OPERATING SYSTEMS

To enable computer systems to function and to allow users to communicate with computer systems, special software, known as operating systems (OS), have been developed. The general tasks for a typical operating system include:

- control of the operation of the input, output and backing storage devices
- supervising the loading, running and storage of applications programs
- dealing with errors that occur in application programs
- maintaining security of the whole computer system
- maintaining a computer log (which details computer usage)
- allowing communication between user and the computer system (user interface).

User interfaces

Operating systems offer various types of user interface. We will consider four different types: command line interface (CLI), graphical user interface (GUI), dialogue-based user interface and gesture-based user interface.

Command line interface (CLI)

A command line interface (CLI) requires a user to type in instructions to choose options from menus, open software, etc. There are often a number of commands that need to be typed in, for example, to save or load a file. The user has to learn a number of commands just to carry out basic operations. It is also slow, having to key in these commands every time an operation has to be carried out. However, the advantage of a CLI is that the user is in direct communication with the computer and is not restricted to a number of pre-determined options.

Graphical user interface (GUI)

A graphical user interface (GUI) allows the user to interact with a computer (or MP3 player, gaming device, mobile phone, etc.) using pictures or symbols (icons) rather than having to type in a number of commands. GUIs use various technologies and devices to provide the user interface. One of the most common is WIMP (windows icons menu and pointing device) which was developed for use on personal computers (PC). Here, a mouse is used to control a cursor and icons are selected to open/run windows. Each window contains an application and modern computer systems allow several windows to be open at the same time. A window manager looks after the interaction between windows, the applications and window system (which handles the pointing devices and the cursor's position).In recent years, devices such as touch screen smartphones and tablets use postWIMP interaction, where fingers are in contact with the screen allowing actions such

as pinching and rotating, which would be difficult to do using a single pointer and a device such as a mouse.

Dialogue-based user interfaces

Dialogue-based user interfaces use the human voice to give commands to a computer system. An example of its use is in some luxury modern cars, where voice activation is used to control devices such as the in-car entertainment system or satellite navigation system. By speaking certain commands, such as 'Hey BMW, drive me to the nearest airport', the system allows natural speech to enable the driver to intuitively interact with the car. The satellite navigation system will automatically direct the driver to their chosen destination (in this case, the nearest airport). This type of interface could also be used in the home; by using voice commands, it is possible to switch on/off lights, operate electronic equipment and so on. In recent years, devices such as Amazon Alexa, Google Now, Apple Siri and Microsoft Cortana have all been developed to interact with a human by recognising verbal commands. These devices act as a personal assistant.

Gesture-based interfaces

Gesture-based interfaces rely on human interaction by the moving of hands, head or even the feet. Gesture recognition allows humans to interface with a computer in a more natural fashion without the need for any mechanical devices. This type of interface uses techniques known as computer vision and image processing. For example, using our car example again, the following gestures can be used to carry out certain functions: rotating a finger clockwise near the radio will increase the sound volumen (rotating the finger anti-clockwise will reduce the sound volume), opening the thumb and next finger will change the track being listened to (for example, in a playlist), moving the foot under the rear bumper of the car automatically opens the boot lid, moving a hand near a window switch automatically opens a window. There are many other examples. Either a sensor or a camera is used to pick up the gesture and a signal is sent to an on-board computer to carry out the required action. It eliminates the need for an array of buttons and dials on the dashboard.

1. Write 2 questions that can be answered with the information from the text.
2. Complete these sentences with information from the text
    a. An example of a task that an OS performs is _____.
    b. A CLI is not fast for the user, because _____.
    c. The first versions of MS DOS are not examples of GUI, because_____.
    d. For a dialogue based interface to work, it is necessary that a device _____.
    e. In gesture-based interfaces, a sensor recognizes a gesture and sends a signal to execute an instruction, so there is no need for _____.
3. Indicate what the words highlighted in yellow refer to.

4. Translate the following noun phrases. Indicate the head noun.
    a. The general tasks for a typical operating system
    b. errors that occur in application programs
    c. direct communication with the computer
    d. the cursor's position
    e. some luxury modern cars
    f. the in-car entertainment system
    g. satellite navigation system
    h. the moving of hands, head or even the feet
    i. the need for any mechanical devices
    j. an on-board computer
    k. the need for an array of buttons and dials on the dashboard
5. Collocations: write words that can appear in the blanks

Maintain_____	Carry out_____	Control _____	Send_____	Allow ____ to _____

6. Look at the expressions in boxes. From all the different meanings that the dictionary provides, choose the most appropriate according to the context:

- DEAL WITH: a) to take appropriate action in a particular situation or according to who you are talking to, managing, etc.; b) to do business with a person, a company or an organization, c) to be about something
- TYPE IN: A) a class or group of people or things that share particular qualities or features and are part of a larger group; a kind or sort; B) having the qualities or features of the group, person or thing mentioned, C) to write something using a computer keyboard or typewriter
- CARRY OUT: A) to do something that you have said you will do or have been asked to do, b) to do and complete a task, c) to take somebody/something from one place to another
- LOOK AFTER: A) to be responsible for or to take care of somebody/something/yourself, B) to make sure that things happen to somebody's advantage, C) an act of looking at somebody/something
- SWITCH ON/OFF: A) to change or make something change from one thing to another, B) to exchange one thing for another, C) to turn a light, machine, etc. off/on by pressing a button
- PICK UP: A) to go somewhere in your car and collect somebody who is waiting for you, B) to answer a phone,

C)to identify or recognize something.

7) Find in the text:

a. A synonym of “Type in”
b. A linking word that contrasts two ideas.
c. Three examples of actions that you perform with your fingers
d. An expression that can be translated as “Ya sea …. O ….”
e. Two verbs in the present simple tense.

8) Have a look at the following sentences:

a. **There are** many other examples
b. **There is** a voice recognition app in my phone.

How do we translate the expressions in bold? What’s the difference between them?

With this text,we worked on:

- □ Noun phrases
- □ Collocations and phrasal verbs
- □ Dictionary skills
- □ Existentials