

T171 P1

Some important points

# Some important points

- Hardware
- Peripherals
- Drivers
- Software
  - Operating System
  - Application
  - Programming language
  - See some examples

# Some important points

- Binary<>Decimal conversion
- Units → bit, byte etc
- How many bits (digits) needed to store a char?
- CPU
  - ALU
  - Memory
  - Control Unit
- BIOS→ Basic Input Output System
- Computer Power
- Some primitive history of computer
- Operation
  - Arithmetic
  - Logic
  - See some examples

# Some important points

- Moor's law and its implication
- Intel
- Apple
- IBM, IBU (Independent Business Unit)
- Microsoft
- Xerox
- Netscape Navigator
- Transistor/ Vacuum tube
- Functions of O/S
- Multi tasking
- GUI (Screen color 1 bit (black/white), 8 bit → 256 colors etc)

# Some important points

- IP address, DNS (Domain Name Service) server
- Ethernet
- Bus, Ring, Star topology
- Data Packet
- DOS, CP/M, OS/2
- Modem
- ISP (Internet Service Provider)
- LCD (Liquid Crystal Display)
- DVD → "Digital Versatile Disc" or "Digital Video Disc"
- Multi Tasking / Parallel Processing

# Some important points

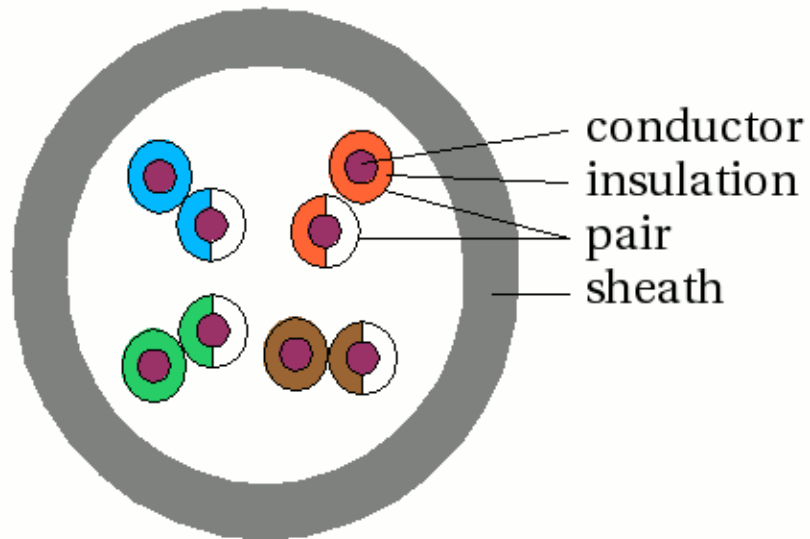
- PAN, MAN, LAN, WAN
- Co-Axial, Twisted Pair, Fiber Optics

# Some Links

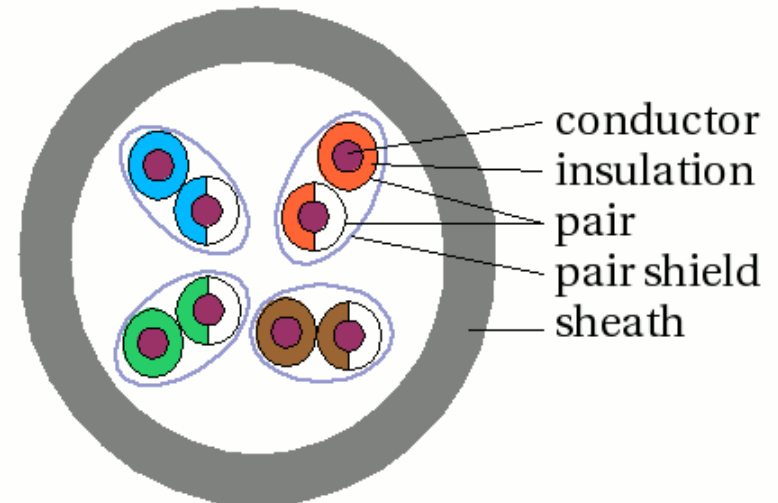
- Twisted pair
- Co-axial cable
- Fiber optics

