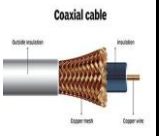
Ex. Nos. 1		STUDY OF DIFFERENT TYPES OF NETWORK CABLES
Date :	08-07-25	

AIM: To Perform basic study on various network cables.

STUDY OF CABLES:

Cable Type	Pros	Cons	Usage	Bandwidth	Speed	Image
Cat5 (Category 5)	- Low cost- Easy to install- Widely used	- Lower speeds- Shorter maximum distance (100 meters)	- Home networks- Small office setups	100 Mbps	10/100 Mbps (Fast Ethernet)	 Cat5
Cat5e (Category 5e)	- Enhanced version of Cat5- Reduced crosstalk- More reliable	- Limited to 100 meters- Lower speeds than newer cables	- Ethernet connections- Home/office networks	1 Gbps	1 Gbps (Gigabit Ethernet)	 Cat5e
Cat6 (Category 6)	- Higher bandwidth than Cat5e- Reduced crosstalk- More reliable	- More expensive than Cat5e- Stiff and difficult to work with	- High-speed networking- Large office buildings	10 Gbps (up to 55 meters)	1-10 Gbps (Gigabit Ethernet / 10 Gigabit Ethernet)	 Cat6

Cat6a (Category 6a)	- Supports higher bandwidths- Longer maximum distance	- Expensive- Bulky and hard to install	- Data centers- High-performance networking	10 Gbps (up to 100 meters)	10 Gbps (10 Gigabit Ethernet)	
Cat7 (Category 7)	- Shielded for high noise resistance- High-speed performance	- Expensive- Thick, less flexible cables	- Data centers- High-speed environments	10 Gbps (up to 100 meters)	10 Gbps (10 Gigabit Ethernet)	 Cat7
Cat8 (Category 8)	- Highest speed & performance- Supports high-frequency signals	- Expensive- Shorter range- Heavy and rigid	- Data centers- Server rooms- High-performance applications	25-40 Gbps (up to 30 meters)	25-40 Gbps (High-Speed Data Centers)	
Coaxial Cable	- Durable- Less susceptible to electromagnetic interference	- Low bandwidth compared to twisted pair cables	- Cable TV- Broadband internet connections	10 Mbps to 10 Gbps	10 Mbps to 10 Gbps (depending on use)	
Fiber Optic	- Extremely high bandwidth- Very long distance- Immune to EMI	- Expensive- Fragile- Requires specialized installation	-Long-distance networking- High-speed data transfer	10 Gbps to 100 Gbps (or higher)	10 Gbps to 100 Gbps (and beyond)	
Twisted Pair (Unshielded)	-Cost-effective- Lightweight- Easy to install	- Prone to interference without shielding	- Telephone lines- Home and office networking	100 Mbps	10/100 Mbps (Fast Ethernet)	

Twisted Pair (Shielded)	- Higher resistance to interference- Better data integrity	- More expensive- Less flexible and harder to install	- Industrial settings- Areas with high interference	100 Mbps	10/100 Mbps (Fast Ethernet)	

RESULT: Thus the study on various network cables was conducted successfully

Ex. Nos. 2		**BASIC NETWORKING COMMANDS IN LINUX AND WINDOWS OPERATING SYSTEM**
Date :	**15-07-25**	

AIM: To execute various networking commands in windows and linux

WINDOWS COMMANDS:

1.ipconfig:

The IPCONFIG network command provides a comprehensive view of information regarding the IP address configuration of the device we are currently working on.

OUTPUT:

C:\Users\Lenovo>ipconfig

Windows IP Configuration

Ethernet adapter Ethernet 3:

Media State . . . . . : Media disconnected Connection-specific DNS Suffix . :

Wireless LAN adapter Local Area Connection* 13:

Media State . . . . . : Media disconnected Connection-specific DNS Suffix . :