

# HeNN eLibrary

## Teachers Training

### 2015

Presented by:  
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& KUOSC Team

# Computer Networks

# NETWORK



- 
- TOPOLOGY
- ARCHITECTURE
- TYPE OF NETWORKS
- TRANSMISSION MEDIA
- NETWORK TECHNOLOGIES
- COMMUNICATION DEVICES
- # NETWORK

TOPOLOGY

ARCHITECTURE

TECHNOLOGY

COMMUNICATION  
DEVICES

NETWORK

TYPES

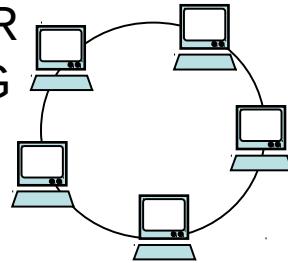
PROTOCOL

TRANSMISSION MEDIA

SOFTWARE

## TOPOLOGY

STAR  
RING  
BUS



## ARCHITECTURE

PEER TO PEER  
CLIENT-SERVER



## TYPES

LAN  
MAN  
WAN

## DEVICES

NIC  
HUB  
ROUTER  
MODEM  
ACCESS  
POINT



# NETWORK

## TECHNOLOGY

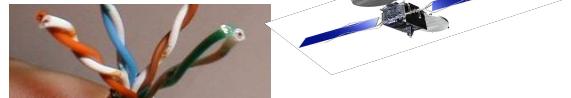
INTRANET  
EXTRANET  
INTERNET

## PROTOCOL

192.168.1.3

TCP/IP

## MEDIUM



PYSICAL / WIRELESS

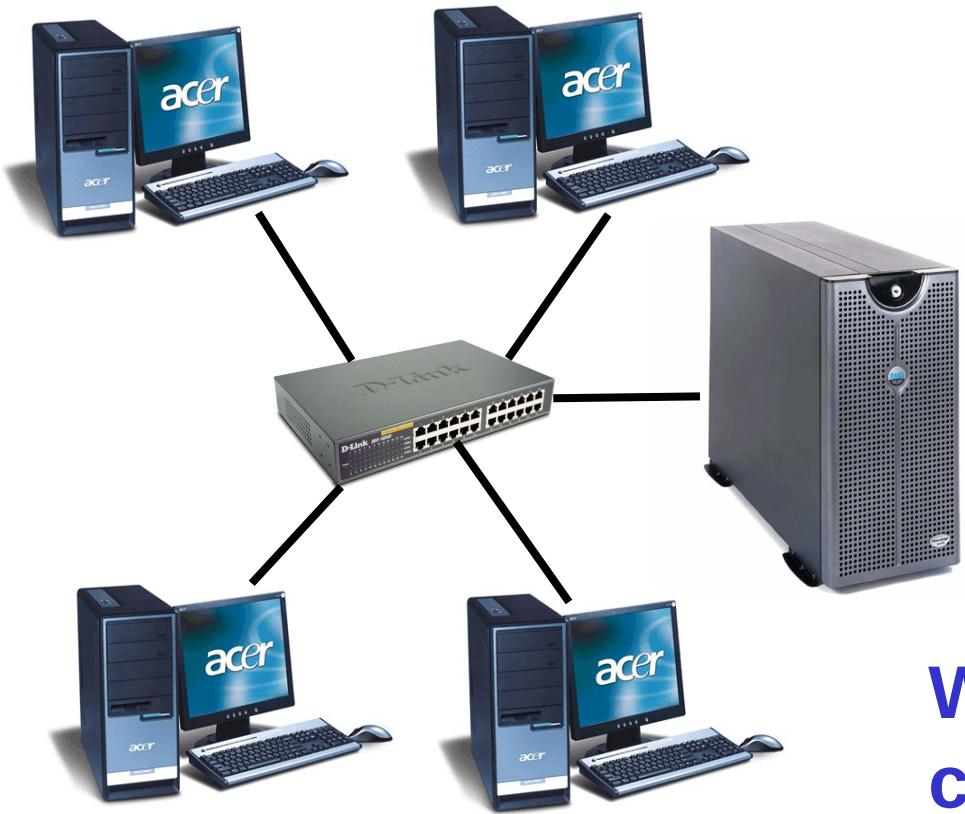
TWISTED PAIR, COAXIAL, FIBRE OPTIC  
INFRARED, RADIOWAVE, SATELLITE



## SOFTWARE

NETWORK OPERATING SYSTEM  
CLIENT SOFTWARE

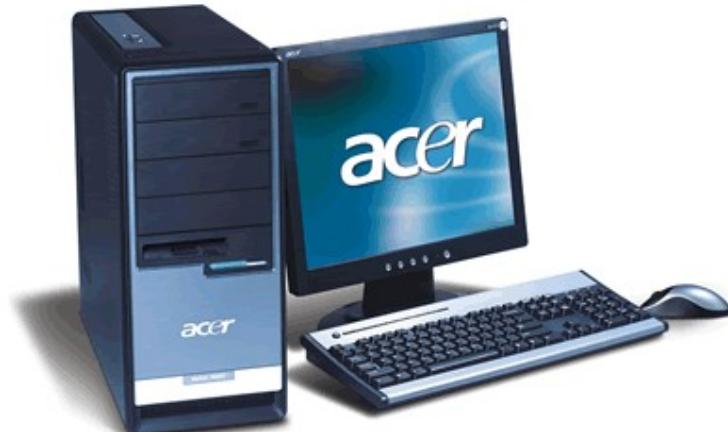
# Network



What the advantages of  
computer network ?

