

Державний вищий навчальний заклад  
“Українська академія банківської справи  
Національного банку України”  
Кафедра іноземних мов

# **ПРОФЕСІЙНО ОРІЄНТОВАНЕ ЧИТАННЯ**

## **READING FOR PROFESSIONAL PURPOSES**

Практичний посібник з англійської мови  
за професійним спрямуванням

Для студентів 1 курсу  
спеціальності “Економічна кібернетика”  
денної форми навчання

Суми  
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**Професійно** орієнтоване читання = Reading for Professional Purposes  
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Посібник розроблений відповідно до робочої навчальної програми курсу “Англійська мова за професійним спрямуванням” (модуль “Читання”) для спеціальності “Економічна кібернетика”. Запропоноване видання містить тексти та різноманітні завдання, які сприятимуть професійно-особистісному розвитку майбутніх спеціалістів з економічної кібернетики, а саме – формуванню їх професійної компетентності.

Може бути використаний на практичних заняттях з англійської мови за професійним спрямуванням, а також для організації самостійної та індивідуальної роботи студентів.

Призначений для студентів 1 курсу спеціальності “Економічна кібернетика” денної форми навчання.

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## FOREWORD

‘Reading for Professional Purposes’ is intended for the students who study the English of Economic Cybernetics for their professional needs. It integrates and develops the students’ linguistic competence in business reading and writing. The focus is on job-related users of language with strong emphasis on the productive skills.

Reading is one of the most necessary skills for students of Economic Cybernetics. Knowledge of lexis and awareness of textual features will be helpful in their professional activity. Texts need to be selected and tasks designed both to provide support for what students already know in the subject and to extend their language knowledge and proficiency in reading skills. Each student uses an individual mix of processing strategies in relation to a particular text and topic. Teachers will need to combine awareness of what happens in the reading process with knowledge of their students, in order to decide on appropriate objectives and procedures for reading module.

7 topic based units cover key areas such as computer uses and applications, networks, the internet, multimedia, programming, and future trends. Key language and vocabulary is presented via a range of authentic contexts and the four skills are developed in areas of practical use in professional situations.

## **INTRODUCTION: KEY CONCEPTS OF MODULE DESIGN**

Students in Economic Cybernetics and Informatics are trained as economic analysts to manage and make decisions in the socio-economic life by employing modern information technologies. It enables students to qualify for management positions in business informatics and informatization of economic entities.

**MODULE AIM** is to enable students to develop an ability to find, extract and process relevant information from a text related to the sphere of Information Technology.

**MODULE OBJECTIVES** are defined in terms of skills and competences learners are supposed to acquire by the end of the course.

### **Language skills**

By the end of the course students will be able to:

#### ***Reading***

- understand authentic texts related to Information Technologies (IT): textbooks, newspapers, magazines, specialist journals or Web-based sources;
- understand details in fairly complex instructions (for equipment, devices, appliances, safety regulations, precautions (e.g. for operation of devices/equipment), advertising materials;
- read and interpret graphs, charts, diagrams;
- make use of accompanying information, e.g. headings, pictures, tables to predict information;
- distinguish between factual/non-factual information, important/less important items, relevant/irrelevant information, explicit/implicit information;
- guess the meanings of unfamiliar words by using contextual clues;
- understand and be able to explain meanings of particular IT terms;
- draw conclusions and make text summaries;
- render texts in IT related topics from Ukrainian/Russian into English;
- read at different speeds for different purposes;
- read with some degree of critical awareness, choosing appropriate information.

#### ***Information Location***

- locate specific technical information using library catalogue, Contents and Index page, reference books and dictionaries, Internet;
- predict information (using clues, such as headings, sub-headings, by-lines, etc.) in technical discourse;
- ask questions seeking information.

### *Organization and self-awareness*

- organize study resources effectively (e.g. dictionaries, reference books, Internet resources);
- keep careful record of reading, and of important references, quotations, etc., if necessary;
- guess the meanings of unfamiliar words by using contextual clues;
- understand and be able to explain meanings of particular IT terms;
- draw conclusions and make text summaries;
- render texts in IT related topics from Ukrainian / Russian into English;
- read at different speeds for different purposes;
- read with some degree of critical awareness, choosing appropriate information.

Text Types	Functions	Recommended Exponents
<ul style="list-style-type: none"> <li>• textbooks;</li> <li>• newspapers;</li> <li>• magazines;</li> <li>• specialist journals;</li> <li>• Web-based sources;</li> <li>• instructions;</li> <li>• specifications;</li> <li>• user manuals;</li> <li>• advertising materials</li> </ul>	<ul style="list-style-type: none"> <li>• identifying and specifying information on IT issues;</li> <li>• locating specific information;</li> <li>• identifying the author's ideas;</li> <li>• expressing agreement and disagreement;</li> <li>• stating and reporting the information obtained;</li> <li>• asking and answering question to obtain additional information;</li> <li>• expressing a point of view;</li> <li>• making conclusions</li> </ul>	<p>The key point of <b>Language Knowledge</b></p> <p>By the end of the module students will have a working knowledge of:</p> <ul style="list-style-type: none"> <li>• grammatical structures needed to understand a wide range of texts in Information Technologies;</li> <li>• rules of English syntax to enable them to recognize a wide range of texts;</li> <li>• a good range of relevant vocabulary (including terminology) for IT texts at this level;</li> <li>• the text is The main idea of the text is... It is essential that...; The author underlines that... The author tries to investigate the problem of...;</li> <li>• I completely agree ... I think so too. I don't think so;</li> <li>• I'd like some information on... Do you know...? Do you happen to know...?</li> <li>• The text / article I have read is about... The text / article under review is devoted to .... The author presents information about.../touches the problem of The text highlights / depicts...;</li> <li>• What do you think about?</li> <li>• What is your attitude to...?</li> <li>• In conclusion I must say ...</li> <li>• To sum up I'd like to say...</li> </ul>

# UNIT 1

## COMPUTER USERS

### Unit Description

In this first unit, students will be introduced to the concept of computers as a general-purpose tool. This unit will demonstrate that information technology (IT) is an essential tool in many day-to-day activities as well as in specialized personal and business applications. The language component of this unit will focus on the use of adjective clauses and common IT-related verbs and will introduce basic note-taking principles.

### Unit Objectives

When you complete this unit, you will be able to:

- Define the term “information technology”;
- Understand the correct vocabulary for, and grammatical usage of, IT terminology;
- Practice basic note-taking concepts;
- Show general comprehension of the gist of a variety of speakers in both structured and less structured situations;
- Comprehend natural speech in a familiar context, with some dependence on repetition;
- Recognize vocabulary words learned in lessons when you hear them.

A **computer** is a device that processes **data** according to a set of instructions known as a **program**. The equipment is known as the **hardware** and the programs and data are the **software**. A special set of programs, called an **operating system**, provides an interface for the user and allows applications programs to communicate with the hardware. Common **applications programs** include **word processors** for creating and editing texts, **spreadsheets** for calculating mathematical formulae and **databases** for storing data in a way that allows the data to be sorted and searched. **Anti-virus programs** are used to detect and remove **viruses** (harmful programs that can reproduce themselves and attach themselves to other programs). Some operating systems have **graphical (user) interfaces** that allow the computer user to select items from **menus** (lists of choices) and to start programs using an input device called a **mouse**. This is done by pressing a button on the mouse i.e. **clicking** the mouse. The main device for inputting the data is a typewriter-style **keyboard** and the output is commonly displayed on a **monitor** screen that looks like a small television screen.

There is a range of sizes and types of computer. Those designed for use by one person at a time are known as **personal computers (PCs)** although

the term PC is usually only applied to personal computers that are compatible with the standards laid down by the company known as **IBM** (International Business Machines). Personal computers include **desktop** computers (for use on an office desk) and **handheld** computers that can be carried around by the user. Electronics can be added to desktop computers by plugging in **expansion cards** (electronic circuit boards that can be plugged into special sockets called **expansion slots**).

It is also possible to build all the main parts of a computer into one electronic integrated circuit packaged as a single electronic **chip** (the common name for a microchip; an electronic integrated circuit in a small package) i.e. the '**computer on a chip**'. This enables computers to be built into other devices including household devices such as washing machines and fridges and to be incorporated into plastic cards i.e. **smart cards**, which are able to store information such as health records, drivers' licences, bank balances, etc. Devices that include a computer circuit are commonly referred to as **smart devices**. A **multimedia computer** can process different forms of data including text, graphics, **audio** (sound), animation and video. This enables computer systems to be used for a combination of education and entertainment, sometimes referred to as **edutainment**.

Unlike most machines, computers do not have a fixed purpose. They are multi-purpose tools. They can be used in a very wide variety of situations and are found in a wide range of systems including security systems, cars and phones. Advanced systems, known as **expert systems**, enable computers to 'think' like experts. Medical expert systems, for example, can help doctors diagnose an illness and decide on the best treatment. As computer systems are developed, they are becoming more common and are gradually being used for more and more purposes. How they are developed, and for what purposes they are actually used in the future, can be influenced by computer users. A variety of devices known as **peripherals** can be added externally to a computer. One of the most common peripherals is a **printer** used for printing the computer **output** (the processed data or signals that come out of a computer system) on paper. A **digital camera** allows photographs to be input to a computer for editing.

Not all computer systems are **compatible** i.e. they cannot use the same programs and data. Connecting computers together to form a **network** can provide the '**connectivity**' required to enable computers and software to communicate and to share resources. Networks connected together form an **internet**. The connection of networks throughout the world is known as **the Internet** (note that a capital I is used) or, more simply, **the Net**. Various communication services are available on the Internet, including **email**



(electronic mail) for sending and receiving text messages and **IRC** (Internet Relay Chat) which allows users to communicate using text messages in **real-time** i.e. without any delay, while the users are **logged on** (connected to a network system account, normally using a password) to the system. An Internet service called **FTP** (File Transfer Protocol) is used for transferring data or program files between the powerful **server** computers that provide the network services and the **client** computers that use these services e.g. downloading music files. Note that copying data from a larger server system to a client is referred to as **downloading** and copying from the client to the server is known as **uploading**.

One of the newest and most popular services available on the Internet is **the World Wide Web (WWW)** which is often simply referred to as **the Web** (note the use of the capital W). The Web contains interlinked documents called **webpages**. A set of related webpages stored together on a server computer is called a **website**.

Websites, such as Dogpile and Askjeeves, give the user access to special programs called **search engines** that are designed to allow the user to find relevant webpages on the Web. An Internet system designed to provide free, interactive access to vast resources for people all over the world is sometimes referred to as an **information superhighway**. Services such as these allow people to **telecommute** (use their computers to stay in touch with the office while they are working at home). Computer uses mentioned in this unit include producing greetings cards; learning, using three-dimensional graphics programs called 'Splat the Cat' and 'Pets 3'; using the Microsoft Word word-processing program including features such as **clipart** (ready-drawn graphic images that can be inserted into documents); communicating on the Internet using email and chat programs including the use of **email attachments** (other types of files e.g. video files attached to simple email text messages); distance learning and **videoconferencing** (a form of communication over a network that uses video cameras so that the people taking part can see and hear each other); electronic classrooms or boardrooms; **browsing** the Web (moving from webpage to webpage using a Web browser program); selling, using a website; painting; scanning pictures; downloading music and creating **CD-ROMs** (compact disk read only memory, commonly referred to as **CDs**). CD-ROMs are storage devices that use laser light for reading and writing data. The most common storage device is a **hard disk** (a set of aluminium disks coated in a magnetic material and enclosed in a vacuum-sealed case) used for storing the operating system and applications programs as well as the user's data.

## Tasks

### 1.1. Choose the best answer.

- A. Which of the following are information technology? (More than one answer may be correct).
- Software;
  - Cars;
  - Networks;
  - Television shows;
  - Computers;
  - Cancer-fighting drugs;
  - Game consoles;
  - Personal digital assistants;
  - Textbooks;
  - Spreadsheets.
- B. What sort of information does information technology help us work with? (More than one answer may be correct).
- Words;
  - Numbers;
  - Images;
  - Sounds.
- C. The instructions that tell a computer what to do are called \_\_\_\_\_.
- hardware;
  - software;
  - netware;
  - codeware.
- D. Why might you say that software makes a computer into thousands of different tools?
- Software lets you add different tools, like printers;
  - All tools are information technology, even hammers;
  - Every software program lets your computer do something different;
  - The Internet lets you read thousands of different Web sites.

### 1.2. Combine the words in the box into at least ten computer terms. Some are written as two words and some as one.

key	site	search	page	data	web	sheet	desk	menu	hard	home
board	spread	help	top	ad	engine	disk	base	banner		

**1.3. Match each verb on the left with the item on the right that it collocates most strongly with.**

- |                  |                      |
|------------------|----------------------|
| a) surf          | a program            |
| b) enter         | files off the Net    |
| c) run           | on an icon           |
| d) download      | data into a computer |
| e) clock         | a computer           |
| f) transmit      | the Internet         |
| g) crash         | a virus              |
| h) install       | the trash            |
| i) burn          | an attachment        |
| j) send          | the Web              |
| k) empty         | text                 |
| l) browse        | to a better model    |
| m) upgrade       | CDs                  |
| n) cut and paste | software             |

**1.4. Complete the song about computers using the verbs on the right. Use the rhythm to help you.**

**My PC is Giving Me Problems**

**(to the tune of My Bonnie Lies Over the Ocean, traditional)**

My PC is giving me problems

My PC is giving me hell

It says it's got Intel inside it

But its Intel inside is not well

Chorus

Bring back, bring back, oh bring back my typewriter, please, oh please.

Bring back, bring back, oh bring back my typewriter, please.

It \_\_\_\_\_ on me three times this morning.

And wouldn't connect to the \_\_\_\_\_.

It \_\_\_\_\_ my trash without warning.

It's some kind of \_\_\_\_\_, I bet.

**virus**

**net**

**crashed**

**emptied**

I \_\_\_\_\_ head office a memo

And sent an \_\_\_\_\_ in Word

But HO's computers are Apple

And that's when an \_\_\_\_\_.

**attachment**

**error**

**occurred**

**e-mailed**

I \_\_\_\_\_ on an icon to \_\_\_\_\_

A \_\_\_\_\_ that iMacs can read

**program**

**files**

But lost that the \_\_\_\_\_ on my hard disk  
So somehow I must have miskeyed.

**download  
clicked**

Now my spreadsheet has lost all its \_\_\_\_\_  
And sadly no \_\_\_\_\_ were made.  
I phoned up the \_\_\_\_\_ at Compaq.  
They told me I need to \_\_\_\_\_.

**upgrade  
helpline  
data  
backups**

They finally sent a \_\_\_\_\_  
Who debugged my \_\_\_\_\_ with ease,  
But something's gone wrong with my \_\_\_\_\_  
Cause when I \_\_\_\_\_ 'd's it prints 'c's.

**type  
printer  
technician  
desktop**

I guess I'm \_\_\_\_\_ illiterate  
I don't know my \_\_\_\_\_ from my RAM.  
My \_\_\_\_\_ skills are a disaster  
**And my e-mail has filled up with \_\_\_\_\_.**

**keyboard  
spam  
computer  
ROM**

I think I should \_\_\_\_\_ down my PC.  
Admit that I'm going \_\_\_\_\_.  
Arrange to see Human \_\_\_\_\_  
And tell them I want to \_\_\_\_\_ !

**Resources  
retain  
shut  
insane**

**1.5. Choose the right synonym:**

- A. Some believe that the open source era is coming to \_\_\_\_\_. =  
Some believe that the open source era is about to end.
- an end;
  - an ending;
  - a finish.
- B. Her programming skills are top- \_\_\_\_\_. = She has great programming skills.
- heavy';
  - notch';
  - hat.
- C. We've witnessed some \_\_\_\_\_ technological progress. = We've witnessed some incredible technological progress.
- reproachable;
  - ravishing;
  - remarkable.

## UNIT 2

# COMPUTER ARCHITECTURE

### Unit Description

In this first unit, students will be introduced to the different types of computers. This unit will demonstrate that **computer architecture** or **digital computer organization** is the conceptual design and fundamental operational structure of a computer system. It is a blueprint and functional description of requirements and design implementations for the various parts of a computer, focusing largely on the way by which the central processing unit (CPU) performs internally and accesses addresses in memory.

### Unit Objectives

When you complete this unit, you will be able to:

- Define the different types of computers;
- Understand the correct vocabulary for, and grammatical usage of, IT terminology;
- Practice basic note-taking concepts.

There are different types of computer of varying size and power, including the following:

**Supercomputer** (the most powerful type of mainframe).

**Mainframe** (large, very powerful, **multi-user** i.e. can be used by many people at the same time, **multi-tasking** i.e. can run many programs and process different sets of data at the same time).

**Minicomputer** (smaller than a mainframe, powerful, multi-user, multi-tasking).

**Desktop computer** (suitable size for sitting on an office desk).

**Workstation** (most powerful type of desktop, used for graphic design, etc.) **Portable** (can be carried around, can operate with batteries).

**Laptop** (large portable, can be rested on user's lap).

**Notebook** (size of a sheet of notebook paper).

**Handheld** (can be held in one hand) **Pen-based** (main input device is an electronic pen).

**PDA** (personal digital assistant, has functions such as task lists, diary, address book).

Note that the term **PC** usually refers to an IBM compatible personal computer i.e. an Apple Mac personal computer is not referred to as a PC. A computer that provides a service on a network e.g. storing files, sharing a printer, is known as a **server** computer. Server computers usually have a **UPS** (uninterruptible power supply) attached to them. This is a battery that automatically provides an electricity supply to allow the server to shut itself down properly if the main supply fails.

