay up-to-date regardless of which versions of IE are running in your environment. Because of this, we recommend starting your testing process like this:

- If your enterprise primarily uses Internet Explorer 8 or Internet Explorer 7 start testing using Enterprise Mode.

- If your enterprise primarily uses Windows Internet Explorer 9 or Internet Explorer 10, start testing using the various document modes.

Because you might have multiple versions of IE deployed, you might need to use both Enterprise Mode and document modes to effectively move to IE11.

Test your sites for document mode compatibility

To see if this fix might help you, run through this process one step at a time, for each of your problematic sites:

1. Go to a site having compatibility problems, press **F12** to open the **F12 Developer Tools**, and go to the **Emulation** tool.
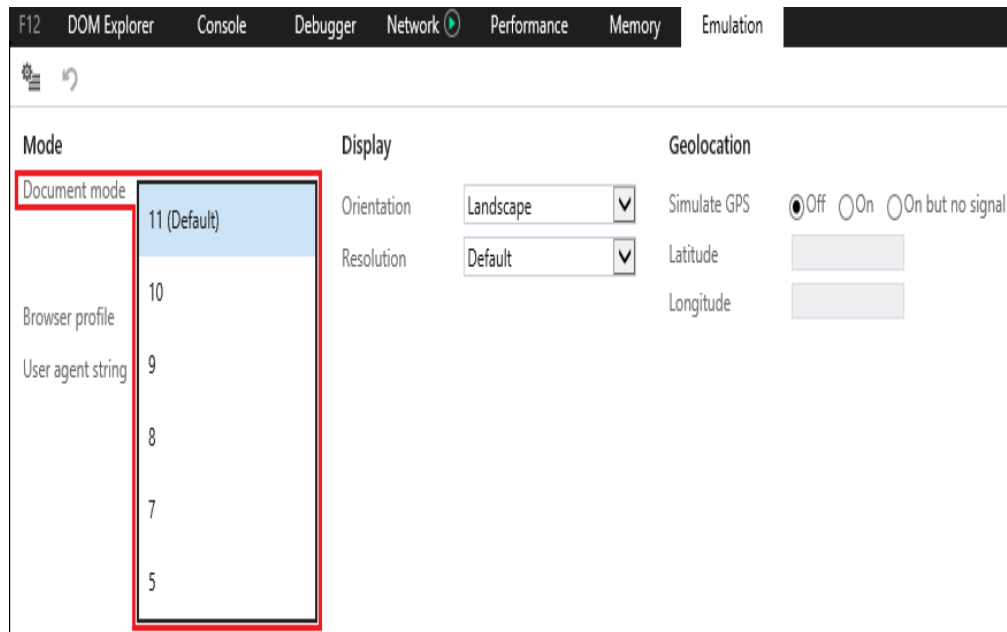
2. Starting with the **11 (Default)** option, test your broken scenario. If that doesn't work, continue down to the next lowest document mode, stopping as soon as you find a document mode that fixes your problems. For more information about the Emulation tool, see <u>Emulate browsers, screen sizes, and GPS locations</u>.

3. If none of the document modes fix your issue, change the **Browser Profile** to **Enterprise**, pick the mode you want to test with starting with **8** (IE8 Enterprise Mode), and then test your broken scenario.

Add your site to the Enterprise Mode site list

After you've figured out the document mode that fixes your compatibility problems, you can add the site to your Enterprise Mode site list.

Note
There are two versions of the Enterprise Mode site list schema and the Enterprise Mode Site List Manager, based on your operating system. For more info about the schemas, see <u>Enterprise Mode schema v.2 guidance</u> or <u>Enterprise Mode schema v.1 guidance</u>. For more info about the different site list management tools, see <u>Use the Enterprise Mode Site List Manager</u>.

To add your site to the site list

1. Open the Enterprise Mode Site List Manager, and click **Add**.
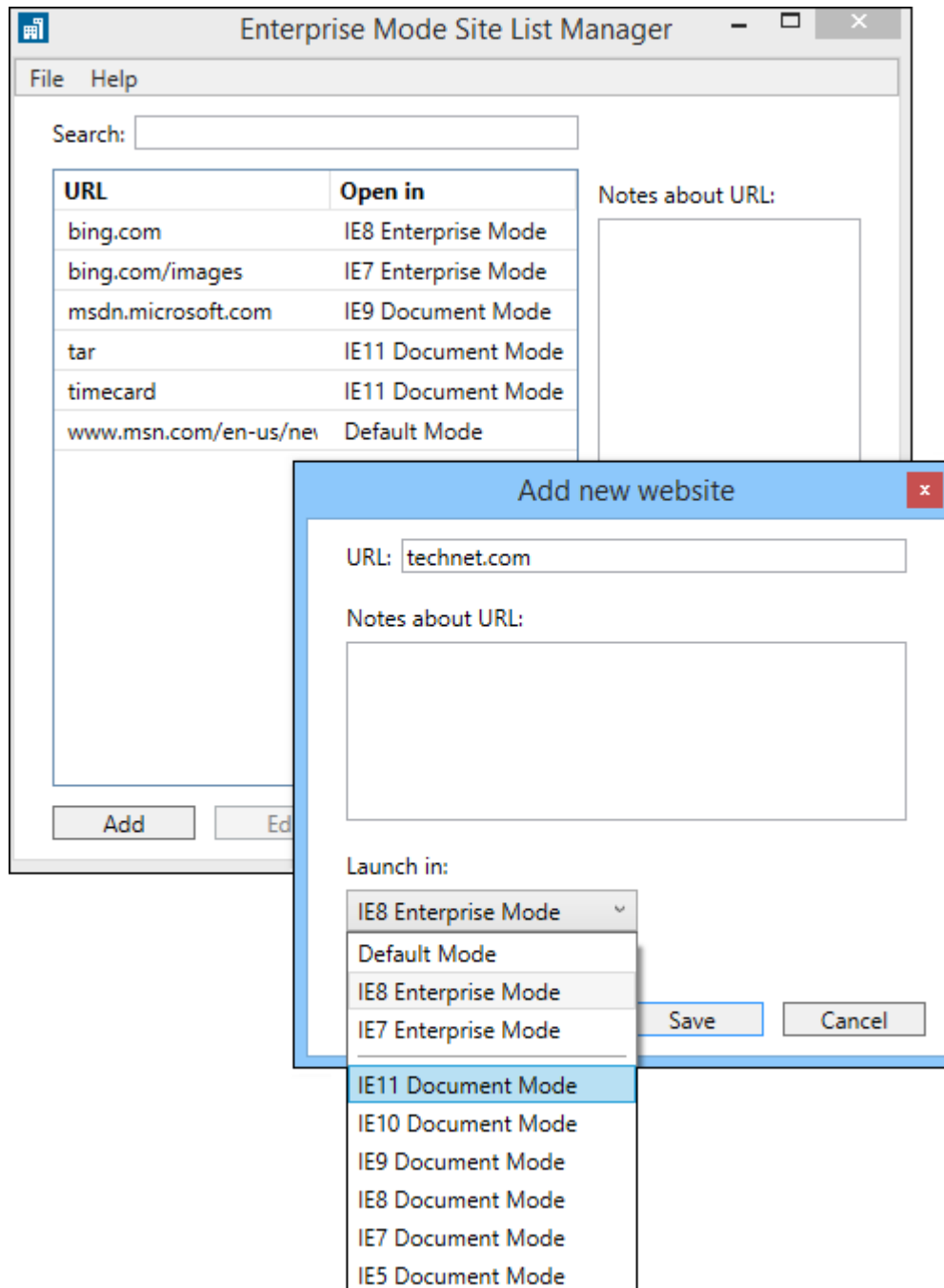
2. Add the **URL** and pick the document mode from the **Launch in** box. This should be the same document mode you found fixed your problems while testing the site.
Similar to Enterprise Mode, you can specify a document mode for a particular web path—such as contoso.com/ERP—or at a domain level. In the above, the entire contoso.com domain loads in Enterprise Mode, while microsoft.com is forced to load into IE8 Document Mode and bing.com loads in IE11.

Note

For more information about Enterprise Mode, see What is Enterprise Mode? For more information about the Enterprise Mode Site List Manager and how to add sites to your site list, see Enterprise Mode Site List Manager.

