Internet (1969) – connection among others

* Runs in TCP/IP

LAN – network for a small geographic area

ISP – connects LAN to LAN via gateway

Nodes- usually computers or devices

Interconnection Technology – used to connect nodes

* Wired – have actual physical connection
* Wireless-don’t have actual physical connection

Protocols – standard way of doing things

Tranceiver – device that receives and transmits data

World Wide Web(1989, Tim Berners-Lee) – system of internet that allows documents to be connected to other documents with hypertext links

Email – earliest application that uses the internet

Packet Switched vs Circuit Switched:

Packet Switch – store and forward; connection to node don’t need connection to that node

Circuit Switch – connection should be maintained

WAIS (Wide Area Information Servers) – databases in servers

Gopher – indexes servers of information

Usenet – similar to bulletin board

HTTP – port 80 (default)

SSL – port 443

Version History:

* HTTP 0.9 (1991)
* HTTP 1.0 (RFC 1945, May 1996)
* HTTP 1.1 (RFC 2068 Jan 1997, RFC 2616 Jun 1999), RFC 7230-7235 (Jun 2014)
* HTTP 2 (RFC 7540 May 2015)

Fundamentals:

* Runs on top of TCP/IP

SSL – Secure Socket Layer

TLS – Transport Layer Security

Servers:

* Origin Server
* Proxy Servers, gateways, tunnels (encription)

User Agent – accessing resources in HTTP web servers via HTTP

HTTP uses request – response standard protocol; client send message, server process request message, send respond message (“PULL”)

Pull – frequent request

Push – server send message to client if there is something new

HTTP – stateless – servers don’t keep info of client

Cache control

MIME (Multipurpose Internet Mail Extensions)

Language & character set specification

Content/transfer coding – compressions

Content Negotiation – default language according to client

Client – Server Protocol Negotiation

Persistent Connections

Request Pipelining – if make request, wait for response before terminate

-send request without waiting to finish execution.

Authentication/Authorization