

**PENANG SANGAM HIGH SCHOOL
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LESSON NOTES 11

Year/Level: 12 Subjects: Computer Studies

<u>Strand:</u>	Computer and Applications
<u>Sub-strand:</u>	CE 12.1.5 Communications and Networks
<u>Content Learning Outcome:</u>	❖ Network types

Lesson Notes

Network Types

Local Area Network (LAN)

- ❖ Are networks that connect nodes which are usually within the same room, offices, rooms within the same building and even homes
- ❖ LANS can be spread within a radius of one hundred metres from the main building
- ❖ It is typically owned or controlled by a single organization
- ❖ LANs are now commonly used by individuals in their homes and apartments

Advantage

- LAN is cheaper to setup and easy to control

Disadvantage

- Include covers a small geographical region and networks are difficult to set up and need to be maintained by skilled technicians.

Wireless LAN (WLAN)

- ❖ Is a LAN that uses radio signals (WiFi) to connect computers instead of cables
- ❖ At the centre of the WLAN is a wireless access point or base station that interprets incoming radio frequencies and routes communications to the appropriate devices.

Advantages

- Is mobility together with installation flexibility

Disadvantage

- Is cost and environmental conditions

Metropolitan Area Network (MAN)

- ❖ Is a network that extends far beyond the reach of a LAN
- ❖ It usually connects offices that are spread around a city or even across multiple cities within an approximate distance of one hundred and fifty kilometres

Advantage

- MAN increases the efficiency of handling data
- increase the speed of transferring data

- It is also cost effective
- And enhances sharing of resources such as printers

Disadvantages

- It is difficult to manage the network once it becomes large
- It requires more cables for connection from one place to the other compare to LAN

Personal Area Network (PAN)

- ❖ Is a wireless network formed spontaneously within a very small area
- ❖ It can be formed by devices like our laptop, mobile phone, cordless mouse and cordless keyboards which can be connected to each other
- ❖ This can also be regarded as an ad-hoc network which sets *Bluetooth RF* for data transmission.

Advantages

- PANs are efficient
- cost-effective
- convenient
- It is more secured because it is controlled by single person

Disadvantages

- it covers a short distance, up to 10 meters only
- data rate is low compared to other network

Bluetooth devices

- ❖ Contain small, low-power radio transmitters and receivers.
- ❖ When devices are within a maximum range of 30 feet of other Bluetooth devices, they detect each other and can be 'paired' (connected).

Advantages

- Are that it is cheap
- convenient
- easy to install
- It also easily connects two technological devices together with no wires

Disadvantages

- Are that it can be hacked into and is also prone to viruses
- It can also only communicate short range.

Wide Area Network (WAN)

- ❖ Is a network that spans the entire globe such as the internet
- ❖ Because WANs are often geographically spread over large areas and links between computers over long distances, they often use quite exotic connections technologies: optical fiber (glass) cables, satellite radio links, microwave radio links, etc.

Advantages

- WAN covers large geographical area therefore networks can be made between long distances
- It also allows sharing of peripherals

Disadvantages

- The setting up of the equipment could be expensive
- Security is a real issue when many different people have the ability to use information from other computers

Essay Question

There are five types of networks. They are LAN, WLAN, and MAN, WAN and PAN.

With reference to the above statement, discuss

- ❖ Discuss any **four** types of networks. **(4 marks)**
- ❖ Use diagrams to support your discussion. **(2 marks)**
- ❖ **Two** advantages of LAN. **(2 marks)**
- ❖ **One** disadvantage of WAN. **(1 mark)**