**Networking Notes**

Internet /= WWW

Networking | Web

Group of computers | Information

1844 Morse Code: Dots and Dashes  
A 🡨 🡪 B

1876 Bell Telephone  
A 🡨🡪 B using Sound

1958 SAGE

Radar into computer network as image

1970 Arpanet

Centralized

Due to weaknesses of Centralized Systems, mainly being if one node is lost the data is lost. Systems moved to Distributed Systems.

Data in large sizes can slow down data routes so usually data is cut up into packets

Standard Protocols:

1. IP: Internet Protocol: Maintains Structure and determines Addresses
2. TCP: Transfer Control Protocol: Guarantees Data is transmitted

Network Addreses:

1. IP Address: Can change based on Network
2. MAC Address: Does not change, it is made by manufacturer

**9/1/2021**

OSI: Open System interconnection

7 Layers

Please: Physical (Cabling or wifi)

Do: Data Link  
Not: Network

Touch: Transport

Sam’s: Session  
Pet: Presentation

Animal: Application

**9/8/2021**

Wan: Wide Area Network

Man: Metropolitan Area Network

Lan: Local Area Network  
Pan: Personal Area Network

unicast: One to One

Multicast One to Some

Broadcast: One to All

Star: Centralized

Mesh: Distributed

**9/13/2021**

Program

Encrypted

Code sent to ip

Packet

Protocol: Set of rules/standards that determines how data is sent between devices

Internet contains 2 things: 1. Distributed Network 2. Packets

SMTP: Simple Mail Transport Protocol

**9/15/2021**

OSi: Open System interconnection

**9/20/2021**

Osi layers 4-7 are called the top layers and are related with programming

Layers 1-3 are called the Bottom layers and are related more with a network itself.

Message sent to all pcs under a switch: Flooding

Message sent to a specific mac address: Forwarding

Modem: Modulation & Demodulation: Analog

Router: Digital

**9/27/2021**

Ipv4 = 32 bit

Ipv6 = 128 bit

4 octet = 8bit x 4

Classes

Class A: 10.0.0.0 to 10.255.255.255

Class B: 172.16.0.0 to 172.31.255.255

Class C: 192.168.0.0 to 192.168.255.255

Subnets and subnet masks

**10/11/2021**

**Midterm Review**

1. Arpanet
2. Distributed Networks
3. Packets

OSI: Open System interconnection

Physical

Data Link: ARP: Converts IP and Mac Addresses

Network: Segments into Packets: TCP & UDP

Trasport: Data into Segment

Session: Assign Port & Checkup

Presentation: Key Encryption

Application: coding

4 Octet = 32 bit

o.o.o.o 🡺 255.255.255.255

IP Classes:

A: 0 mask = 8

B: 10 mask = 16

C: 110 = 24

D: 1110

E: 1111

Ipconfig

Ping

Tracert

Mslookup

Java.net

Inetaddress

URL = URL Connection

**10/20/21**

A Socket is one endpoint of a two-way communication link between two programs running on the network.

**12/8/2021**

**Final Review**

Network

Command prompt

Ipconfig

Ping

Nslookup

OSI (Open System Interconnection): TCP IP

Phsical

Data Link

Network

Transport

Session ^

Presentation |

Application |

Enoding: Public Key : Decoding Private Key

Encoding happens in Presentation

TCP IP Model

Application

Transport

Internet

Data

Extends Thread : **ON FINAL**

Implements Runnable

50 Multiple Choice and Fill in the blank questions

46 are from hw

1 IP Adress

2 Subnet

3 Thread

Design: 1 to 1 Server and Client side