Review your Enterprise Mode site list

Take a look at your Enterprise Mode site list and make sure everything is the way you want it. The next step will be to turn the list on and start to use it in your company. The Enterprise Mode Site List Manager will look something like:
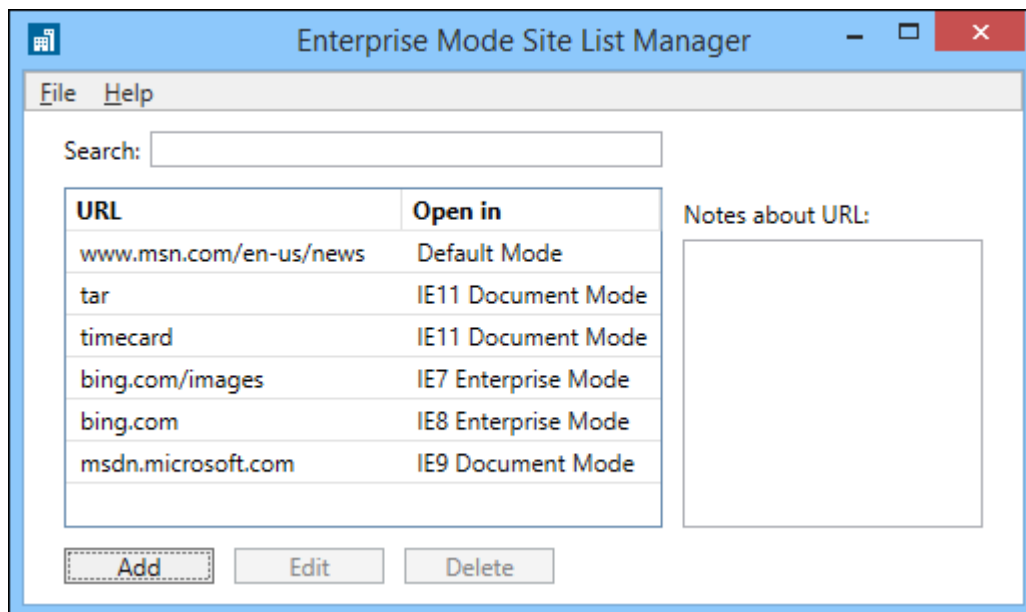
And the underlying XML code will look something like:
XMLCopy

```
<rules version="1">
  <emie>
     <domain exclude="false">bing.com<path exclude="false"
forceCompatView="true">/images</path></domain>
     <domain exclude="true">www.msn.com<path
exclude="true">/news</path></domain>
  </emie>
  <docmode />
  <docMode>
     <domain docMode="edge">timecard</domain>
     <domain docMode="edge">tar</domain>
     <domain docMode="9">msdn.microsoft.com</domain>
  </docMode>
</rules>
```

Turn on Enterprise Mode and using your site list

If you haven't already turned on Enterprise Mode for your company, you'll need to do that. You can turn on Enterprise Mode using Group Policy or your registry. For specific instructions and details, see Turn on Enterprise Mode and use a site list.

7 Turn off default Compatibility View for your intranet sites

By default, IE11 uses the **Display intranet sites in Compatibility View** setting. However, we've heard your feedback and know that you might want to turn this functionality off so you can continue to upgrade your web apps to more modern standards.

To help you move forward, you can now use the Enterprise Mode site list to specify sites or web paths to use the IE7 document mode, which goes down to IE5 "Quirks" mode if the page doesn't have an explicit DOCTYPE tag. Using this document mode effectively helps you provide the Compatibility View functionality for single sites or a group of sites, which after thorough testing, can help you turn off Compatibility View as the default setting for your intranet sites.

3. Unit 28   *LANs and WANs*

1 Warm-up

 Try to answer these questions.

1   What is a computer network?
2   What are the benefits of connecting computers and peripherals in a network?

2 Listening

Ë1Э **Listen to the description of this computer network. Label the different elements.**

3 Reading

Read the text and then match these technical terms with their definitions
.
1   LAN
2   Network architecture
3   nodes
4   protocol
5   transceiver
6   token
 7   gateway

a) the hardware that emits and receives signals in a computer network
b) a network contained in a relatively small area
c) the arrangement of nodes in a communication system (i.e. the distribution of elements in a network)
d) a device that translates protocols between different types of networks (e.g. it can

link networks of PCs and Macs to mainframes and minicomputers)
e) a special unit of data which acts as a key on a Token Ring network; only the machine in possession of this piece of software can transmit on the network
f)   a set of rules that allows the exchange of information over a network
g) computer devices interconnected in a network

Network configurations

A data communications network is a group of devices (CPUs, printers, etc.) or 'nodes' interconnected by communications circuits so that users can share data, software programs and hardware resources. There are two different elements in this kind of network: the **physical structure** that links the equipment, and the **software** that allows communication.

The physical distribution of nodes and their interconnecting communication circuits is known as network 'topology' or 'architecture'. The software consists of the **protocols,** i.e. the rules which determine the formats by which information may be exchanged between different systems. We could say that cables and transceivers (the architecture) allow computers to 'hear' one another, while the software is the 'language' that they use to 'talk' to one another over the network.

As regards the cables, they consist essentially of the transceiver — the hardware that sends and receives network signals. At present the most widely used transceivers are: Token Ring, Ethernet and LocalTalk. Token Ring is the most common method of connecting PCs and IBM mainframes. Most Token Ring adapters transmit data at a speed of 16 megabits per second. With Ethernet, data is transmitted at 10 Mbits/sec. Ethernet provides a very robust, trouble-free architecture with good levels of performance. *In this regard,* Ethernet is the best solution for fast and intensive activity. It is also recommended for electronic colour printing or three-dimensional CAD.
LocalTalk transceivers are the cheapest of all because they are included in each Apple Macintosh. However a EocalTalk network is a bit slow, which is why most Macs come with additional circuitry for connecting to a high-speed network.

As for protocols, these are rules which describe things like transmission speed and physical inter- faces. They also define functions such as printing and file sharing. The Token Ring protocol avoids the possibility of collisions. To transmit data, a workstation needs a token, and as there is only one token per network, holding one guarantees sole use of the network. With Ethernet there are other options, of which TCP/IP (Transmission Control Protocol/Internet Protocol) is perhaps the most useful since it allows different operating systems to communicate with each other. *With regard to L*ocalTalk networks, they use AppleTalk protocols. The Macintosh operating system includes the AppleTalk manager and a set of drivers that let programs on different Macs exchange information.
LANs can be interconnected by gateways. These devices help manage

communications and control traffic on large networks. They can translate protocols of different networks which means that a EocalTalk network running an AppleTalk protocol can be connected to an Ethernet network running TCP/IP.

4 Language work: Prepositional phrases of 'reference'

In the following example: *As for Paris, it has some amazing sights — like the Eiffel Tower,* **the expression** *as for* **marks the theme of the sentence.**

Look at the -words in the box below and combine them to make eight similar phrases of reference meaning 'concerning'. You can use words more than once. Refer back to the text to find some of them.

with	to		for	as	on the	regard
this	in		matter	reference	of	respect
	regards					

13 Writing

The diagram below illustrates the computer connections in three areas of a large company. First look at the description of the office area network. Then write similar descriptions of the other two areas.

• **In the office area,** the computers are connected in a Token Ring network. Various PCs have access to a file server, an IBM mainframe, an e-mail server, and a printer.
The file server probably contains application programs like databases, spreadsheets and accounting packages. The mainframe contains large amounts of information about the company, administrative work, etc.

• **Engineering area**
(TCP/IP network, connecting Unix, Macs and PCs)

• **Desktop publishing area**
printer
Mac
scanner
DEC station   gateway
Unix file server
modem

B   If you use a network write a short description of it, with details of its architecture and protocol. Say what you and your colleagues use the network for.

6 WANs and worldwide communications

Try to answer these questions.

1 What is a WAN?
2 How can computers be linked up over a long distance?
3 What are the advantages of optical-fibre cables over telephone lines?
4 What is the function of communications satellites?

Now read the passage and find out if your answers were correct.

For long-distance or worldwide communications, computers and LANs are usually connected into a wide area network (WAN) to form a single, integrated network. Two good examples of wide area networks are Internet and Arpanet. They transfer data and e-mail for university researchers and academics, commercial groups, military installations and ordinary people.