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Standalone



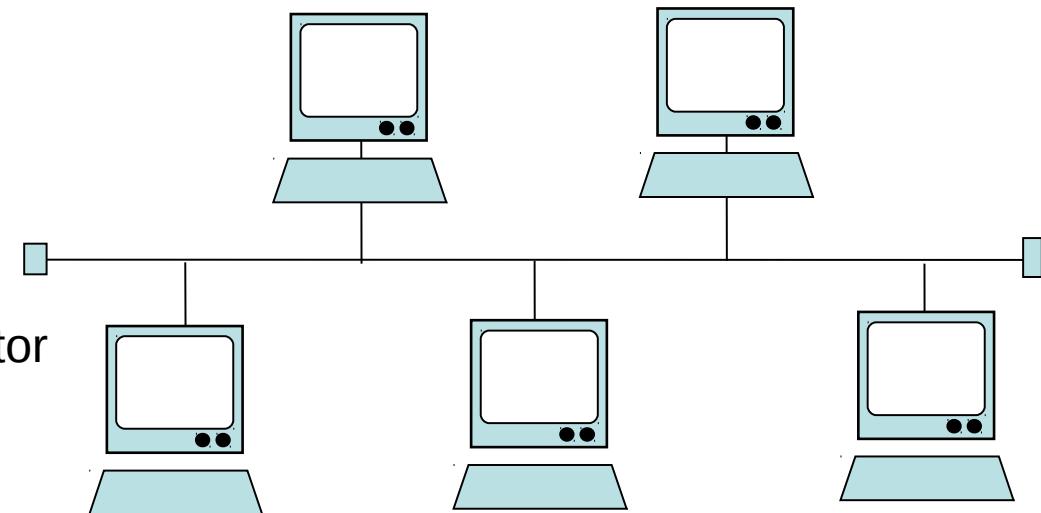
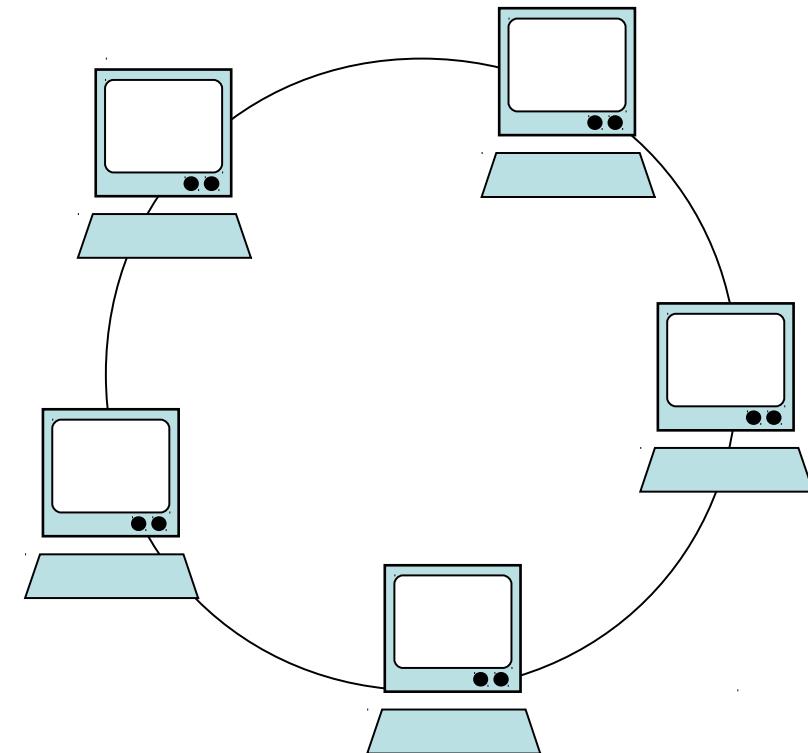
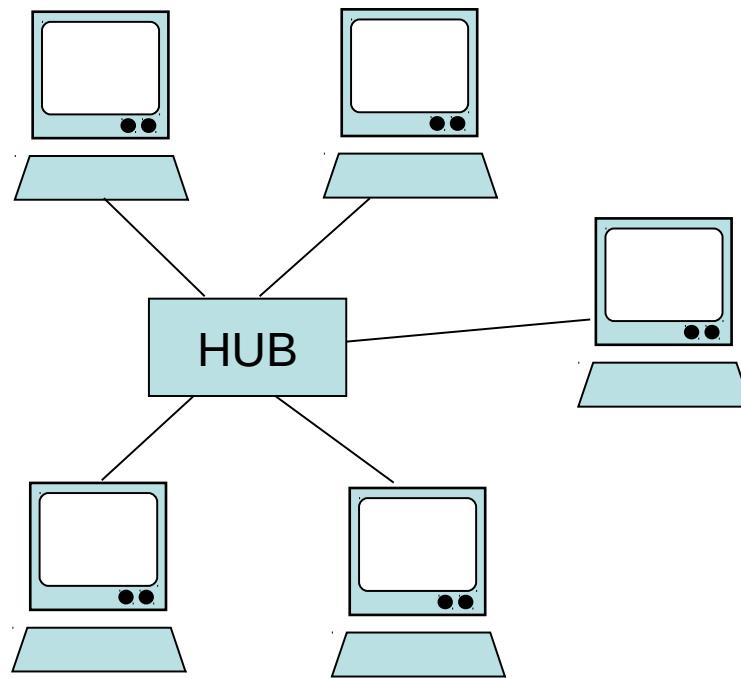
# **Advantages of Network**

- 1. Sharing of peripheral devices.**
- 2. Sharing of program/software.**
- 3. Sharing of files.**
- 4. Sharing of data.**
- 5. Sharing of information.**
- 6. Sharing of internet connection.**
- 7. Access to database.**
- 8. Better communication.**

