Section ٤: Information Networks

LAN, WAN

Understand the terms, local area network (LAN), wide area network (WAN). Understand the term client/server.

Networks

A set of computers connected together so that they can communicate is called a computer network. This involves installing **network cards** in each computer. Each computer is then connected through cabling to a central device called a **hub**. Operating systems contain components that are dedicated to the task of enabling computers to communicate over a network. This software makes use of special rules of communication called **protocols**. There are many different types of protocols used for a variety of purposes. The most commonly used protocol for establishing and maintaining communication across a network is called **TCP/IP** or **Transmission Control Protocol / Internet Protocol**.

Client-server and peer-to-peer networks

Networks on which all computers have equal status are called **peer-to-peer** networks.

On most networks, certain computers have special dedicated tasks. Since these machines provide **services** to other computers, the are called **servers**. The computers that make use of the services or servers are called **clients** or **workstations**. A network such as this is called a **clientserver** network.

A server which is used for the central storage of files is called a **file server**. Using a file server, users can access their work from anywhere on the network. They can also make these files available to users on other computers. File servers also enable users to co-operate on a task by centralising the results of their work.

A computer attached to a printer which users can access is called a **print server**. Having a single printer rather than a printer attached to each computer obviously saves capital.

An increasingly important type of server is an **applications server**. In the case of applications servers, application packages are not installed on the workstations but on the applications server.

A **communications server** is a computer dedicated to connecting a network to the outside world. These are often called **proxy servers**.

As the case of print servers illustrates, one of the values of having a network is that it enables **resources to be shared**.

LAN

A **LAN** or **Local Area Network** is a group of computers within the same building, or within a group of buildings that are in close proximity, that are connected together.

WAN

A **WAN** or **Wide Area Network** is a group of widely dispersed computers that are connected together. These could be across the same town, or across a country or even across the world. Apart from distance, the other feature that distinguishes as WAN from a LAN is that the WAN would make use of a range of communication technologies such as telephone, microwave and satellite links.