Unit 3

PERSONAL COMPUTER

1.1. Read and translate the following words and word-combinations.

System software, application software, interact, a combination of two types of interface, a list of choices, a word-processing program, a menu of numbered choices, available menus, pictures and graphic symbols, a trash can, a method for dividing, variable-sized rectangles, at the same time.

1.2. Learn key words and word-combinations.

argument (n) – аргумент
command-driven interface – командно-керований інтерфейс
command-line interface – інтерфейс командних рядків
execute (v) – виконувати
file folder – каталог файлів
graphical user interface (GUI) – графічний інтерфейс користувача
icon (n)– піктограма
menu-driven interface – інтерфейс, керований через меню
menu bar – рядок меню
pop-up menu – спливаюче меню
prompt (v) – підказувати
provide feedback – забезпечувати зворотний зв'язок
pull-down menu – низхідне меню
request (v) – просити
user interface – інтерфейс користувача
window (n) – вікно
word-processing program – програма опрацювання текстів
WIMP (Window Icons Menus Pointers) – інтерфейс екранних вікон

1.3. Read and translate the text.

Types of Software

Personal computer software comes in many different varieties, and the applications number in the thousands, so it is useful to know how individual programs are categorized. The broadest classifications of software are system software and application software.

System software includes

- Operating systems.
- Programming languages.

When using personal computer software, you interact with the **user interface** – the software that is responsible for passing information to and from the person using a program. The purpose of a user interface is to enable you to communicate with and control the computer. It takes your requests and distributes them to other parts of the program that perform the actual processing tasks. It also provides feedback to you while the software is running and provides output from the results of the processing tasks.

User interfaces differ in the way you give them commands. Interacting with software can be accomplished with a command-driven, menu-driven, or graphical interface, or a combination of two or more types of interfaces.

Command-driven interfaces request or prompt you to type in a single letter, word, or line that is then translated into an instruction for the program to follow. The typical command begins with a verb, such as COPY. The verb is followed by one or more words called **arguments** that specify in more detail what the command is to accomplish. For example, in the operating system command COPY OLDDATA NEWDATA, COPY is the verb, and the arguments are two file names separated by a space. When the command is executed, it copies the data in the file named OLDDATA to the file named NEWDATA.

Menu-driven interfaces offer you a list of choices or options, called a **menu**, so that you can choose from several dif-ferent commands or functions. For example, a word-processing program might offer a menu of numbered choices. You type the number that corresponds to your choice.

A popular form of menu-driven inter-faces uses two levels to provide more choices. At the first level, a menu bar provides a list of all the available menus. When you select a choice from the menu bar, a list of choices will drop down from the menu bar. This type of menu is called a **pull-down menu.**

Menu-driven interfaces are generally easier to learn than command-driven interfaces. However, if the menu-oriented system is not flexible (i.e., if it requires you to continue working your way through menus long after you have mastered the use of the system), it can become annoying to use.

Graphical user interfaces, often abbreviated GUIs, use pictures and graphic symbols to represent commands, choices, or actions. They often present the user with a graphic representation of a desktop, complete with pictures or icons of disks, a trash can, file folders, and programs. In addition, they provide **windows** – a method for dividing the display screen into variable-sized rectangles for viewing two or more applications or parts of an application at the same time.

1.4. Find synonyms.

individual, request, option, select, communicate, choice, specify, wide, personal, ask, divide, define, choose, interact, interpret, separate, accomplish, simultaneously, broad, translate, share, execute, at the same time.

1.5. Fill in the blanks with the words from the box.

ROM, graphic and intuitive tools, a window, interface

1. A Macintosh _____ is called WIMP: Window, Icon, Mouse and a Pointer.
2. The _____ chips of a Macintosh contain libraries, that provide program developers with routines for generating windows, dialogue boxes, icons and pop-up menus.
3. Double-clicking opens _____ which contains programs, documents or further nested windows.
4. A user interface is based on _____.

1.6. Explain the following terms in your own words.

window, pull-down menu, icon, folder, scroll bar, trash can (basket).

1.7. Translate into English off-hand.

Інтерфейс користувача

Будь-яку прикладну програму розробляють для широкого кола користувачів, і вона повинна мати прості та зручні засоби взаємозв'язку з

нею. Ці засоби називають інтерфейсом користувача.

Через інтерфейс користувач керує роботою програми, отримує від неї повідомлення, відповідає на запити програми та ін.

За способом розміщення вікна на екрані дисплея розрізняють горизонтальне меню (menu bar), спадаюче (pull-down), які звичайно з'являються під відповідним пунктом горизонтального меню, спливаюче (pop-up) меню, яке часто з'являється в позиції курсора миші.

Важливим елементом інтерфейсу користувача є вікно діалогу. Вікно діалогу видається на екран дисплея за програмою. У ньому або пропонується перелік об'єктів для вибору, наприклад перелік файлів, шрифтів, або його потрібно заповнити самому користувачу.

Можливості вікон діалогу графічних систем набагато ширші текстових. Вони включають додаткову кількість елементів, таких, наприклад, як командні кнопки, прапорці, поля вибору та ін.

Ще одним елементом інтерфейсу користувача є повідомлення системи, які відображаються на екрані дисплея. Ці повідомлення можна розділити на такі групи:

1) Повідомлення, які не потребують від користувача ніяких відповідних дій. Як правило, ці повідомлення інформують користувача про той процес, який проходить в комп'ютері. Наприклад, процес копіювання може супроводжуватись на екрані заповненням кольорової смуги. Або, наприклад, при знищенні файлів на екран видаються імена цих файлів.