Networks can be linked together by either **telephone lines** or **fibre-optic cables.** For example, ISDN (Integrated Services Digital Network) is an international standard for transmitting digital text, sound, voice and video data over telephone lines. On the other hand, FDDI (Fiber Distributed Data Interface) is an optical-fibre network. This new standard transmits data at great speed— 100 megabits per second.

Modern telecommunications use fibre-optic cables because data can be transmitted at a very high speed through the extremely wide band-widths of glass fibres. The fibre system operates by transmitting light pulses at high frequencies along the glass fibre. This offers considerable advantages: (i) the cables require little physical space; (ii) they are safe because they don't carry electricity; (iii) they avoid electromagnetic interference.

Networks on different continents can also be connected via **satellite.** Computers are connected by a modem either to ordinary telephone wires or fibre-optic cables, which are linked to a dish aerial. This aerial has a large concave reflector for the reception and sending of signals. Then, when signals are received by the satellite, they are amplified and sent on to workstations in another part of the world.

Libraries use a WAN to keep records of bans and to supply information to Iff;
library users who have modems

7 Speaking

In small groups, study and discuss the illustration below. Then prepare a

description and give an oral report to the class.

• This diagram represents a wide area network or WAN. Two networks are linked via satellite. One network is in .... and consists of..
.... The other LAN is in .... and
contains..
.
• In Los Angeles, the computers are connected to the telephone lines by
....
However, in Barcelona
....
• The satellite receives signals from .... Then the signals are
retransmitted to
....
• The purpose of this integrated network may be
....
....
.. . It allows large companies and institutions to
....

4.Unit 29   N*ew technologies*

1 New products

A   Look at these pictures and match them with texts 1-4.
1   The Philips Screenphone is a telephone that cames with an LCD and a pull-out keyboard. The ccomputer interface lets you use applications that combine voice and data.
Companies manufacturing this kind of computer-telephone also include services which enable you to order airline and concert tickets, pay bills, bank electronically, and send e-mail and faxes by telephone.
(from BYTE Magazine, August 1993)

2 A new service from WalkSoft (Rochester, NY) takes electronic publishing a step further, delivering once a week via modem or disk a formatted 'newspaper' that includes colour pictures and animations. WalkSoft's *News In Motion* costs $250 for 52 issues - including telephone charges to download the data files, if you use a modem.

When you subscribe to *News In Motion,* WalkSoft provides software that includes everything you need to download, read, and search articles. Each issue is 700 KB

compressed or 1.4 MB uncompressed, which means it fits on a single disk.
(from 'Electronic publishing', Andy Reinhardt, *BYTE Magazine,* September 1993)

3   Virtual reality lets people interact with artificial objects and environments through three-dimensional computer simulation. In a VR system, you are hooked to a computer through a controlling device, such as a glove, and head-mounted displays give you the feeling of being propelled into an artificial 3D world. The computer brings to life events in a distant, virtual world using databases or real-time objects and sounds. Your senses are immersed in an illusionary, yet sensate, world.

VR can be applied to anything from video games, testing a motor vehicle, visiting a virtual exhibition, to checking out imaginary kitchen designs.

4 Video teleconferencing is a new technology that allows organizations to create 'virtual' meetings with participants in multiple locations.

A video teleconferencing system combines data, voice and video. Participants see colour images of each other, accompanied by audio, and they can exchange textual and graphical information.

In video teleconferencing, images are captured by computer-mounted cameras. Video processors digitize and compress the images, which are transmitted over a network bidirectionally. Data and sound travel via telephone lines.

B   Write a suitable caption under each picture. . .

C   Match the terms below with the explanations and definitions on the right.

1   electronic publishing   a) to transfer a file from one
computer to another
2   to download over the telephone line
3   virtual reality   b) technology that integrates data,
sound and
4 to compress files   video. The participants in
different/distance   .
5   video teleconferencing   virtual places hold a meeting, as if
they   were

                                                       face-to-face.
                                        c) to squeeze data into smaller files by
                                        coding it   to specific formats that take
                                        less space
                                                d) distributing magazines and
newspapers

electronically via a modem or disk, instead of   using paper

e) technology that allows users to see a computer-

simulated world in which he or she can move

2   Get ready for listening

Look at the computer in the photo and answer the questions about it.

1   What is different about this computer?
2   How can you enter information?
3   What kind of screen do you think it has: a cathode ray tube (CRT) or a liquid-crystal display (LCD)?
4 What sort of power supply do you think it uses?
5   If you had one, what would you do with it?

3 Listening

K^Л **Listen to this interview \with Tom Bryant, a writer with a computer magazine. Are the following sentences true (T) or false** (F)?

1   A pen-based interface uses an electronic stylus as an input device.
2   Pen computers do not require specialized operating systems to recognize pen gestures and characters.
3   Pen computers come with operating systems that can be trained to recognize handwriting.
4   Some pen computers are more powerful than desktop PCs.
5   A Personal Digital Assistant is a hand-held pen computer designed to organize and communicate personal information.
6 You cannot transmit data from pen computers to desktop PCs and peripherals.
7   Business people will make up a large section of the pen computer market.

**B   Read this extract from the interview and fill in the missing words.
     The first letter of each missing word is given.**

Interviewer: Can you explain how a (1) p .... computer works?

Tom Bryant: Sure. A pen computer usually (2) r .... on rechargeable alkaline batteries. You hold the computer with one hand and with the other you use an electronic (3) s............................

to write, draw and make selections on a flat LCD (4) s ....

Interviewer: That means it doesn't have a keyboard.

Tom Bryant: That's right. You write (5) i... with the

stylus
like a pen.

Interviewer: And how does the computer (6) r .... what you
write? -

Tom Bryant: It reads the (7) p .... of the pen and sends signals to the screen. The computer then translates the movements of the pen into characters or performs the functions like 'delete'. The operating system recognizes specific gestures
like drawing a circle or crossing out a (8) w ....

Interviewer: Can these operating systems really recognize
(9) h...?

Tom Bryant: Yes, they can. Software systems like Pen Windows from Microsoft and PenPoint from Go Corp. can be trained to recognize
(10) c .... written in your own handwriting.

Ë5У **Now listen again and check your answers.**

C   How do you say these expressions in your language?

1 rechargeable alkaline batteries
2 a flat LCD screen
3 a pen-based interface
4 handwriting recognition
5 a Personal Digital Assistant
6 an infra-red port
7 a portable supplement

4 Discussion

In small groups, discuss these questions. Then prepare a short report for the class.

1   What are the most important differences between traditional PCs and pen-operated computers?
2   Now that you know more about pen computers, can you think of any other potential uses for them?
3   What are the advantages and limitations of a pen-based interface?
4   Should students be allowed to use pen computers in class?
5   Do you agree with this statement: 'The PC of the future will resemble EO's hand-held communicator and Apple's Newton Personal Digital Assistant'?

Apple's Newton MessagePad is like an electronic notebook and is about the same size as a personal organizer. It is a Personal Digital Assistant, with an impressive

ability to recognize handwriting and communicate with other computers. Data can be sent via an infrared link to another MessagePad, transferred by cable to a desktop computer, output on a printer or transmitted to an e-mail service

5 Language work: Making predictions

Read the box on the right and then expand these sentences using the future perfect tense.

1   In ten years' time / a lot of people / connect their television to the telephone line
2   Portable computers / replace / desktop computers / in a few years' time
3   With the help of computers / doctors / find / cure / AIDS and cancer / by the year 2005
4 By this time next year / software manufacturers / make / hundreds of new programs
5   By 2020 / post offices and bookshops / disappear
6   By this time next year /I/ buy / pen computer

Making predictions

• Future with *will/shall A computer program will be the world chess champion.*
• Future continuous *(will be* + present participle) *In twenty years' time, some people will be living in space, inside a computerized colony.*
• Future perfect *(will have* + past participle)
By 2020, new technology will have revolutionized communications.
• Special structures
- Possibility *(may/might/could)*
Scientists may discover new electronic components.
- Probability *(likely to)*
Talking machines are likely to be built
- Certainty *(certainly, definitely, certain to)*
Working hours will definitely become shorter with the help of computers. Prices are certain to go up.

B   Here are some predictions made by an intelligent supercomputer. In small groups, -write your own predictions.