# Twisted pair

UTP

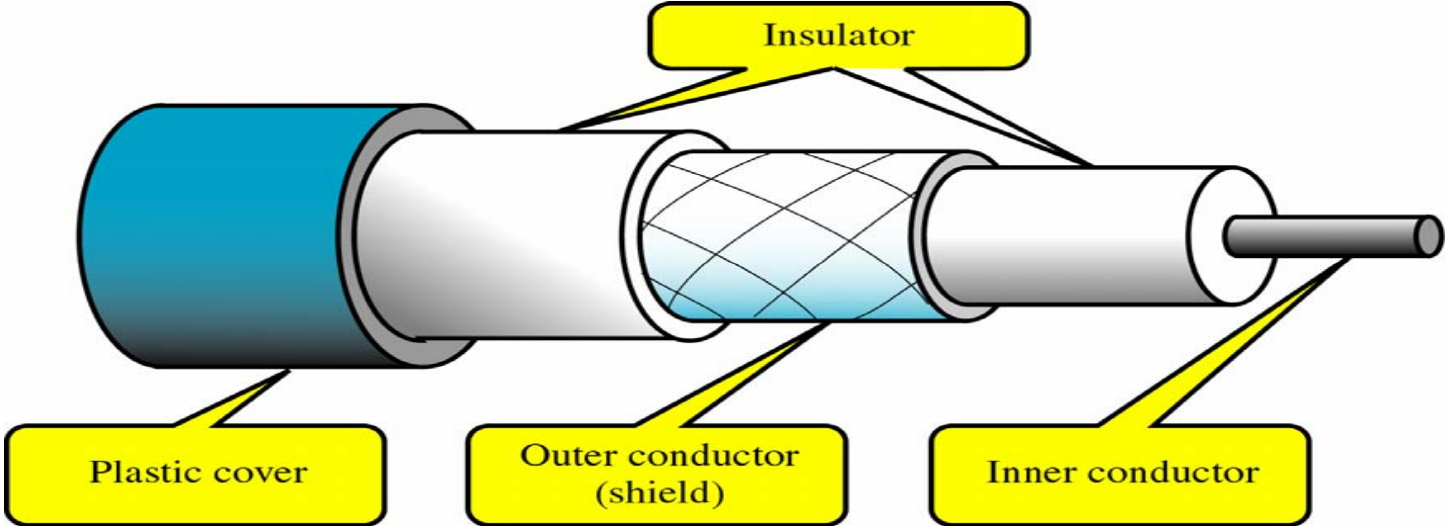
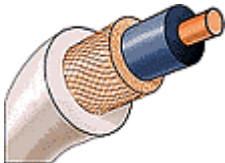