2) Це повідомлення, які потребують від користувача відповідних дій. До таких повідомлень належать повідомлення про нормальне завершення програми (у цьому випадку достатньо натиснути клавішу Enter) і повідомлення про особливі ситуації. До останніх відносять, наприклад, повідомлення про відсутність дискети в дисководі, повідомлення про неможливість копіювання файла через відсутність вільної пам'яті на диску та ін.

1.8. Answer the questions.

1. What is the purpose of a user interface?
2. In what way do user interfaces differ?
3. What types of interfaces are easier to learn?
4. What types of interfaces are generally used nowadays?
5. What does the abbreviation GUI stand for?

6. What do GUIs present the user with?
7. What does the acronym WIMP mean?
8. How do you run a program on a computer with a graphical interface?
9. Can you give two reasons for the importance of user-friendly interface?
10. What are the most widely known GUIs?

2.1. Read and translate the following words and word-combinations.

The overall operation, set of parts, multiple tasks, within a single computer, keep track of, take care of, application programs, a named collection of information, store information, an empty platter, retrieve information, translate instructions, at a time, integration of dynamic data types, a video track, a sound track.

2.2. Learn key words and expressions.

application (n) – прикладна програма застосування; використання
device driver – драйвер пристрою
device file – файл пристрою
format (v) – форматувати
format the disk – форматувати диск
integration of dynamic data – інтеграція (об'єднання) динамічних даних
keep track of – слідкувати за
kernel (n) – ядро
manage files – керувати файлами
manage information in memory – керувати інформацією в пам'яті
manage the flow (stream) of information – керувати потоком інформації
multimedia extension – розширення мультисередовища
multitasking OS – багатозадачна ОС
operating system – операційна система
portability (n) – рухливість; мобільність
shell (n) – оболонка
single-tasking OS – однозадачна ОС
support application programs – підтримувати прикладні програми

2.3. Read and translate the text.

Operating Systems

An **operating system** is software that manages the overall operation of the computer system. Its primary purpose is to support application programs. The parts of an operating system can be grouped into four broad functional categories. One set of parts forms the **shell** or user interface; another set of parts is responsible for coordinating multiple computers in a network; a third set coordinates multiple tasks or basic units of work within a single computer; and, finally, the **kernel** of the operating system is software that ties the hardware to the software and performs such tasks as keep-

Personal computer operating systems

Part	Functions	Trends
Shell	Interface with user	Windowing Graphical user interfaces
Network Management	Communicate with other computers	Internetworking Standard protocols
Task Management	Coordinate multiple applications	Multitasking Advanced memory management
Kernel	Interface with hardware	Microkernel Richer variety of files

All application programs share some tasks in common. They include accepting characters typed at the keyboard, displaying information on the screen, managing information on a disk, and managing information in memory. The operating system takes care of the details of these tasks. A most important example of how operating systems support application programs is the task of managing files. A **fil**e is a named collection of information. Whether your application is general or special purpose, your program needs to store information in files.

By itself, a disk is an empty platter waiting to be filled. The operating system takes care of

- Formatting the disk, which involves electronically preparing the disk to be able to store files.
- Managing the location of information on the disk.

- Checking to make sure that errors do not occur when reading to and writing from the disk.
- Performing the input and output necessary to retrieve and store information on the disk.

Operating systems also manage the other components of a computer system. They support programs, called **device drivers**, that control the various hardware devices, such as the keyboard, display screen, and printer. The device driver translates instructions from the application into commands the hardware understands

A **single-tasking operating system** runs one application program or task at a time. With multitasking operating systems, you can have more than one application program or task active at a time. The operating system takes care of the details that are required to keep track of each task, know where the task's data are in memory, and allocate a fair share of computing services to each task.

Some operating systems allow integration of dynamic data types such as sound, animation, and video. To accomplish this, the operating system uses **multimedia extensions** – time-based synchronizing software for managing the coordination of video, sound, and animation. For example, a film might contain a video track and a sound track that need to be coordinated when the film is played on a computer's display screen.

2.4. Find antonyms.

Similar, secondary, in practice, descendent, advantage, permanent, minor, top, exclude, an extensive number, ancestor, few, internal, specific, major, primary, temporary, external, different, bottom, general, include, in theory, drawback.

2.5. Find synonyms.

Manage, multiple, involve, significant, interpret, control, numerous, translate, display, need, allocate, purpose, tie, show, require, contain, integration, aim, connect, important, check, hold, combination, goal, share, search, examine, cooperate, shell, divide, instruction, retrieve, work together, core, include, nuclear, command.

2.6. Translate the following compound nouns into Ukrainian.

Multimedia extension, program management, network service, user interface, security control, application portability, software developer,

hardware types, computer hardware, user familiarity, program file, video track.

2.7. Translate the following word-combinations into English so that could form compound nouns.

Файл пристрою, ім'я файла, рядок меню, екран дисплея, інтерфейс користувача, комп'ютерна система, драйвер пристрою, пристрої апаратного забезпечення, звукова доріжка, прикладне програмне забезпечення, програмні засоби бази даних, програмні засоби користувача, пристрій уведення, системний пристрій, пристрій виведення.

2.8. Give English equivalents.

Керувати потоком інформації, піклуватися про деталі, форматувати диск, керувати розміщенням інформації, слідкувати за кожним завданням, прикладна програма, підтримувати прикладні програми, виконувати програму, зберігати інформацію на диску, керування мережею, перекладати команди, звукова доріжка, ядро операційної системи, оболонка, головна мета, спільно користуватися.