The **processor** e.g. Pentium, is the most important part of the computer. It processes the data and controls the computer. Powerful computers used as servers often have more than one processor. There are two main types of **memory**:

- a) **RAM** (random access memory) holds the program instructions and the data that is being used by the processor;
- b) **ROM** (read only memory) holds the program instructions and settings required to start up the computer.

The combination of the processor and memory is sometimes referred to as the **CPU** (central processing unit), although sometimes the processor itself is referred to as the CPU. The other parts connected to the CPU are known as **peripherals**. These can include input devices, output devices, storage devices and communications devices. **Input devices** include: keyboards, scanners, barcode readers, digital cameras, microphones and video cameras e.g. webcams (small digital video cameras used on the Web). **Output devices** include: **monitors** (VDU display screens), printers, plotters, loudspeakers, headphones. **Storage devices** include: magnetic tape, **floppy disks** (diskettes), hard disks, CD-ROMs, CD-R disks, CD-RW disks, DVDs and MO disks. A common **communications device** is a **modem** (a modulator/demodulator used for converting digital signals to analogue signals and vice versa to allow a computer to be connected to the ordinary telephone system).

**Storage devices** include: magnetic tape, **floppy disks** (diskettes), hard disks, CD-ROMs, CD-R disks, CD-RW disks, DVDs and MO disks. A common **communications device** is a **modem** (a modulator/demodulator used for converting digital signals to analogue signals and vice versa to allow a computer to be connected to the ordinary telephone system). The processor determines where processed data is stored by sending an address signal along an **address bus** and data along a **data bus**. This is synchronized by an electronic **clock** in the CPU that determines the operating speed of the processor. Transferring data between the processor and RAM can slow up the computer; therefore, some very expensive, extremely fast memory is usually used as a **cache** to hold the most frequently used data. In a desktop computer, the **CPU** (central processing unit) and **storage devices** (pieces of equipment used for reading from and writing to a storage medium) are normally built inside a **system unit** which consists of a metal chassis enclosed in a flat desktop or a tower shaped case. Other peripherals are attached to the system unit by cables. Each peripheral uses its own **driver card** or **controller** (an expansion card that is plugged into special **expansion slots** in the system unit).

In a desktop computer, the **CPU** (central processing unit) and **storage devices** (pieces of equipment used for reading from and writing to a storage medium) are normally built inside a **system unit** which consists of a metal chassis enclosed in a flat desktop or a tower shaped case. Other peripherals

are attached to the system unit by cables. Each peripheral uses its own **driver card** or **controller** (an expansion card that is plugged into special **expansion slots** in the system unit).

**Expansion cards** contain the electronics required to communicate with and control the device e.g. **video** or **graphics cards** are used for monitors, **soundcards** are used for audio input/output and **NICs** (network interface cards) are used for connecting to other computers in a **network** (computing devices connected together). Extra memory can also be added to the computer using special **memory expansion slots** inside the computer. A portable computer that does not have enough space inside to fit expansion cards may use an external device called a **port replicator** to provide connections for peripherals.

**Storage devices** in the form of a **disk** or **tape** are used to store the programs and data that are not being used. Note that the American spelling of *disk* is commonly used, although the British spelling, *disc*, is sometimes used. Before a program or data can be used, it must be transferred from the storage device to the main RAM memory. **Hard disks** consist of a set of magnetic coated metal disks that are vacuum-sealed inside a case to keep out the dust. The magnetic surfaces of the disks are **formatted** using a **read/write head** to provide magnetic storage areas. These storage areas form concentric circles called **tracks** and each track is subdivided into sections called **sectors**. The disks are rotated at high speed and read from or written to by the read/write head that moves across the surface of the disks. In connected together and made to operate as one unit using **RAID** (a redundant array of inexpensive disks – see Unit 17). This can speed up the system and provide a way of recovering data if the system **crashes** (fails suddenly and completely, usually referring to the failure of a hard disk). There is a variety of optical storage devices that use laser light to read or write to a disk, including: **CD-ROMs** (compact disk read only memory), **CD-R** (recordable compact disk), **CD-RW** (rewritable compact disk), **DVD** (digital versatile disk – previously known as digital video disk).

When comparing computers, the **power** of the computer is important. This is mainly determined by the **speed** and **capacity** (size) of each part of the computer.

Speed is measured in **hertz** (Hz) i.e. cycles per second.

Capacity is measured in **bytes** (B) where 1 byte = 8 **bits** (binary digits) = 1 character.

*When specifying a computer the following are normally quoted:*

- a) the speed of the processor (MHz – megahertz, GHz – gigahertz);
- b) the capacity (size) of the memory (MB – megabytes);
- c) the capacity (size) of the **magnetic storage devices** e.g. hard disk, floppy disk (MB – megabytes, GB – gigabytes);

- d) the speed of the **optical storage devices** e.g. CD-ROM, DVD (given as a multiple of the speed of the first devices produced e.g. 24x = 24 times, 12x = 12 times);
- e) the display monitor size (measured in inches diagonally across the screen surface);
- f) the monitor image quality (**resolution**) given by the number of **pixels** (picture elements) that are used across and down the screen e.g. 800x600, or by the graphics standard used e.g. **VGA** (video graphics array), **SVGA** (super video graphics array);
- g) the graphics card memory size (MB – megabytes);
- h) the speed of the modem (measured in **kbps** – kilobits per second).

*Two different number systems are used in computer specifications:*

- a) The **decimal system**, which consists of ten; digits from 0 to 9, is used for measuring speed;
- b) The **binary system**, which only has two digits (1 and 0), is used for measuring capacity.

Communication is provided between **applications programs** (word-processors, drawing programs, etc.) and the computer **hardware** (the physical components of a computer system) by a set of programs collectively known as the **operating system** e.g. Microsoft Windows, MacOS.

## Task Sheet

### 2.1. Commonly Used Computer Systems.

You work in the IT department of Virgil Megastores. The company has 50 shops located around the country, a Head Office in London and a factory in Leeds. Richard Pickle, the managing director has decided that it is time to upgrade the whole computer system and has come to you for some advice.

Richard knows very little about computers. He would like you, in your own words, to give an explanation of the following and tell him about possible pros and cons of each system:

#### Desktop PCs

.....  
 .....



#### Laptops



.....  
 .....



## Palmtops and PDAs

.....

.....

.....



## Mainframe



.....

.....

.....

## 2.2. Computer Systems.



Jamie wants to buy a new computer system to use at home.

He has found one he likes the look of, but he doesn't really understand all of the technical details.

He has asked you to look at the details and give him a brief description for each item:

- What does it do?
- Is it an input, output, storage device or a processor;
- How suitable is each item is in terms of speed or size.

## 2.3. Write your answers in the table below.

Item	Explanation
Intel Pentium 4 Processor	
1024 Mb RAM Memory	
200 Gb Hard Drive	
DVD rewriter	
19" TFT Flat Panel Monitor	
Keyboard	
Mouse	
HL-2030 Laser Printer	

**2.4. Complete the sentence by clicking on the words in the correct order. The hint tells you the first word of the sentence.**

1. disk something a when file a disk from your to write copied onto it is (16 words).

**Hint: The first word is “when”.**

2. computer a what do is a to of software instructions tells that set (13 words).

**Hint: The first word is “software”.**

3. smart who works the me with is programmer (7 words).

**Hint: The first word is “the”.**

4. software person is who illustrator using draws a computer an (10 words).

**Hint: The first word is “an”.**

5. that files send an client e-mail is to used something is (11 words).

**Hint: The first word is “an”.**

6. a computer a person designs using graphic is images a who designer (12 words).

**Hint: The first word is “a”.**

**2.5. These paragraphs are out of order. Write ‘1’ in the box next to the start of the paragraph that should come first, ‘2’ in the second, and so on.**

**Mobile devices**

- Which computer you choose will depend on what you want to do with it. If you need to use a computer that can do everything the computer on your desk (or under your table) can do, you need a desktop computer. These are very fast computers that can display videos, burn DVDs, and run the most modern versions of programs and operating systems. But size and strength means that these machines belong on a desk. It is hard to move them, and they run out of power very quickly unless they have a mains power supply.
- PDAs are weakest in power and performance. But they are the marathon runners of the mobile world. They can run all day, and keep going long after the other two. You can carry them in a handbag or in a suit, so they can stay with you all day, and they have another advantage – they can turn on and off instantly. Some people who work with computers can’t decide which type of computers they need, so they have one of each!

- There is an English proverb ‘Horses for Courses’. This means that you should choose something suitable for the job you will be doing. Portable computers can weigh as much as six kilograms, or as little as 300 grams. They can run all the very latest programs, or they might be little more than an electronic diary and address book.
- A portable laptop is a compromise. It tries to be as powerful as a desktop, or the desktop replacements we have just described and as light as a PDA, but it ends up as something in between. It is more powerful than a PDA, but less than a desktop replacement. It will run most programs, but do it more slowly. The screen is smaller, but the battery lasts longer, and so on. Portable laptops are not all alike – some.

## UNIT 3 COMPUTER APPLICATIONS

### Unit Description

Unit 3 will introduce application software. **Application software** is computer software designed to help the user to perform a singular or multiple related specific tasks.

### Unit Objectives

When you complete this unit, you will be able to:

- develop web design;
- demonstrate skills in current software programs;
- implement tasks appropriate for a variety of informal and formal work environments;
- create and design basic publications, illustrations and digital imagery.

As computer systems become more intelligent, they are used in a wider variety of work situations where previously it was necessary to employ people. Hospitals can increasingly use computers where highly trained people were required to deal with life-threatening situations. Computers can also be used in airports where highly trained experts were previously required to ensure safety and the police can make more use of computers to detect and investigate increasingly sophisticated crimes.

One of the uses considered in this unit is police **speed traps** used to catch drivers that are breaking the official speed limit. In earlier systems, **radar** equipment was used to bounce radio waves off the moving car. A small processor, known as a **microprocessor**, calculated the speed of the car from the changes in the radio waves and triggered an ordinary camera with a flash-gun to take a photograph of the car if it was speeding. The details were stored on a **smart card** (a plastic card with a built-in computer system that can store large amounts of data). When the smart card was taken back to the police station, the driver's details were obtained from the **DVLC** (Driver and Vehicle Licensing Centre) **database** i.e. the central computerised records of all licensed drivers and vehicles.

Newer systems prevent '**surfing**' i.e. where the driver only slows down as they pass through the speed trap, by using two computerised units with digital cameras placed at a fixed distance apart. Each unit records the time that a vehicle passes it, as well as photographing and identifying the car licence number using **OCR software** (optical character recognition software that changes picture images of letters and numbers into digital form for use by a computer system).

The computer then uses the difference in recorded times to calculate the speed of the vehicle. The registration numbers of vehicles exceeding the speed limit are immediately **downloaded** (copied from the computer to a server computer) to the computer at police headquarters where each vehicle is matched with the DVLC database. Standard letters are then printed off addressed to the vehicle owners using **mail merge** (a word-processing feature that produces a separate standard letter containing details obtained from each record in a database).

There are many ways in which computer systems can be used in large supermarkets, particularly for financial calculations and in stock control using **EPOS tills** (electronic point of sale cash tills). Each item on a supermarket shelf has a **barcode label** with a **barcode** (a standard set of vertical bars of varying thickness used to identify products) printed on it. The barcode number system giving standard price and item code numbers used throughout Europe is known as **EAN** (European Article Number). The barcodes are read by scanner devices called **barcode readers** that are attached to the EPOS tills. When a checkout operator moves the barcode label across the scanner, the label is scanned and the barcode number for that item is read. The scanner signals are converted to a **digital** form (where the changing signal is either off or on) and sent to the supermarket branch computer. The branch computer checks the digital EAN code against a computer **database** (a type of applications program used for storing information so that it can be easily searched and sorted) that holds a record of each type of item. In this way the item and the price of the item can be identified and the sale of the product can be recorded by the computer. The item and the price are shown on the EPOS till display and printed on a paper receipt.

Computers are also used to provide cash to users and to process bank cards such as Visa cards using an ATM (automatic teller machine – the type of machine used by banks for enabling customers to withdraw money from their bank accounts).

### Task sheet

#### *3.1. From the list of words, choose the best verb to complete the sentence.*

#### A

**filter | controls | command | edit | install | calculate | execute**

1. Word is a common type of word-processing software that you can use to \_\_\_\_\_ your writing.
2. It is possible to \_\_\_\_\_ the computer to save files every five minutes.
3. When I want to \_\_\_\_\_ my taxes, I can use a spreadsheet.

4. The operating system \_\_\_\_\_ the interaction between the software and hardware on your computer.
5. Some types of software can \_\_\_\_\_ out viruses or unwanted e-mail.
6. The operating system lets you \_\_\_\_\_ software onto your computer.

## B

**run | manipulate | write | program | provide | search | send | simulate**

1. I will \_\_\_\_\_ the photo to make it clearer.
2. There are many games that \_\_\_\_\_ real life.
3. This company will \_\_\_\_\_ the best Internet connection.
4. It is possible to \_\_\_\_\_ more than one program at a time.
5. You can \_\_\_\_\_ for any kind of information on the Internet.
6. My teacher will \_\_\_\_\_ my assignment to me by e-mail.
7. They can \_\_\_\_\_ the computer to do almost anything.

## Vocabulary Review

***3.2. Match each term in the left column with the correct definition in the right column.***

	Terms	Definitions
1	<u>Typewriter.</u>	<u>A picture, photo, or graph.</u>
2	<u>X-ray.</u>	<u>A large building used for special events or public gatherings.</u>
3	<u>Image.</u>	<u>Machine used for typing letters.</u>
4	<u>Architect.</u>	<u>A formatted page that has rows and columns.</u>
5	<u>Auditorium.</u>	<u>A person who designs buildings.</u>
6	<u>Drafting. table.</u>	<u>A special image that is taken with X-rays.</u>
7	<u>Spreadsheet</u>	<u>A special table used for making pictures or drawings</u>
8	<u>Software.</u>	<u>Books that are used to record accounting information.</u>
9	<u>Ledgers.</u>	<u>A piece of office furniture with drawers that are used to keep files and important documents.</u>
10	<u>Filing cabinets.</u>	<u>The money paid to office workers for their work.</u>
11	<u>Rely.</u>	<u>A group of recordings produced as a single unit.</u>
12	<u>Tool.</u>	<u>A set of instructions that tells a computer what to do.</u>
13	<u>Office payroll.</u>	<u>An instrument that is used to help complete a task.</u>
14	<u>Album</u>	<u>To depend on something</u>

### 3.3. Which Computer For Who?

Virgil Megastores employs many different staff. Your job is to help identify which computer system would be the most appropriate for the following staff:

**Richard Pickle** is the busy Managing Director of Virgil. He is hardly ever in the office, travelling regularly from one end of the country to the other. He uses a Filofax to record all his appointments and important phone numbers. Unfortunately, the pages keep falling out which has caused him to miss a few important meetings. He doesn't like using keyboards, he believes that writing things down is easier.



*Which computer system do you think would suit Richard best and why?*

.....  
.....

**Hatcher** works in the finance department in London. She deals with all of the payments coming into the company, recording them immediately onto the finance database. She rarely leaves her desk during the day unless she needs to check some information with another member of staff across the office.

*Which computer system do you think would suit Maggie best and why?*

.....  
.....  
.....



**John Marples** is an area manager for Virgil. He has worked for the company for five years and loves his job. He travels around the country and is never in the same place for more than two days running. He cannot survive without his computer. He uses it to record all of his daily sales figures, to produce graphs of monthly targets and to write business



reports to his manager about his progress. He tends to use his computer mainly in the evenings when he will relax and settle down to a few hours work. It is important to him that the computer has an easy to use keyboard and a good quality screen.

*Which computer system do you think would suit John best and why?*

.....

.....



**Karmijit Patel** is a sales lady for Virgil. She visits each store in her area once a week. Because she is in and out of the car all day, she needs something that is light and easy to carry. In order to be able to do her job, she needs to be able to use the usual Microsoft Office programs such as Word and Excel. She needs a keyboard to type the information into, but would prefer something compact. It is difficult for her to use the computer on mains power during the day, thus a long lasting battery is important. When she gets back into the office, she needs to be able to input the records from her computer into the main computer system easily.

*Which computer system do you think would suit Karmijit best and why?*

.....

.....



## UNIT 4 PERIPHERALS

### Unit Description

Unit 4 will introduce peripherals such as printers, monitors, and digital cameras. You will learn about the different ports that peripherals plug into in the computer. It looks into how many of these devices can be used to produce, gather, and study data about everyday life.

### Unit Objectives

When you complete this unit, you will be able to:

- Identify and explain the purpose of peripherals such as printers, monitors, and digital cameras;
- Understand and compare different input/output ports such as USB and parallel or serial ports.

**EPOS** (electronic point of sale) **tills** used in supermarkets form part of a computer system with various input and output **peripheral devices** attached to the till, including: **electronic scales** for weighing produce, **barcode reader** for looking up prices using **barcodes**, **swipe card reader** for reading bank cards, **numeric keypad** for inputting prices manually, **LCD** (liquid crystal display) screen for outputting purchase details.

**Digital cameras** are gradually being developed that are as good as conventional cameras. They have various electronic devices inside, including:

- a) **LCD** (Liquid Crystal Display) screen used as a view-finder and for viewing the pictures after they have been taken;
- b) **CCD** (Charge-Coupled Device) consisting of thousands of **photo-transistors** (light-sensitive transistors – a transistor is an electronic switch). It creates the pictures as a set of dots or **pixels** (picture elements);
- c) Memory cards e.g. **flash cards** – **solid state memory** (electronic integrated circuits, i.e. chips, used for storing the pictures).