• Work/Jobs
e.g. *By the year 2030 human labour in industry will have been replaced by robots.*
Yours: ....
• Homes
e.g. *Most families will have robots to do the housework.* Yours:
....
• Education/Schools

e.g. *By the end of the next century, every student in every school in the world will have a PC.*
Yours: ....
• Money/Holidays
e.g. *Most families will have videotex systems, with which they can shop and make financial transactions. Cash will disappear.*
Yours: ....

Notes for Student A
Unit 6 Task 4   Speaking

Read these notes about two input devices. Then describe them to your partner. He/she has to guess what you are describing. Begin: 'This device is ...

1 — scans text and pictures
    - sends digitized image to computer
2 - allows you to control computer vocally
- spoken commands do what is normally done with keyboard/mouse

Now listen to your partner and guess -which input devices he/she is describing.

Unit 19   Task 6   Speaking

A   Look at the graph below and describe it to your partner. Then answer your partner's questions.
Useful constructions:

This is a two-/ three-dimensional representation of...
In 1994, they paid £.. .for ...
They spent £... on ...
As for ..., that cost them ...

communications
new furniture
repairs
gas/electricity
office supplies
books
technical equipment

Graph 1   The 1994 expenditure of Lancashire College expressed in pounds

B   Now look at this graph and listen to your partner's description of it. Ask questions so that you can complete the graph.

Graph 2   The 1994 expenditure of the Brownfamily expressed in pounds

Unit 20 Task 5   Computers for newspapers

B   Read the information on the next page which Katherine Powell received from *El Independiente* and tell your partner about:

• the hardware used to produce the newspaper:
— computers on the network.
— printers.
— data communication systems.
• the software used to:
— edit text.
— create illustrations.
— manipulate photographs.
— design the pages.

Notes for Student A
EL Independiente

• Hardware:
• The newspaper is written and edited on PCs and Macintosh computers.
• Several Micro VAX servers (with 64 MB of RAM, and 1 GB hard disk) are dedicated to managing communications on the network and storing common files.
• Black-and-white proofs are printed by Epson ink-jet and laser printers. The final product is printed by photosetters (imagesetters).
• Different data communications systems — fax machines, electronic mail, etc. — are used to communicate with newspaper correspondents.
• Software:
• The text is typed and edited with compatible word processors.
• The illustrations (diagrams, charts, etc.) are created with Freehand, Illustrator and MacDraw.
• The photographs are corrected with Adobe Photoshop (image manipulation software).
• The page-layout is designed with QuarkXPress. The text is imported and flowed into columns. The artwork and graphics are imported, resized, cropped and placed in the layout.

Your partner has the information which another newspaper — *Le Matin* sent to Katherine Powell. Listen to your partner tell you about it and complete the

fact file below.

Le Matin the newspaper: • The hardware used to produce	
— peripherals:	
• The software used to: — edit text:	
— produce graphics:	
- arrange text and pictures on the page	....
O *1*	*1* O

Unit 23 Task *3*   Speaking

Complete the table on the next page by asking for information, like this:

-What does 'FORTRAN' mean?
-'FORTRAN' stands for ...
-When was FORTRAN developed?
-In...
-What's it used for?
—It's used for ...
—What features has it got?
-It's a combination of algebraic formulae and English phrases. It's difficult to learn.

Answer your partner's questions too.

Language	Date of development	Characteristics	Use /function
• FORTRAN (FORmula TRANslation)	• 1954-56	• Has combination of algebraic formulae and English phrases. • Difficult to learn.	• Problem-oriented language for scientific and mathematical use.
• COBOL	• 1958-59	• • •	applications.
• PASCAL (Named after ....)	•	• Structured language with algorithmic features • A fast compiler called TurboPascal was created in 1982. Very popular.	• •
• LOGO	• 1969	• Easy to learn. • Flexible: it can do maths, make lists, construct	•

		graphics, etc. • Its drawing capabilities allow children to construct simple graphics programs.	
• • LISt Processing O	• 1959	• •	• Developed to work on and analysing text.
• PROLOG • • Implemented by................	•	• Has its roots in specify 'how' something *i* *J* O is done, but 'what' is to be done, describing ' o situations and problems.	• •

Notes for Student B

Unit 6 Task 4   Speaking

Listen to your partner and guess -which input devices he/she is describing. Now use these notes to describe two input devices to Student A.

1 stationary device
— controls the cursor and selects items on the screen
— works like upside-down mouse
— ball on top turned round with fingers
2 graphics tool
— lets you interact with computer
— you move pressure-stylus across the surface of a tablet   *
— creates graphics

Unit 19 Task 6   Speaking

A   Look at this graph and listen to your partner's description of it. Ask questions so that you can complete the graph.

communications
new furniture
repairs
gas/electricity
office supplies
books
technical equipment

Graph 1   The 1994 expenditure of Lancashire College expressed in pounds

B   Now look at this graph and describe it to your partner. Then answer your partner's questions.
Useful constructions:
*This is a two-/ three-dimensional representation of... In 1994, they paid £ ...for ...
They spent £... on ... As for ..., that cost them ...*

Graph 2   The 1994 expenditure of the Brownfamiiy expressed in pounds

Unit 20 Task 5   Computers for newspapers

B   Your partner has the information which *El Independiente* sent to Katherine Powell. Listen to your partner tell you about it and complete the fact file below.
El Independiente
• The hardware used to produce the newspaper:
- computers on the network: ....
— printers: ....
— data communication systems:
— The software used to:

— edit text: ....
— create illustrations: ....
— manipulate photographs: ....
— design the pages: ....

Katherine Powell also sent a similar letter to *Le Matin*. Read the information they provided and tell your partner about:

• the hardware used to produce the newspaper:
— computers on the network.
— peripherals.
— data communication systems.
• the software used to:
— edit text.
— produce graphics.
— arrange text and pictures on the page.
The system is based on an Ethernet network: several Intel 486 computers running at 33 MHz are connected to a file server Pentium (at 150 MHz), with 1 GB of storage capacity.
All kinds of peripherals are interconnected over the network (scanners, laser printers, photosetters, faxes, etc.).
The newspaper is connected via a modem to other papers of the 'Z' group.
Photographs are received via satellite.
The text is written and edited with WordPerfect word-processing software.
The graphics are produced on Macintosh computers with commercial packages such as Adohe Illustrator and Canvas from Deneba Systems.
Words, pictures, graphs and tables are imported and arranged on the page by Ventura Publisher, a DTP package.

Unit 23 Task 3   Speaking

Complete the table on the next page by asking for information, like this:

- What does'FORTRAN'mean?
- 'FORTRAN'stands for...
- When was it developed?
- In...
- What's it used for?
- It's used for ...
- What features has it got?
- It's a combination of algebraic formulae and English phrases. It's difficult to learn.

Answer your partner's questions too.

Language	Date of development	Characteristics	Use/function
• FORTRAN (FORmula TRANslation)	• 1954-56	* Has combination of algebraic formulae and English phrases. • Difficult to learn.	• Problem-oriented language for scientific and mathematical use.
• (COmmon Business Oriented Language)	•	• Easy to read. • Able to handle very large *J* o data files. • Written in English.	•
• • (Named after the famous scientist Blaise Pascal.)	• 1970-73	• • 	• Often used in colleges and O universities to teach programming. i^ o o
• LOGO	•	• • •	• Designed for use in schools experiment with programming.

			;
• LISP	•		•
•		numeric data). • Numerous commercially available LISP implementations.	•
• • PROsrammi nff o o in LOGic • Implemented by David Warren in the mid 1970s.	• Early 1970s	• • 	• For AI research. development of fifth- generation computers.

Glossary

acceleration card /sk.sela'reijan ,ka:d/ *n*
Л board that increases the speed of the processor.

access time /'skses ,taim/ *n* The average time required for the read/write head to move and have access to data; measured in milliseconds. Also known as 'seek time'.

acoustic coupler/З,ku:stik '1елр1э(г)/яA type of modem which allows an ordinary telephone receiver to be used for connecting a computer to the telephone network.

ADA/'eida/ A programming language developed for the US Department of Defense, named after Lord Byron's daughter Augusta Ada, who worked with Charles Babbage and is not unjustly described as the first programmer.

additive colour /'a^drtiv ,1сл1э/ *n* A colour model on cathode ray tube displays.

address /З'dres/ *n* A code number that identifies the location of stored information.