2.9. Explain the terms and word-combinations in your own words.

Format a disk, multimedia extension, single-tasking OS, multitasking OS, device driver.

2.10. Answer the questions.
1. What is a primary purpose of an operating system?
2. What functional categories can the parts of an operating system be grouped into?
3. What does an operating system manage?
4. What is the shell responsible for?
5. What part of an OS ties hardware to software?
6. What is a file?
7. What does a device driver control?
8. What software does an operating system use to allow integration of dynamic data type?

3.1. Read and translate the following words and word-combinations.

Similar functions, in practice, the highly competitive nature, evolve improvements, undergo updates, an ancestor, a descendant, make compati-

ble, standard methods, temporary windows, without modification, high-performance computers, the academic community, allocate resources, mediate accesses, application portability, familiarity with the interface, the safety and privacy of information.

3.2. Learn key words and word-combinations.

allocate resources – розподіляти ресурси
application writer – редактор програми
available (adj) – наявний; придатний
back up (v) – робити резервну копію
compatible (adj) – сумісний
delete (v) – вилучати; усувати; витирати
dialog box – вікно діалогу
file system – файлова система
library (n) – бібліотека
manage hardware – керувати апаратним забезпеченням
mediate access – опосередковувати доступ
network service – обслуговування мережі
read access – доступ для читання
run (v) – виконувати
update (n) – нова версія; оновлення, (v) – модифікувати; оновлювати
window interface – поліекранний інтерфейс
write access – доступ для запису

3.3. Read and translate the text.

Comparing Operating System

Although in theory all operating systems perform very similar functions, in practice there are many different operating systems. One primary reason is the highly competitive nature of the computer industry. Operating systems, like other major computer products, evolve and undergo improvements and updates over time. In addition, applications are developed to take advantage of specific features in operating systems, so applications developed for one operating system may not be available for other operating systems.

MS-DOS. MS-DOS is a single-tasking operating system. Newer versions have a command-driven user interface. Their commands can be used

to format disks; copy, rename, delete, and back up files; and organize and manage files on the disk. Newer versions also include a user interface called the shell with pull-down menus to access commands.

MS-DOS has several advantages. MS-DOS does not require a powerful computer or a large amount of memory to run. It also has several disadvantages. MS-DOS was specifically developed for the Intel family of microprocessors. It has no network services or multimedia extensions. And it has limitations on how it uses memory.

Also, MS-DOS does not provide a user interface for application programs. Thus, applications from, say, Lotus Development Corporation and Borland International present the user with completely different interfaces. A graphical user interface allows a user to learn one interface that works with all applications. MS-DOS users who want a graphical user interface can obtain Microsoft Windows, an extension to MS-DOS that provides standard methods for switching among applications, file and program management, windowing, icons, pull-down menus, scroll bars and **dialog boxes** – temporary windows that contain choices when the program needs additional information from the user.

Windows NT. Windows NT (New Technology), introduced in 1992, is a descendant of DOS and the Windows extensions to DOS developed at Microsoft. It is a multitasking operating system. It has several advantages. It can run DOS and Windows programs without modification. It has network services and multimedia extensions, and it is not limited to the Intel family of processors. It has several disadvantages. It is designed for high-performance computers and requires large amounts of memory and disk space. It does not have as many applications developed for it as do other operating systems.

Operating System/2 (OS/2). When IBM decided to introduce a sec-ond generation of personal computers in 1987, it named them Personal Systems/2. The operating system, called Operating System/2 (OS/2), is an operating system for this generation of personal computers. OS/2 is a multitasking operating system. OS/2 has several advantages. It has network services and multimedia extensions. However, it also has disadvantages. It was specifically designed for the Intel family of microprocessors. It requires a high-performance computer with large amounts of memory and disk space. It does not have as many applications developed for it as do other operating systems**.**

UNIX Operating System. Unix is an increasingly popular operating system. Traditionally used on minicomputers and workstations in the academic community, UNIX is now available on personal computers and the business community has started to choose UNIX for its openness. Previous PC and mainframe users are now looking to UNIX as their operating system solution.

UNIX, like other operating system, is a layer between the hardware and the applications that run on the computer. It has functions that manage the hardware and functions that manage executing applications. So what's the difference between UNIX and any other operating system? Basically, two things: internal implementation and the interface that is seen and used by user.

The UNIX system is actually more than strictly an operating system. UNIX includes the traditional operating system components. In addition, a standard UNIX system includes a set of libraries and a set of applications. Sitting above the hardware are two components: the **file system** and process control. Next is the set of **libraries**. On top are the applications. The user has access to the libraries and to the applications. These two components are what many users think of as UNIX, because together they constitute the UNIX interface.

The part of UNIX that manages the hardware and the executing processes is called the kernel. In managing all hardware devices, the UNIX system views each device as a file (called a device file). This allows the same simple method of reading and writing files to be used to access each hardware device. The file system manages read and write access to user data and to devices, such as printers, attached to the system. It implements security controls to protect the safety and privacy of information. In executing processes, the UNIX system allocates resources (including use of the CPU) and mediates access to the hardware.

One important advantage that results from the UNIX standard interface is **application portability.** Application portability is the ability of a single application to be executed on various types of computer hardware without being modified. This can be achieved if the application uses the UNIX interface to manage its hardware needs. UNIX's layered design insulates the application from the different types of hardware. This allows the software developer to support the single application on multiple hardware types with minimal effort. The application writer has lower development costs and a

larger potential customer base. Users not only have applications available, but can rely on being able to use the same applications on different computer hardware.

