- Crucial - Internet Protocol

	network	
Google.com	Internet	Phone
Client		

→ Protocols - set of rules that can be implemented on different machines to exchange data w/ correct packets in correct order

→ Issue: Internet Protocol - must know to send the packet data to one of 2 ways: 1 - direct send to correct client
2 - indirect

→ Computers - Internet must identify each IP address:

Google.com → 1.2.3.4
→ 5.6.7.8

→ An idea: devices that can connect must know and know how best to route other IP address:

→ Router: internet that IP and sending best method

→ Problem: will change with device must update routing table

→ IP address changes: Internet Service Provider

→ IP address changes: Switch device to one the other

→ Solution: notification to send the data to other device - do that using DNS

Client asks ns1 → 1.2.3.4 about www.google.com
→ 5.6.7.8 → replaced client
→ 1.2.3.4 → updating

→ Basic connection: connected

Problems - network flow, congestion, packet loss, corrupted packet, reordered, duplicate, etc.

→ Goal - Send data without, send packet/order, reliable
→ Model - Angelo & Cory
→ Model - Angelo Cory
→ Model - Angelo Cory

→ Topology - dial, ASDL, SONET, WiFi, WiMAX

→ OSI Model

→ Note: Internet Interconnection model → standard layers of functions to make computers / devices communicate with their network

→ 7 layers

Application	Abstraction for providing services to user
Presentation	Same use of syntax and semantics of the data transmitted over the Internet connection
Session	Establishes, manages, terminates connections between the computers and devices
Transport	Responsible for process to process delivery, data checksum, error correction
Network	Communication, with other computers. Responsible for delivery of packets from one to other destination
Data link layer	Moving frames from one hop to next hop
Physical layer	Moving individual bits from one device to next device

→ TCP / IP Model

① Application Layer

→ Uses: internet
→ Protocols: Resolves etc

Key: Simple user → IP address, URL, Word and time for exchange, time from format to data of computer and network level, client/server

Client and network play direct role in the working and service data

→ Protocols

Web protocols:
TCP / IP

→ HTTP - protocol for delivering resources such as HTML documents

→ DNS - Domain Name System - internet protocol for addresses to clients such as computers to route network

→ FTP - File Transfer Protocol, has the files on browser

→ SMTP - Simple mail transfer protocol for sending text messages

→ POP - Post Office Protocol

→ IMAP - IP, has access to inbox on mail connection

Telnet - port 23

Client - Telnet - Host - the process and Internet

HTTP - 2.0 is a client/server protocol

→ GET - Get the resource from the server

→ POST - Send/Client data to the server to be processed

→ PUT - Replace/Client data to the server to be processed

→ DELETE - Remove data on server

→ TRACE - Remove data from server

→ OPTIONS - Client asking client to map

→ CONNECT - Connection to web that uses SSL/TLS encryption

→ HTTP protocol

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Application layer

Client → Internet → Server → Client

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