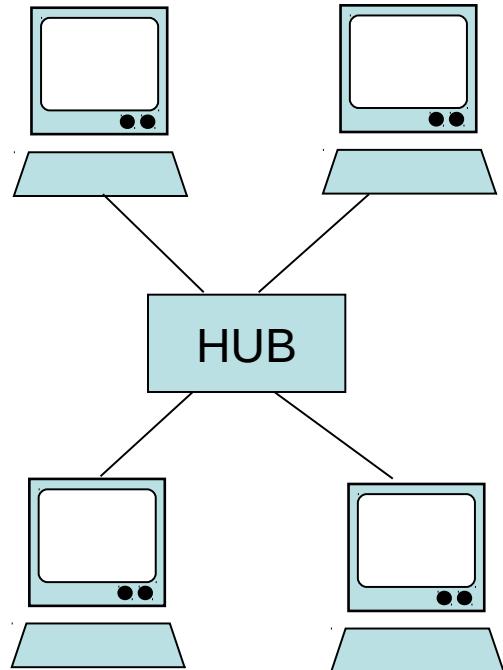
# TYPE OF NETWORK

- LAN
- MAN
- WAN

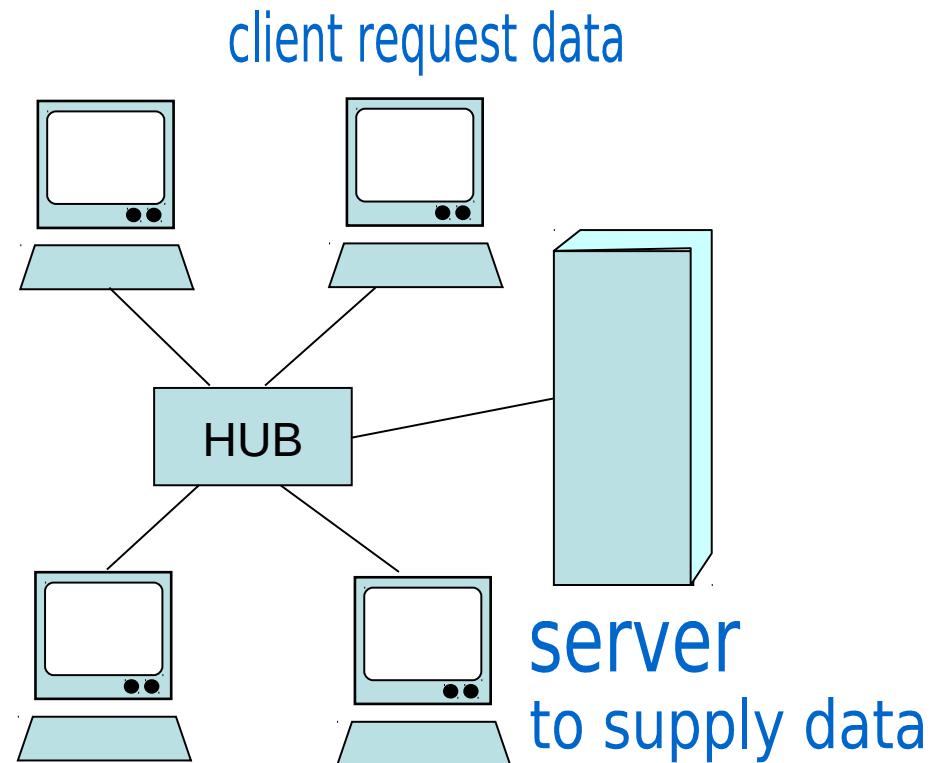
# TOPOLOGY



# ARCHITECTURE



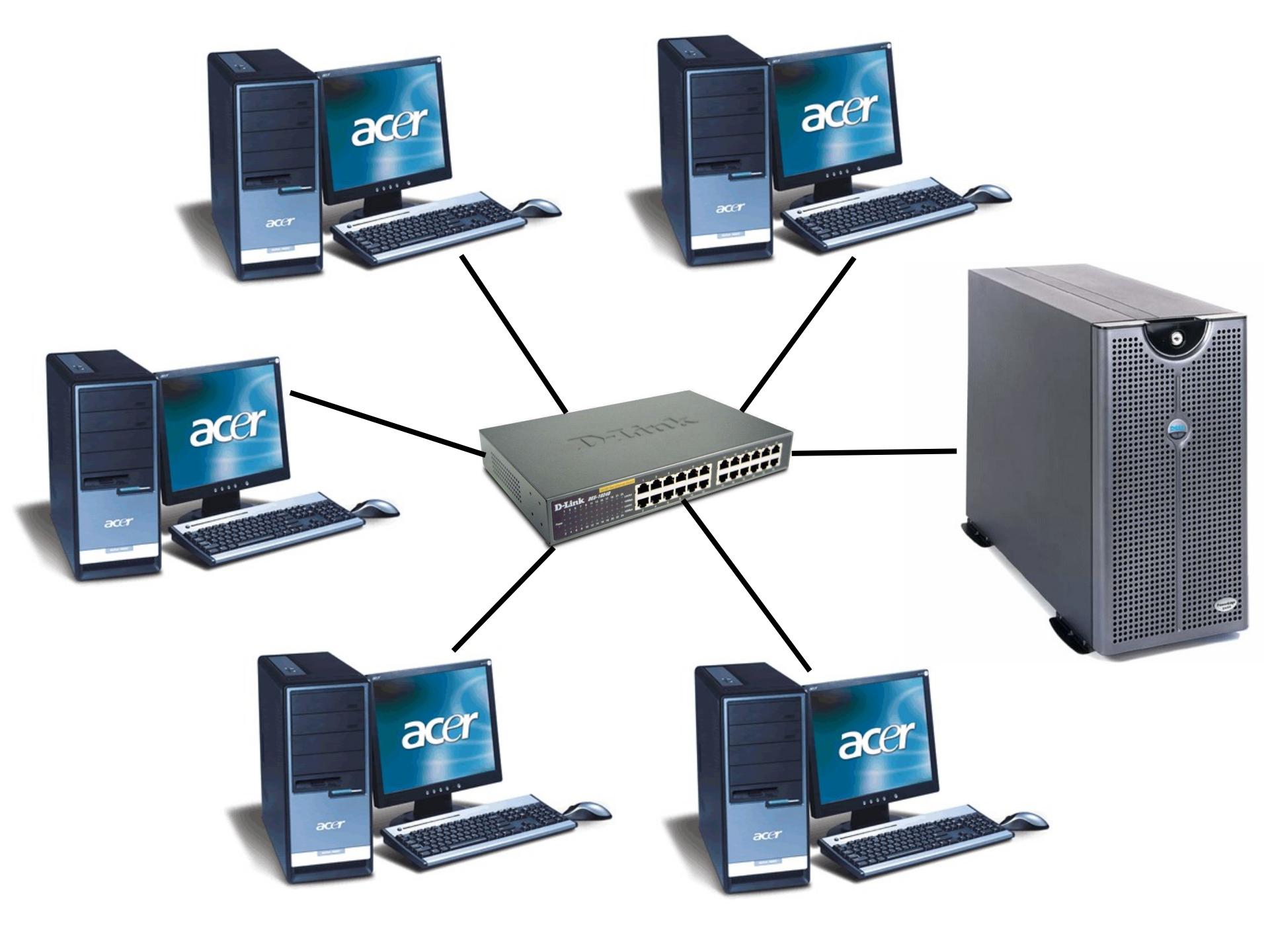
peer to peer



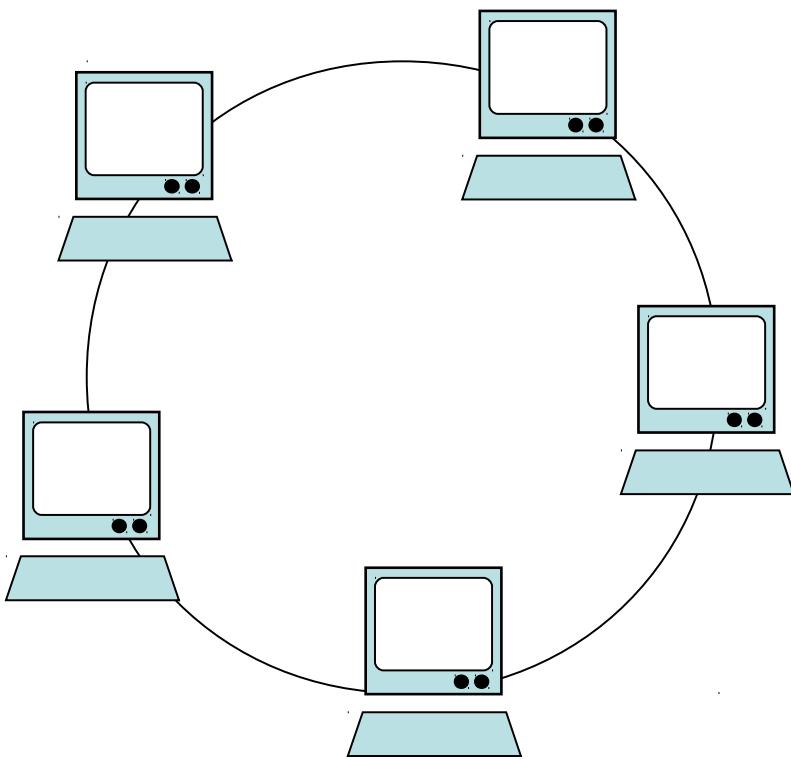
client - server

client request data

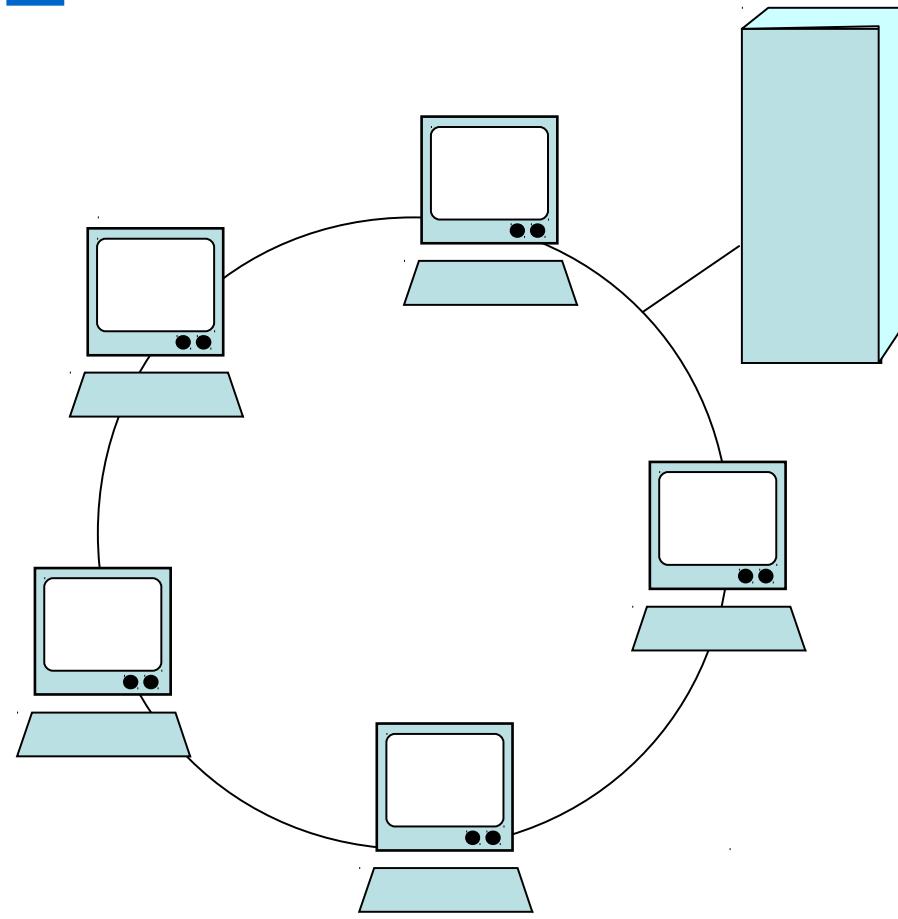
server  
to supply data



# ARCHITECTURE



peer to peer

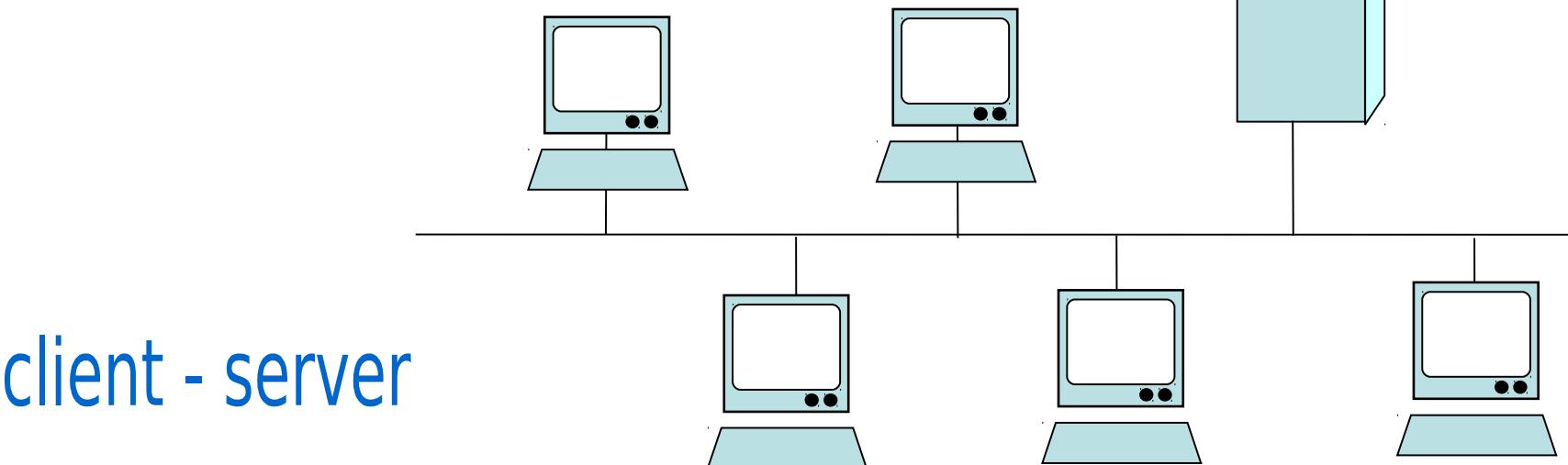
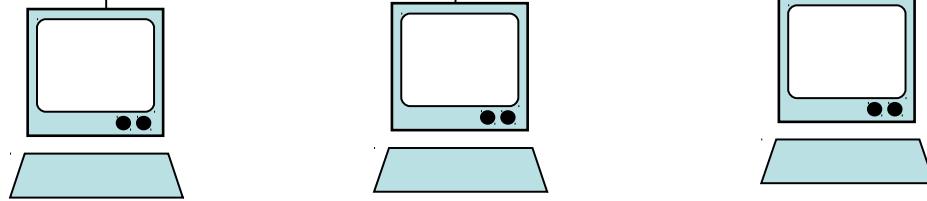
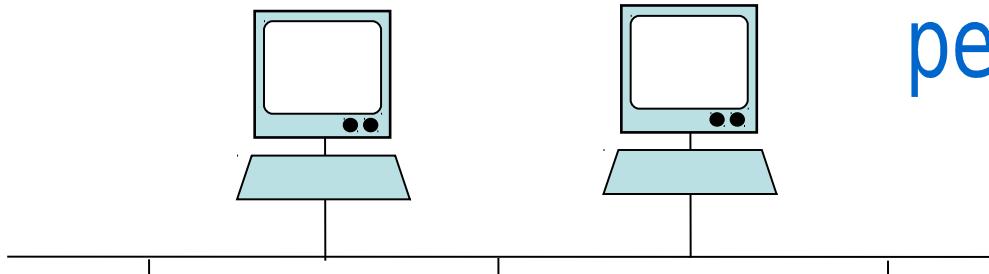


client - server

# ARCHITECTURE



peer to peer



client - server

# SERVER





# SERVER ROOM



# SERVER ROOM



# TYPES OF SERVER

## FILE SERVER

A computer that provides **access to files** for client that are connected to the network

## PRINT SERVER

A computer that **manages printers** and print requests from other nodes and network .

## EMAIL SERVER

A computer that controls the **distribution** and storage of **e-mail** messages

## WEB SERVER

A computer that **delivers (serves up)** **web pages** .