UNIX goes beyond the traditional operation system by providing a standard set of libraries and applications that developers and users can use. This standard interface allows application portability and facilitates user's familiarity with this interface.

3.4. Find synonyms.

Main, choice, beyond, numerous, core, contain, handle, allocate, variant, defend, search, purpose, require, cooperate, develop, restriction, acquire, benefit, within, selection, version, include, modification, kernel, change, manage, limitation, obtain, need, protect, advantage, evolve, primary, multiple, aim, retrieve, work together, divide.

3.5. Complete the sentences with the phrases from the box. You can use the phrase more.

application software   operating system   software   system software   system utilities

1. Information provided by programs and data is known as _____.
2. The _____ refers to all programs which control the basic functions of the computer.
3. The _____ refers to all those applications such as word processors and spreadsheets which are used for specific purposes.
4. The _____ is the most important type of system software.
5. _____ are small programs which improve a system's performance and help users take advantage of the computer's capabilities.
6. In most configurations, the _____ is automatically loaded into the RAM section when the computer is started up.

3.6. Translate the following compound nouns into Ukrainian.

Program module, service program, computer device, memory allocation, computer resources, display screen, user interface, disk space, user data, hardware device, computer hardware, development cost, customer base, application portability.

3.7. Translate into English off-hand.

Операційні системи ПК доповнюють апаратні засоби. Вони являють собою набір програмних модулів, які дозволяють користувачеві забезпечувати взаємодію програм з зовнішніми пристроями та один з одним. Операційні системи мають набір сервісних програм, які дозволяють здійснювати перевірку функціонування пристроїв комп'ютера, розмітку дискет, зв'язок з локальною мережею та ін.

До основних функцій ОС, що забезпечують взаємодію програм з апаратурою, треба віднести такі: взаємодію програм із зовнішніми пристроями, розподіл оперативної пам'яті, виявлення помилок і нестандартних ситуацій та ін.

До основних функцій ОС, що забезпечують загальне керування ресурсами комп'ютера, необхідно віднести форматування дискети, виведення на екран дисплея каталогу, копіювання файлів з однієї дискети на іншу, встановлення режимів роботи дисплея та принтера, запуск програми та ін.

3.8. Answer the questions.

1. What is the purpose of an operating system?
2. What changes have operating systems undergone for the last decade?
3. What does the word "compatible" mean?
4. What are the advantages of a multitasking OS over a single-tasking OS?
5. What is the function of the Finder in Macintosh computer?
6. What language are modern OSs written in?
7. Why is Unix considered to be the best?

3.9. Write a report on.

a) Modern OS
b) System Utilities

4.1 Read and translate the following words and word-combinations.

In contrast to, in response to, built-in, problem-solving features, common tasks, specific use, coin, a standard set of office activities, a common application, manual methods, business correspondence, a margin, in addition, a draft, electronic ways, become apparent, a visual aid, look professional, revise a document, blocks of text, a discrepancy, thesaurus program.

4.2. Learn key words and word-combinations.

application software – прикладне програмне забезпечення
arrow key – клавіша керування курсором
boldface (n) – жирний шрифт
compose (v) – складати
deletion (n) – вилучення
draft (n) – чернетка
End key – клавіша переміщення курсора до кінця (сегмента)
flush left (right) – зміщений ліворуч (праворуч); вирівняний ліворуч (праворуч)
font name – назва шрифту
footnote (n) – підрядкова примітка
header (n) – заголовок; рубрика
Home key – клавіша переходу до початку (сегмента)
intended paragraph – абзац
justification – вирівнювання; узгодження
margin (n) – поле (сторінки)
Page Down key – клавіша прямого перегляду
page preview – перегляд сторінок
Page Up key – клавіша зворотного перегляду
point size – розмір у пунктах
revise a document – редагувати документ
save (v) – зберігати
scrolling(n) – прокручування
spacing (n) – відстань; проміжок
spelling checker – орфографічний коректор
type face – вид шрифту
underline (v) – підкреслювати
word processing – опрацювання текстів
word processor – текстовий процесор
word wrap – автоматичний перехід до нового рядка

4.3. Read and translate the text.

Application Software

In contrast to operating systems, application software performs work not related to the computer system itself. This application software falls into two categories: special purpose and general purpose.

Special-purpose programs have been developed in response to the specific needs of individuals, professionals, and small businesses. Dedicated to performing tasks such as payroll, accounting, bookkeeping, education, entertainment, or statistical analysis, the programs contain built-in problem-solving features specially designed for those particular tasks.

General-purpose programs have been developed in response to the general problem-solving needs of people whose work involves such common tasks as planning, writing, record keeping, calculating, and communicating. General-purpose software can be adapted to a wide variety of tasks.

Word processing is a term coined by IBM in 1964 to describe electronic ways of handling a standard set of office activities – composing, revising, filing, and printing written documents. Word processing is a common application for personal computers.

Composing a document simply means typing the text on your computer keyboard. With most word processors, you select an option that lets you create a new document and begin typing. When you start with a blank screen, a small blinking box or underline, called a cursor – a visual aid on the display screen – is positioned at the beginning of the document. As you type, the cursor marks where the next character you type will appear. With most word processors, you will notice that when you reach the end of a line, the cursor will automatically jump down to the next line and any words extending past the right margin will automatically drop with the cursor. This feature is called **word wrap;** it allows you to continue typing without having to use the Enter key. In addition, effects that make your work look professional, such as centred titles, headers and footnotes, indented paragraphs, and boldfaced and underlined words or phrases, are all easily accomplished with special commands.