Adobe Systems /a'daubi .sistamz/ Creators of the PostScript language and the Illustrator application, and suppliers of fonts for use with PostScript printers.

algorithm /'ш!дэпбт/ *n* A series of instructions or a step-by-step procedure for the solution of a problem.

animation /,<eni'meij3n/ *n* The process of creating and recording images that change over time.

application generator /.spli'keijgn 4зепэгеПэ/ *n* A tool that allows applications to be created interactively. Frequently includes a fourth-generation language and a database management system.

application program / aspli keijsn ,ргэодгсет/ *n* A program which executes a specific task, such as word processing, database management or financial planning.

Arithmetic Logic Unit (ALU) /З,n6m3tik 'Indjik jumit/ n A component of the **CPU** which performs the actual arithmetic and logical operations asked for by a program.

arrow keys /'<егэи ,ki:z/ *n* Direction or cursor keys that allow the user to move the insertion point around the screen.

assembler /З'sembb(r)/ и A special program that converts a program written in a low-level language into machine code.

assembly language /З'sembh Ja *n* A low-level language in which instructions are the mnemonic equivalent of the code understood by the machine. Used for specialized applications where speed or compactness of code is the most important consideration.

AT-compatible /,ei,ti: ksm'pEetsbsl/ *adjA* computer which can run the same software as the IBM PC-AT, the model introduced by IBM in 1 984.

attributes /'stnbjuits/ *n* Characteristics that affect the visual representation of lines and polygons, e.g. line styles, rectangle colour, etc.

B

backing store /tekirj ,sto:/ и A storage device with a larger capacity but slower access time than the main memory. This type of memory is stable. It can be in the form of'hard disks, floppy disks, tapes or optical disks.

back-up /'ba^kAp/ *n* A copy of data or software, usually kept in case the original disk is damaged.

back up /'bsk 'лр/ *v* To copy files from one-disk to another.

batch processing /tetj prsosesirj/ *n* Л method of information processing in which transactions are prepared for input to the computer for processing as a single unit. There may be some delay between the occurrence of the original events and the processing of data. Compare with **real time.**

baud /bo:d/ *n* A unit for measuring the rate of data transmission. One baud = 1 bit per second. Named after Baudot, a pioneer of telegraphic communication.

binary digit /'Ъатэп .didyt/ и The smallest unit of information in the binary system, 0 or 1 . Also called **bit.**

binary system /'Ъатэп ,sist3m/ и A notation system in which the base for each digital position is 2. In this system numbers are represented by the two digits 0 and 1 . Thus the binary number 1 0 represents 2 in the decimal system, while 1 00 represents 4.

bit-mapped display /'bitmspt dis.plei/ *n* A display that stores pixel information in RAM memory cells.

boot /bu:t/ *v* To start up a computer.

bridge /bndj/ и A device used to connect groups of computers.

browser /'brauzg(r)/ и A program designed to fetch and display Web pages on the Internet.

bug /Ълд/ *n* An error in a program.

bulletin board /'bubtm ,bo:d/ *n* An online service that allows users to access and send information to other users quickly and easily. Any users who want to send or read messages dial up with their PC and modem combination to the central bulletin board system. Once connected they can share information anoS files using various facilities. Bulletin board systems (BBS) offer more than standard e-mail facilities in which messages are private.

bus /bAS/ n A channel, or highway, which carries signals between units in the CPU.

byte /bait/ *n* A unit of information which consists of a fixed number of bits (usually 1 byte — 8 bits). A byte can represent any value from 0 to 255. The sequence of bits in a byte represents an instruction, letter, number or any other character. Compare with **kilobyte, megabyte, gigabyte, terabyte.**

cathode ray tube (CRT) /,kie69ud 'rei tjuib/ *n* The picture tube of the display, which is made of glass and contains a vacuum. In a monochrome monitor, the electron beam scans the screen and turns on or off the pixels that make up the black-and-white image. In a colour monitor, the screen surface is coated with triads of red, green and blue phosphor. Three electron guns energize the phosphor dots, causing them to emit coloured light from which the picture is formed.

cell /sel/ *n* An intersection of a column and a row in a spreadsheet.

central processing unit (CPU) /.sentral 'prausesirj juaut/ *n* The 'brain' of the computer. Its function is to execute programs stored in the main memory by fetching their instructions, examining them and then executing them one after another. Its basic components are the control unit, the arithmetic logic unit and the registers. The CPU of a microcomputer is built into a single microprocessor chip.

character /'ksnkta(r)/ *n* A symbol available on the keyboard (letter, number or blank space).

chip /tjip/ *n* A tiny piece of silicon containing complex electronic circuits. Chips are used to make the hardware components of a computer.

Chooser /'tju;zs(r)/ я A desk accessory supplied by Apple and used to select the printer you wish to use.

Clipart /'klipait/ я Images shipped with graphics packages.

Clipboard /klipboid/ *n* A holding place for text or graphics that you have just cut or copied.

coding /'kaudirj/ и The process of writing instructions for a computer.

colour palette /']сл1э .paelit/ *n* The collection of colours available in a system. Its size depends on the hardware.

command /ks'mamd/ *n* An order which the computer can obey. Synonymous with 'instruction'.

compact disk /kam'piekt .disk/ *n* A storage device which uses optical laser techniques and which provides mass storage capacity.

compatibility /kampreta'biliti/ *n* This is said to exist between two computers if programs can be run on both without any change; it also refers to those applications that are executed in specific types of computers; these applications are 'compatible' with the computer.

compiler /kam'pailafr)/ я A special program that converts a source program (written in a high-level language) into an object program (written in a lower-level language).

configuration /kan.figju'reijgn/ *n* The physical components of a computer system.

control unit (CU) /kan'traul jumit/ *n* A component of the CPU which coordinates all the other parts of the computer system. This unit is also responsible for fetching instructions from the main memory and determining their type.

co-processor /kguprausesgfr)/ я A silicon chip which performs precise tasks and mathematical operations very rapidly. Sometimes it is called the 'floating-point unit' or FPU.

crash /kraej/ 1 я A serious faUure which usually requires operator attention before the computer system can be restarted. 2 *v* When a hard disk system fails, it is said to have **'crashed'.**

D

data /'delta/ *n* Information to be processed by a computer program. **Data processing** is the performing ol operations on data to obtain information or solutions to a problem.

database /'deitabeis/ *n* A file of structured data.

database program /'deitabeis ргэидгэгт/ *n* An applications program used to store, organize and retrieve a large collection of data. Among other facilities, data can be searched, sorted and updated.

data communication system /.delta kg.mjurni'keifan .sistam/ и A computer system connected by telecommunications links (for data transmission).

data transfer rate /,deit3 tramsfa reit/ *n* The average speed required to transmit data from a disk system to the main memory Usually measured in megabits per second.

debug /di:'t)Ag/ *v* To correct program errors or 'bugs'.

debugger /dii'bAga/ *n* A tool which lets the user follow the execution of programs one statement at a time, in order to help find errors in the code.

default font /di'foilt .font/ *n* A font used by the system until another font is chosen from the menu.

desk accessory /,desk ak'sessn/ *n* A mini-application available on the Apple Menu. Examples: Calculator, Clock, Scrapbook.

desktop /'desktop/ *n* An area of work - the menu bar and other sections of the screen.

desktop publishing (DTP) /.desktop 'рлЬЬГщ/ *я* The use of a computer system for all steps of document production, including typing, editing, graphics and printing.

dialog box /'daialog ,boks/ *n* A message box requiring information from the user.

directory /,dai-, .di'rektsn/ *n* Дп alphabetical or chronological list of the contents (files) of a disk. Also known as **catalogue.**

disk /disk/ *n* A storage device made of flat circular plates with magnetizable surfaces. Sec **floppy, hard** and **optical disks.**

disk drive /'disk draiv/ *n* The electronic mechanism that actually reads what is on a disk. If we are talking about hard disks, the disk and the drive are built into a single unit (hard disk = hard drive). If we are talking about floppies, the disk drive is the slot into which you insert a floppy disk.

dithering /'diSgnrj/ *n* The process of mixing two colours to produce an approximation to another colour. By using this shading technique, the human eye will blend the colours, increasing the apparent number of colours on the screen.

dot matrix /'dot ,ma3tnks/ *n* A regular pattern of dots; conventionally used to refer to **dot-matrix printers** which, instead of printing formed characters, print an array of dots. There are two main types of dot-matrix printers: the 9-pin and the 24-pin. The two most important emulations for these printers are Epson and IBM Proprinter.

download /'daunlaud/ *v* To transfer a file from one computer to another over the telephone.

edit /'edit/ *v* To make changes and corrections to text and graphics. Well-known editing techniques are: 'select', 'undo', 'copy', 'cut' and 'paste' a portion of text.

electronic mail (e-mail) /.elektronik 'med/ *n* A facility which allows users to exchange messages electronically.
Here is a typical e-mail address: leo@sendanet.es
'leo' is the user name. @ means "at",
'sendanet' is the Internet service provider,
and 'es' means the server is based in Espafla
(Spain).