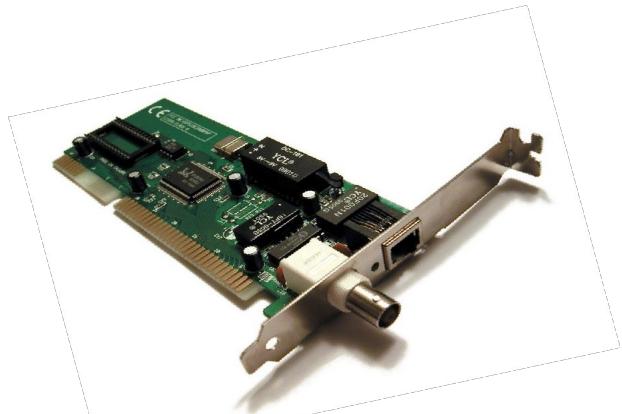
## FTP SERVER

# COMMUNICATION DEVICES



# NIC

wired network



wireless network



adapter

# USB wireless Adapter



# Access Point





Access  
Point

Router

Modem



3 in 1

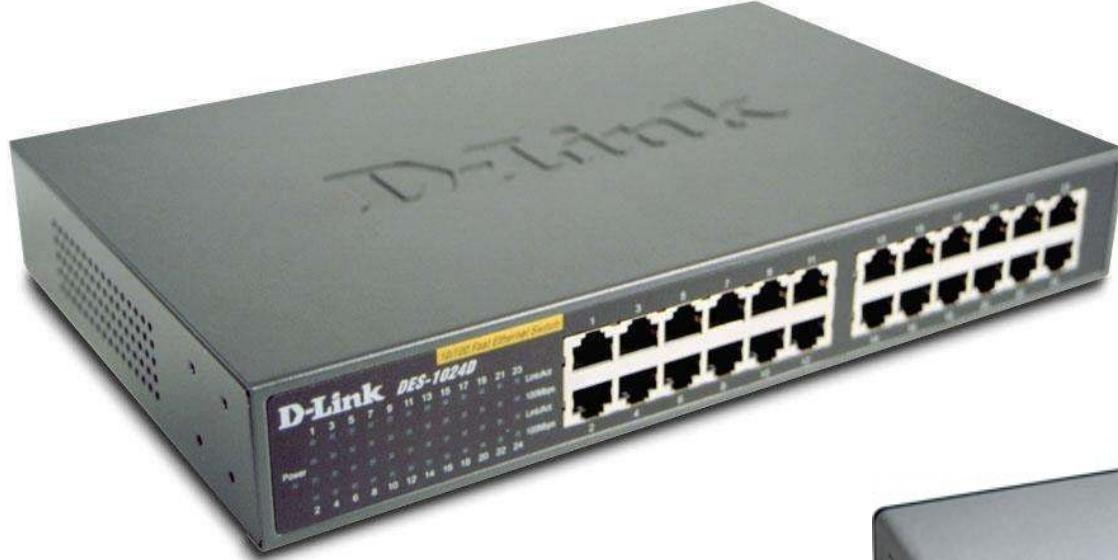
# ROUTER



port



# HUB

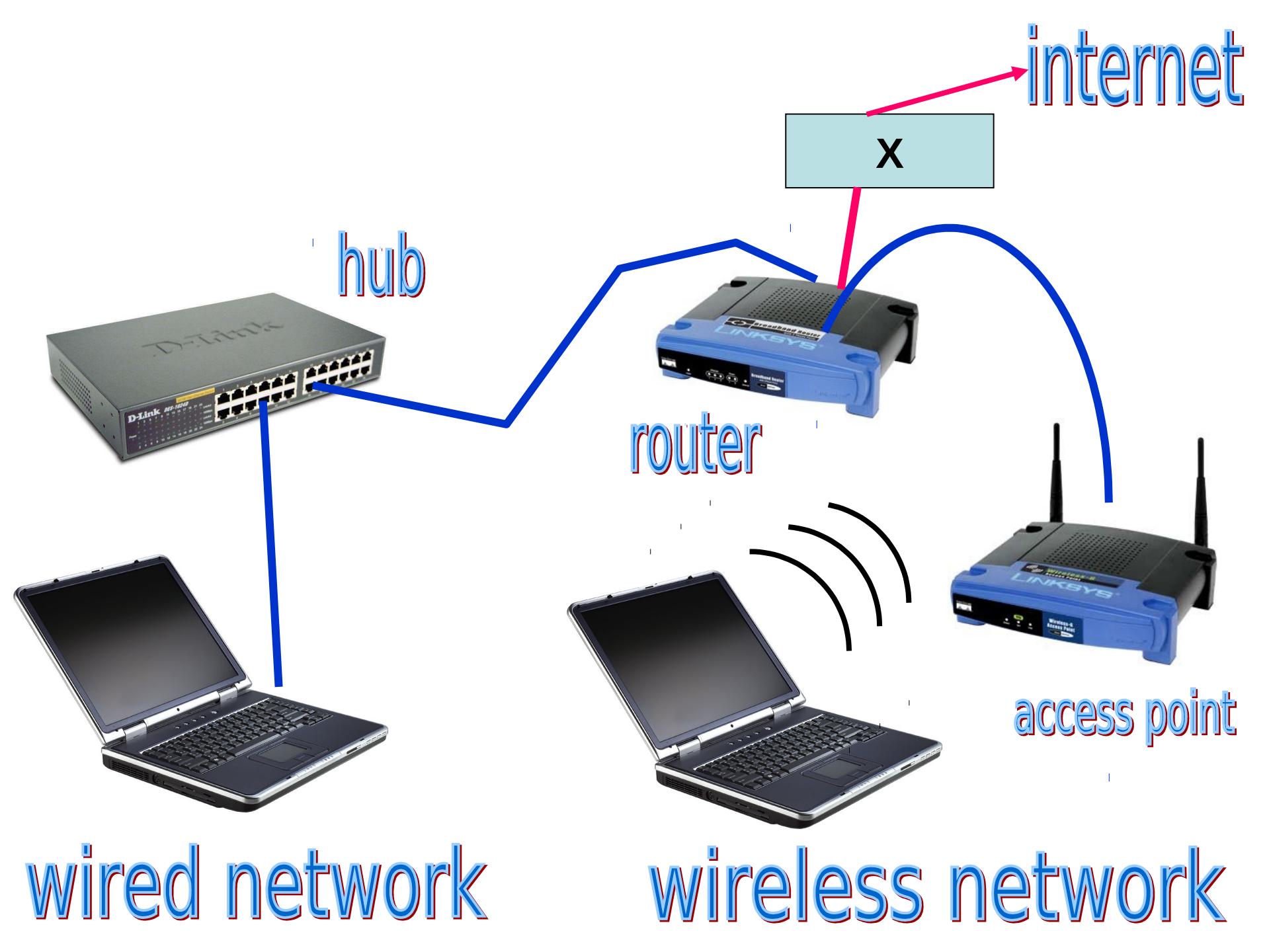


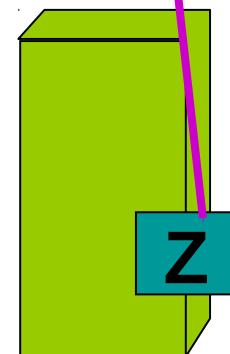
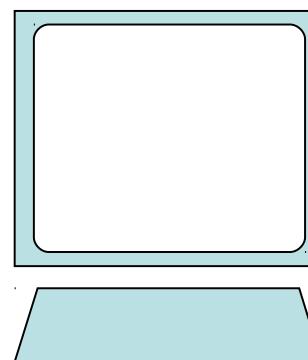