One of the most powerful features of word processing is its ability to **revise** a document. Although revisions can be accomplished during the process of composing your document, assume that you have completely typed a first draft of your report on your word processor. You wish to check it for errors and polish it into a final draft. You can move to any location in the document by using the cursor movement arrow keys, or other specially marked keys, such as Page Up, Page Down, Home, or End. Because many documents are larger than can be displayed on the screen, **scrolling** – the process of moving the contents of a screen up, down, left, or right – can be used to view any portion of the document. By using the cursor movement

keys, you can quickly move through a document and make changes, corrections, additions, and deletions.

For more extensive revisions, you can move, copy, or delete entire paragraphs or other specially marked blocks of text. Revising also includes changing how the document appears, which is called **reformatting**. This capability includes changing from single to double spacing – or vice versa – as well as changing the width of the printed text by resetting the left and/or right margins.

Word processors come with options that help you to compose complex documents. They include **spelling checkers,** thesaurus programs, form-letter addressing programs, and programs that can insert graphics and pictures into your document.

Whatever you compose or revise in a document stays in the computer's memory until you save or file it on a disk. Filing is accomplished by using commands that name and save a fully or partially finished document on a disk.

Most word processors have a feature called **page preview** that allows you to view a screen representation of how pages will be produced by the printer. Others are designed to reproduce the words on the page in exactly the same format as they appear on the display screen. One of the benefits of word processing is its ability to revise and edit draft copies without having to print each version. Only the finished draft need be printed.

4.4. Find synonyms.

Perform, purchase, contain, specific, handle, benefit, select, begin, look for, blank, locate, next, permit, go on, make up, see, fast, ability, accomplish, buy, include, particular, symbol, manipulate, choose, alter, insert, start, position, indicate, allow, continue, advantage, view, quick, paste, empty, mark, following, character, compose, make changes, search, capability.

4.5. Give English equivalents.

У відповідь на, редагувати документ, ставати очевидним, вибирати опцію, чернетка, підрядкова примітка, заголовок, рубрика, підкреслювати, абзац (відступ), до того ж, подвійний інтервал, вилучати, мати професійний вигляд, орфографічний коректор, рух курсору, прикладне програмне забезпечення, вирівнювання/узгодження, об'єднання, клавіша прямого перегляду.

4.6. Explain the following terms in your own words.

Word processing, cursor, spelling checker, page preview, general-purpose program, special-purpose program, word wrap, scrolling.

4.7. Look at the words in the box and complete the following sentences with them.

type style	WYSIWYG	format	indent
font menu	justification	mail	merging

1. _____ stands for "what you see is what you get". It means that your printout will precisely match what you see in the screen.
2. _____ refers to the process by which the space between the words in a line is divided evenly to make the text flush with both left and right margins.
3. You can change font by selecting the font name and point size from the _____.
4. _____ refers to a distinguishing visual characteristic of a type face; "italic", for example is a _____ that may be used with a number of typeface.
5. The _____ menu of a word processor allows you to set margins, page numbers, spaces between columns and paragraph justifications.
6. _____ enables you to combine two files, one containing names and addresses and the other containing a standard letter.
7. An _____ is the distance between the beginning of a line and the left margin, or the end of the line and the right margin. Indented text is usually narrower than text without _____.

4.8. Answer the questions.

1. What kind of work does application software perform?
2. What categories can application software be divided into?
3. What are the advantages of general-purpose software?
4. What does the term "word-processing" mean?
5. What is a purpose of a cursor?
6. What is one of the powerful features of word processing?
7. What options do word processors come with?
8. What is page preview?

5.1. Read and translate the following words and word-combinations.

Methods and techniques, arcade games, in conjunction with, sophisticated presentations, the growing popularity, a step-by-step series, convey ideas, share programs and information, message-passing centre, topical in nature, a projection panel, directory services, car reservation, computer-to-computer communication, various modes of communication, switching between functions.

5.2. Learn key words and phrases.

arcade game – відеогра в реальному часі
business graphics – ділова графіка
chart (n) – схема; креслення; діаграма
communication software – програмне забезпечення зв'язку
computer graphics – комп'ютерна графіка
computer-aided design – автоматизоване проектування
draw program – графічна програма
electronic bulletin board – електронна дошка об'яв
electronic mail – електронна пошта
file structure – структура файла
graphics software – програмні засоби машинної графіки
log on a system – завантажувати систему
modem (n) – модем
paint program – програма малювання
presentation graphics – супровідна графіка
share programs – спільно користуватися програмами
spreadsheet program – програма табличних розрахунків
stand-alone – автономний

5.3. Read and translate the text.

Graphics and Communications Software

Computer graphics is a broad term that refers to the methods and techniques used to draw pictures or images on display screens or on graphic printers and plotters. You have probably seen computer graphics in arcade and educational games and in special effects on television programs and

films. Another use for graphics is in the graphical user interfaces, where pictures are used in conjunction with words to communicate with the user.

Graphic software for personal computers can be used to create charts, presentations, maps, drawings, diagrams, and pictures. The simplest graphic software consists of paint and draw programs. A **paint program** provides commands to create lines, circles, rectangles, and other shapes, as well as do freehand sketching. A **draw program** provides similar capabilities, but the objects created, such as circles or rectangles, can be resized or moved around on the screen without affecting other objects. Draw programs are better suited for diagrams that must often be changed, whereas paint programs are preferred for more artistic illustrations. **Computer-aided design** (CAD) programs use very sophisticated draw-program features to allow engineers to use their display screens as electronic drafting tables and eliminate the tedium of manually redrawing their designs in much the same way that the users of spreadsheet programs eliminate the tedium of manual recalculation.

