


OS - CN - DBMS

✓ CN
✓ DBMS
✓ OS



→ Course Expectation

↳ Theory //

Computer Network →

Network Model

↓ TCP/IP



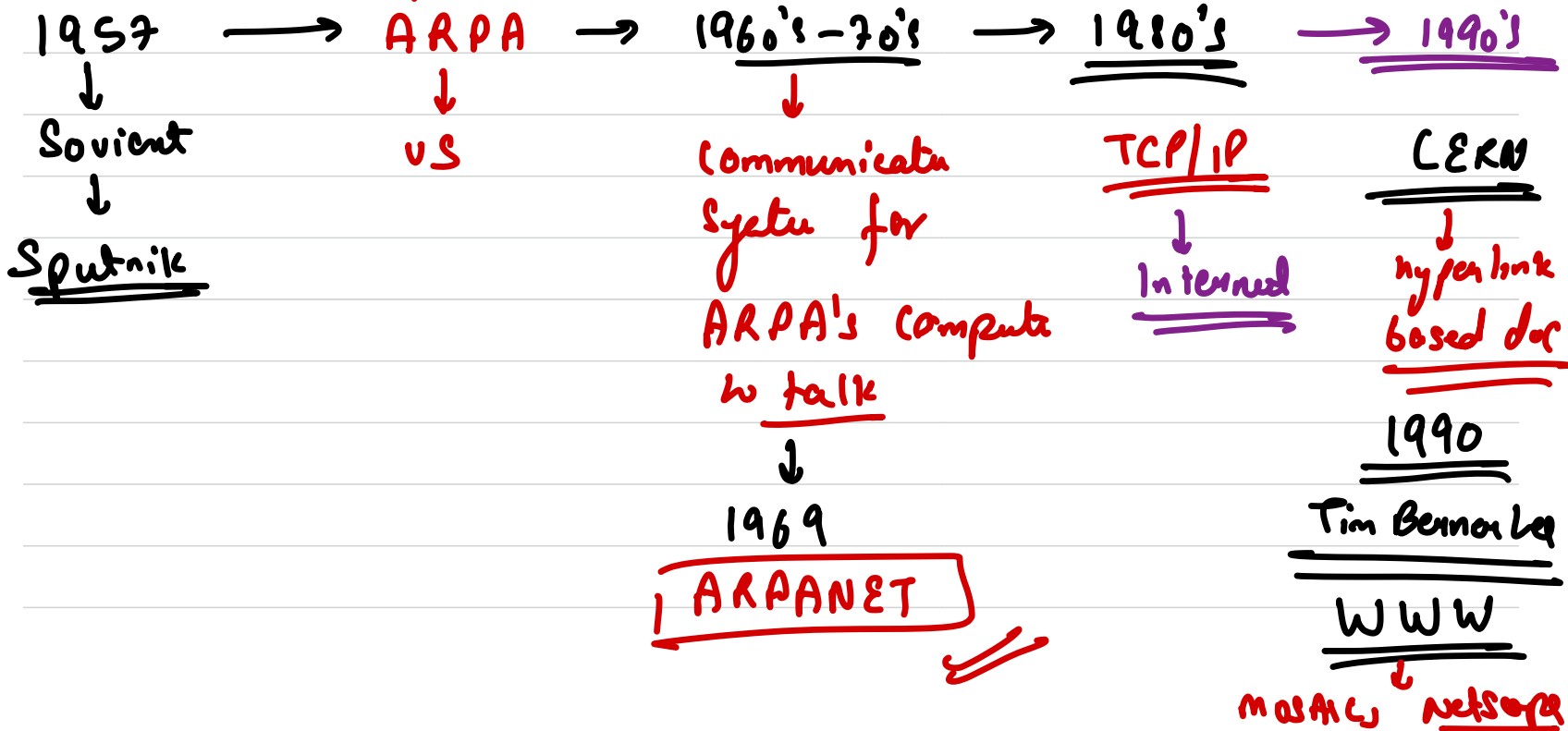
Computer Networks

Network → It is a group or system of interconnected people or items. Computers connected with each other with cables or wireless is called computer networks.

Internet → In a nutshell, internet is a network of computer networks. Complex web of interconnected computer networks.

History Of Internet

advanced research
project agency



Protocols

Network

^ Protocols are a set of rules and regulations setup to communicate and share information over a network.

Ex → HTTP, UDP, TCP, SMTP etc

Packets

In order to share data, we can't send big chunks of data over the network. So we divide the data in smaller chunks, these small chunks are called as packets.

Address

Sending messages over the networks require the destination details. This detail uniquely identify the end system is called as address.

Ports

Any machine could be running many network apps.
In order to distinguish these apps for receiving messages
we use ports. (port number)

IP-address + Port
└──────────┘
Socket

Port helps you get the packets to specific process on
the host

↳ Every process has 16 bit port number

$$0 - 2^{16} = 65535$$

range of
port no.

★ 0-1023 → well known ports
↳ ex → port 80 → http
port 443 → https

* 1024 - 49152 → Registered ports

They are used by specific, potentially proprietary apps / process that are known but not system defined.

Sql server → 1433

mysql → 27017

★ 49152-6SS3S → dynamic ports

Access Networks

These are media using which end systems connect to the internet.

Network Interface Adaptor → It enables a computer to attach to a network. As there are different type of networks, it acts as a single suite to connect to any network.

DSL (Digital Subscriber Line)

→ DSL uses the existing telephone groundwork lines for internet connection. Generally DSL is provided by same company which supplies telephone service.

↳ ISP (Internet Service Provider) → It is just a company that provides end users internet. Ex → AT&T

Network Protocol Stack

OSI (7 layer)

Application
Presentation
Session
Transport
Network
Data Link
Physical

TCP/IP (5 layer)

Application
Transport
Network
Data Link
Physical

Application layer → email server, chat server, browser

Presentation → presentation of data, compression
encryption

Session → User session managed

Transport \rightarrow Divides big chunk of data coming from above to small chunks. & merge these chunks.

Network \rightarrow how routing of packets will be done in the network

Data link layer \Rightarrow error / flow control, multiplexing & demultiplexing, handles addressing

Physical