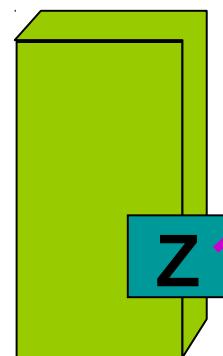
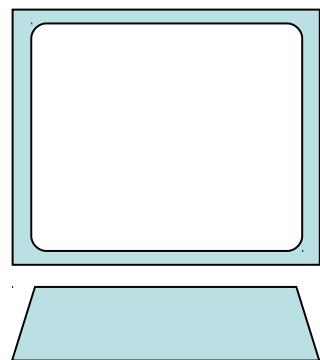
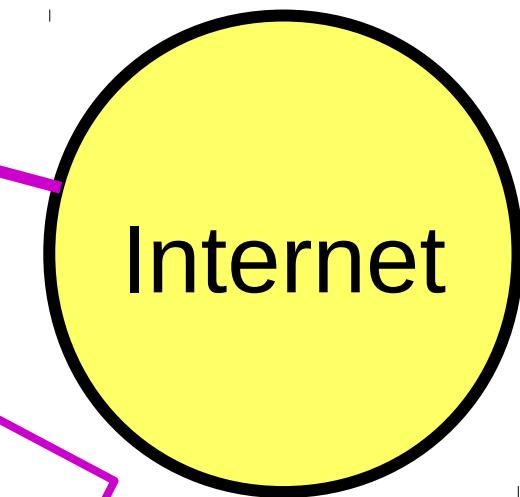
# SWITCH

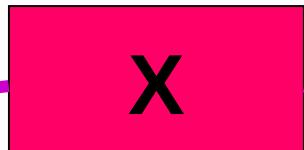


# MODEM



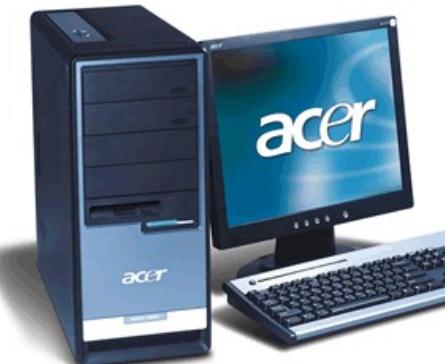
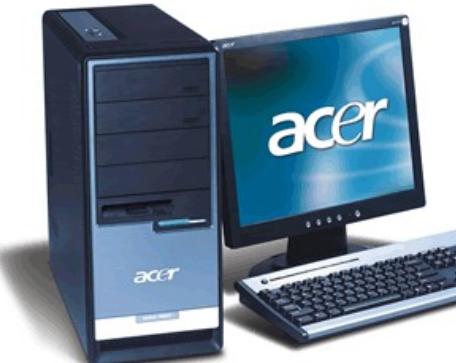


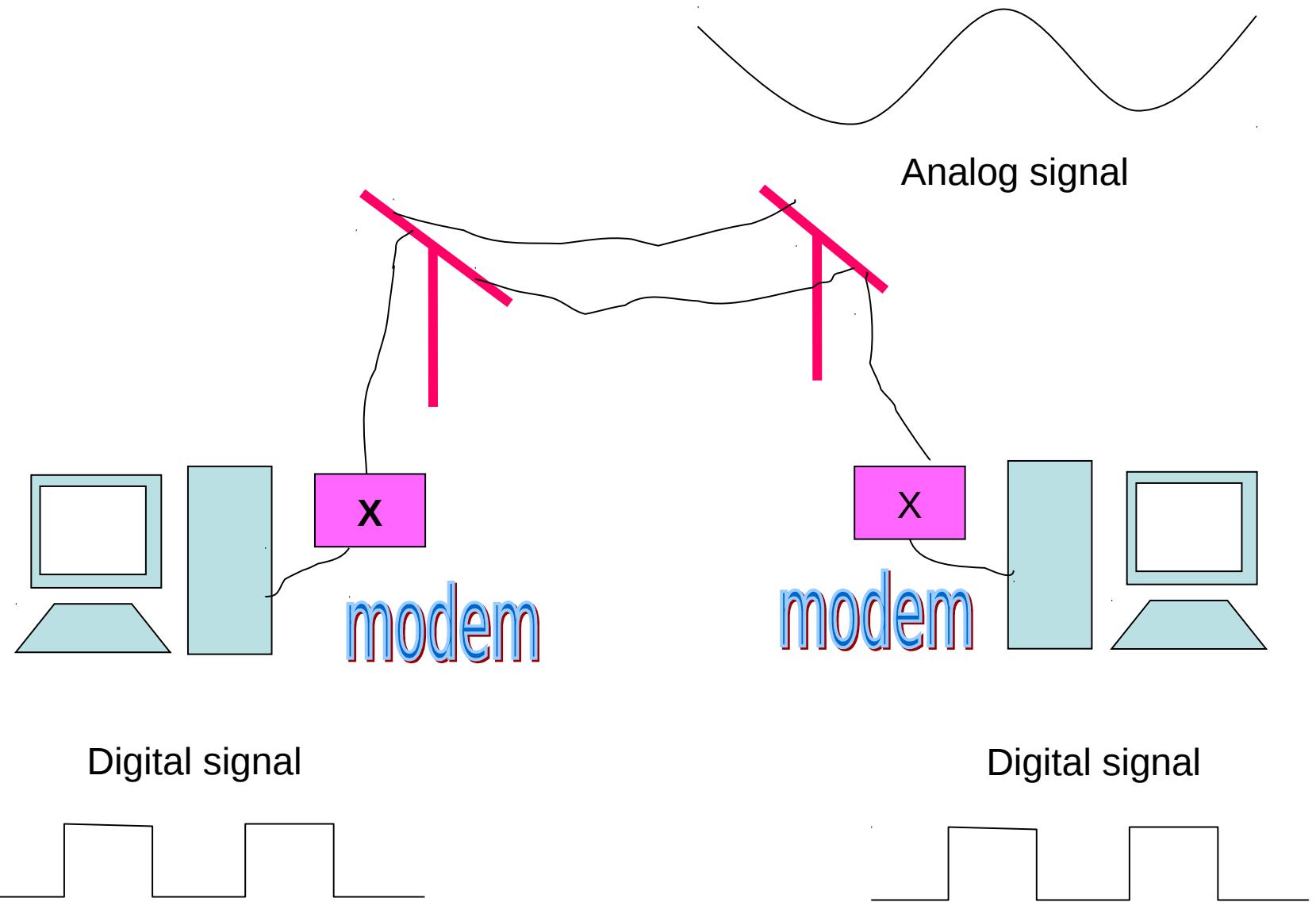




Internet







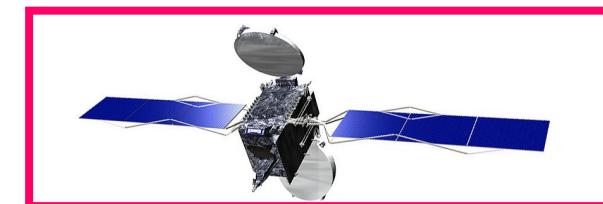
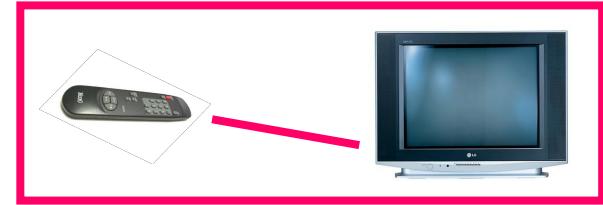
**MODEM**