There is no delay in getting pictures from digital cameras because there is no film requiring chemical processing. They can be attached to a computer to directly transfer pictures for editing using special software and unwanted pictures can be deleted. However, they cost more than conventional cameras and the quality is not quite as good. You also need to buy rechargeable batteries and a photo-quality colour printer with high printing costs for paper, ink, etc.

Two important features when buying a digital camera are:

- a) picture quality or **resolution**. The resolution of a camera is measured in pixels and given as two numbers, indicating how many pixels there are across the image and how many going down the image e.g. 1280 by 960 (or 1280x960);

- b) the number of pictures the camera can store. The higher the resolution, i.e. the more pixels, the more memory is required to store the pictures. Data can be compressed to allow more pictures to be stored.

**Storage devices** are used to store data and programs that are not being used by the processor. They usually consist of:

- a) **storage media** in the form of a circular disk or a tape where the data is stored;
- b) a **disk or tape drive** that moves the media past a **read/write head** that reads the data from and writes data to the storage media.

### Types of storage devices include

<b>magnetic devices</b> (that use magnetism)	<b>floppy disks</b> (diskettes) and <b>magnetic tape</b> made of a magnetic coated flexible plastic; <b>hard disks</b> made of magnetic coated aluminium disks
<b>optical devices</b> (that use laser light)	<b>CD-ROM</b> – compact disk read only memory <b>CD-R</b> – recordable compact disk <b>CD-RW</b> – re-writable compact disk <b>DVD-ROM</b> – digital versatile disk read only memory <b>DVD-RAM</b> – digital versatile disk random access memory
<b>magneto-optical devices</b> (that use a combination of magnetism and laser light)	<b>CD-MO</b> – magneto optical compact disk

**Read only media** enable the user to both read data from and write data to the media. **Read and write media** can only be used for reading data i.e. the stored data cannot be changed in any way.

**Removable storage** enables the user to change the media and transfer it to another computer.

**Fixed storage** does not allow the media to be changed or transferred to another computer.

Other factors that vary between storage devices include:

- a) the speed at which the drive moves the media past the read/write head and reads or writes data to the storage media;
- b) the capacity of the media i.e. how much data can be stored on each disk or tape;
- c) the cost of the drive and the media.

There are various types of **printers** for out-putting text and graphics to paper. Some types of printers are **mono** (print in black and white only) and others can print in colour. The speed, quality and cost of printing varies between different types of printer. Some are designed for printing text and are not really suited to printing graphics.





Data can take many forms and there is a wide variety of input, output, storage and communication **peripherals**.

**Units of measurement** used in data storage include:





- bit** a binary digit i.e. a 1 or a 0
- byte** 8 bits = 1 character i.e. a letter, numerical digit or a punctuation mark
- megabyte** 1,048,576 bytes (MB) (approximately one million bytes)
- gigabyte** 1,073,741,824 bytes (GB) (approximately one thousand million bytes)
- terabit** 1,099,511,627,776 bits (approximately one thousand gigabits)
- micron** one millionth of a metre
- angstrom** the approximate radius of an atom

### Task sheet

#### 4.1. Fill the table.

Storage Device	Size	Description	Advantages	Disadvantages
<p>Hard Disk</p> 				
<p>Floppy Disk</p> 				
<p>Zip Drive</p> 				
<p>Magnetic tape backup</p> 				

*Table continued*

Storage Device	Size	Description	Advantages	Disadvantages
<p><b>CD-ROM</b></p> 				
<p><b>CD-RW</b></p> 				
<p><b>DVD</b></p> 				
<p><b>Flash Memory Stick</b></p> 				

**4.2. Choose the best answer for each question**

- If you use your computer to write an essay and now want to edit a picture, you need to \_\_\_\_\_.
  - start a new software program;
  - use grid computing;
  - buy a new computer;
  - add new hardware.
- Which type of software does every computer need? \_\_\_\_\_
  - Web browser;
  - Word processor;
  - Desktop publishing software;
  - Operating system.

3. The source code for a large software program such as an operating system \_\_\_\_\_.
- a) is written in Java;
  - b) consists of ones and zeroes;
  - c) has millions of lines;
  - d) is difficult to copy.

**4.3. Take this quiz and test your data storage IQ.**

- A.** Which is larger?
- terabyte;
  - brontabyte;
  - petabyte.
- B.** NAS stands for:
- NTFS Analogue System;
  - Network Attached Storage;
  - New Advanced Storage.
- C.** How many bits in a byte?
- four;
  - six;
  - eight.
- D.** War and Peace the novel can be stored on
- 150 kilobytes;
  - 0.25 megabytes;
  - 1–5 megabytes.
- E.** War and Peace the movie needs at least
- 4 gigabytes;
  - 40 gigabytes;
  - 400 gigabytes.
- F.** A hard disk is attached to the computer by
- IDE or SCUSI;
  - USB or firewire;
  - all of the above.
- G.** A server is a type of
- Workstation;
  - Computer;
  - Network.
- H.** CD, DVD and CD-RW are types of
- Flash memory;
  - Magentic memory;
  - Optical storage.
- I.** It is easiest to destroy data on...
- Magnetic storage;
  - Optical Storage;
  - Flash memory.
- J.** A CD-ROM can hold about
- 640mb of data;
  - 640gb of data.

# UNIT 5

## OPERATING SYSTEM

### Unit Description

Unit 5 will introduce operating system. It helps students to compete in today's world of technology and achieve success in computer-related occupation.

### Unit Objectives

When you complete this unit, you will be able to:

- to be able to compete the full stall breakdown stack online with very small overhead;
- to be able to sample data precisely based on their source.

The **OS (operating system)** is the set of computer programs that allow the user to perform basic tasks like copying, moving, saving and printing files. It also provides an **interface** between (i.e. provides communication between) **applications programs** (e.g. wordprocessors or spreadsheets) and the computer hardware. As a user interacts with an applications program on the screen, the applications program communicates with the operating system and the operating system communicates with the computer hardware. The work of the operating system takes place in the background and is not always obvious to the user.


The most important program in an OS is the **supervisor program**. It remains in memory all the time that the computer is operating, and manages the OS. It loads other parts of the OS into memory when they are needed. Programs that remain in memory while the computer is in use are known as **resident programs**. Programs that only stay in memory while they are being used are known as **non-resident programs**.

Some operating systems are **command driven** (i.e. the user runs a program by typing a command). The screen is usually blank except for a symbol (e.g. \$) which acts as a **command prompt**. When the command is typed at the prompt and the Enter key is pressed, the command is processed and the output is displayed on the screen. OS commands are usually short words or abbreviations (e.g., date, logout, passwd, ls). **Unix** is a command driven operating system used on all sizes of computers, but mostly large multi-user, multi-tasking mainframe computers. It is available in many versions, such as Linux, Minix, HP-UX, Xenix, Venix, Ultrix, A/UX, AIX, Solaris, and PowerOpen. Other command driven operating systems mentioned in this unit include: VAX/VMS, MVS VM OS/390, NetWare, MS-DOS and PC-DOS.

Some operating systems have a **GUI** (pronounced like ‘goo-ey’ – **graphical user interface**) that allows the user to use a mouse to click on icons on the screen or choose commands from a list of choices known as a **menu**. Operating systems with graphical interfaces mentioned in this unit include: MacOS, OS/2, Penpoint, Windows NT, Windows 3.x, Windows 9X and Windows 2000.

## Tasks sheet

### 5.1. Answer the questions:

1. Why do you think that Operating Systems are necessary in order for a computer to run effectively?
2. Explain four tasks performed by an Operating System.
3. There are many different brands of Operating System. Identify four of the most common ones.
4. Explain how an Operating System can manage numerous people working at the same time. What is this called?
5. Explain how an Operating System can manage several programs that are running at the same time. What is this called?
6. Utility programs provide a ‘toolbox’ of common tasks which help the computer to run more efficiently. Identify and explain three utilities that are available.
7. Explain the difference between the three different methods of processing and provide an example of each.
8. For each of the following tasks that can be performed on a computer, state whether they would be a job for the operating system or an application:
  - Controlling the engine management for a car
  - Writing a letter
  -  Backing up the system
  - Calculating company accounts
  - Allocating memory to allow programs to run
  - Writing a report
  - Communicating with a printer

5.2. Read the description and give the correct answers.

# WHAT AM I?

"I am the type of operating system that you probably have installed on your computer at home. I can only be used by one person at a time. While you are using your computer, I can find the files that you need, open applications for you and make sure that print request actually gets to the printer"

ANSWER .....

"I am the type of operating system which is usually installed on a network. I can be used by many people at the same time. Part of my job will be to deal with your user name and passwords when you log on"

ANSWER .....

"My term refers to the ability to run many tasks at the same time. I can allow lots of applications to be open at once and I can also be receiving an email whilst opening a web page"

ANSWER .....

"I am a processing method. I collect up lots of 'jobs' or 'tasks' and save them until a later time when I will process them all in one big go. This saves me from having to do them one at a time"

ANSWER .....

"I am a very important processing method that you might find in a control system. My job is to make sure that if an instruction is issued, I don't leave it until when I feel like doing it, I deal with it that instant. I can be found in aircraft systems, car braking systems and in many systems which use robotics.

ANSWER .....



**5.3. Find the subtitle:**

- a) Batch processing;
- b) Introduction;
- c) Transaction processing;
- d) Real time processing;
- e) Single user operating system;
- f) What is an operating system?
- g) Multi tasking operating system;
- h) Tasks of the operating system;
- i) Examples of operating systems;
- j) Multi user operating system.

**1. ....**

A computer is made up of many parts. You have the hardware e.g. monitor, keyboard and mouse and you have the software e.g. word processor, spreadsheet and database.

However, the software and the hardware can't work together without something to act as an 'in-between'.

The task of co-ordinating all of the software and hardware is given to the **Operating System**.

**2. ....**

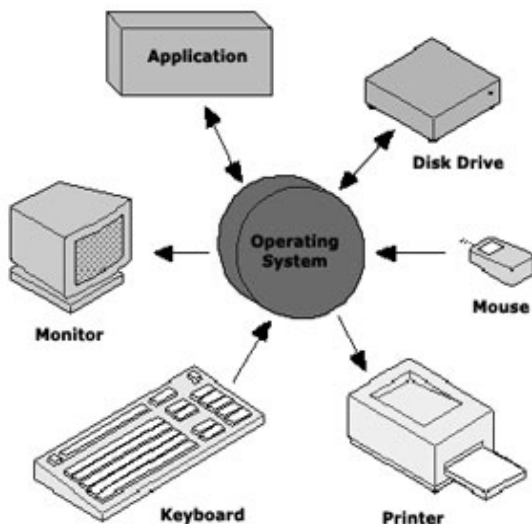
There are two main categories of software. There is 'application software' with examples such as word processors, spreadsheets and databases.

The other main category is called 'system software' which includes the operating system and utility programs.

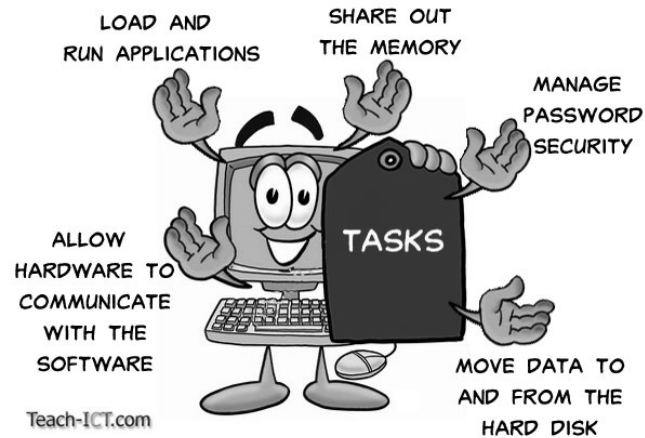
Once your computer has begun booting up using the BIOS instructions in ROM, the operating system will be the first piece of software to be loaded up.

The operating system is needed to control everything happening in your computer. It controls the memory, the disks, the peripherals and the application software.

Without the operating system your computer would just sit there doing nothing.



3. ....



An operating system is also responsible for a whole host of other tasks.

4. ....

There are a number of operating systems that you could use on your computer.



The one that you are most likely to be familiar with is one of the Microsoft Windows operating systems. Almost all personal computers are loaded with Windows before you purchase them and most schools use a network version.



If you use an Apple Mac computer then you will be familiar with Apple's unique operating system, **Mac OS**.

Many people find this far easier and more intuitive than Microsoft's Windows versions.

**Linux** is an alternative operating system for most computers.

It has the advantage of being free of charge. This is because it is 'open source' software.

**5. ....**

Many of you will have a computer at home and as mentioned on the previous page, it is likely to have either Microsoft Windows or Mac OS loaded onto it.

Whilst you are using your computer it is likely that you don't need to share peripherals e.g. a printer and you probably don't need to share out your processing time with another person in the house.

Therefore, the operating system on your computer only has to deal with the tasks you are giving it. It doesn't need to worry about sharing out memory, hardware or processing time.

This is called a single user operating system.

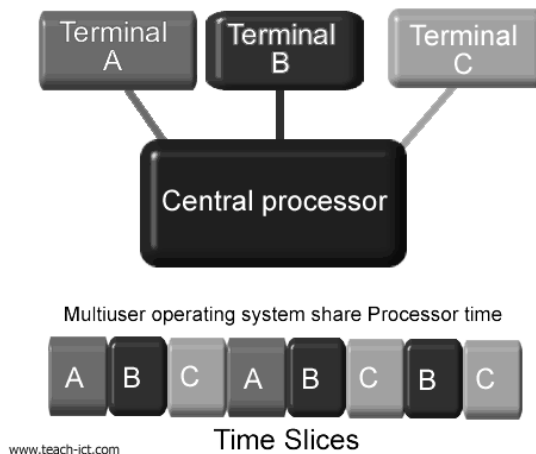
Examples of such operating systems are Microsoft Windows 95, 98, 2000, XP and Vista as well as the Mac OS range.

**6. ....**

Large companies often use a mainframe computer system. These are very expensive, powerful machines and it would make no sense at all for only one person to be able to use the computer.

However, a mainframe computer can only do one thing at a time – even if it does it very quickly. So, to allow the mainframe to be able to deal with hundreds of people who all want to do something different, multi-user operating systems were developed.

Multi-user operating systems work by 'slicing' up the processing time of the CPU into tiny chunks. Each chunk of time is given to a user to deal with their task. See the diagram below to explain.



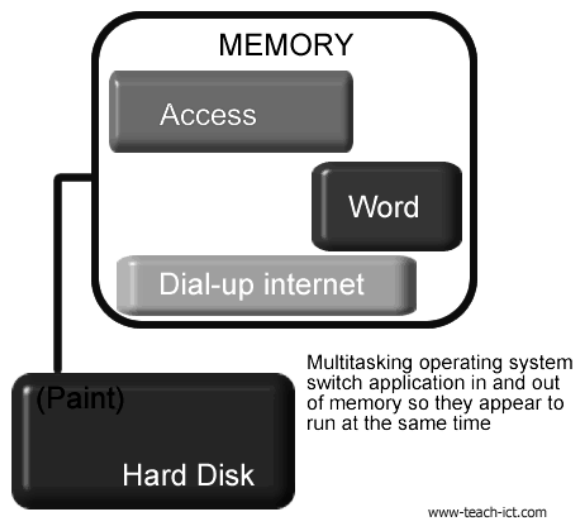
As you can see, the person on the computer/terminal A gets a little slice of the CPU time before the person on terminal B. Once his time is up, even if the task isn't completed, person B gets a slice of the time. However, this happens so quickly, (billionths of a second) that users don't realise that they have to share the computer with others.

7. ....

When you are working on the computer you probably have a web browser open, an email or instant messaging system open and one or more applications such as a word processor, spreadsheet or graphics package open.

You are able to do this because your operating system will switch the application modules in and out of RAM as you are using them and return them temporarily to the hard disk when they are open but not being accessed.

This is called multi tasking.



8. ....

Real time processing is usually found in systems which use computer control.

This processing method is used when it is essential that the input request is dealt with quickly enough so as to be able to control an output properly. For example, the computer inside the Engine Control Unit in a car has to manage the engine at every moment based on what the driver wants to do.

Real time processing has to be programmed very carefully to ensure that no input events are missed.

Note that real-time processing does not have to be 'fast'. For example, a traffic light system is a real-time system but it only needs to process data relatively slowly. On the other hand, controlling a car engine has to deal with input events happening every thousandth of a second so a very fast computer is needed to do this – but both the traffic-light and the car engine computers are carrying out 'real-time' processing.

Examples:

- Traffic lights;
- Heart rate monitoring;
- Aircraft control;
- Computer games.

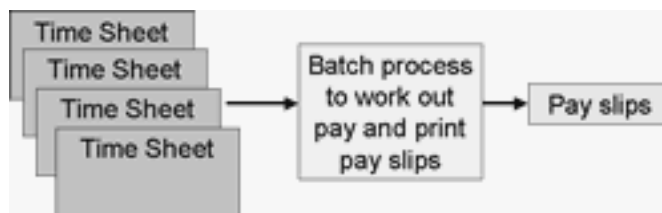
**9.** .....

Inputs are noted by the computer, but it deals with them after a short delay. It spends that delay handling other inputs and managing data movements.

The delay may be so brief that it looks to you as if it has happened straight away. But in terms of ‘computer time’, where each computer cycle is far less than a millionth of a second, it will have spent many cycles doing other things.