The largest application for personal computer graphic software is producing business graphics. Application software for business graphics includes two categories, charting programs and presentation graphics programs.

Charting programs are built-in components of spreadsheet programs. These programs are capable of transforming data that are contained in their spreadsheet into charts – graphics or diagrams that display data or the relationships among data in pictorial form. Common chart types include bar, line, and pie charts.

Presentation graphics programs, sometimes called desktop presentation programs, are stand-alone programs that help you create presentations including output to transparencies or slides.

The traditional presentation involves a step-by-step series of slides consisting of bullet-pointed text and accompanying graphics. It is typically used to supplement a human speaker who is trying to convey ideas to another person or a group of people. Using the computer's display screen for presentations is becoming more common. Also, the contents of the screen can be displayed using a projection panel, a device that sits on top of an overhead projector. More sophisticated presentations incorporate animation, sound, and video, thanks to the growing popularity of multimedia.

By itself, a personal computer is a powerful and interesting tool, but when it can communicate with other computers, a whole new world of ap-

plications opens up. Groups of computers linked together in networks can share programs and information. For example, you can communicate with another personal computer by sending and receiving **electronic mail** – an application that handles the sending and receiving of electronic messages. You can connect to a public-access **electronic bulletin board,** software that serves as an information and message-passing centre for its users. Electronic bulletin boards are usually topical in nature and exist for almost any subject.

Most computer-to-computer communication occurs over the telephone system, so you need a device called a modem. A **modem** – short for modulate and demodulate – is a hardware device that enables two computers to exchange data over standard telephone lines. A modem may be a device that is separate from the computer or it may be built into the computer. Modems generally include such useful features as automatic dialling, automatic answering, and options for various modes of communication.

In addition to a modem, communications software is necessary to provide the interface between one computer with a modem and another computer with a modem. A communications program automates many of the functions involved in getting the computer to communicate. In effect, it provides you with a set of commands so that you can easily perform such operations as dialling the phone, redialling if connection is not established on the first try, putting your computer in automatic answer mode so that it can receive calls from other modem-equipped computers, storing and retrieving a list of frequently called numbers, automatically logging on to the system you are calling, and capturing data or transferring files automatically.

All the programs discussed in the categories of general- and special-purpose application software can be combined or **integrated.** Integration provides the benefits of easy switching between functions without having to go back to the operating system and the ability to share data between functions. For example, with integrated word processor and database programs, you can instruct the word processor to obtain the required addresses from the database and print multiple letters to different addresses automatically. Integration can be accomplished in a variety of ways. The simplest method is to incorporate multiple functions into a single program. Families of programs, such as an integrated accounting application, can share data between programs.

5.4. Give Ukrainian equivalents of the following terms and expressions.

Electronic mail, computer graphics, electronic bulletin board, paint program, message-passing center, draw program, on-going dialog, charting program, information-providing service, desktop presentation program, communications software, stand-alone program, automatic answer mode, step-by-step, log on to a system, to share programs, capture data, to transfer files, integrated program, file structure.

5.5. Find synonyms.

Picture, link, on-going, occur, combined, perform, method, change, transfer, manage, apply, transform, stand-alone, use, illustration, selection, transmit, convert, begin, connect, interactive, technique, organize, alter, sophisticated, start, take place, autonomous, integrated, fulfil.

5.6. Complete the sentences using the words from the box. You can use words more than once.

computer graphics	computer animation	CAD software

1. _____ are pictures and drawings produced by the computer.
2. _____ is used to develop, model and test car designs before the actual parts are made.
3. _____ is the process of creating objects which move across the screen.
4. Engineers use _____ to design circuits.
5. Basically, _____ helps users to understand complex information quickly by presenting it in a clear visual form.

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

creating	adding	clicking	processing	printing	rendering

1. Graphic artists like _____ colour and depth to their drawings and designs.
2. A 32-bit painting program has a complete palette of tools for _____ images from scratch.

3. The speed of a microprocessor is important in _____ information.
4. Before _____ a document, the user should decide on the layout.
5. You can open the colour palette by _____ on the corresponding pop-up icon.
6. _____ refers to the techniques used to make realistic objects.

5.8. Translate into English.

Презентація зі сценарієм – це традиційна презентація зі слайдами, доповнена засобами кольорової графіки й анімації з виведенням відеоматеріалу на великий екран. У ній забезпечується можливість під час показу вносити зміни у процес демонстрації. Цей вид презентації належить до найпоширеніших мультимедійних презентацій, які включають титри, що пливуть по екрану і містять додаткові пояснення.

Використання анімаційного тексту в поєднанні з анімаційними діаграмами, графіками та ілюстраціями дає змогу зосередити увагу слухачів на основних положеннях і сприяє кращому запам'ятовуванню інформації.

5.9. Answer the questions.

1. What is "computer graphics"?
2. What do acronyms "CAD", "CAE", "CAM" stand for?
3. What are the benefits of using computer graphics in engineering?
4. What are the benefits of using computer graphics in the car industry?
5. What is "desktop presentation"?
6. How can you communicate with another personal computer?
7. What services does a commercial information-providing service include?

6.1. Read and translate the text. Write out computer terms.

Desktop Publishing

One application that has grown in popularity recently is **desktop publishing.** In all organizations, there is the fun-damental need to produce written communications that not only deliver a message clearly but have a professional look as well. Desktop publishing can satisfy that need. In its sim-

plest form, desktop publishing entails the use of personal computers to prepare and print a wide variety of typeset- or near-typeset-quality documents.