# TRANMISSION MEDIA

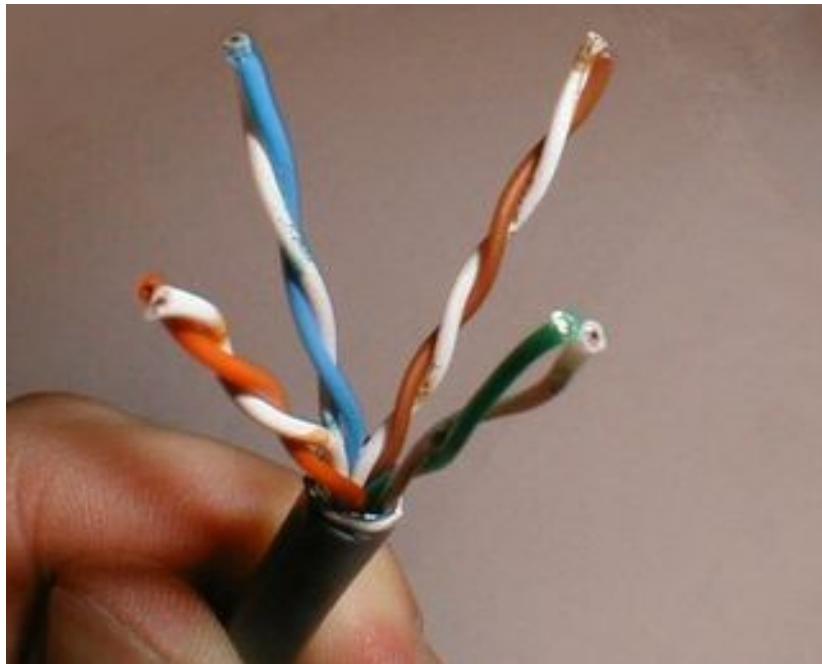
## PHYSICAL



## WIRELESS



# TWISTED PAIR CABLE



RJ45  
connector



# COAXIAL CABLE

## T-CONNECTOR

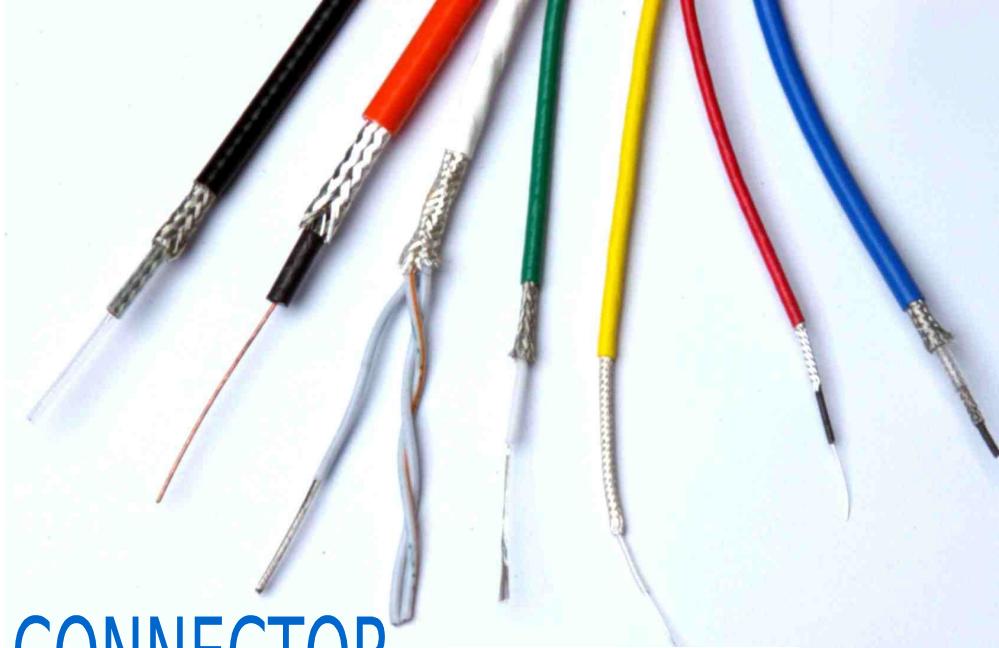


iStock

## TERMINATOR



## BNC CONNECTOR



SC connector



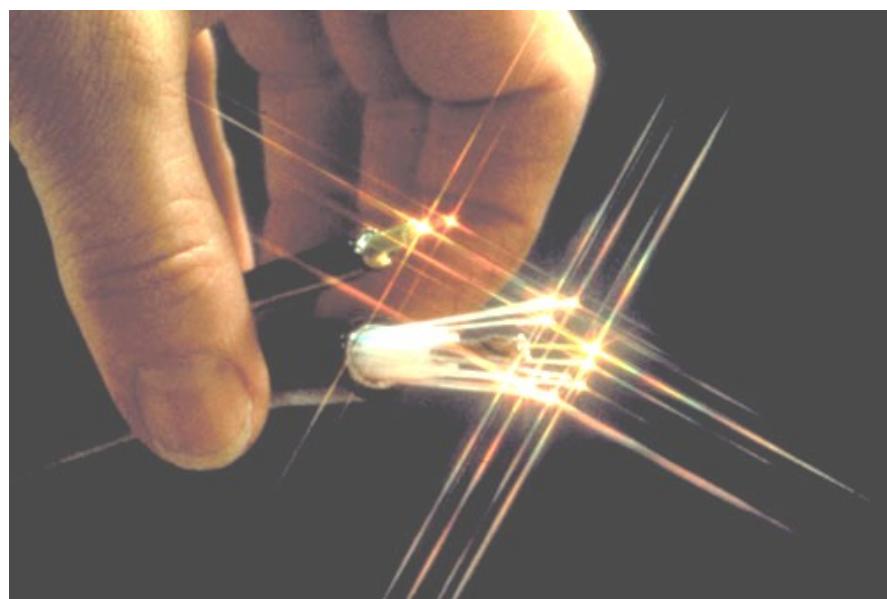
ST connector



FC connector

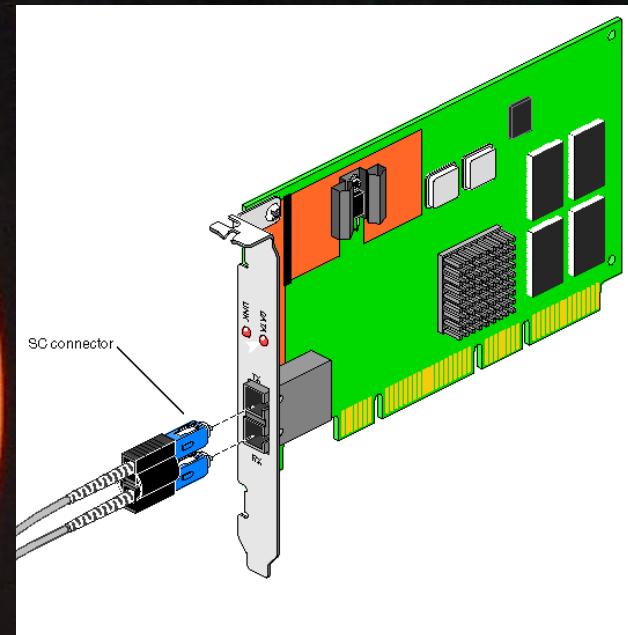


FIBRE OPTIC



MT-RJ connector





# FIBRE OPTIC





Optical  
Cable



left  
left surround



center



right  
right surround

# Home Theater

Audio-Video  
Cable



# INFRARED

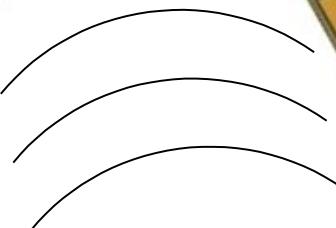


# BLUETOOTH IEEE 802.15.1





IEEE 802.11

