**WWW - World Wide Web**

**1.1**

**Web browser**

**-** Visualize pages on web document.

- Contains link, button, video, image

**internet :**

- hardware - global network of machines , and devices that facilitate interaction

**nodes -** computes

**edges -** connection

**www :**

- software - application on top of internet - using hardware infra structure

- also protocol for communication

- composed of document that are linked to each other through web-browser

**nodes** - documents/content/resources

**edges**- links between documents

**Addresses**

URI - uniform Resource Identifier - unique

URL - uniform resource Locator - type of URI. location on www and protocol

*http://www.example.com/home/inde.html?a=12&b=34*

*http :* protocol

*www.example.com :* host name

*example.com :* domain name

*home/inde.html :* file path

*a=12&b=34 :* query parameter

**Protocol:**

Structure of content of communication between devices

**Contents on www**

**static:** Contents does not change, -who, when-html,css

**dynamic:** content changes - user, event -js

request - receive / send - how display - how generate dynamic content

**1.2**

**View content on WWW:**

1980's - text web browsers

1095s - mosaic web browser - images and links between pages

**web browser :**

software displays content and let you navigate

component:

Rendering engine -

decides what to display and how to display on web browser.

presentation, ordering, content

html, css

Java script Engine-

dynamic part - create modify

run code

Web browser works -

http protocol -

web browser communicates - request, transfer documents

client -(laptop, mobile, fridge)

server - server /big computer

connected via connections , devices

client initiates - http request

server - listens - decides response and content and sends http response

client again - decides what to do with the content from server response

http:

plain text, human readable protocol on the web

client server model

request + client info

response + server info



**http request**

verb - Action client hoping to perform

get - requesting resource

head - just header info, not any resource

post -create new content on server

argument - name of the resource requested

protocol - http/1.1

client information + other information

Ex:

Request Verb URI HTTP Version

----- --------------------------- -----------

GET /example/index.html HTTP/1.1 ------------> Request Line

Host: www.edx.org |

User-Agent: Mozilla/4.0 |-----------> Request header

Accept-Language: en-us |

Content-Length: 9 |

-------------> Blank Line Separator

a= 12 & b=34 -------------> Request Message Body

**HTTP Response -**

1st line

Protocol and status code

1XX - Information only

2XX - Success

3XX - Client redirect

4XX - client error

5XX - server error

Most common status codes

200 OK - request succeeded , returning contents requested

404 Not Found - requested resource does not exist

500 Server Error - Error on server side while processing request

2nd line

header information - info about server / info of content

3rd line

blank separator

4th line

response body - content of page requested

Ex:

HTTP Version Status Code

---------- --------

HTTP/1.1 200 OK -----------------------------------> Response Line

Date: Fri, 06 Apr XXXX 09:30:00 GMT |

Server : Apache/1.4 |

Last-Modified: Wed, 04 Apr XXXX |

Connection: close |------------> Response Headers

Content-Type: text/html |

Content-Length: 228 |

--------------> Blank Line Separator

<!DOCTYPE html> <html><Head> --------------> Response Body

**HTML**

1.3

**HTML -**

Structure content / data on WWW

html document - elements -tags - can be nested

plain text - human readable

structure

doesn't decide how to display - web browser decides

**Tags**

<!DOCTYPE html> - version of html

<html> - all contents within

<head>- info of document

<title> title bar

<link> link to other document ex: css -styling

<meta> provide additional information Ex: keyword used by search engine

<script> link to dynamic content Ex: Javascript

<body> - content to be displayed Ex: image, text

**HTTP and HTML -**

browser request for content

client - http request

server - response - content - plain text -html

browser - how to display

Browser - View source Code

html page - right click - view source -html source