Desktop-publishing software, often called **page-composition software,** shares some characteristics with its progenitor, word-processing software; however, desktop-publishing programs are quite different from word processing programs. A word processor's features are designed to let users control and manipulate a document's content, whereas a desktop-publishing program is more concerned with changes in style, format, placement, and shaping of text and graphics. Anyone who is considering using a desktop-publishing program should be prepared to learn the basics of graphic design and typography. Effective design is the key to publishing clear, professional-looking communications.

The process involves designing or laying out the publication; making up or composing the document by assembling the text and graphics created by other programs; making changes such as repositioning items, editing text, and manipulating graphics; and publishing the finished product on a high-quality printer.

Desktop publishing can be used to create
- Manuals and technical documentation.
- Low-volume specialty publications.
- Proposals, press releases, letters, brochures, and newsletters.
- Financial statements.
- Business forms.
- Proof copies for commercial typesetting and printing.
  In these applications, desktop publishing can accomplish the following:
- Reduce the time and number of steps required to print pages.
- Print on demand (where and when needed).
- Produce customized documents.
- Produce documents that can be corrected and reprinted in minutes.

In addition to high-quality printers, desktop publishing requires a good deal of graphic display capability.

6.2. Answer the questions.

1. In what way do desktop publishing programs differ from word-processing programs?
2. What documents can be produced with desktop publishing software?
3. What capabilities does desktop publishing require?

4. What do these terms mean in Ukrainian: page-composition software, image setter?
5. What are the advantages of desktop publishing?

7.1. Read and translate the following words and word-combinations.

A collection of data, the database capabilities, computerized filing cabinets, sophisticated multiple-file systems, handle basic tasks, a general example, a set of records, a preidentified sequence, ZIP code, the entire contents, to meet the criterion, a specific record.

7.2. Learn key words and word-combinations.

database (n) – база даних
database management system – СКБД (система керування базою даних)
database manager – адміністратор бази даних
database program – програма бази даних
database software – програмні засоби бази даних
field (n) – поле
file manager – програма керування файлами
format (v) – форматувати
personal information manager – адміністратор особистої інформації
record (n) – запис
record structure – структура запису
report generator – генератор звітів

7.3. Read and translate the text.

Database Software

A **database** is a collection of data, a structure, and programs that can manage and manipulate the data and its structure. The database capabilities for personal computers vary widely. Very simple databases are nothing more than computerized filing cabinets. Sophisticated multiple-file systems are suitable for organizing large amounts of information and retrieving that information in many different ways.

Database software for personal computers falls into two categories:

- A **file manager** is composed of a single file, its indexes, and a program to handle basic tasks such as entering, modifying, retrieving, and printing data from the file.

- A **database manager** is composed of multiple files, their indexes, the relationships among data in the files, and a program to link the files and handle basic tasks such as entering, modifying, retrieving, and printing data from the file.

A database program derives much of its power through the ability to perform three simple tasks: sorting, searching, and generating reports. To show how a **database program** allows you to perform these tasks, it is helpful to look at a general example. Almost all businesses keep a set of records known as a customer list. In its simplest form, it might be a file, in which each record is a card that contains a customer's name, address, and phone number. A more complex example might include a record for each customer that contains enough information to generate all the company's billing information.

Suppose that the customer list database is made up of one record for each customer, which includes the previously mentioned customer information along with some general information about the customer's purchases. **Sorting,** which involves arranging the records into a predeidentified sequence, makes it possible to generate a list sorted by customer number, alphabetically by customer name, by ZIP code for mailing purposes, or even by items purchased. Sorting a database also makes it possible to search and generate reports in various sequences. For example, you can sort a database alphabetically by customer name to print a report and then sort the database by ZIP code to generate and print mailing labels in ZIP code order.

Searching involves the ability to find information in a database. This might include a most general case in which you want to list the entire contents of a database on the computer's display screen or a special case in which you want to search for a specific record or set of records. For example, if you want to know the name of every customer who purchased more than $10,000 worth of goods last year, you could search the customer list database to display only those customers who meet the criterion – more than $10,000 in sales.

A report generator allows you to create nicely formatted reports, including headings, subheadings, columns of data from the database, columns of data computed from existing fields in the database, and computed intermediate and final totals. Once the format of the report has been defined, it can be saved as a file on a disk and used over and over again to print copies of the report.

A class of software similar to database programs is called **personal information managers.** Like databases, these programs help you manage information. Unlike databases, they can manage information without using the record and field structure common to databases. You do not have to think about the structure of your data ahead of time. For example, you can use a personal information manager to type in notes about a project you are working on, then filter through the notes and reorganize them by categories of your own choosing.

7.4. Complete the following sentences.

1. A database is used to _____.
2. Information is entered on database via _____.
3. Each field holds _____.
4. The advantages of database program over a manual filling system are _____.
5. Access to a common database can be protected by using _____.

7.5. Give English equivalents.

Упорядковувати базу даних в алфавітному порядку, знаходити інформацію в базі даних, керувати даними та їхньою структурою, складні системи файлів, керувати основними завданнями, з'єднувати файли, відповідати критерію, визначити формат звіту, заздалегідь, за власним вибором, друкувати звіт, вводити дані, вилучати дані.

7.6. Give synonyms.

Handle, retrieve, compose, include, modify, arrange, delete, perform.

7.7. Answer the questions.

1. What is a database?
2. Which tasks can be performed by using a database? Make a list of possible applications.
3. What do these terms mean in Ukrainian: file, record, field?
4. What is personal information manager?
5. What stages can be defined while working with database?