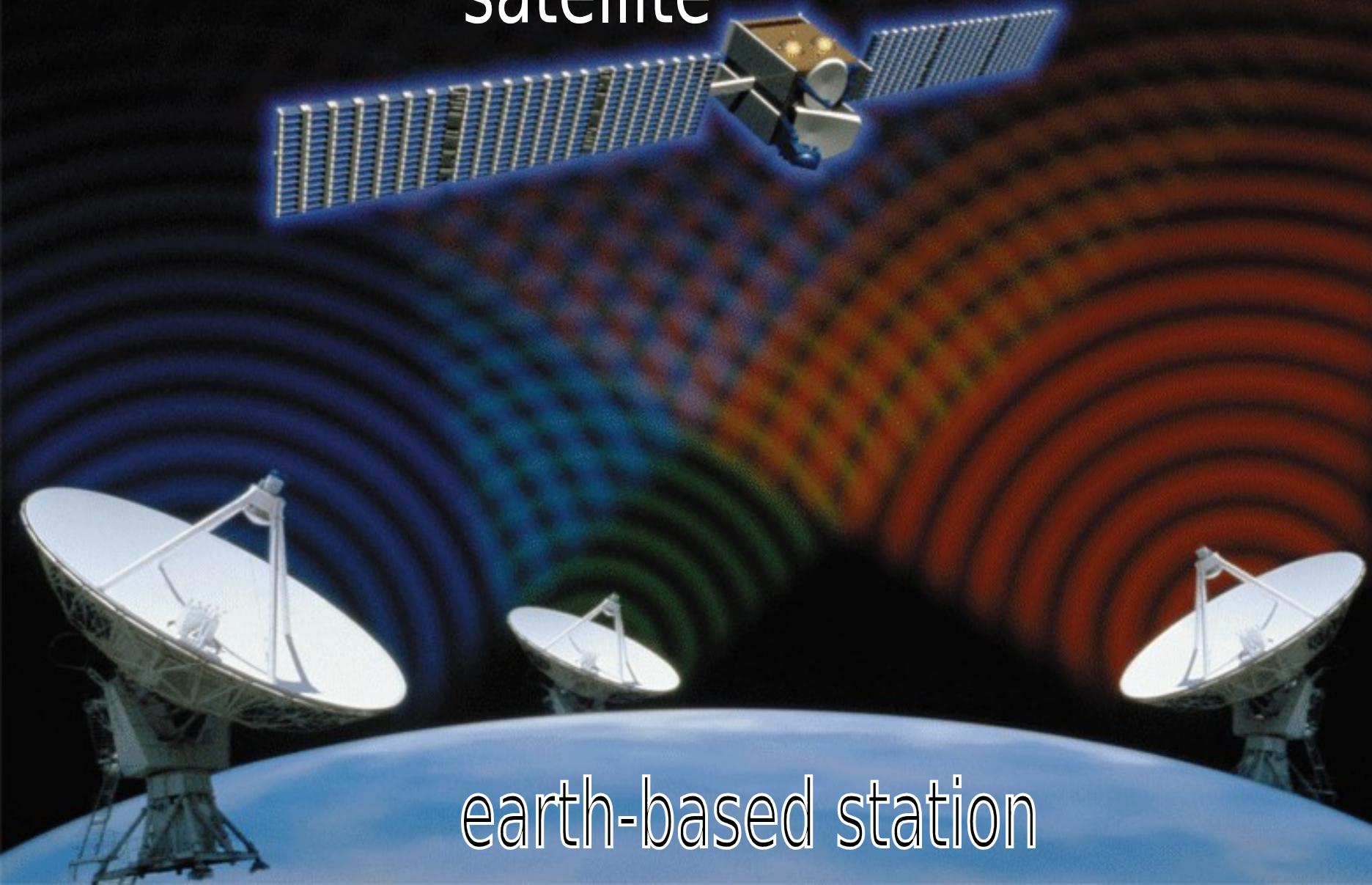


# SATELLITE





satellite

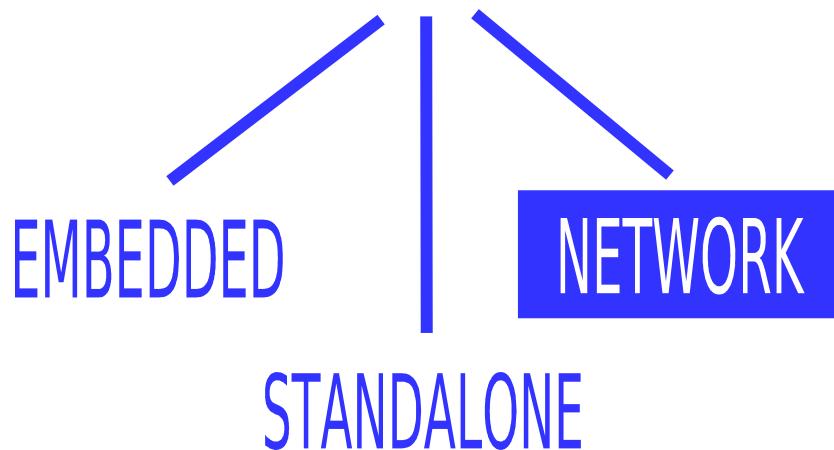


earth-based station

# SOFTWARE

## SYSTEM SOFTWARE

- UTILITY
- OPERATING SYSTEM



## APPLICATION SOFTWARE

- WORD PROCESSOR
- PRESENTATION
- SPREADSHEET
- DATABASE
- GRAPHIC
- GAMES

# EMBEDDED OPERATING SYSTEM



WINDOWS CE  
EMBEDDED LINUX  
PALM OS  
SYMBIAN OS

# STAND-ALONE OPERATING SYSTEM



WINDOWS XP  
LINUX  
UNIX  
MAC OS X  
DOS

# NETWORK OPERATING SYSTEM



WINDOWS 2003 SERVER  
LINUX  
UNIX  
NETWARE  
SOLARIS

WINDOWS XP



WINDOWS XP



WINDOWS XP  
CLIENT OPERATING SYSTEM

WINDOWS XP



WINDOWS 2003 SERVER  
NETWORK OPERATING SYSTEM

CLIENT-SERVER