For example:

- Booking pop concert tickets;
- Ordering books online;
- Handling bank accounts.



**10.** .....

It is often not desirable to deal with the inputs until a certain number have occurred or a set time has passed. So they are stored until the system comes online to process the data in one ‘batch’.

Batch processing is usually fully automatic unlike ‘real-time’ or transaction processing which are interactive.

For example:

- A stock control programme may store records of every item sold in a shop that day. Then, at the end of each day it calculates what needs to be ordered;
- An online competition stores all the entries until it is time to find the winner;
- Electricity, gas and telephone bills are usually calculated on a monthly basis.

# UNIT 6

## SOFTWARE ENGINEERING

### Unit Description

Unit 6 introduces different types of interfaces and their use. This unit examines software interfaces, command line interfaces, and graphical user interfaces (GUIs) and looks at how browsers can provide a simple GUI front-end to a database. The language focus of this unit is on using imperative verbs in an IT related setting such as a help desk.

### Unit Objectives

When you complete this unit, you will be able to:

- Understand and define software interfaces, command line, and graphical user interfaces;
- Understand the basics of how a Web browser can be used as a front-end to a database;
- Identify some of the consequences of the fact that software can be copied easily;
- Distinguish between proprietary code and free code;
- Guide others through common computing tasks, such as finding a file or formatting text;
- Use imperative verbs to describe the steps in solving an IT problem;
- Use imperative verbs to explain commands in an IT related situation;
- Learn and use transition words used in a process and direction.

**Software engineering** is the discipline of designing high quality software solutions. **Software** consists of programs (sets of instructions for controlling a computer) and **data** (the material that has to be processed). Programs are written in computer languages by people called **programmers**. A **systems analyst** is a person who designs or modifies information systems to meet users' requirements. This includes investigating feasibility and cost, producing documentation, and testing prototypes of the system. Producing a program, therefore, involves a number of stages including:

- a) **clarifying** the problem by considering the requirements of the potential users;
- b) **designing** the solution to the problem by first deciding on the overall structure of the solution;
- c) **coding** the program by first choosing an appropriate programming language and inputting the program code;
- d) **testing** and **debugging** the program (identifying and fixing any problems or faults in the program code);
- e) **documenting** and **maintaining** the program including writing instructions for using the program.

Systems analysts first need to talk to the people involved in the computing problem, including the people managing the system and the users or potential users of the system. They need to establish factors such as:

- a) the nature of the problem;
- b) what systems already exist;
- c) to what extent any existing systems are **computerised** (changed so that they can be operated or controlled using a computer);
- d) what **output** (the processed data or signals that come out of a computer system) will be required from the system;
- e) who will be using the system and what parts of the system they need to be able to use;
- f) the computing experience of the staff and what training would be required;
- g) what **hardware** (the physical components of a computer system) already exists and what would need to be added, including the specification of the hardware and whether a **network system** is required (a system where a number of computers and peripheral devices are connected together).

They then have to plan the structure of the solution and check it through with the people involved to make sure it meets their requirements. Next, they have to choose a suitable programming language and write the **program** (a set of instructions, written in a computer language, that control the behaviour of a computer), continually testing and adapting it until it works to the satisfaction of the customer and users. The system then has to be put into service and the users have to be trained. This involves documenting the program specifications and writing instructions for using the system.

Programming languages commonly use different structures for sequencing program instructions, including:

- a) **conditional instructions** i.e. if a certain condition is true, then process this instruction (*if X then Y*). **Decision tables** are used to indicate how a conditional structure will process data. They show all the different inputs that might arise for each condition and the resulting outputs that would be produced by the conditional instruction;
- b) **iterations or loop instructions** i.e. process these instructions repeatedly until or while a particular condition is true, or false (*do... until...* or *do... while...*). **Program flowcharts** can be used to show the sequence of instructions in a program and are sometimes used for designing parts of programs such as iterations. **Pseudocode** is a method of writing a description of a computer program using a mixture of natural language and computer language code.

There are a large number of computer languages available for use by programmers. Each language is designed for use in solving particular types of problem and therefore has particular strengths and weaknesses. A systems analyst has to decide which language is most appropriate in each situation.

Languages such as **C++** are particularly suitable for writing **systems programs** (programs that are used to control the basic functions of a computer system e.g. operating system programs). Languages such as **Visual Basic** and **Pascal** are easy to use and are particularly suitable for learning how to program. **FORTRAN** is designed for solving engineering problems, **COBOL** for writing business programs, **Ada** for military purposes **Prolog** and **LISP** for working in **artificial intelligence** (an area of computing concerned with developing computer programs that perform tasks that can normally only be done). **Prolog** and **LISP** for working in **artificial intelligence** (an area of computing concerned with developing computer programs that perform tasks that can normally only be done). Converting to new computer systems can be done in different ways. Each strategy has its advantages and disadvantages. These include:

- a) **direct implementation** where the old system is simply removed and the new system installed. In this strategy only one system is used at any one time but there is no **fall back** (alternative system that can be used if problems occur in the main system) if the new system does not operate properly;
- b) **parallel implementation** where the old and the new systems are both used at the same time until the users are satisfied that the new system is working properly;
- c) **phased implementation** where the old system is gradually replaced by the new system, one part at a time;
- d) **pilot implementation** where the new system is tried out in one section of the company to make sure that it works as required.

### Different Types of Software

Here are some common types of software.

<b>Type</b>	<b>Operating systems</b>
<b>Examples</b>	Microsoft Windows. Linux. Macintosh OS X.
<b>Purpose</b>	Control your computer.
<b>Type</b>	<b>Word processors</b>
<b>Examples</b>	Word. Corel WordPerfect. AbiWord.
<b>Purpose</b>	Write essays, novels, reports, or other types of text.
<b>Type</b>	<b>Spreadsheets</b>
<b>Examples</b>	Excel. Lotus 1-2-3. VisiCalc.
<b>Purpose</b>	Track budgets or investments, or make other calculations.
<b>Type</b>	<b>Presentation software</b>
<b>Examples</b>	PowerPoint.
<b>Purpose</b>	Create slideshows for meetings.



<b>Type</b>	<b>Database management systems</b>
<b>Examples</b>	Access. Oracle. Sybase. 4th Dimension.
<b>Purpose</b>	Organize and filter lists of data, such as addresses or inventories.
<b>Type</b>	<b>Photo editors</b>
<b>Examples</b>	Photoshop. Fireworks. PhotoPaint. Gimp.
<b>Purpose</b>	Change digital photos and other images.
<b>Type</b>	<b>Games</b>
<b>Examples</b>	The Sims. PacMan. Minesweeper.
<b>Purpose</b>	Have fun playing or experiencing challenges.
<b>Type</b>	<b>Desktop publishing</b>
<b>Examples</b>	PageMaker. InDesign. QuarkXPress.
<b>Purpose</b>	Make a magazine, a poster, or an advertisement.
<b>Type</b>	<b>Computer-aided design (CAD) software</b>
<b>Examples</b>	AutoCAD. SolidWorks. MicroStation.
<b>Purpose</b>	Create blueprints or designs.
<b>Type</b>	<b>Web browsers</b>
<b>Examples</b>	Internet Explorer. Netscape. Mozilla Firefox. Opera. Safari.
<b>Purpose</b>	View pages on the World Wide Web.
<b>Type</b>	<b>E-mail clients</b>
<b>Examples</b>	Outlook. Eudora. Entourage.
<b>Purpose</b>	Send letters and files to other people.

*Programmers have also created software to do the following tasks:*

- Organize employee schedules;
- Encode messages to protect bank transactions and other private information;
- Change speech into type;
- Format screenplays;
- Determine how to get the most lumber from a log;
- Count down seconds, like an egg timer;
- Create music CDs;
- Block unwanted advertisements on the World Wide Web or in e-mail;
- Keep track of airplane traffic;
- Design Web sites;
- Edit sound recordings;
- Help create more software.

## Tasks sheet

**6.1. This exercise tests your knowledge of the concepts you just learned. Choose the best answer.**

- A. A software program that performs calculations on rows and columns of numbers is called a \_\_\_\_\_.
- word processor;
  - CAD software;
  - spreadsheet;
  - database management system.
- B. A feature to check your spelling would be most useful in a \_\_\_\_\_.
- word processor;
  - CAD software;
  - spreadsheet;
  - database management system.
- C. Type the best answer in the text box.  
A grocery store could keep track of what its customers bought in a \_\_\_\_\_.
- D. A photographer could remove a car from a digital photograph with \_\_\_\_\_.
- presentation software;
  - photo-editing software;
  - CAD software;
  - a database management system.
- E. You could design a bridge with \_\_\_\_\_.
- presentation software;
  - photo-editing software;
  - CAD software;
  - a database management system.
- F. Which software program would probably NOT help you make a magazine \_\_\_\_\_.
- presentation software;
  - photo-editing software;
  - word processing software;
  - desktop publishing software.

G. Mozilla, Opera, and Safari are all names of \_\_\_\_\_.

- e-mail clients;
- photo-editing software;
- word processing software;
- Web browsers.

H. A database is \_\_\_\_\_.

- a list of addresses;
- a set of folders and files;
- a list of information about a group of things, broken down into categories;
- software to draw blueprints.

I. Which of the following is the best example of a database?

- the programming language C++;
- a list of temperatures; for example 10 degrees, 20 degrees, -5 degrees;
- a list of people, including their names and addresses;
- the text of a book.

J. The software you need to organise a database is called \_\_\_\_\_.

- database monitoring software;
- database management software;
- database argument software;
- database monument software.

K. If you are going to give a presentation at a meeting, you might want to bring the software called \_\_\_\_\_.

- Excel;
- Oracle;
- QuarkXPress;
- PowerPoint.

L. Some types of software are like computer-based replacements for older ways of getting things done. Match the older tool in the left column with its software alternative in the right column.

	Tool	Software Alternative
1	Overhead projectors	Spreadsheets
2	Forms and filing cabinets	Database management software
3	Typewriter	CAD software

Table continued

	Tool	Software Alternative
4	Ledger	Word processors
5	Drafting tools	Photo editor
6	Darkroom chemicals	Presentation software
7	Recording studio	Sound-editing software
8	Envelopes and stamps	E-mail

**M.** Match the task with the type of software you would need.

	To Do This Task	You Need This Type of Software
1	Write a story	Presentation software
2	Plan a budget	E-mail software
3	Prepare a slideshow	Database management system
4	Design an engine	Desktop publishing software
5	Organize your record collection	Web browser
6	Send a picture to a friend	Spreadsheet
7	Change a colour photo to black and white	Photo editor
8	Run any software application	Operating system
9	Make a newsletter	Word processor
10	Visit a Web site	CAD software

**6.2.** Look at the table below. On the table on the left left is an example of a particular kind of text formatting. Put the number in front of each example next to the type of text formatting it shows.

The right-hand table has types of punctuation. Put the letter in front of each type of punctuation next to the name of the punctuation type.

Text types		Punctuation	
1. I want some	<input type="checkbox"/> subscript	A. !	<input type="checkbox"/> quotation mark
2. <i>red roses for</i>	<input type="checkbox"/> Underline	B. ?	<input type="checkbox"/> full stop
3. <u>a blue lady</u>	<input type="checkbox"/> plain	C. &	<input type="checkbox"/> question mark
4. Send them to	<input type="checkbox"/> superscript	D. \	<input type="checkbox"/> back slash
5. THE SWEETEST	<input type="checkbox"/> strike through	E.:	<input type="checkbox"/> colon

- |                                      |                                      |      |   |
|--------------------------------------|--------------------------------------|------|---|
| 6. <del>girl in town</del>           | <input type="checkbox"/> Italic      | F. ; | <input type="checkbox"/> exclamation mark |
| 7. If <sup>that does the</sup> trick | <input type="checkbox"/> Sans serif  | G. " | <input type="checkbox"/> percentage       |
| 8. I'll <sup>be back to</sup> pick   | <input type="checkbox"/> capitalize  | H. * | <input type="checkbox"/> asterisk         |
| 9. A snow-white orchid               | <input type="checkbox"/> hyphenation | I. . | <input type="checkbox"/> ampersand        |
| 10. for her wedding gown             | <input type="checkbox"/> bold        | J. % | <input type="checkbox"/> semi-colon       |

*You do not just need English to work with computers, you also need to learn the special English ('jargon') which computers have made necessary! If you want to know about viruses, here is some essential vocabulary.*

### The Computer Virus Guide

**Black hat:** A programmer who uses his skills to damage the internet.

**VXer:** a criminal who writes viruses – sometimes for fun, sometimes for profit.

**Malware:** Any program which is designed to harm your computer or its security.

**Adware:** A program that shows you advertisements (sometimes lots and lots of advertisements) while you are using the net. Many people think a website is showing all the advertisements, when it is the adware infecting their computer.

**Trojan:** A program which gets into your computer by hiding itself in another, innocent piece of software.

**Worm:** Malware which spreads from computer to computer in a network, often without the user doing anything, or even being logged in.

**Owned:** When a black hat's program is able to give him total control of someone else's machine.

**Phoning home:** When a virus or spyware had successfully entered a computer, it can signal the VXer that he can start his egg-drop.

**Egg-drop:** When a trojan has allowed a VXer into a computer, he must then download ('do an egg-drop') onto that computer all the files he needs to use to own it.

**Signature:** A piece of code that an anti-virus program can use to identify a virus.

**Exploit:** The method that a particular virus uses to infect a computer.

**Payload:** A virus has three parts – the part that gets it into a computer's operating system, a part that it uses to spread further, and the payload – what it actually does to the computer it has infected.

**Spoofing:** Email viruses do not want to be traced back to the machine that they came from, so they pretend to be sent from another computer.

**Social engineering:** Persuading a user to run an infected file. This is sometimes done by emails which pretend to be jokes, pornography or ‘important notices’.

**6.3. How safe is your PC? Try this quiz.**

*Almost every computer is at risk from viruses. Even computers in the 1970s were infected sometimes, but today the risks are much higher.*

1. What operating system do you have?
  - a) don't know;
  - b) Windows;
  - c) Linux;
  - d) Apple;
  - e) other.
  
2. If you answered Windows, which version?
  - a) windows 98;
  - b) win XP;
  - c) windows 95;
  - d) win 2000.
  
3. What user privileges do you have?
  - a) administrator;
  - b) don't know;
  - c) user.
  
4. Which e-mail client do you use?
  - a) other;
  - b) Outlook Express;
  - c) Outlook;
  - d) webmail.
  
5. When did you last update/patch your operating system?
  - a) never;
  - b) this month;
  - c) this week;
  - d) this year.
  
6. When did you last update your anti-virus software?
  - a) never;
  - b) what anti-virus software?
  - c) more than a month ago;
  - d) this week.

7. Your firewall is
  - a) hardware;
  - b) software;
  - c) non existent.
  
8. Where is your computer?
  - a) in a small business;
  - b) in a large business;
  - c) at home.
  
9. Your internet connection is
  - a) broadband – always on;
  - b) dial-up;
  - c) broadband – sometimes on;
  - d) none.
  
10. Which of these have you never heard of?
  - a) MeroHaX;
  - b) MyDoom;
  - c) VPN;
  - d) telnet.

# UNIT 7

## NETWORKS

### Unit Description

Unit 7 examines the Internet and networks in general. The focus is to learn to identify the main components of a network and understand the main purposes of networks. The language component of this unit focuses on the use of Adverbs of Certainty with specific IT-related terms and concepts.

### Unit Objectives

When you complete this unit, you will be able to:

- Give an overview of how the Internet and other networks work;
- Describe the main components of a typical network;
- Understand the use of relative clauses with a participle in connection with specific IT related terms and concepts.

Computers and **peripherals** (pieces of equipment that are connected to the central processing unit of a computer system) connected together form a **network**. Networks allow communication between computers and the sharing of **hardware** (such as printers) and **software** (programs and data). A network that covers a small area e.g. an office or building is known as a **LAN** (local area network). The main computers that provide services on the network are called **servers** e.g. a **file server** provides a central storage area for data files. The computers that use the services are known as **clients**. The computers can be connected using various types of cabling, including the ordinary telephone system wiring. A main data communications cable connecting LANs together is referred to as a **backbone**. Various electronic devices are also used to amplify, filter and determine the best path for the signals. These include or connecting similar networks together, gateways for connecting different types of networks and **routers** for connecting different networks together and determining the best path (or **route**) for the signals. Routers are used to connect networks to form the Internet. A **modem** (modulator/demodulator) is used to convert signals from **analogue** (having a variety of levels) to **digital** (having only two levels, representing on and off) for connection to the ordinary telephone system. Alternatively, an **ISDN** (integrated services digital network) **adapter** or a **DSL** (digital subscriber line) **modem** can be used to allow digital signals to be used without being converted to analogue signals.

There are different standard methods of connecting computers in a LAN. One of the most common is known as **Ethernet**. Each computer must have a network adapter (special electronics to control the network connection). This is usually in the form of an expansion card known as a **network interface card** (NIC). All the computers are connected through another electronic device known as a **hub**. The electronics in the hub are used to amplify the



signals to prevent them from becoming too weak before they reach the desired computer. The cable normally used to **twisted-pair cabling**. It contains two cables twisted together to eliminate interference from external signals. In a home network, the mains power cables built into the house can be used instead if electronic devices called **isolation adapters** are used to isolate the computer from the mains electricity running through the cable. In future, **wireless networks** will use a radio transmitter and receiver tuned to use the same radio frequency, instead of cabling.