EPS format /i:pi:'es ,fb:mst/ *n* A file format that stands for 'Encapsulated PostScript'. It stores a file in a form that can be imported into a different file.

execute /'eksikjuit/ *a* To perform the operations specified by a routine or instruction. **Execute a program:** run a program in a computer.

expansion slots /ik'spa^nfan slots/ *я* The connectors that allow the user to install expansion boards to improve the computer's performance.

fault tolerance /fo:lt ,ш1эгэп5/ я A technique to protect data from hardware failures such as disk crashes, bad controllers or the destruction of important information on a file server. Fault-tolerant systems are essential for LAN installations.

fax /fasks/ *n* A facsimile machine that operates by scanning a document so that the image is sent to a receiving machine which produces a copy of the original.

field /fiild/ я A unit of information in a 'record'. In a database, information is entered via fields.

file /fail/ я 1 A collection of records (in a database). 2 A section of information stored on disk - a document or an application.

file compression /fail ksm.prejsn/ *n* The encoding of a file into a more compact format so that it occupies less disk space.

file server /'fail ,S3:va/ я The combination of a software controller and a
mass storage device which allows various users to share common files and applications (in a network).

firmware /'faimwes/ *n* Permanent software instructions contained in the ROM.

floppy disk /.flopl 'disk/ *n* A disk made of a flexible plastic material upon which data is stored on magnetic tracks.

flowchart /'fbutjurt/ л A diagram or symbolic representation which shows the logical steps of a computer program.

flush /fbvf/ *n* A line of type is said to be 'flush' when there is no space between it and a reference line. For example, text that is 'flush left' is aligned with the left margin of a page.

folder /'faulda/ *n* A holder of documents, applications and other folders on the Macintosh desktop. Folders (similar to subdirectories in other systems) allow you to organize information in different levels.

font /font/ *n* The shape, style and size of a particular typeface, e.g. Times Bold at 10 pt; **resident font** /'rezidsnt ,fnnt/ *n* A font included in a laser printer's memory. (If a font is not resident the printer has to load it from the computer, which takes up RAM from the printer.)

font formats:
— PostScript Type 1 & 2, scalable font formats from Adobe Systems.
— Speedo, scalable font format from Bitstream.
— Truetype, scalable font format from Apple and Microsoft.

format /'foimaet/ 1 *n* The layout of a document, including page numbers, line spaces, margins, paragraph alignment, headers and footers, etc. **2 format a disk** *v* To prepare a disk for use. When a disk is initialized, the operating system marks tracks and sectors on its surface.

fragmentation /.fraegmen'teijan/ *n* Disk performance can be affected by fragmentation. When the operating system cannot find enough contiguous space to store a complete file, the file is divided into several separated fragments. As disk fragmentation increases, disk efficiency starts decreasing.

function key /'fAijkJan ,ki:/ *n* A key on a computer keyboard which causes a specific operation to take place, other than the entry of a standard character. What function keys do depends on the program.

gateway /'geitwei/ *n* A device used to interconnect different types of networks.

gigabyte /'dsaigsbait/ л 1024 megabytes.

graphics tablet /'grarfiks ,tsblit/ л An input device which allows the user to specify a position on the screen by using a stylus. Tablets are more accurate than other devices.

graphical user interface (GUI) /.grsfiksl ju:zsr intgfeis/ л An operating environment based on graphics (windows, icons, pop-up menus), mouse and pointer, e.g. the Macintosh system, Microsoft Windows, IBM OS/2 Presentation Manager or OSF Motif.

graphics package /'grrfiks ,рагЫз/ л Software that allows the user to create and run graphics programs.

H

hacker /'hcek9(r)/ *n* Someone who invades a network's privacy.

hard disk /,ha:d 'disk/ *n* A disk made from a solid magnetic material used as a storage device. There are different versions: fixed (internal, external), removable, etc. Compare with **optical disks.**

hardware /'hcndwes/ л The physical units which make up a computer system. See **software.**

hexadecimal system /.heksa'desimal ,SISt9in/ л The notation of numbers to the base of 16. The ten decimal digits 0 to 9 are used, and in addition six more digits — A, B,C,D,E and F-to represent lOto 15.

high-level language /,hai ,levsl
л A language in which each statement represents several machine code instructions, e.g. FORTRAN, COBOL, LISP, etc.

hyphenation /.haifa'neijsn/ *n* The division of words into syllables by a short dash'-' or hyphen. To produce lines of equal length, word processors hyphenate words instead of stretching word spaces too much.

icon /'aikon/ л Л small picture representing
an object, process or function. **inch** /mtf/ я The equivalent of 2.54 cm, or
72.27 points. **indentation** /.mden'teijan/ л This moves
the edge of the text away from the margins
towards the centre of the page. **INITs** /'mils/ л System utilities activated
when the computer is turned on. **ink-jet printer** /irjk dset ,рпп1э(г)/ л A
printer that generates an image by
spraying tiny droplets of ink at the paper.
By heating the ink within the print head,
individual drops are expelled to make a
matrix of dots on the paper.

input /'input/ 1 л The process of transferring information into the memory from some peripheral unit. 2 *v* To transfer data, or program instructions, into the computer.

input devices /input diyaisiz/ л Units of hardware which allow the user to enter information into the computer, e.g. the keyboard, mouse, trackball, lightpen, graphics tablet, voice recognition devices.

integrated package /.mtsgreitid 'peekidj/ я Software which includes a family of

applications - typically spreadsheet, word processor, database, graphics and communications modules. The modules are linked by a common user interface.

interface /'mtafeis/ л Channels and control circuits which provide a connection between the CPU and the peripherals. See also **user interface.**

internal memory /т'1з:пэ1 ,тетэп/ и Sec **main memory.**

Internet /'mtgnet/ и A global network of computer networks which facilitates data communication services such as e-mail, file transfer, information retrieval and newsgroups.

interpreter /т'1з:рШэ/ л A programming environment that executes statements directly, avoiding the need for compilation.

Java /'d3Q:V3/ л The cross-platform programming language from Sun Microsystems for building Internet applications.

joystick /'djoistik/ л An input device with a vertical lever used in computer games to move the cursor around the screen.

justification /.djAStifi'keiJan/ *n* The process by which the space between the words and letters in a line of type is evenly divided to produce a line that is flush with both left and right margin.

K

kerning /'kainirj/ л The process of adjusting the spaces between letters to achieve even, consistent letter spacing.

keyboard /'ki:bo:d/ л An input device with typewriter keys for letters, numbers and line controllers. It may also have function keys for special purposes.

kilobyte /'kilgubait/ и A unit for measuring the memory or disk space in thousands of bytes. Also called k = $2^{1\{1}$ = 1024 bytes.

laptop /'Iseptop/ *n* A small type of portable computer.

laser printer /leiza ,рпп1э(г)/ л A nonimpact printer that takes in data from the computer and builds up an image of the page in its own internal memory. A laser beam traces the image's dot pattern onto a rotating photosensitive drum, placing a static charge on the exposed areas. As the drum rotates, the toner particles are attracted to the charged areas. Then an electrically-charged wire pulls the toner particles off the drum, and they fall onto the paper.

lightpen /laitpen/ *n* A highly sensitive photo-electric device which uses the CRT screen as the positioning reference. The user can pass the pen over the surface of the screen to detect, draw or modify images displayed on the screen.

load /laud/ *v* To read program instructions into the main memory.

