THE PC MODES OF OPERATION

Computers can operate in many different ways requiring different and complex operating systems

- **Real-time processing**

When the computer has to react within a guaranteed time to an input, a real-time operating system is used. For example, the engine management system within a car uses a real-time operating system in order to react to feedback from sensors placed throughout the engine. Computers operating in real time are often dedicated to the control of systems such as industrial processes, aircraft and space flights. A real-time operating system (RTOS) guarantees a certain capability within a specified time constraint.

- **Multi-programming**

Multi-programming is a method of operating such that several programs appear to be running at once. Since there is only one processor, there can be no true simultaneous execution of different programs. Instead, the operating system executes part of one program, then part of another, and so on, but the processor is so fast that it seems that many jobs are being processed at the same time.

- **Batch processing**

A batch processing system is where programs or data are collected together in a batch and processed in one go. Typically, the processing of payrolls, electricity bills, invoices and daily transactions are dealt with this way. Jobs are stored in a queue until the computer is ready to deal with them. Batch processing jobs are often done overnight.

- **Interactive processing**

An interactive processing system is where the tasks on the computer system require a continuous exchange of information between the user and the computer system. It can be seen as the opposite of batch processing.

- **Multi-tasking**

A multitasking process allows a user to perform more than one computer task at a time. The operating system is able to keep track of where you are in these tasks and go

from one to the other without losing information. When you open your Web browser and then open Word at the same time, you are making the operating system do multitasking.

- **Multi-access or multi-user**

Modern personal computers can allow multi-user access. A multi-access (or multi-user) system is one where several users can use the same system together via a LAN (Local Area Network). The CPU deals with users in turn. Clearly, the more users, the slower the response time. Generally, however, the processor is so fast that the response time is at most a fraction of a second and the users feel they are being dealt with immediately.

1 Complete the following sentences.

1. A real-time operating system is used when ..... .
2. Multi-programming is a method of operating such that ..... .
3. A batch processing system is where ..... .
4. An interactive processing system is where ..... .
5. Multitasking allows a user ..... .
6. A multi-access system is one where ..... .

2 Decide if the following sentences are true or false.

		T	F
1.	The engine management system within a car uses a real-time operating system.	☐	☐
2.	With batch processing, different programs are executed simultaneously.	☐	☐
3.	In real time processing, the processor is so fast that it seems that many jobs are being processed at the same time.	☐	☐
4.	The processing of payrolls, electricity bills, invoices and daily transactions are dealt with in multi-programming.	☐	☐
5.	Batch processing jobs are often done early in the morning.	☐	☐
6.	In multi-tasking, the operating system is able to keep track of where you are in the different tasks.	☐	☐
7.	When you open your web browser and then open Word at the same time, you are making the operating system work in batch method.	☐	☐
8.	With multi-programming, the CPU deals with users in turn.	☐	☐

ACTIVITIES

batch: *gruppo unico*
constraint: *vincolo*
invoice: *fattura*
one go: *colpo solo*
overnight: *dalla sera al mattino*
payroll: *libro paga*
throughout: *in ogni parte di*
track: *traccia*