Computer provides the **services** (sharing of printers, programs or data, etc.) and the attached **client** computers can be normal computers or simple **terminals**. Terminals require the server to do most or all of the processing. A **thin client** (or thin terminal), such as a **NetPC**, has a processor that does some of the processing but a **dumb terminal** does not have a processor and all the processing must be done by the server computer.

One character of data is referred to in computing as a **byte**. In the **binary system** (a number system that only uses two digits i.e. 1 and 0) used in computers, a byte is made up of 8 **bits** where a bit is a 1 or a 0. When data is transmitted through a network system, it can be transmitted in different ways. **Asynchronous transmission** (or stop-start transmission) sends the data one byte (or character) at a time. A **start bit** (called a **control bit**) is added to indicate the beginning of each byte and another control bit called a **stop bit** is added to indicate the end of each byte. **Synchronous transmission** sends the data in blocks. Extra bytes of data called **synch bytes** are added at the beginning and end of each block. They are used to synchronize the sending and receiving *devices*.

When a message is transmitted through a network, it is processed in various ways by the software and the hardware. It is first processed by the applications program e.g. an email program, and then it is processed by the operating system. It is then processed by the hardware such as the network interface card and finally by the network electronics e.g. a router, as it passes through the network system. When it arrives at its destination, it is similarly processed in reverse order to display *the message on the display screen* of the receiving computer.

## Tasks sheet

### 7.1. Choose the best answer, a, b, c or d:

1. A workstation is connected to a network by:
  - a) a network interface card;
  - b) a hub;
  - c) a switch;
  - d) a router.

2. Which of these types of network cable is not affected by interference from other cables?
  - a) UTP;
  - b) Co-axial;
  - c) Fibre-optic;
  - d) Thin Ethernet.
  
3. Which of these devices allows many computers to connect to a server's network interface card?
  - a) router;
  - b) switch;
  - c) modem;
  - d) bridge.
  
4. A computer network that is confined to one site is called a:
  - a) MAN;
  - b) LAN;
  - c) WAN;
  - d) Peer-to-peer.
  
5. A company provides its users with a network that can be accessed from all its offices world-wide. This network is:
  - a) a LAN;
  - b) a MAN;
  - c) a WAN;
  - d) an intranet.

**7.2. On a particular network, one computer is used to store the data shared by all the users. State what this computer is called.**

**7.3. A small company designs the layout for books. It employs three designers who use desktop publishing software to arrange the text and illustrate that they receive by e-mail from the authors. A secretary uses office software for administrative purposes. The company is planning to install network with six workstations and two servers.**

- a) Explain, with examples, why this company might require two servers rather than just one;
- b) State two ways in which the network will allow the company to improve the security of its data files;
- c) Explain why the company might now need to appoint an extra member of staff. Describe what the role of this person would be.

#### **7.4. Read the text and answer questions.**

##### **Meet the Internet**

The internet is not a single entity. When most people talk of ‘the internet’ they are in fact referring to only one part of it – the World WideWeb. Yet e-mail (for example) is a very important part of the internet, and most people do not read their e-mail on the Web. So what are the different parts of the internet, and how do they all fit together?

One of the earliest bits of the Net is FTP, which stands for File Transfer Protocol. ‘File’ and ‘transfer’ are easy enough to understand, but what is a ‘protocol’? Put simply, a protocol is a method that two computers have agreed to use when they are talking to each other. The very first job of the internet was to move files from one computer to another even when these computers were very far apart, and File Transfer Protocol was used for this job. If you use the Net just to browse your favourite websites, you may not use FTP a lot, but the people who built those websites almost certainly used a FTP program to put the pages on the web in the first place.

We all know what e-mail is, but did you know that you usually use two different protocols with it? We usually send mail by SMTP (Simple Mail Transfer Protocol) and pick it up, as you might expect by POP (Post Office Protocol). And yes, the World Wide Web also uses a protocol. The links on a web page that you click to take you to another part of the Net are called ‘hypertext links’. Now look at the top of your web page, and you should see “<http://www.english-online.org.uk/>”. Http stands for (you guessed it!) HyperText Transfer Protocol, and the ‘www’ after that shows that this page is part of the World Wide Web.

Today, if we just want to browse the web, we can do almost everything with one program – a web browser. A browser is one kind of ‘net interface’. Net interfaces are programs which sit between you and the internet and help you and the Net make sense to each other. The browser takes care of the technical details of connecting you to the web, and makes sure that the information from the internet arrives in a way that makes sense to you. It also finds out what you want to do, and passes on the information in a way that the internet can understand.

Websites are built in different ways. Pages that contain a lot of information but are not very interactive are called ‘static’ pages. These are usually written in a language called HTML (Hyper Text Markup Language). Interactive pages can be written in VBS (Visual Basic Script) or in JavaScript. Because it can be dangerous to run unknown programs, many interactive websites today use interactive scripts that don’t run on your computer. These scripts often use a language developed for Personal Home Pages (php).

Sometimes, you might want to get sound or moving pictures from the internet. These are things that the internet can only deliver to you through File Transfer Protocol, but you see them in your browser because your browser has special programs called 'plug-ins' which run these files as soon as they arrive.

- A.** What is the best definition of a protocol?
- An agreed means of communication.
  - The way that a computer talks.
  - Something made from FTP.
  - A method between two computers.
- B.** How many protocols does the text mention?
- Three.
  - Four.
  - Five.
  - Six.
- C.** What does interactive mean?
- Using one protocol.
  - Responding to user input.
  - Using Javascript or VBS.
  - Containing unknown.php.
- D.** Why might unknown programs be dangerous?
- They might crash your computer.
  - They might contain viruses.
  - They might be used by hackers.
  - A, B, and C.
- E.** Plug-ins deliver:
- Extra features for your web browser.
  - Pictures from the Internet.
  - More interactivity.
  - File transfer protocols.

## UNIT 8 DISCUSSION

Think about the questions, then post your answers on the WebBoard and discuss your responses with your tutor and/or classmates.

1. List other examples of information technology can you think of and describe how they can be used.
2. Describe two software programs you use the most. Are there programs on your computer you have never tried? If so, describe what they do.
3. Do you think actors could ever be entirely replaced by computer-generated characters?

### Web Sites that May Help You

The following Web sites may help you understand unfamiliar ideas or words. They may be useful during the course or later, when you explore information technology on your own.

### IT Glossaries

These Web sites explain information technology terms, such as “packet switching”. They also explain information technology acronyms, such as “AGP”.

- Webopedia <<http://www.webopedia.com/>>
- Whatis <<http://whatis.techtarget.com/>>
- TechEncyclopedia <<http://www.techweb.com/encyclopedia/>>

You can also visit the Glossary for this course.

### *Dictionary*

If there is an English word you want to learn to pronounce or define, this Web site may help:

Answers.com <<http://www.answers.com/>>

### *Encyclopedia*

If you need more information about any topic, try this free online encyclopedia. It covers information technology and other subjects, such as history, literature, and biology.

Wikipedia <<http://en.wikipedia.org/>>

### *Search Engine*

A search engine finds Web sites related to words you pick. See Unit 7 for advice on using a search engine.

Google <<http://www.google.com/>>

### *Directory*

A directory is a list of Web sites organized by humans. Directories list fewer sites than search engines, but they can have more useful results. Directories are best for general topics, such as “hardware” or “word processors”.

Open Directory Project – DMOZ <<http://www.dmoz.com/>>

## GLOSSARY

### Unit 1 IT Lesson Terms

<b>Code</b>	<b>Definition</b>
noun	The series of instructions to the computer that together make up a software program. Also called “source code”.
Unit 1 – IT Lesson	<b>Example</b>
	The programmer writes a <b>code</b> that gives instructions to the computer.
<b>compiler</b>	<b>Definition</b>
noun	Software that translates source code into machine code.
Unit 1 – IT Lesson	<b>Example</b>
	The <b>compiler</b> converts the source code into machine code so that the program can tell the computer what to do.
<b>computer-aided design (CAD) software</b>	<b>Definition</b>
phrase	Software for making blueprints or other designs.
Unit 1 – IT Lesson	<b>Example</b>
	<b>Computer-aided design software</b> is very useful for helping to create plans and letting you look at them before the product is built.
<b>data mining</b>	<b>Definition</b>
noun	Analyzing large amounts of data to find patterns humans may not see.
Unit 1 – IT Lesson	<b>Example</b>
	The grocery store used <b>data mining</b> on its sales records to see which foods sold best on rainy days.
<b>database</b>	<b>Definition</b>
noun	A collection of information broken down into categories.
Unit 1 – IT Lesson	<b>Example</b>
	The library uses a <b>database</b> to record all of its books. People can then use the database to find a book quickly.
<b>database management system</b>	<b>Definition</b>
phrase	Software to let you search, analyze, or summarize your database.
Unit 1 – IT Lesson	<b>Example</b>
	The school has a new <b>database management system</b> . Now the office staff can find students’ names and addresses more quickly and efficiently.

<b>grid computing system</b>	<b>Definition</b>
phrase	Using a group of computers to solve a complicated problem.
Unit 1 – IT Lesson	<b>Example</b> The <b>grid computing system</b> is helpful in problem solving, especially for people who work in hospitals and who need to analyze complex information.
<b>information technology</b>	<b>Definition</b>
phrase	A variety of electronic machines used to manipulate information, such as words, numbers, images, or sounds; also known as “IT”.
Unit 1 – IT Lesson	<b>Example</b> <b>Information technology</b> has changed our lives by making the Internet, computers, and digital cameras part of our everyday life.
<b>machine code</b>	<b>Definition</b>
noun	A software program that has been converted to on and off signals, which the computer can understand.
Unit 1 – IT Lesson	<b>Example</b> <b>Machine code</b> is like a math problem that a computer solves. The computer reads the code as on and off signals.
<b>operating system</b>	<b>Definition</b>
noun	Software that passes instructions from the user to other software and between software and hardware. For example, Windows or Linux are operating systems.
Unit 1 – IT Lesson	<b>Example</b> Your computer’s <b>operating system</b> controls your software and hardware; examples are Windows or Linux.
<b>presentation software</b>	<b>Definition</b>
noun	Software for making slideshows for meetings.
Unit 1 – IT Lesson	<b>Example</b> The professor uses the <b>presentation software</b> called PowerPoint to show the information in his lecture more clearly.
<b>programming language</b>	<b>Definition</b>
noun	A set of rules about how to write source code.
Unit 1 – IT Lesson	<b>Example</b> Learning a <b>programming language</b> is necessary in order to develop new software.

<b>software</b>	<b>Definition</b>
noun	The set of instructions that tells a computer what to do. Also called “software program” or “application”.
Unit 1 – IT Lesson	<b>Example</b>
	There are many types of <b>software</b> that we use daily, such as e-mail and word processing programs.
<b>spreadsheet</b>	<b>Definition</b>
noun	Software for tracking budgets or investments that automatically calculates totals or averages of numbers entered in the spreadsheet’s rows and columns.
Unit 1 – IT Lesson	<b>Example</b>
	The accountant uses a <b>spreadsheet</b> to see how much money the company has made and how much it has spent.
<b>word processor</b>	<b>Definition</b>
noun	Software for writing essays and other documents.
Unit 1 – IT Lesson	<b>Example</b>
	Twenty years ago, people used typewriters to write documents and letters. Now, it’s more common to use <b>word processor</b> software on your computer for typing a document.

## Unit 2 IT Lesson Terms

<b>CD-ROM</b>	<b>Definition</b>
noun	A compact disc with music, pictures, or other information.
Unit 2 – IT Lesson	<b>Example</b>
	I have a dictionary on a <b>CD-ROM</b> . I can look up words that I don’t understand on the CD-ROM.
<b>command</b>	<b>Definition</b>
noun	An instruction.
Unit 2 – IT Lesson	<b>Example</b>
	When you type in a <b>command</b> , you are telling the computer what to do.
<b>command line interface</b>	<b>Definition</b>
phrase	A software interface in which you type instructions.



Unit 2 – IT Lesson	<b>Example</b> Many years ago, the only way to use a computer was to type in a command using a <b>command line interface</b> .
<b>copyright laws</b>	<b>Definition</b>
noun	Laws that require you to get permission before copying software, books, or movies.
Unit 2 – IT Lesson	<b>Example</b> Each country has its own <b>copyright laws</b> . Some countries do not control how you can use other people’s materials, and some have very tight controls.
<b>graphical user interface (GUI)</b>	<b>Definition</b>
noun	A software interface in which you use the mouse to point at pictures and words that represent commands and files.
Unit 2 – IT Lesson	<b>Example</b> Common operating systems like Linux or Windows use a <b>graphical user interface</b> .
<b>installer</b>	<b>Definition</b>
noun	Software that adds other software to your computer.
Unit 2 – IT Lesson	<b>Example</b> When you add new software to your computer, you often use an <b>installer</b> .
<b>interface</b>	<b>Definition</b>
noun	Tools you use to give instructions to, or receive information from, a machine – for example, the dials and gauges on a stove.
Unit 2 – IT Lesson	<b>Example</b> The dashboard on the car is a simple <b>interface</b> , because it provides information to the driver.
<b>licence</b>	<b>Definition</b>
noun	A document that gives you permission to use certain software. It usually contains restrictions on what you are allowed to do with the software. For example, you might only be allowed to install the software on one computer.
Unit 2 – IT Lesson	<b>Example</b> The school has a <b>licence</b> to use certain software in its computer. If the school does not have a licence, it is not allowed to use that software.

<b>pre-install</b>	<b>Definition</b>
verb	To put software on a computer before it is sold.
Unit 2 – IT Lesson	<b>Example</b> Before a new computer is sold, the manufacturer <b>pre-installs</b> the software you will need to run the computer.
<b>prompt</b>	<b>Definition</b>
noun	The spot where you type commands in a command line interface.
Unit 2 – IT Lesson	<b>Example</b> When you type in your command at the <b>prompt</b> , the computer will do what you have told it to do.
<b>reverse-engineer</b>	<b>Definition</b>
verb	To study software to learn its source code.
Unit 2 – IT Lesson	<b>Example</b> The main reason that companies do not allow people to <b>reverse-engineer</b> software is that they don't want the software to be copied and sold illegally.
<b>site licence</b>	<b>Definition</b>
noun	A licence to install software on many computers.
Unit 2 – IT Lesson	<b>Example</b> Now that we have a <b>site licence</b> , we can install the software on five of our computers.
<b>software interface</b>	<b>Definition</b>
noun	The onscreen tools you use to give instructions to, or receive information from, software – for example, a button or a pop-up box.
Unit 2 – IT Lesson	<b>Example</b> The <b>software interface</b> allows the user to control the software on the computer. It makes it easier to interact with the computer.
<b>table</b>	<b>Definition</b>
noun	A list of information that is divided into rows and columns. Each column contains a different type of information.
Unit 2 – IT Lesson	<b>Example</b> Creating a <b>table</b> or a chart to organise information can make it easier for readers to understand the material.

**user interface**  
 noun  
 Unit 2 – IT Lesson

**Definition**  
 Another term for “software interface”.

**Example**  
 The **user interface** is useful because it provides onscreen tools you can use to give instructions to, or receive them from, software. It allows the user to control the software on the computer.

### Unit 2 Language Lesson Terms

**document**  
 noun  
 Unit 2 – IT Lesson

**Definition**  
 A piece of work created with an application, as by a word processor.

**Example**  
 It is common to save a **document** on your hard drive.

**duplicate**  
 noun  
 Unit 2 – Language Lesson

**Definition**  
 Being the same as another; a copy.

**Example**  
 I want to make a **duplicate** of your letter. Can I copy it?

**install**  
 verb  
 Unit 2 – Language Lesson

**Definition**  
 Put software on the hard drive.

**Example**  
 When you buy a new computer, you will need to **install** software for things like word processing and e-mail.

**legal permission**  
 phrase  
 Unit 2 – Language Lesson

**Definition**  
 Written consent to do something.

**Example**  
 To use that information on your Web site, you will have to get **legal permission**.

**rearrange**  
 verb  
 Unit 2 – Language Lesson

**Definition**  
 Arrange again in a different way.

**Example**  
 You can **rearrange** the files by sorting them alphabetically.

<b>settings</b>	<b>Definition</b>
noun	Preferences for how the computer or the software application will run.
Unit 2 – Language Lesson	<b>Example</b> The <b>settings</b> on our computer are adjustable, so, for example, you can change the screen saver as you like.
<b>transfer</b>	<b>Definition</b>
verb	To move something from one place to another.
Unit 2 – Language Lesson	<b>Example</b> It is common to <b>transfer</b> files from one computer to another. People who share legal music files transfer the files from their personal computer to another person’s computer.
<b>updated</b>	<b>Definition</b>
adjective	The most recent version of a software application or operating system, usually with added features.
Unit 2 – Language Lesson	<b>Example</b> It’s helpful to have the <b>updated</b> version of the software because there are often new improvements.
<b>window</b>	<b>Definition</b>
noun	The view seen on your computer screen.
Unit 2 – Language Lesson	<b>Example</b> When you open the <b>window</b> on your screen, you can see the information pop up.

### Unit 3 IT Lesson Terms

<b>analog</b>	<b>Definition</b>
adjective	Information that has been translated into electrical pulses of varying strengths.
Unit 3 – IT Lesson	<b>Example</b> In the past, <b>analog</b> signals were commonly used for long-playing records, but now digital signals are becoming more popular for recorded music.
<b>bar code</b>	<b>Definition</b>
noun	Information that has been encoded as black-and-white striped labels on packages.