7.8. Puzzle.

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

computer graphics	computer animation	CAD software

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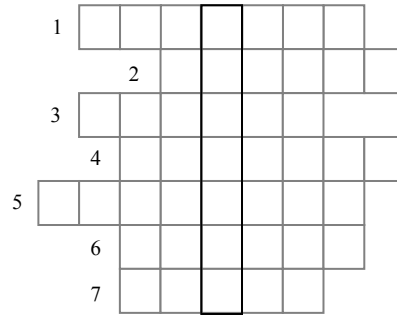
Test Yourself

Match the following key terms to the appropriate definition:

A.
1. User interface
2. Command-driven interface
3. Menu-driven interface
4. Graphical user interface
5. Windows
6. Operating system
7. File
8. Device driver
9. Single tasking
10. Multitasking

a. An interface that uses pictures and graphic symbols to represent commands, choices, or actions.
b. A method for dividing the display screen into variable-sized rectangles.

c. Functional units that control the operation of the hardware components of a personal computer system.

d. A set of programs that manages the overall operation of a computer system.

e. An operating system that allows two or more applications to be operating at the same time.

f. An interface that prompts the user to type in a single letter, word, or line that represents an instruction.

g. Software that passes information to and from the person using the program.

h. An interface that offers a list of choices or options as a way of getting the user to make a selection.

i. An operating system that allows one application to be operating at a time.

j. A named organized collection of information.

B.
11. Network services
12. Multimedia extensions
13. Application software
14. Special-purpose programs
15. General-purpose programs
16. Word processing
17. Cursor
18. Word wrap
19. Scrolling
20. Desktop publishing
21. Spreadsheet

a. Programs that are dedicated to performing single-use tasks.

b. Time-based synchronizing software for coordinating video, sound, and animation.

c. An interactive program that enables you to organize numbers and formulas into a rectangular array of cells.

d. Software that provides file-sharing, print-sharing, and electronic mail.

e. A blinking box or underline that marks where the next character you type will appear.

f. Programs that are adaptable to a wide variety of tasks.

g. Programs that perform work not related to the computer system itself.

h. Electronic ways of handling a standard set of office activities — composing, revising, printing, and filing written documents.
i. A feature that allows you to type beyond one line without having to use the [Enter] key.
j. The use of personal computers to prepare and print a wide variety of typeset- or near-typeset-quality documents.
k. The process of moving the contents of a display screen up, down, left, or right.

C.
22. Database
23. File manager
24. Database manager
25. Record
26. Field
27. Sorting
28. Computer graphics
29. Charting program
30. Presentation graphics program
31. Modem
32. Communications software

a. The smallest unit of named data that has meaning in a record.
b. Software that provides the interface between one computer with a modem and another computer with a modem.
c. A collection of data, a structure, and programs that manage and manipulate the data.
d. Multiple files, their indexes, the relationships among data in the files, and a program to link the files.
e. Programs that help you create presentations including output to transparencies or slides.
f. A single file, its indexes, and a program to handle basic tasks.
g. A collection of related data treated as a unit.
h. Programs that are capable of transforming data that are contained in their spreadsheet into charts.
i. A device that enables two computers to exchange data over standard telephone lines.
j. The methods and techniques used to draw pictures or images on display screens or special graphic printers and plotters.
k. Arranging records into a preidentified sequence.

True/False:

33. System software includes operating systems and programming languages.
34. Using a personal computer primarily involves finding the right hardware that will meet your application needs.
35. One of the main purposes of an operating system is to support application programs.
36. One trend in operating systems is to make the user interface command driven.
37. Even though operating systems perform similar functions, using one computer's operating system is not the same as using another.
38. One advantage of a word processor is the accuracy with which you can make corrections, additions, and deletions.
39. Word processors require special commands to type in multiple-line documents.
40. Whatever you compose or revise in a word-processing document is automatically transferred to disk.
41. Desktop-publishing users need to learn the basics of graphic design and typography.
42. Only financial people can use spreadsheet programs effectively.
43. An important aspect of a database is the relationship among the data.
44. Searching the database involves arranging the records into a preidentified sequence.
45. The largest application for personal computer graphics software is freehand drawing.
46. A computer must be equipped with special graphics adapters or chips in order to display graphic images.
47. Modems are software programs that provide an interface between two or more computers.

Multiple Choice:

48. Which of the following is not considered application software?
    a. Spreadsheet programs.
    b. Operating systems.
    c. Word processors.
    d. Communications programs.
49. Which of the following are not usually stored in a spreadsheet cell?
    a. Values.
    b. Formulas.

    c. Labels.

    d. Models.

50. Which of the following is not a basic function of a spreadsheet program?

    a. Writing.

    b. Forecasting.

    c. Planning.

    d. Modelling.

51. Computerized record-keeping systems allow you to

    a. Check for spelling and punctuation errors.

    b. Communicate with other computers.

    c. Enter, modify, and retrieve data.

    d. Manage files on disks.

52. The job of managing files belongs to the

    a. Word processor.

    b. Communications program.

    c. Database program.

    d. Operating system.

53. Which of the following types of user interfaces usually requires that you type in abbreviated instruc-tions?

    a. Command-driven interface.

    b. Menu-driven interface.

    c. Graphical user interface.

    d. None of the above.

54. Which of the following is not a function of a word processing program?

    a. Document management.

    b. Composing.

    c. Record keeping.

    d. Revising.

55. A primary purpose of computer graphics is to

    a. Change the user interface of computers.

    b. Communicate with other computers.

    c. Create formatted reports.

    d. Draw pictures on display screens.