STP

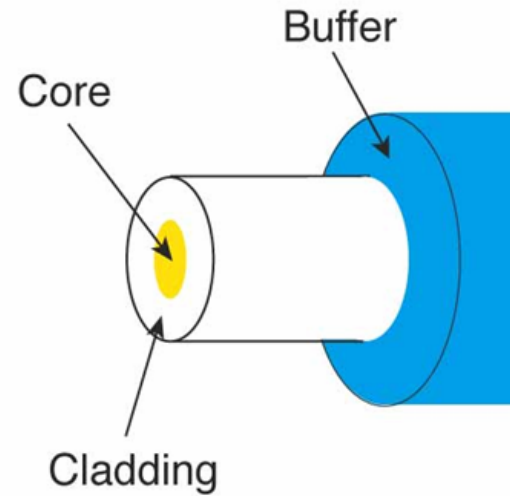




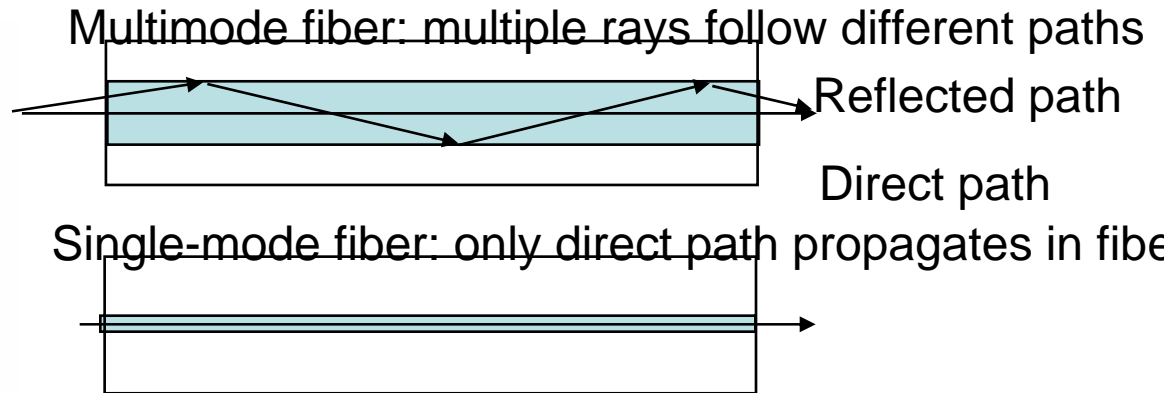
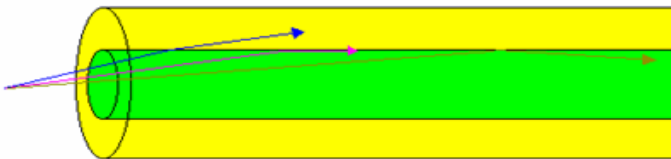
# Coaxial Cable



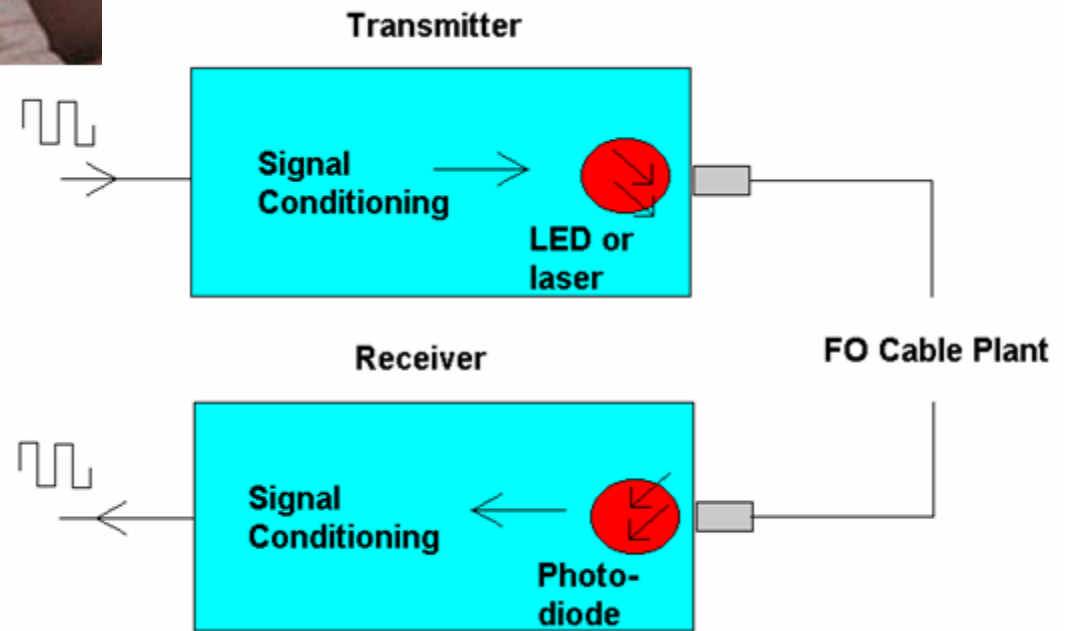
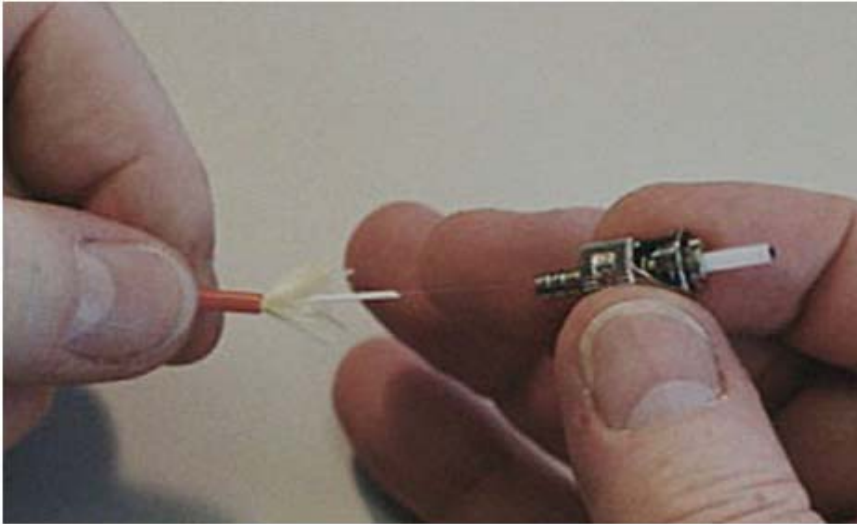
# Fiber Optics