Unit 3 – IT Lesson	<b>Example</b> In the United States, the first <b>bar code</b> used for selling products was put on a package of gum.
<b>bar-code scanner</b>	<b>Definition</b> A device that can read a <b>bar code</b> and determine what information it contains.
noun	<b>Example</b> It is very common to see a <b>bar-code scanner</b> used in retail stores; it helps businesses keep track of their products.
Unit 3 – IT Lesson	<b>Definition</b> To shrink digital information so it takes up less space.
<b>compress</b>	<b>Example</b> It is better to <b>compress</b> large files so that you will have more room to store other files on your hard drive.
verb	<b>Definition</b> Information that has been translated into on and off signals.
Unit 3 – IT Lesson	<b>Example</b> Computers work with <b>digital</b> information.
<b>digital</b>	<b>Definition</b> A machine that works with <b>digital</b> information.
adjective	<b>Example</b> A music player is a common type of digital device.
Unit 3 – IT Lesson	<b>Definition</b> A device that uses satellite signals to determine your location.
<b>digital device</b>	<b>Example</b> Some cars are equipped with <b>global positioning satellite receivers</b> . Drivers can use them to locate a specific address and drive there easily.
noun	<b>Definition</b> When information about you is used without your permission.
Unit 3 – IT Lesson	<b>Example</b> It is considered an <b>invasion of privacy</b> to have your personal information sold to a business or put on the Internet without your permission.
<b>global positioning satellite (GPS) receivers</b>	
phrase	
Unit 3 – IT Lesson	
<b>invasion of privacy</b>	
phrase	
Unit 3 – IT Lesson	

<p><b>personal digital assistant (PDA)</b></p> <p>noun</p> <p>Unit 3 – IT Lesson</p>	<p><b>Definition</b></p> <p>An electronic day planner that helps you keep track of addresses, phone numbers, appointments, and other notes.</p> <p><b>Example</b></p> <p>Peter has a <b>personal digital assistant</b> that keeps track of his business and personal telephone numbers and addresses.</p>
<p><b>privacy</b></p> <p>noun</p> <p>Unit 3 – IT Lesson</p>	<p><b>Definition</b></p> <p>The ability to control who gets to see information about you, such as your buying habits.</p> <p><b>Example</b></p> <p>Having <b>privacy</b> means being able to control the personal information in your life, such as your banking information.</p>
<p><b>privacy policy</b></p> <p>phrase</p> <p>Unit 3 – IT Lesson</p>	<p><b>Definition</b></p> <p>An organization’s guidelines describing how it will use the information you give it.</p> <p><b>Example</b></p> <p>When you apply for a credit card, it is possible to sign a <b>privacy policy</b> that guarantees your personal information will not be sold to other businesses.</p>
<p><b>radio frequency identification (RFID) systems</b></p> <p>phrase</p> <p>Unit 3 – IT Lesson</p>	<p><b>Definition</b></p> <p>A set of machines that work together to identify packages and other things using radio signals.</p> <p><b>Example</b></p> <p>A <b>radio frequency identification system</b> is used in toll booths so that the drivers can pay in advance and not have to stop at the toll booth. The RFID tag sends out a signal to the transceiver in the toll booth saying that the driver has already paid the toll.</p>
<p><b>transceiver</b></p> <p>noun</p> <p>Unit 3 – IT Lesson</p>	<p><b>Definition</b></p> <p>The part of an RFID system that receives radio signals.</p> <p><b>Example</b></p> <p>The <b>transceiver</b> receives signals from the transponder. They work together as a team to keep track of specific items.</p>

<b>transponder</b>	<b>Definition</b>
noun	The part of an RFID system that sends out radio signals.
Unit 3 – IT Lesson	<b>Example</b> The <b>transponder</b> sends out signals so the transceiver will know when an item is near. So, for example, a transponder hidden in a software package will send out a signal if a thief tries to walk out of a shop without paying for the item.

### Unit 3 Language Lesson Terms

<b>affects</b>	<b>Definition</b>
verb	To produce an effect upon; influence.
Unit 3 – Language Lesson	<b>Example</b> What other people say about a product <b>affects</b> my opinion of that product. If people say a product is good, I will be influenced by what they say.
<b>digital music player</b>	<b>Definition</b>
phrase	A type of peripheral used to listen to and record music.
Unit 3 – Language Lesson	<b>Example</b> <b>Digital music players</b> are popular with people of all ages. It's great to listen to music from CDs and MP3s.
<b>goods</b>	<b>Definition</b>
noun	Something manufactured or produced for sale.
Unit 3 – Language Lesson	<b>Example</b> Many computer <b>goods</b> are made in Japan. Products like televisions and DVD players are often made there.
<b>keep track of</b>	<b>Definition</b>
verb	To record information.
Unit 3 – Language Lesson	<b>Example</b> This PDA will <b>keep track of</b> addresses and phone numbers.
<b>record</b>	<b>Definition</b>
noun	A piece of information or a description of an event that is written on paper or stored on a computer.

Unit 3 – Language  
Lesson

**red lights**

noun

**Example**

It is important to keep a **record** of your computer purchases. It is useful to have the information for future reference.

**Definition**

The stop lights at an intersection that are coloured red.

**Example**

The **red lights** at an intersection mean that a car must stop and not enter the intersection.

Unit 3 – Language  
Lesson

**signals**

noun

**Definition**

A series of electrical or radio waves that are sent to a radio or television in order to produce a sound, picture, or message.

**Example**

Digital **signals** are either zero or one.

Unit 3 – Language  
Lesson

**translated**

verb

**Definition**

Turn from one set of symbols into another.

**Example**

The information is **translated** into either analogue or digital signals.

Unit 3 – Language  
Lesson

**warehouse**

noun

**Definition**

A structure or room for the storage of merchandise or commodities.

**Example**

Before most items reach a retail store, they are kept in a **warehouse** because a warehouse can hold a large amount of goods.

Unit 3 – Language  
Lesson

**Unit 4 IT Lesson Terms**

**bit**

noun

**Definition**

The smallest unit of digital information. A single on or off signal. A one or a zero.

**Example**

A **bit** is a signal that is either off or on.

Unit 4 – IT Lesson

**byte**

noun

**Definition**

Eight bits. The most common unit of measurement for digital information.



Unit 4 – IT Lesson	<b>Example</b> A <b>byte</b> is larger than a bit. It takes eight bits to make one byte.
<b>clock speed</b>	<b>Definition</b>
noun	A measure of how fast a processor cycles through its work.
Unit 4 – IT Lesson	<b>Example</b> A common <b>clock speed</b> is 2.2 GHz. The clock speed often indicates how quickly the processor can cycle through its work.
<b>desktop computer</b>	<b>Definition</b>
noun	A personal computer designed to stay in one place, usually on or beside a desk.
Unit 4 – IT Lesson	<b>Example</b> The director uses a <b>desktop computer</b> in his office at work and uses a laptop computer when he travels.
<b>expansion card</b>	<b>Definition</b>
noun	A computer part that fits into the motherboard to give a computer new capabilities.
Unit 4 – IT Lesson	<b>Example</b> The three most common types of <b>expansion cards</b> are sound cards, video cards, and network cards.
<b>graphics adapter</b>	<b>Definition</b>
noun	An expansion card that converts digital video into signals for monitors. It is also called a “video card”.
Unit 4 – IT Lesson	<b>Example</b> You will need a fast <b>graphics adapter</b> if you want to play video games because there is so much information going to your monitor for you to watch.
<b>hard disk drive</b>	<b>Definition</b>
noun	The part of a computer that stores information, such as software or documents, even when the power is off.
Unit 4 – IT Lesson	<b>Example</b> Every computer has a <b>hard disk drive</b> . It is the main storage area of a computer.

<p><b>hardware</b></p> <p>noun</p> <p>Unit 4 – IT Lesson</p>	<p><b>Definition</b></p> <p>The physical parts of a computer (or other digital device).</p> <p><b>Example</b></p> <p>The <b>hardware</b> on our computer includes a monitor, a hard disk drive, a processor, RAM, a sound card, a printer, and a keyboard.</p>
<p><b>main memory</b></p> <p>noun</p> <p>Unit 4 – IT Lesson</p>	<p><b>Definition</b></p> <p>The part of a computer that stores information while it is being used or changed by software. Main memory is also called “RAM”.</p> <p><b>Example</b></p> <p>Computers that have a lot of <b>main memory</b> don’t need to access the hard drive as often when processing information.</p>
<p><b>motherboard</b></p> <p>noun</p> <p>Unit 4 – IT Lesson</p>	<p><b>Definition</b></p> <p>A large circuit board into which you plug all your other hardware so it can communicate.</p> <p><b>Example</b></p> <p>Every computer needs a <b>motherboard</b>. It is necessary so that the hardware can work together and run your computer properly.</p>
<p><b>optical disk drive</b></p> <p>noun</p> <p>Unit 4 – IT Lesson</p>	<p><b>Definition</b></p> <p>The part of a computer that reads CDs or DVDs.</p> <p><b>Example</b></p> <p>The <b>optical disk drive</b> reads CDs and DVDs by using laser light.</p>
<p><b>port</b></p> <p>noun</p> <p>Unit 4 – IT Lesson</p>	<p><b>Definition</b></p> <p>An opening, usually in the back of your computer, where you plug in devices such as printers or a mouse.</p> <p><b>Example</b></p> <p>It is common for a computer to have <b>ports</b> so that you can plug in items such as a printer, mouse, or modem.</p>
<p><b>processor</b></p> <p>noun</p> <p>Unit 4 – IT Lesson</p>	<p><b>Definition</b></p> <p>The part of a computer that solves the problems sent to it by software.</p> <p><b>Example</b></p> <p>A faster <b>processor</b> will let your computer solve problems more quickly.</p>

**sound card**  
noun  
Unit 4 – IT Lesson

**Definition**  
An expansion card that converts digital sound into signals for speakers or earphones.  
**Example**  
You will need a **sound card** on your computer if you want to listen to the sound on the videos or CDs.

### Unit 5 IT Lesson Terms

**CRT**  
noun  
Unit 5 – IT Lesson

**Definition**  
A type of monitor that works like a television. CRT stands for “cathode ray tube”.  
**Example**  
An older computer had a **CRT** instead of an LCD monitor.

**drawing tablet**  
noun  
Unit 5 – IT Lesson

**Definition**  
A peripheral that lets you draw digital pictures as though you were drawing on paper.  
**Example**  
The artist used a **drawing tablet** to create characters, so whatever he drew went directly from the tablet to the computer.

**hot-pluggable**  
adjective  
Unit 5 – IT Lesson

**Definition**  
Able to be connected or disconnected safely while the computer is on.  
**Example**  
The USB cable is **hot-pluggable**, so it’s safe to plug it in while the computer is still turned on.

**inkjet printer**  
noun  
Unit 5 – IT Lesson

**Definition**  
A peripheral that makes documents or photos by spraying tiny droplets of ink on paper.  
**Example**  
**Inkjet printers** are less expensive to buy than laser printers; however, the ink cartridges for inkjet printers can be very expensive.

**input device**  
noun

**Definition**  
A peripheral that lets you send information or commands to the computer – for example, a keyboard.

Unit 5 – IT Lesson	<b>Example</b> The main function of an <b>input device</b> is to send information to the computer.
<b>laser printer</b>	<b>Definition</b> A peripheral that makes documents by melting dry powder, called toner, onto paper.
noun	
Unit 5 – IT Lesson	<b>Example</b> <b>Laser printers</b> are more efficient, and they print files more clearly, than inkjet printers do.
<b>LCD</b>	<b>Definition</b> A thinner and more expensive type of monitor that works by applying electricity to any spot that needs to change. LCD stands for “liquid crystal display”.
noun	
Unit 5 – IT Lesson	<b>Example</b> The display on my new <b>LCD</b> monitor is very clear.
<b>output device</b>	<b>Definition</b> A peripheral that lets the computer send information to you – for example, a printer.
noun	
Unit 5 – IT Lesson	<b>Example</b> A monitor is an <b>output device</b> because the computer sends information to the screen for you to see.
<b>peripherals</b>	<b>Definition</b> The parts of a computer system that stay outside the computer case – for example, a monitor or a mouse.
noun	
Unit 5 – IT Lesson	<b>Example</b> It is possible to get wireless <b>peripherals</b> , such as a wireless mouse, printer, or keyboard.
<b>port</b>	<b>Definition</b> An opening in a computer where you connect the plug on the end of a cable.
noun	
Unit 5 – IT Lesson	<b>Example</b> To connect your mouse to the computer, you will need to plug it into the <b>port</b> at the back of your computer.
<b>PS/2 port</b>	<b>Definition</b> An older port used for keyboards and mice.
noun	
Unit 5 – IT Lesson	<b>Example</b> On my old computer, the keyboard and mouse were plugged into the <b>PS/2 port</b> .

<b>scanner</b> noun Unit 5 – IT Lesson	<b>Definition</b> A peripheral that makes a digital copy of something flat, such as a document or photo. <b>Example</b> I used the <b>scanner</b> to copy a page from the book. It scanned the information directly into the computer.
<b>USB port</b> noun Unit 5 – IT Lesson	<b>Definition</b> A common port used for printers, scanners, cameras, and many other devices. <b>Example</b> I plugged my webcam into the <b>USB port</b> on the computer.
<b>webcam</b> noun Unit 5 – IT Lesson	<b>Definition</b> A peripheral that records videos or still pictures while staying in one place. <b>Example</b> We used the <b>webcam</b> in our office and communicated with the people in the Hong Kong office, who were also using their webcam. It was great because the webcams let us see each other on our monitors.
<b>wireless</b> adjective Unit 5 – IT Lesson	<b>Definition</b> Not needing a cable to communicate with a computer; communicating by sending radio signals to a base station. <b>Example</b> It is possible to have a <b>wireless</b> connection in your home rather than a cable connection.

### Unit 6 IT Lesson Terms

<b>broadband</b> adjective Unit 6 – IT Lesson	<b>Definition</b> A fast Internet connection that is active whenever your computer is on. <b>Example</b> We are using a <b>broadband</b> connection that is very fast and efficient.
<b>dial-up modem</b> noun	<b>Definition</b> A peripheral that lets a computer connect to an ISP using regular telephone lines.

Unit 6 – IT Lesson	<b>Example</b> Connecting to the Internet by <b>dial-up modem</b> is still popular in places where it is difficult or too expensive to have a cable connection.
<b>domain</b>  noun	<b>Definition</b> An Internet address that uses words instead of numbers. <b>Example</b> Well-known <b>domain</b> names are www.google.com or www.microsoft.com.
Unit 6 – IT Lesson	<b>Definition</b> A computer that converts domains into IP addresses. <b>Example</b> A <b>domain name server</b> converts domain names into IP addresses.
<b>domain name server</b>  phrase	<b>Definition</b> Receiving information from another computer on the Internet. <b>Example</b> It is possible to <b>download</b> free software updates from software companies.
Unit 6 – IT Lesson	<b>Definition</b> Software that lets you upload or download files to another computer on the Internet. You can also use FTP software to delete, copy, or rename files on other computers, if you have permission to do so. <b>Example</b> You will need <b>File Transfer Protocol (FTP) software</b> if you want to upload files to another computer at work.
<b>download</b>  verb	<b>Definition</b> Software that lets you send and receive short messages, which appear immediately on your computer or the one you send them to. <b>Example</b> Many teenagers like to use <b>instant messenger</b> so that they can communicate with each other easily and quickly.
Unit 6 – IT Lesson	
<b>File Transfer Protocol (FTP) software</b>  phrase	
Unit 6 – IT Lesson	
<b>instant messenger</b>  noun	
Unit 6 – IT Lesson	

<p><b>Internet</b></p> <p>noun</p> <p>Unit 6 – IT Lesson</p>	<p><b>Definition</b></p> <p>A collection of computers and other machines around the world that can send information to each other.</p> <p><b>Example</b></p> <p>The <b>Internet</b> is an excellent tool for finding out information on just about anything, from general university policies to technical documentation about software.</p>
<p><b>Internet Protocol (IP) address</b></p> <p>noun</p> <p>Unit 6 – IT Lesson</p>	<p><b>Definition</b></p> <p>A series of numbers that acts as a computer’s address on the Internet. IP addresses are made up of four numbers from 0 to 255, separated by periods – for example, 142.104.5.64.</p> <p><b>Example</b></p> <p>Each computer has its own <b>Internet Protocol (IP)</b> address so that it can be identified by other computers.</p>
<p><b>Internet Service Provider (ISP)</b></p> <p>noun</p> <p>Unit 6 – IT Lesson</p>	<p><b>Definition</b></p> <p>A company that connects your computer to the Internet by passing on messages for it.</p> <p><b>Example</b></p> <p>It is a good idea to find a reliable <b>Internet Service Provider (ISP)</b> so you can connect to the Internet at any time.</p>
<p><b>modem</b></p> <p>noun</p> <p>Unit 6 – IT Lesson</p>	<p><b>Definition</b></p> <p>A peripheral that lets a computer connect to an ISP.</p> <p><b>Example</b></p> <p>A few years ago it was very common to use a dial-up <b>modem</b> to connect to the Internet.</p>
<p><b>online</b></p> <p>adjective</p> <p>Unit 6 – IT Lesson</p>	<p><b>Definition</b></p> <p>Connected to the Internet.</p> <p><b>Example</b></p> <p>Once you are <b>online</b>, you can search the Internet or send out e-mail.</p>
<p><b>packet</b></p> <p>noun</p> <p>Unit 6 – IT Lesson</p>	<p><b>Definition</b></p> <p>A small piece of information sent across the Internet. All Internet traffic is made up of packets.</p> <p><b>Example</b></p> <p>Internet traffic is made up of small pieces of information called packets. Each <b>packet</b> carries specific information.</p>

<p><b>router</b></p> <p>noun</p> <p>Unit 6 – IT Lesson</p>	<p><b>Definition</b> A machine that guides packets to their destination.</p> <p><b>Example</b> Wireless <b>routers</b> are often used for computing at home.</p>
<p><b>streaming software</b></p> <p>phrase</p> <p>Unit 6 – IT Lesson</p>	<p><b>Definition</b> Software that lets you listen to, or watch, a broadcast over the Internet, much like a radio or television station.</p> <p><b>Example</b> <b>Streaming software</b> is now commonly used for viewing video over the Internet.</p>
<p><b>TCP/IP</b></p> <p>noun</p> <p>Unit 6 – IT Lesson</p>	<p><b>Definition</b> The rules for sending, addressing, and assembling Internet packets.</p> <p><b>Example</b> Any computer that knows <b>TCP/IP</b> can communicate with any other computer that knows TCP/IP.</p>
<p><b>update</b></p> <p>verb</p> <p>Unit 6 – IT Lesson</p>	<p><b>Definition</b> Getting new information to replace or add to older information.</p> <p><b>Example</b> It is important to <b>update</b> the anti-virus software on your computer on a regular basis so that your computer cannot be attacked by a virus.</p>
<p><b>upload</b></p> <p>verb</p> <p>Unit 6 – IT Lesson</p>	<p><b>Definition</b> Sending information to another computer on the Internet.</p> <p><b>Example</b> A server will <b>upload</b> information to other computers.</p>
<p><b>Virtual Private Network (VPN) software</b></p> <p>phrase</p> <p>Unit 6 – IT Lesson</p>	<p><b>Definition</b> Software that lets you use the files and peripherals of another computer over the Internet as though you were connected to it with a cable.</p> <p><b>Example</b> If you are at home and want to access files you have saved at work, you can use <b>Virtual Private Network (VPN) software</b> to connect to the file server.</p>



## Unit 7 IT Lesson Terms

**dynamic Web site**

phrase

Unit 7 – IT Lesson

### **Definition**

Web sites that build Web pages using a database. Also known as “database-driven Web sites”.