Local Area Network (LAN) /,1эи1сэ1 ,еэпэ 'netwsik (1геп)/ л A network contained in a relatively small area.

low-level language /,1эи Деуэ! 'lasrjgwidj/ *n* A language in which each instruction has a corresponding machine code equivalent.

M

machine code /ma'Jim kaud/ *n* Binary code numbers, the only language that computers can understand directly.

macro /'maskreu/ *n* 1 An abbreviation for 'macro-instruction'. 2 A stored set of commands, control sequences or definitions that is substituted for the macro name

when that name is invoked.

mail merging /'meil ˌтз:ёз1П/ *n* The process of combining a database file with a word processor to personalize a standard letter.

mainframe /'memfreim/ *n* The largest and most powerful type of computers. Mainframes process enormous amounts of data and are used in large installations.

main memory /ˌmem 'тетэп/ *я* The section which holds the instructions and data currently being processed; also referred to as the 'immediate access store', 'primary memory' or 'internal memory'. Microcomputers make use of two types of internal memory: RAM and ROM.

megabit /'megabit/ *n* A million binary digits; used to refer to storage devices.

megabyte /'meggbait/ *n* 1024 kilobytes.

megahertz /'megahsits/ *n* A unit of a million cycles per second used to measure processor speed.

menu bar /'menjui ˌbai/ *я* The area at the top of the screen which allows access to the various menus.

microchip /'maikrau.tjip/ *n* See **chip**

microprocessor ^maikrau'preusesafr)/ *n* A chip, or integrated circuit, that processes the instructions provided by the software.

mnemonic /ni'monik/ *n* A label or abbreviation used to make words easier to remember.

modem /'maudem/ *n* A device attached to a computer and the telephone line allowing access to wide networks. Standard telephone lines carry analogue signals, so the digital signals used by computers must be converted into the correct form by means of a modem.

monitor /'топйэ(г)/ *n* A CRT device which displays the computer output. **Monochrome** monitors display one colour at a time, in contrast to **colour** monitors which can display many different colours at the same time.

mouse /maus/ *n* A small input device with a ball underneath that is rolled by the user to specify the position of the cursor or to make choices from the menu.

multimedia /mAlti'miidra/ *я* This refers

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to the mtegrajjJDn ot existing technologies of audio, video, animation and telecommunications with computing. Multimedia applications are also known as **hypermedia.**

multitasking /.mAlti'tarskin/ *n* The execution of several tasks at the same time.

N

network /'netwaik/ *n* A system of computer devices (e.g. CPUs, printers) or 'nodes' interconnected so that information and resources can be shared by a large number of users.

newsgroups /'гушгдгшр/ *л* The public discussion areas which make up Usenet.

node /ti9ud/ *л* A point on a junction of communication lines in a network. In a communications network, various computer devices **(nodes)** are interconnected to permit information to be interchanged between those devices.

O

object language /'obdpkt ˌlasrjgwid3/ *я* A language or set of instructions into

which a **source language** is translated by a compiler.

object-oriented programming /'obdsikt pinentid ргэидггегшп/ я A programming technique that allows the creation of'objects' which can be reused, or used as the foundation of others. Used
to develop complex programs, especially GUI programs.

octal system /'oktgl ,sist3m/ *n* The notation of numbers using 8 as a base or radix.

operating system /'npareitir) .sistam/ я The programs and routines which allow a computer to operate; it usually consists of a group of programs which coordinate the software and hardware of a computer system.

optical character recognition /.nptiksl ,ka;nkt3 rekag.nijan/ я Technology that allows computers to recognize text input into a system with a scanner. After a page has been scanned, an OCR program identifies fonts, styles and graphic areas.

optical disk /pptrksl 'disk/ л A storage device in which data is recorded as microscopic 'pits' by a laser beam. The data is read by photoelectric sensors which do not make active contact with the storage medium.

optical fibre cable /'optikal 'faiba ,keibgl/ л A type of cable that guides light impulses at high frequencies along the glass fibre.

output /'autput/ 1 л The results produced by a computer. 2 *v* To transfer information from a CPU to an output device.

output devices /'autput di.vaisiz/ л The units of hardware which display the results produced by the computer (e.g. plotters, printers, monitors).

page description language /rjeidj dis'knp Гэп .terjgwids/ я A computer language that describes how to print the text and images on each page of the document.

parallel port /,разгэ1е1 'po:t/ я An interface port on a printer used to communicate with the computer. It transmits and receives 8 bits of data side by side. Compare with **serial port.**

Pascal /paestel/ A high-level language, named after Blaise Pascal.

password /'pdiswsrd/ я A secret word which must be entered before access is given to a computer system.

patterns /'pxtanz/ л A menu or palette from which the user can pick the required pattern to fill shapes and draw borders.

peripherals /ps'rifaralz/ я The units connected to the CPU: input devices, output devices and storage devices.

phosphor /'fbsfar/ л The material or substance of the CRT screen that lights up when struck by an electron beam.

photosetter /feutgu.seta/ л A printer that
sets type by a photographic process or on photographic film that allows for high resolution.

pica /'paika/ *n* A unit of 4.23 mm used in typography.

piracy /'paiaresi/ *n* The illegal copying of programs.

pixel /'ptkssl/ *n* The smallest element of a display surface. In monochrome monitors, one pixel is the visual representation of a bit in the refresh buffer (the memory used for storing the picture for screen refresh). The pixel is white if the bit is 0, and black if the bit is 1. In colour monitors, each pixel can represent various bits.

platform /'plaetfoim/ *n* A type of computer system, e.g. IBM PCs and compatibles, Macintosh computers.

plot /pltjt/ *v* To draw lines connecting the points on a graph.

plotter /'pk>t9(r)/ *n* A very common graphics output device which is used to make various types of engineering drawings.

point /point/ *n* A unit used to measure font types and the distance between baselines. A point is a subdivision of a pica: there are 12 points in a pica and 72.27 points in an inch.

pointer /'рэт1э(г)/ *и* 1 A small picture that follows the mouse movements. 2 The cursor which locates the insertion point on the screen, i.e. indicates where the next character will be displayed.

port /port/ *n* A socket or channel in the rear panel of the computer into which you can plug a wide range of peripherals: modems, fax machines, hard drives, etc.

PostScript /'pgussknpt/ *n* A page description or graphics language developed by Adobe Systems Inc. A PostScript font is any font - such as Times or Helvetica - that is defined in the PostScript language.

primary colours /ргаппэп 'Ял1эг/ *n* These are red, green and blue in computers. Compare with the colours considered basic in inks (magenta, yellow and cyan).

primitives /'pnmitivz/ *и* The basic shapes used to construct graphical objects: lines, polygons, etc.

printer /'prmt3(r)/ *n* An output device which converts data into printed form. The output from a printer is referred to as a **print-out.** There are various types of printers: **daisywheel, laser, dot-matrix, ink-jet, thermal,** etc.

printer driver /'prints ,draivs(r)/ *я* A program installed to control a particular type of printer.

program /'ргэидгжт/ *n* A set of
instructions for solving a specific problem by computer. **Programming** is the process by which a set of instructions is produced for a computer to make it perform a specified task. The task can be anything from the solution to a mathematical problem to the production of a graphics package.

protocol /'prautakol/ *и* A set of rules which determine the formats by which information may be exchanged between different systems.

Q,

quit /kwit/ *v* To leave a program.

R

Random Access Memory (RAM) /,ггепёэт 'skses ,тетэп (гжга)/ «The part of the main memory which stores information temporarily while you are working. RAM requires a continuous power supply to retain information. Compare with ROM.

RAM cache *n* A certain amount of RAM memory which can be designated to store information that an application uses repeatedly.

