8. Hardware for LAN

Network interface card(NIC):

- Unique physical address – MAC address
- Needed to allow a device to connect to a network

Wireless Access points(WAPs)

- Allows a device to access LAN without a wired connection
- Forms WLAN
- Allows Wi-Fi devices to connect to a wired network

Wireless network interface card

- Allowing devices to connect to the LAN via radio communication
- … instead of using cable
- … easy to move a device to different location

Hubs:

- Centre of a star topology
- Broadcast to all
- One hub connected to another hub
- Built in broad band modem - connection to the internet

Switch:

- Function as a hub
- Connect a number of devices together to form an LAN
- MAC address
- More intelligent - store addresses of connected devices
- Unicast
- Reduces network traffic

Gateway

- Capable of connecting two dissimilar networks. Connect a LAN to a WAN.

- A device used between two dissimilar LANs. The device is required to convert data packets from one protocol to another
- Can connect two networks with different protocols
- Gateway can also act as firewall or server.

Router

- Most Intelligent - takes decision to forward the received transmission
- May function as a gateway or NAT box.
- Forward packets of data from one network to another; routers read each incoming packet of data and decide where to forward the packet.
- Can route traffic from one network to another network
- Can be used to join LANs to form a WAN and also connect a number of LANs to the internet
- Offer additional features such as dynamic routing.
- Connects two networks with the same protocol.
- Transmit data between the servers and the internet
- Connect devices/servers to the internet

Modem

- Converts between digital data and analogue data
- To connect the servers to the internet over a telephone line

Repeater

- boost the signal so it can travel greater distance.

Bridge

- connect one LAN to another LAN that uses the same protocol.

Server

- a device or software that provides a specific function for computers using a network. The most common examples handle printing, file storage, and the delivery of web pages.

	Router	Gateway
Differences	· Forward packets of data from one network to another; read each incoming packets of data and decide (using IP address) · Route traffic from one network to another network · Can be used to join LANs together to form a WAN; connect a number of LANs to the internet · Offers additional features such as dynamic routing · Connects two or more networks · Assign private IP address · Can be used to segment a network	· Convert one protocol to another protocol used in a different network · Convert data packets from one protocol to another · Translate from one protocol to another · Do not support dynamic routing · Can connect a network to WAN // act as single access point · Assigns private IP address
Similarities	Both regulate network traffic between two network	Both receives packets from one network and forward it to another.