### **Example**

The online store used a **dynamic Web site** to show its books. The title, author and price on each page was filled in using a database.

**hyperlink**

noun

Unit 7 – IT Lesson

### **Definition**

A word, phrase, or picture you click on with your mouse to load a new Web page. Hyperlinks are often highlighted to make them easy to find.

### **Example**

**Hyperlinks** are placed on Web pages so you can click on the hyperlink and move to a new Web page.

**Hypertext Markup Language (HTML)**

phrase

Unit 7 – IT Lesson

### **Definition**

The computer language used to create Web pages.

### **Example**

**Hypertext Markup Language (HTML)** is used to create Web pages.

**path**

noun

Unit 7 – IT Lesson

### **Definition**

Directions to a specific file or folder on a Web site.

### **Example**

The computer uses a **path** to find a specific file or folder.

**protocol**

noun

Unit 7 – IT Lesson

### **Definition**

A set of rules about how two computers should communicate.

### **Example**

The Internet works according to rules called **protocols**.

**search engine**

noun

Unit 7 – IT Lesson

### **Definition**

A Web site that helps you find Web pages with information you are looking for.

### **Example**

You can use a **search engine** to find information about IT-related topics.

<p><b>source code</b></p> <p>noun</p> <p>Unit 7 – IT Lesson</p>	<p><b>Definition</b></p> <p>The HTML instructions and text that tell a browser what a Web page should look like.</p> <p><b>Example</b></p> <p>The Web page designer writes the <b>source code</b> that tells the browser what the Web page should look like.</p>
<p><b>tag</b></p> <p>noun</p> <p>Unit 7 – IT Lesson</p>	<p><b>Definition</b></p> <p>Short HTML instructions surrounded by angle brackets – for example, &lt;B&gt;.</p> <p><b>Example</b></p> <p>The Web page designer used a <b>tag</b> for each of the instructions on the Web page.</p>
<p><b>URL</b></p> <p>noun</p> <p>Unit 7 – IT Lesson</p>	<p><b>Definition</b></p> <p>An Internet address.</p> <p><b>Example</b></p> <p>Each Web page has its own unique <b>URL</b>.</p>
<p><b>Web browser</b></p> <p>noun</p> <p>Unit 7 – IT Lesson</p>	<p><b>Definition</b></p> <p>Software to view Web pages.</p> <p><b>Example</b></p> <p>You use a <b>Web browser</b> such as Internet Explorer to view pages on the Internet.</p>
<p><b>Web hosting</b></p> <p>noun</p> <p>Unit 7 – IT Lesson</p>	<p><b>Definition</b></p> <p>The service provided by companies that let you put Web pages on their Web server so the pages become part of the World Wide Web.</p> <p><b>Example</b></p> <p>Many small businesses subscribe to companies that provide <b>Web hosting</b> so that their Web pages can be seen on the Internet.</p>
<p><b>Web page</b></p> <p>noun</p> <p>Unit 7 – IT Lesson</p>	<p><b>Definition</b></p> <p>Documents shared over the Internet that you view with a Web browser. They usually contain text, graphics, and hyperlinks.</p> <p><b>Example</b></p> <p>A <b>Web page</b> can provide very detailed information about companies or institutions.</p>
<p><b>Web server</b></p> <p>noun</p>	<p><b>Definition</b></p> <p>A computer that sends Web pages to you when you ask for them.</p>

Unit 7 – IT Lesson	<b>Example</b> The <b>Web server</b> provides the Web pages to your computer so that the Web browser can display them.
<b>Web site</b> noun	<b>Definition</b> A group of Web pages, usually created by the same person and available from a single Web server. <b>Example</b> Most businesses have their own <b>Web site</b> where you can find out information about the company.
Unit 7 – IT Lesson	<b>Definition</b> Software that helps you create a Web page by inserting the HTML tags for you. <b>Example</b> It is easy to use <b>Web-authoring software</b> to create a Web page because it writes the HTML for you.
<b>Web-authoring software</b> noun	<b>Definition</b> The collection of all the Web pages on the Internet. <b>Example</b> The <b>World Wide Web (WWW)</b> has changed the way people communicate and share information worldwide
Unit 7 – IT Lesson	<b>Definition</b> The collection of all the Web pages on the Internet. <b>Example</b> The <b>World Wide Web (WWW)</b> has changed the way people communicate and share information worldwide
<b>World Wide Web (WWW)</b> phrase	
Unit 7 – IT Lesson	

### Unit 7 Language Lesson Terms

<b>automatically</b> adverb	<b>Definition</b> Able to operate independently of human control. <b>Example</b> My e-mail program checks for new mail <b>automatically</b> as soon as I turn on my computer. I don't need to instruct it to check for new mail.
Unit 7 – Language Lesson	<b>Definition</b> Providing the base or starting point from which something can develop; the main parts. <b>Example</b> When you know <b>basic</b> word processing, you can easily write a document.
<b>basic</b> adjective	<b>Definition</b> To tap on a mouse button, pressing it down and then immediately releasing it.
Unit 7 – Language Lesson	
<b>click</b> verb	

Unit 7 – Language  
Lesson

**in progress**

phrase

Unit 7 – Language  
Lesson

**request**

noun

Unit 7 – Language  
Lesson

**shows up**

verb

Unit 7 – Language  
Lesson

**client**

noun

IT Lesson

**dedicated line**

noun

IT Lesson

**file server**

noun

**Example**

It is likely that you will **click** on your mouse hundreds of times in an hour. You need to click on the mouse to control actions on the computer.

**Definition**

Happening or being done now.

**Example**

The download is **in progress** and should be complete in a few minutes.

**Definition**

An act of asking for something; the thing asked for.

**Example**

To make a **request** on Google, just type in a topic and the results of the search will appear in a list.

**Definition**

Appears.

**Example**

After you click on the link, the Web site **shows up**.

## Unit IT Lesson Terms

**Definition**

A computer that asks a server to do something.

**Example**

A **client** asks the server for information and the server responds to the request, sending information back to the client.

**Definition**

A high-speed line reserved for communication on a WAN.

**Example**

Our company uses a **dedicated line** for the WAN so we can connect easily to our branch offices in other cities.

**Definition**

A computer that stores files for other computers, sending the files when requested.

IT Lesson	<b>Example</b> The students save all their projects on the <b>file server</b> . They can now open their projects on any computer in the lab.
<b>gateway</b> noun	<b>Definition</b> A machine that translates information and passes it between two networks that use different protocols.
IT Lesson	<b>Example</b> You need a <b>gateway</b> to translate and pass information between two networks.
<b>intranet</b> noun	<b>Definition</b> A private network that uses the same technologies as the public Internet.
IT Lesson	<b>Example</b> Many small businesses use an <b>intranet</b> to communicate with employees.
<b>local area network (LAN)</b> phrase	<b>Definition</b> A network in which all the nodes are in the same building or otherwise close together.
IT Lesson	<b>Example</b> Many companies will have their own local network, which allows them to share information easily. This type of network is called a <b>local area network</b> or a <b>LAN</b> for short.
<b>network</b> noun	<b>Definition</b> A group of two or more computers that can share messages or files.
IT Lesson	<b>Example</b> A <b>network</b> connects two or more computers so that people using those computers can share information such as messages or files.
<b>network interface</b> noun	<b>Definition</b> The place where a cable or radio antenna plugs into the computer.
IT Lesson	<b>Example</b> You will need a <b>network interface</b> in order to use a cable or radio antenna on your computer.
<b>network licence</b> noun	<b>Definition</b> Permission from a software company to let computers run the company's software over a network.

IT Lesson	<b>Example</b> If a business wants to use a specific type of software over the network, it must get a <b>network licence</b> from the software company.
<b>node</b> noun	<b>Definition</b> A point along a network, such as a computer, a peripheral, or a router. <b>Example</b> A <b>node</b> can be any point along a network, such as a computer.
IT Lesson	<b>Definition</b> A computer that answers the requests of other computers. Usually a fast computer. <b>Example</b> The <b>server</b> handles thousands of requests a day.
<b>server</b> noun	<b>Definition</b> A computer that is not part of any network. <b>Example</b> If you have a <b>stand-alone computer</b> , it is not connected to a specific network or to the Internet.
IT Lesson	<b>Definition</b> A common type of cable, used in most offices, made of two copper wires wrapped together. <b>Example</b> A computer may have either <b>twisted pair</b> or coaxial cables.
<b>stand-alone computer</b> phrase	<b>Definition</b> A network in which some nodes are in different cities or otherwise far apart. <b>Example</b> Some businesses use a <b>wide area network (WAN)</b> to connect to branch offices.
IT Lesson	<b>Definition</b> A type of network connection in which signals are sent by radio waves rather than over cables. <b>Example</b> My friend has a <b>wireless</b> connection on his computer, which means he does not have to use the telephone line in order to connect to the Internet.
<b>twisted pair</b> phrase	
IT Lesson	
<b>wide area network (WAN)</b> phrase	
IT Lesson	
<b>wireless</b> adjective	
IT Lesson	

# ENGLISH-UKRAINIAN ABBREVIATION DICTIONARY

## A

AAI	Application to Application Interface – інтерфейс зв'язку між додатками.
ACD	1) automatic call distribution – автоматичний розподіл викликів (у системі телефонного зв'язку); 2) automatic call distributor – пристрій автоматичного розподілу викликів.
ACMS	1) Application Control and Management System – система контролю та адміністрування додатків; 2) Automated Connection Manager Server – сервер автоматизованого управління з'єднаннями.
ACS	automated cartridge system – автоматизована картриджна система.
ADB	Apple Desktop Bus – шина настільних систем фірми Apple Computer.
ADMD	Administration Management Domain – домен адміністративного управління (окрема мережа, що входить в Internet).
ADSL	asymmetrical digital subscriber line – асиметрична цифрова абонентська лінія.
AEC	automatic error correction – автоматичне виправлення помилок.
AFN	Access Feeder Node – вузол, що забезпечує доступ (у мережі).
AMIS	Audio Messaging Interchange Specification – специфікація обміну мовними повідомлення.
AMPS	Advanced Mobile Phone System – удосконалена система мобільного радіотелефонного зв'язку (стандарт стільникового зв'язку у США).

ANDF	Architecture Neutral Distribution Format – незалежний від архітектури формат електронного розповсюдження ПО.
ANI	automatic number identification – автоматичне визначення номеру (телефону).
API	Application Programming Interface – інтерфейс прикладного програмування.
APPC	Advanced Program-to-Program Communications – розвинутий зв'язок між програмами (інтерфейс фірми IBM).
ARL	Access Rights List – список прав доступу.
ART	1) Adaptive Recognition Technology – технологія адаптивного розпізнавання (образів); 2) Automatic Recognition Technology – технологія автоматичного розпізнавання (інтерфейсу принтера).
ASA	1) American Software Association – Американська асоціація програмного забезпечення; 2) American Standards Association – Американська асоціація зі стандартизації.
AVR	automatic voice recognition – автоматичне розпізнавання голосу.
<b>В</b>	
BCS	basic catalog structure – базова структура каталогу.
BDC	backup domain controller – резервний контролер домену (див. також PDC).
BFS	Boot File System – завантажувальна файлова система (що підтримує завантаження незалежно від файлової системи, що використовується).
BFT	binary file transfer – передання двійкових файлів (стандарт).
BNA	Broadband Network Architecture – архітектура широкосмужових мереж (запропонована фірмою IBM).



BOP	bit-oriented protocol – протокол побітового передання даних.
BPR	Business Process Reengineering – реорганізація системи ведення бізнесу.
BRIM	Bridge Router Interface Module – інтерфейсовий модуль мосту.

## С

CAM	Controlled Attachment Module – керований модуль підключення до середовища.
CAS	Communication Application Specification – специфікація додатків зв'язку (стандарт, розроблений фірмами Intel та Digital Communications Associates).
CASE	Computer-Aided Software Engineering – система автоматизованої розробки програм.
CAV	Constant Angular Velocity: 1) постійна кутова швидкість; 2) відповідний спосіб запису інформації на лазерний диск; 3) відповідний формат лазерного диску.
CCIA	Computer and Communications Industry Association – Асоціація виробників засобів обчислювальної техніки та зв'язку (США).
CDDI	Copper Distributed Data Interface – розподілений інтерфейс передання даних кабельними лініями (варіант FDDI для кабельних ліній).
CD-ROM	Compact Disk Read-Only Memory – ПЗУ на компакт-дисках.
CGM	computer graphics metafile – метафайл машинної графіки (стандартний формат зберігання та передання зображення).
CIC	1) carrier (circuit) identification code – код ідентифікації каналу; 2) commercial Internet carriers – постачальники платних послуг у мережі Internet.

CIF	1) Common Intermediate Format – єдиний проміжний формат (стандарт на роздільну здатність при цифровому кодуванні/декодуванні відеосигналів); 2) Customer Information File – файл інформації про замовника; 3) CIO Chief Information Officer – керівник інформаційної служби (компанії). Call Level Interface – інтерфейс на рівні викликів (комунікаційний інтерфейс на рівні викликів для забезпечення зв'язку між різними базами даних).
CMS	1) Call Management System – система управління (телефонними) викликами; 2) Color Management System – система управління кольором.
CMVC	configuration management and version control – управління конфігурацією та контроль версій.
CODE	Client/Server Open Development Environment – відкрите середовище розробки програм типу клієнт/сервер.
COP	character-oriented protocol – протокол посимвольного передавання даних.
CORBA	circuit-switched data network – мережа передавання даних з комутацією каналів.
CSTA	Computer Supported Telecommunications Application – застосування телекомунаційних технологій з використанням обчислювальної техніки (стандарт ЕСМА).
CUA	Common User Access – єдиний користувальницький доступ (стандарт ІВМ для інтерфейсу програм користувачів).
<b>D</b>	
DA	disk array – дискова матриця.
DAMA	demand-assignment multiple access – множинний доступ з наданням каналу на вимогу.
DAP	1) Database Access Point – місце доступу до бази даних (у мережі); 2) Directory Access Protocol – протокол доступу до каталогів.

DBCL	database control language – мова управління базами даних.
DBMS	Database Management System – система управління базами даних, СУБД.
DCB	Domain Control Database – керуюча база даних домену (каталог, що містить інформацію про всі спільно використовувані ресурси домену).
DDE	1) direct data entry – пряме введення даних; 2) Dynamic Data Exchange – динамічний обмін даними.
DDL	Data Definition Language – мова опису даних.
DDP	distributed data processing – розподілена розробка даних.
DEN	Document Enabled Networking – середовище мережі, що підтримує роботу з документами (єдина модель розповсюдження документів у NetWare незалежно від їх форми).
DES	Data (Digital) Encryption Standard – стандарт шифрування даних.
DFS	Distributed File Services (System) – розподільна файлова служба (система).
DFT	Disk Failure (Fault) Tolerance – засоби підтримки відмовостійкості диску.
DIP	1) document and image processing – обробка документів і зображень; 2) dual-in-line package – дворядний корпус, корпус ДІП (мікросхема з дворядним розташуванням виводів). Distribution lists – списки розсилки.
DMD	digital micromirror display – цифровий мікрозеркальний (проекційний) дисплей.
DMS	1) Data Management System – система управління даними; 2) Document Management Service (System) – служба (система) управління документами.

DPM	1) data processing manager – програма управління обробкою даних; 2) dual processor mode – двопроцесорна обробка.
DRDA	Distributed Relational Database Architecture – розподілена архітектура реляційних баз даних (стандарт фірми IBM).
DXI	Data Exchange Interface – інтерфейс обміну даними.
DXS	Directory Exchange Server – сервер обміну каталогами.