Total Internal Reflection



# Fiber Optics



# Quick Review of the material

- What software and hardware are.
- The different categories of software.
- What binary is, and how it relates to denary.
- How a computer uses bits to represent information.
- What analogue and digital mean.
- The main components of a computer and their functions.
- The factors that affect the power of a computer.
- The difference between mainframes, minicomputers, workstations and PCs.
- Computer terminology, such as RAM, ROM, CPU, bytes, kilobytes, data, instructions, I/O, motherboard, buses and words.

# Quick Review of the material

- The important contributions made by Babbage, Turing, Von Neumann, Mauchly and Eckert.
- How Intel was started.
- How the microprocessor works.
- The role of the microprocessor in a computer.
- Moore's Law.
- The implications of Moore's Law.

# Quick Review of the material

- How Microsoft was founded.
- How Bill Gates and Paul Allen set several trends for the future.
- The main functions of an operating system.
- What bootstrapping means.
- Text-based operating systems.
- The structure of CP/M.
- The function of the BIOS. How Apple Computers was started.

# Quick Review of the material

- The role of Xerox PARC in the development of computer technology.
- What a GUI is.
- How bit-mapping operates.
- Why computers are networked.
- What types of network exist.
- What a protocol is.
- How Ethernet operates.
- The difficulty in managing the software process.
- Types of management structure. The benefits of the flat structure. How the culture of computer companies has influenced management strategy.

# Quick Review of the material

- How the PC was developed in an IBU.
- The importance of the IBU approach.
- What an open standard is.
- The importance of the open standard in the PC industry.
- How Kildall missed the opportunity to sell CP/M. Some differences between the mainframe and the PC industries. The 'mainframe mentality'. Some of the cultural differences between Microsoft and IBM.



# Quick Review of the material

- The process of reverse engineering.
- What it means for the PC to become a commodity.
- The success of the clones.
- The significance of the 80386-based computer.
- The factors which affected IBM's reduction in market share.
- Some of the successful technologies associated with the PC.
- Some of the reasons why technological products are successful.
- What happened to IBM in the years after the success of the PC, and where they are now.

# Quick Review of the material

- How metaphors operate.
- The importance of the desktop metaphor.
- Steve Jobs's influence on the development of the Macintosh.
- The use of computers as tools of empowerment.
- The factors affecting Apple since the release of the Macintosh.
- How desktop publishing changed the publishing industry.

# Quick Review of the material

- How the relationship between IBM and Microsoft ended.
- The success of Windows over OS/2. What multi-tasking is.
- What legacy means in terms of software and hardware.
- The Year 2000 problem.
- The requirements of a network operating system.
- Some of the reasons why such alliances and rivalries are commonplace in this industry.

# Quick Review of the material

- Internet and its evolution
- The ideas of Vannevar Bush and Norbert Wiener
- The setting up of ARPA
- J.C.R. Licklider and his vision
- Paul Baran and Donald Davies
- Circuit-switching and packet-switching
- Analogue and digital communications
- Thomas Kuhn's ideas about paradigm shifts

# Quick Review of the material

- IMPs and the design of the first network;
- Protocols
- The Network Working Group:
- RFC
- Function of different layers of TCP/IP