**DATA COMMUNICATION ASSIGNMENT**



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1. The difference between UTP cable and STP cable :

|  |  |
| --- | --- |
| **Types** | |
| **UTP** | **STP** |
| -Non shielded | -Shielded |
| -Cheap | -Expensive |
| -Transfer rate 10-100 Mbps | -Transfer rate 10-100 Mbps |
| -Used in LAN | -Used as transmission media to connecting sender and receiver for data change |

1. The difference Cat 5, Cat5e, Cat6, Cat7 :

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Types** | | | | |
|  | **Cat 5** | **Cat 5e** | **Cat 6** | **Cat 7** |
| **Transfer Data Rate(Bandwidth)** | 100 Mbps | 1000 Mbps | 1000 Mbps | 1000 Mbps |
| **Frequention** | 100 MHz | 100 MHz | 250 MHz | 600MHz |
| **Theoritically & Practice** | In theory can support till 1000Base-T but must high cuality cat 5 to support it. | Bandwidth can reach 1000Mbps if installed with high quality standard. | Can built network installation 1000 BASE-TX but cat 6 must have suitable specification. | Can work in 1000MHz frequention but it still in development |

1. The difference of fiber optic on single mode & multi mode.

|  |  |
| --- | --- |
| **Single Mode** | **Multi Mode** |
| 8,3 – 10 mikrometer | 50-100 mikrometer |
| Bandwidth more big | Little bandwidth |
| Using Wave Devision Multiplexing(WDM) | Not using WDM |
| Using laser for light source | Using LED for light source |

Theoritical and Practice:

Single Mode : Can bring big data in bandwidth 50x more fast than multimode but must have a big light source and expensive in cost.

Multi Mode : In multi mode if total of mode increase it will affect the modal dispersion effect but the price is more cheap.

The fiber optic sigle mode and multi mode was used to transfered data in far area and could through thousand miles or in international region.

1. Wireless.

Wireless is technology in networking that not use any kind of cable for their data exchange.

Type of Wireless :

|  |  |  |
| --- | --- | --- |
|  | **Frequention** | **Data Transfer Speed** |
| **IEEE 802.10** | 2.4 GHz | 2 Mbps |
| **IEEE 802.11a** | 5 GHz | 58 Mbps |
| **IEEE 802.11b** | 2.4 GHz | 11 Mbps |
| **IEEE 802.11g** | 2.4 GHz | 54 Mbps |
| **IEEE 802.11n** | 2.4 GHz | 100-200 Mbps |

Theorytical & Practice :

Wireless can reach a far area and can accessed by anyone but with this transparent technology the security is low so in using wireless,for example in wifi network information personality can see by other user.

Wireless technology used in this modern era like on wifi to connect with internet,remote on tv,satelite,controller,etc.