## Е

EASE	Embedded Advanced Sampling Environment – вбудоване середовище опитування з додатковими можливостями (система збирання та аналізу статистики за трафіком мережі з наданням цієї інформації адміністратору).
EBB	electronic bulletin board – електронна дошка об’яв.
EBR	Enterprise Backup and Restore – система резервного копіювання та відновлення інформації в мережі масштабу підприємства.
ECC	Error-Correcting Code – код з виправленням помилок.
ECMA	European Computer Manufacturers Association – Європейська асоціація виробників обчислювальної техніки.
ECS	external cache socket – гніздо для підключення зовнішньої кеш-пам’яті.
EDCC	error detection and correction code – код з виявленням і виправленням помилок.
EDD	Electronic Document Delivery – електронна доставка документів.
EDMS	Electronic Document Management System – система управління електронними документами.

EIN	electronic ID number – електронний ідентифікований номер.
EN	end node – кінцевий вузол (у мережі).
ENMS	enterprise network management system – система управління мережею масштабу підприємства.
EOM	event-oriented modelling – моделювання, орієнтоване на події.
ESDL	electronic software distribution and licensing – електронне розповсюдження та ліцензування програмного забезпечення.
ESL	electronic software licensing – електронне ліцензування програмного забезпечення.
ESM	1) Enterprise Storage Manager – програма управління зовнішньої пам'яті в мережі масштабу підприємства; 2) Ethernet Switching Module – комутаційний модуль Ethernet.

## F

FAT	File Allocation Table – таблиця розміщення файлів (в операційній системі DOS).
FCSI	Fiber Channel System Initiative – ініціатива щодо системи волоконно-оптичного зв'язку (спільна програма Sun Microsystems, IBM та Hewlett-Packard).
FDD	Floppy Disk Drive – накопичувач на гнучких магнітних дисках, НГМД.
FDDI	Fiber Distributed Data Interface – розподілений інтерфейс передавання даних волоконно-оптичними каналами (стандарт).
FSF	Free Software Foundation – Фонд безкоштовного програмного забезпечення.
FTAM	File Transfer, Access and Management – передавання, доступ та управління файлами (протокол).

FTS  
functional test suite – набір функціональних текстів.

FTSA  
Fault-Tolerant Server Architecture – відмовностійка серверна архітектура.

## G

GAPPN  
Gigabit Advanced Peer-to-Peer Networking – архітектура гігабітних однорівневих мереж (компанії IBM).

GDMO  
Guidelines for the Definition of Managed Objects – принципи опису керованих об’єктів (стандарт ISO).

GFS  
grandfather/father/son – “дід/тато/син” (порядок дублювання даних на магнітних стрічках один раз на місяць, один раз на тиждень і кожного дня).

GIS  
Geographic Information System – географічна інформаційна система, ГІС.

GLOP  
Graphical Library Object Parser – синтаксичний аналізатор графічних бібліотечних об’єктів.

GOOP  
Graphical Object-Oriented Programming – графічне об’єктно-орієнтоване програмування.

GOSIP  
Government Open Systems Interconnection Profile – урядовий профіль взаємодії відкритих систем (США).

GUI  
Graphical User Interface – графічний інтерфейс користувача.

## H

HADA  
High Availability Disk Array – дискова матриця з високим коефіцієнтом готовності.

HDTV  
High Definition Television – телебачення високої чіткості, ТВЧ.

HFT	High Function Terminal – багатофункціональний термінал.
HIPPI	High Performance Parallel Interface – високошвидкісний паралельний інтерфейс.
HLL	high-level language – мова високого рівня.
HLLAPI	High Level Language Application Programming Interface – інтерфейс прикладного програмування мовами високого рівня.
HLS	hue-level-saturation, колір – яскравість – насиченість (метод передавання кольору).
HPFS	High Performance File System, високопродуктивна файлова система (архітектура фірми 3Com).
HSB	hue-saturation-brightness – колір – насиченість – яскравість (метод передавання кольору).
HSDL	high-speed data link – високошвидкісний канал передавання даних.
HSSI	High Speed Serial Interface – високошвидкісний послідовний інтерфейс.
HSV	hue-saturation-value – колір – насиченість – значення (метод передавання кольору).
HTML	Hyper-Text Markup Language – гіпертекстова мова опису документів (файлів).

## I

IBN	1) Integrated Branch Node – об’єднаний комунітаційний вузол; 2) integrated business network – інтегральна мережа ділового зв’язку.
ICDA	Integrated Cashed Disk Array – дискова матриця з вбудованою кеш-пам’яттю.

CFA	International Computer Facsimile Association – Міжнародна асоціація комп'ютерного факсимільного зв'язку.
ICTS	Inter-City Telecommunications System – система міжміського зв'язку.
IDAPI	Integrated Database Application Program Interface – інтегрований інтерфейс доступу до баз даних з додатків (стандарт фірми Borland).
IDL	Interface Definition Language – мова опису інтерфейсу.
ILE	Integrated Language Environment – інтегроване мовне середовище (розробка програм).
IMAP	Interactive Mail Access Protocol – протокол інтерактивного доступу до електронної пошти.
IMR	Integrated Multiport Repeater – інтегральний багатопортовий ретранслятор.
IMS	1) information management system: а) інформаційно-керуюча система; б) система управління інформацією (ієрархічна система управління базами даних, розроблена фірмою IBM); 2) Integration of Management Systems – об'єднання адміністративних систем.
INM	Internet Network Management – адміністрування в мережі Internet.
IOS	integrated office system – інтегрована офісна система.
IP	1) image processing – обробка зображень; 2) Internet Protocol – міжмережевий протокол (спочатку розроблений для мережі Internet).
ISP	Internet Service Provider – постачальник сервісу в мережі Internet.



ISR	information storage and retrieval – зберігання та пошук інформації.
ISSA	Information Systems Security Association – Асоціація захисту інформаційних систем (США).
ISV	1) Independent Software Vendor – незалежна фірма-розробник програмного забезпечення; 2) Information System Vendor – постачальник інформаційних систем.

## J

JAD	joint application development – спільна розробка додатків.
JCL	Job Control Language – мова управління завданнями.
JPEG	Joint Photographic Experts Group: 1) об'єднана експертна група з фотографії; 2) алгоритм стиснення нерухомого зображення, розробленого цією групою.

## K

KBMS	Knowledge Base Management System – система управління базою знань.
KBS	Knowledge Base System – система баз знань СБЗ.

## L

LAP	Link Access Protocol – протокол доступу до каналу зв'язку.
LAPM	Link Access Protocol for Modems – протокол доступу до каналу зв'язку для модемів.
LAT	Local Area Transport – передання в локальній мережі (протокол).
LEC	local exchange carrier: 1) місцева телефонна мережа; 2) фірма – володар місцевої телефонної мережі.

LED	Light-Emitting Diode, світлодіод.
LNМ	LAN Network Manager – програма управління локальною мережею.
LON	LAN Outer Network – мережа, зовнішня щодо даної локальної мережі.
LQ	letter quality – режим високоякісного друку.
LS	1) Library Server – бібліотечний сервер; 2) Licensing System – система ліцензування.
LSAPI	License Server Application Programming Interface – інтерфейс прикладного програмування для сервера контролю ліцензій (програмний засіб у складі ОС та додатків, що дозволяють контролювати фактичне використання ліцензійних програм у мережі).
LUG	Local User Group – локальна група користувачів.
LVM	Logical Volume Manager – програма управління логічними томами.
<b>М</b>	
MAC	Media Access Control – управління доступом до середовища передання (стандарт мереж Ethernet).
MAN	metropolitan area network – загальноміська мережа.
MAPI	Messaging Application Programming Interface – інтерфейс програмування додатків електронної пошти (запропонований фірмою Microsoft).
MAS	Multimedia Access System – система доступу до даних мультимедіа.

MAU	a) 1) medium attachment unit – блок доступу до середовища (передання даних); 2) multistation (multi) access unit – пристрій множинного доступу. b) 1) Medium Dependent Interface – інтерфейс, що залежить від середовища (передання даних); 2) Multiple Document Interface – інтерфейс для роботи з кількома документами.
MFC	Microsoft Foundation Classes – базові класи (об’єктів) фірми Microsoft.
MHS	1) Message Handling Service – служба обробки повідомлень (протокол фірми Novell для зв’язку із системами електронної пошти); 2) Message Handling System – система обробки повідомлень.
MI	management interface – інтерфейс управління.
MIB	Management Information Base – адміністративна база даних.
MIDI	Musical Instrument Device Interface – інтерфейс електромuzичних інструментів. Multilevel Security – багаторівневий захист даних.
MMPM	Multimedia Presentation Manager – програма управління презентацій з використанням мультимедіа.
MP	multiprocessing – мультипроцесорна обробка.
MPC	multi-purpose communications – багатоцільова система зв’язку.
MVS	1) multiple virtual storage – багатосегментна віртуальна пам’ять; 2) MultiVideo System – система мультивідео.
<b>О</b>	
O&M	operation and maintenance – експлуатація та технічне обслуговування.
OD	(O/D) on demand – на вимогу, за запитом.
ODA	Open Document Architecture – відкрита архітектурна обробка документів (див. також ODMA).

ODAPI	Open Database Application Programming Interface – відкритий інтерфейс прикладного програмування баз даних.
ODBC	(ODC) Open Database Connectivity – відкриті засоби зв'язку з базами даних (стандартний інтерфейс фірми Microsoft).
ODL	object definition language – мова опису об'єктів.
OLTP	on-line transaction processing – оперативна обробка транзакцій.
OMW	Object Management Workbench – інструментальний засіб об'єктного управління.
ONA	Open Network Architecture – відкрита архітектура мережі.
OODB	object-oriented database – об'єктно-орієнтована база даних.
OOPS	object-oriented programming system – об'єктно-орієнтована система програмування.
OSF	Open Software Foundation – Фонд відкритого програмного забезпечення (консорціум компаній-розробників).
OURS	Open User Recommended Solutions – технічні рішення, що рекомендуються для користувачів відкритих систем у розподілених середовищах, що містять продукти різних постачальників.

## Р

PABX	private automatic branch exchange – приватна АТС з вихідним і вхідним зв'язком (з містом).
PAD	packet assembly and disassembly – формування та декомпозиція (розпакування) пакетів.
PC	Personal Computer – персональний комп'ютер, ПК.
PCL	Printer Control Language – мова управління принтерами.

PDA	Personal Digital Assistant – персональний цифровий асистент, електронний секретар (тип портативного комп'ютера).
PDB	protocol data block – протокольний блок даних.
PDF	Portable Document Format – формат документа.
PDL	Page Description Language – мова опису сторінок.
PG	presentation graphics – презентаційна графіка.
PGP	Pretty Good Privacy – “надійна конфіденційність” (алгоритм шифрування).
PL	programming language – мова програмування.
PPL	process-to-process linking – зв'язок між процесами.
PPP	Point-to-Point Protocol – протокол двох точкового зв'язку.
PTF	Program Temporary Fixes – тимчасові виправлення у програмі.
PTM	packet transfer mode – режим пакетного передавання.
PVC	1) permanent virtual circuit – постійний віртуальний канал; 2) permanent virtual connection – постійне віртуальне з'єднання.

## Q

QBE	Query by Example – запит за зразком.
QBF	Query by Form – запит за формою.
QBM	Query by Model – запит за моделлю.
QIC	quarter-inch cartridge – 1/4-дюймовий картридж.

## R

RACF	Resource Access Control Facility – засоби управління доступом до ресурсів (система захисту даних у хост-машинах фірми IBM).
RAID	Redundant Array of Inexpensive Drives (Disks) – матриця дешевих дискових накопичувачів з надмірністю.
RAS	1) Reliability, Availability and Serviceability – надійність, працездатність і зручність експлуатації (апаратури); 2) Remote Access Server – сервер дистанційного доступу.
RC	remote control – дистанційне управління.
RDA	Remote Database Access – дистанційний доступ до баз \$ --ke.
RJE	Remote Job Entry – дистанційний введення завдань.
RLE	run-length encoding – групове кодування.
RMON	Remote Monitoring: 1) дистанційний збір адміністративної інформації, 2) середовище дистанційного мережі (стандарт).
RPC	Remote Procedure Call – дистанційний виклик процедур (адміністрування мережі).
RTP	Rapid Transport Protocol – протокол прискореного передавання даних (складова частина HPR).

## S

SAA	Systems Application Architecture – архітектура системних додатків (запропонована фірмою IBM для з'єднання різних платформ у мережі).
SAFE	Secure Access Facility for Enterprise – засоби доступу до захищених даних у мережі підприємства.
SAM	1) Secure Access Management – управління захищеним доступом; 2) System Administrator Means – інструментальні засоби системного адміністратора.

SAS	single attachment station – станція з єдиним підключенням (до мережі).
SCS	structured cabling system – структурована кабельна система.
SCSI	Small Computer System Interface – інтерфейс малих обчислювальних систем (стандарт).
SFS	Shared File Server – файл-сервер колективного доступу.
SGML	Standard Generalized (General) Markup Language – стандартна узагальнена мова опису документів.
SIG	Special Interest Group – спеціальна група (кінцевих користувачів) з будь-якої проблеми (у складі Асоціації з обчислювальної техніки США).
SINC	single-image network computing – єдине представлення мережевих обчислень.
SMF	Standard Messaging Format – стандартний формат передавання повідомлень.
SNAP	Standard Network Access Protocol – стандартний протокол доступу до мережі.
SPA	Software Publishers Association – Асоціація видавців програмних продуктів.
SQA	software quality assurance – забезпечення якості програмного забезпечення.
SQL	Structured Query Language – мова структурованих запитів.
SRB	source route bridging – мостове передавання з маршрутизацією від джерела (протокол, запропонований фірмою IBM).
SWS	structured wiring system – структурована система кабельної розводки.

## Т

TAPI	Telephony Application Programming Interface – інтерфейс програмування додатків телефонного зв'язку (стандарт, запронований фірмами Microsoft та Intel).
TFT	thin-film transistor – тонкоплівковий транзистор.
TLU	table look-up – табличний пошук.
TP	1) transaction processing – обробка трансакцій; 2) Transport Protocol – транспортний протокол; 3) twisted pair – вита пара.
TPC	Transaction Processing Council: 1) Рада з обробки трансакцій; 2) однойменний набір стандартів для тестування СУБД.
TPI	tracks per inch – кількість доріжок на дюйм.
TPS	transactions per second – кількість трансакцій за секунду.
TSR	1) terminate-and-stay-resident – “після виконання залишитися в пам'яті” (тип резидентної програми); 2) Time-Sharing Regime – режим розподілу часу.
TTS	text-to-speech – (преобразование) “текст-до-мови”.

## У

UART	Universal Asynchronous Receiver/Transmitter – універсальний асинхронний приймач-передавач.
UDF	user-defined function – функція, що визначається користувачем.
UDM	Uniform Data Model – стандартна модель даних (стандарт взаємодії бібліотек взаємодії програм, що використовуються багаторазово).
ULP	Upper Layer Protocol – протокол верхнього рівня.
UMIG	Universal Messaging Interoperability Group – група з універсальної взаємодії системи передавання повідомлень.



UNI	User(-to-)Network Interface – мережевий інтерфейс користувачів (зокрема в мережі АТМ).
URPC	Universal Remote Procedure Call – універсальна система дистанційного виклику процедур.
USS	United States Standard – стандарт США.
UTP	Unshielded Twisted Pair – неекранізована вита пара.
<b>V</b>	
VAC	value-added carrier: 1) високоякісна лінія зв'язку, що орендується; 2) компанія – володар мережі, що надає додаткові послуги.
VAN	value-added network – мережа з додатковими послугами.
VAT	Video Audio Teleconference – відео-аудіо-телеконференція.
VDI	Video Device Interface – інтерфейс відеопристрою.
VDS	virus detection system – система виявлення вірусів.
VDT	visual display terminal – відеотермінал.
VESA	Video Electronics Standards (Suppliers) Association: 1) Асоціація зі стандартів у галузі відеоелектроніки (Асоціація виробників засобів відеоелектроніки); 2) однойменний тип локальної шини в ПК з процесором фірми Intel.
VIVID	Video, Voice, Image and Data – відео, мова, зображення та цифрові дані (мультимедія).
VLB	VESA Local Bus – локальна шина VESA.
VRS	voice recognition system – система розпізнавання мови.
VTAM	virtual telecommunications access method – віртуальний телекомунікаційний метод доступу.

## W

WABI	Windows Application Binary Interface – двійковий інтерфейс додатків середовища Windows.
WAN	Wide-Area Network – глобальна мережа.
WAND	Wide-Area Network Distribution – розповсюдження програм глобальною мережею.
WFS	workflow software – програмне забезпечення автоматизації ділових процедур (документообігу).
WORM	Write-Once/Read-Many – з одноразовим записом і багаторазовим зчитуванням (тип лазерного диску).
WWW	World-Wide Web – всесвітня “павутина” (глобальна гіпертекстова система у мережі Internet).
WYSIWYG	What You See Is What You Get – “що бачиш, те і отримуєш” (режим повної відповідності зображень на екрані та роздруківки).

## X

XCOFF	Extended Common Object File Format – розширений загальний формат об’єктних файлів.
XDP	External Data Presentation – зовнішнє представлення даних.
XE	extended edition – розширена редакція (версія програмного продукту).
XOR	exclusive OR – виняток АБО.

## Z

ZIF	zero insertion force – з нульовим зусиллям зчленування (з’єднувач).
ZIP	zigzag-in-line package – плоский корпус зі штирковими выводами, розташованими зигзагоподібно.

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*Навчальне видання*

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