January 20,2018

* WWW

= resources that can be accessed with the help of the internet.

= invented by Sir Tim Berners-Lee(1989)

= came up with HTML, HTTP, URL

= from CERN

= client-server architecture

= applications: -Webserver

* Webclient (e.g Browsers)
* Two web resources
  + Static
    - Exists already in the web
  + Dynamic
    - Produced only when it is accessed(e.g Google Search)
* DNS(Domain Name System) – where the ip address is mapped to a resource
* https – secure transport of data
* Webspiders

= locates specific informations in the web and then collects it.

* Internet

= International Network

= It is a network where all hosts can use to interact globally.

* Hosts

= the devices (computer, cellphones, laptops, etc)

* FTP (File Transfer Protocol)

= transfer files between two computers with the help of the network.

* URL(Uniform Resource Locator)

= address of a web page

* http://

= shows what type of protocol you are using

* Fiddler

= web debugger proxy

= eavesdrop in a web

= retrieve-response interface

* HTTP is based on a client-server architecture
  + Servers
    - Origin servers
    - Proxy servers
    - Gateway servers
  + Clients

= A.K.A user agents(UA)

* + - Web servers
    - Web crawlers/spiders
    - Other end user tools and applications
* HTTP

= is a stateless communications protocol

= servers do not keep information about clients in between requests

= serve and forget

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* HTTP

= by Tim Berners-Lee (1989)

= joined by W3C and IETF

* Version
  + History

-HTTP 0.9(1991)

* Request only consists of one line the GET header and path to the resource.
* GET is the only header available
* Closed after every request
* Request-response and client-server
* Serves HTML

-HTTP 1.0 (RFC 1945, May 1996)

* Can serve more things other than HTML
* Request and Response has header fields
* GET, HEAD and POST are the headers available
* Closed after every request

-HTTP 1.1 (RFC 2068 Jan 1997, RFC 2616 Jun 1999, RFC 7230-7235 Jun 2014)

* GET,HEAD,POST,DELETE,PUT,TRACE and OPTIONS are the method available
* Increased the performance of HTTP. Has now persistent connection, compression and depression, faster response and greater bandwidth

-HTTP 2 (RFC 7540 May 2015)

* SPDY=for faster transfer of resources(A Google Work)
* SeverPush – sends additional resources to the client for future reference.
* Accepts multiple requests at the same time
* HTTP typically functions on top of TCP/IP using TCP port 80 by default, or TCP port 443 for HTTPS (HTTP over SCL/TLS)

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* Cache

= a copy of something saved in a local storage

* Content media type (MIME) specification

= MIME = Multipurpose Internet Mail Extension

= specifies the extension of a file

* Content negotiation

= accepts many different document formats, adapts to what document format the client has.

* Language and Character set specification
* Content/ Transfer Coding

= e.g compression(zip, rar)

* Client-server protocol negotiations
* Persistent connections
* Request pipelining/multiplexing

= multiple requests at the same time

* Authentication/Authorization
* HTTP Resource Addressing
  + URI

= Uniform Resource Identifier

= Like the name implies in is an identifier for a resource

* + Parts
    - Scheme(http or https)
    - Colon
    - Authority

= user info

= host- domain name

= port number

* + - Path

= static/dynamic(document root)

* + Query

= typically provided as key

= clear with ampersand separator between key/value pairs (?id=1234), may be URL encoded

* + Fragment identifier

= A.K.A bookmark (#)

=e.g. <http://usr:pwd@server.org:81/info/profile.php?id=1234#addr>