Read-Only Memory (ROM) /,ri:d aunli ,тетэп (гот)/ *и* Chips of memory containing information which is present and permanent.

real-time /'пэ! ,taim/ *adj* involving the processing of data input to a system at almost the same time as the event which generates the data. Compare with **batch processing.**

reboot /n:'bu:t/ »To restart the computer.

record /'rekoid/ *n* A unit of a file consisting of a number of interrelated data elements (fields).

recording heads /n'koidiq ,hedz/ *и* The read/write heads of disk drives.

refresh rate /'nfrej reit/ *n* The number of times per second the display screen is scanned, creating the pixels. Also known as the 'scan rate'. (A refresh rate of 70 Hz or more is needed if flicker is to be avoided.)

register /'red3iste(r)/ *n* The component in the processor or other chip which holds the instruction from the memory while it is being executed.

resolution /,rez3'lu:j3n/ *и* The maximum number of pixels in the horizontal and vertical directions of the screen; also refers to the number of pixels per inch.

router /'ги:1э(г)/ *n* A device used to connect various LANs.

routine /ru;'ti:n/ *n* A piece of code which performs a specific function or task in the

operation of a program or system. **ruler icons** /'га:1эг .aikonz/ *n* Small graphics representing different format options - tab stops, paragraph alignment, line spacing, etc. - which are displayed in rows at the top of a Windows screen.

save /seiv/ *v* To copy information from the RAM to a disk.

scale /skeil/ *в* 1 To magnify or shrink a particular font in order to use it at a range of point sizes. 2 To make an object larger or smaller in any direction.

scanner /'sk£ena(r)/ «An input device that scans (reads) the image as a series of dots and introduces the information into the computer's memory. **Flatbed** scanners have a flat surface. **Slide** scanners work with 35 mm slides.

Scrapbook /'skrapbuk/ *n* A desk accessory in which you can keep images and text. You can copy, cut and paste frequently used pictures.

screen saver /'skrim servs(r)/ *и* A program that darkens the screen after you have not worked for several minutes. Designed to protect an unchanging image from burning into the screen, but used more often as a status symbol.

scroll /skreul/ *v* To move a document in its window by using scroll bars so that text in another part of the document is visible.

secondary memory /.sekandsn 'тетэп/ *и* See **backing store.**

sector /'sekta(r)/ *и* A part of a track or band of a magnetic disk.

serial port /,51эпэ1 'po;t/ *n* An interface port on a modem, mouse or printer used to communicate with the computer. It transmits and receives bits of data one after the other. Compare with **parallel port.**

shareware /'Jeswea/ *n* Programs that are distributed free, via an electronic bulletin board or on a disk from user groups. The programmer usually requests that you send £5 or £ 10 to him or her, but only if you like the software.

silicon chip /'srlikgn tjip/ *n* A device made up of a non-metallic semiconducting material (silicon), which contains a set of integrated circuits, with high-speed performance.

Single In-line Memory Modules (SIMMs) /.sirjgal т lam 'тетэп .modjuilz/ *n* Boards containing RAM chips, connected to the mainboard of the computer.

software /'srrftweg/ *n* Programs or

instructions executed by the computer. See **hardware.**

source program /'so:s ,praugra;m/ и A program written in a source language, i.e. a programming language which cannot be directly processed by the hardware but requires 'compilation' into an 'object program'.

spell checker /'spel ,tjeks/ *n* A utility to correct typing mistakes. Some programs are able to correct grammar and style.

spooler /'spude/ л A utility which makes it possible to send one document to the printer (by creating a temporary file for it) so that the user can work on another.

spreadsheet /'spredjkt/ л An application program for financial planning which allows the user to analyse information presented in tabular form, by manipulating rows and columns.

style /stall/ л A distinguishing visual characteristic of a typeface, e.g. plain text, italic, bold, etc.

subroutine /'SAbru:,ti:n/ *n* A set of instructions which performs a specific function of the program.

teletext /teh.tekst/ *n* A method of communicating information by using TV signals. An extra signal is broadcast with the TV picture and translated into text on the screen by a **decoder.**

telex /'teleks/ «An automatic exchange service which uses telegraphic equipment (e.g. teleprinters).

terabyte /'terabait/ и 1,024 gigabytes.

terminal /'1з:ттаэ1/ *n* A visual display unit where data may be input to or output from a data communications system.

thesaurus /6i'so:ras/ л A utility for searching synonyms and antonyms. Word finder.

three-dimensional (3D) /,0ri:-di'menjanal/ *adj'SD* drawings have depth.

token /'taukgn/ *n* A special unit of data which acts as a key on a Token Ring network; only the adapter in possession of the token can transmit on the network.

track /tr<ek/ *n* An area marked on the surface of a disk. When a disk is initialized, the operating system divides the surface of the disk into circular tracks, each one containing several sectors. A floppy disk usually contains 80 tracks. Tracks and sectors are used to organize the information stored on disk.

trackball /'traekbo:!/ *n* A stationary device that works like a mouse turned upside down. The ball spins freely to control the movement of the cursor on the screen.

transceiver /tra5n'zi:va(r)/ я A transmitter and **receiver:** a hardware component that sends and receives network signals.

transformation /.trasnsfa'meijgn/ я The manipulation of an object by moving, rotating or scaling it.

two-dimensional (20) / tu:-di'menjangl/ *adj* 2D drawings have no depth (they look flat).

typeface /'taipfeis/ л A set of visually-related shapes for the characters of a script. A **bit-mapped typeface** is one where the characters arc stored as images made up of dots. A bit-mapped typeface cannot be altered in size. A **scalable typeface** is one where the outline of the characters is stored with formulae which adjust the outline as the font is enlarged or shrunk.

typeset /taipsct/ » To set text as type.

U

Unix /'jumiks/ л A popular operating system designed by Bell Laboratories in the USA and widely adopted by many manufacturers.

update /Ap'deit/ *v* To correct, add or delete information in a file and thus ensure that the file reflects the latest situation.

upgrade /Ap'greid/ *v* To add or replace hardware or software in order to expand the computer's power.

Usenet /'juis.net/ я A large collection of discussion areas (called 'newsgroups') on the Internet.

user-friendly/ju:zs 'frendli/ *adj An* expression used to describe computers which are designed to be easy to use, by means of self-explanatory interaction between user and computer.

user interface / ju:zar intsfeis/ *n* The standard procedures for interaction with specific computers.

utility /ju:'tlllti/ л A small program designed to improve the performance of the system. The term 'system utility' refers to a diverse field covering anything from software designed to help you back up your hard disk or locate files, to anti-virus programs or routines used by the system.

videotex /Vidiaoteks/ л A viewdata service that uses telephone lines to transmit data and information; it provides services such as tele-banking and tele-shopping.

virtual interface /.vsitjugl 'mtafcis/ л A type of interface in which the user puts on a set of special goggles as a display, a controlling device (such as a glove) and a motion detector that allows a computer to sense when and how the user moves. What the user sees is an artificial, computer-generated world in which *he* or she can move.

virtual reality /,v3:tjual n'aelati/ л A computer-generated space in which the user interacts with artificial objects and environments through three-dimensional computer simulation. This is done by using sensory peripherals such as data gloves and head-mounted displays to give the feeling of being immersed into an illusionary, yet sensate, world.

virus /Varares/ я A piece of software which attaches itself to an application or file. Once you run an infected application, the virus quickly spreads to the system files and other software. Some viruses can delete files or destroy the contents of hard disks.

voxel /Vokssl/ л A volume element, analogous to pixels. In spatial-partitioning representations, a solid can be decomposed into cubic cells (voxels).

w

Web /web/ л A hypertext-based system by which you can navigate through the Internet. By using a special program known as a 'browser' you can find news, pictures, virtual museums, electronic magazines — any topic you can imagine. You travel through the Web pages by clicking on keywords that take you to other pages or other Web sites. It is also known as the World Wide Web or WWW.

Wide Area Network (WAN) /,waid ,eэпэ 'netwa:k (warn)/ я A network that extends outside a building or small area. For longdistance communications, LANs are usually connected into a WAN.

widow /'widsu/ я A single line ending a paragraph and appearing at the top of a printed page or column.

window /'wmdau/ я A rectangle on the desktop that displays information.

window-based /'wmdgu ,beist/ «aJ'This refers to an application or program whose interface is based around windows.

word processor /'ws:d ,prauses9(r)/ я An application that manipulates text and produces documents suitable for printing.

word wrap /'waid ,raep/ л An editing facility which automatically moves a word
. to the next line if there is not enough space for the complete word on the current line.

workstation /'wsiksteijsn/ л A computer system which usually includes a defined collection of input and output devices.

CÂU HỎI ÔN TẬP

Câu 1: Trình bày các từ vựng và ngữ pháp cơ bản của Tiếng Anh chuyên ngành Công nghệ thông tin?

Câu 2: Giải thích các thuật ngữ liên quan đến chuyên ngành máy tính?

TÀI LIỆU THAM KHẢO

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