HTTP

method

Get

The HTTP Method | Path to the source on Web Server | Parameters to the server | Protocol Version Browser supports

The Request Headers:
```
GET /RegisterStudent.asp?user=jhon&pass=java HTTP/1.1
Host: guru99.com
User-Agent: Mozilla/5.0
Accept-text/xml,text/html,text/plain, image/jpeg
Accept-Language: en-us,en
Accept-Encoding: gzip,deflate
Accept-Charset: ISO-8859-1, utf-8
Keep-Alive: 300
Connection: keep-alive
```
Guru99.com

Post

Http request method | Path to source on Web Server | Protocol Version Browser support

request header:
```
POST/profile.jsp HTTP/1.1
Host: www.studytonight.com
User-Agent: Mozilla/5.0
Accept: text/xml,text/html,text/plain,image/jpeg
Accept-Language: en-us,en
Accept-Encoding: gzip
Keep-Alive: 300
Connection: keep-alive
user=abhi&course=java
```
← parameter inside message body

status code

1xx: Information

Message	Description
100 Continue	Only a part of the request has been received by the server, but as long as it has not been rejected, the client should continue with the request.
101 Switching Protocols	The server switches protocol.

1xx

2xx: Successful

Message	Description
200 OK	The request is OK.
201 Created	The request is complete, and a new resource is created .
202 Accepted	The request is accepted for processing, but the processing is not complete.
203 Non-authoritative Information	The information in the entity header is from a local or third-party copy, not from the original server.
204 No Content	A status code and a header are given in the response, but there is no entity-body in the reply.
205 Reset Content	The browser should clear the form used for this transaction for additional input.
206 Partial Content	The server is returning partial data of the size requested. Used in response to a request specifying a Range header. The server must specify the range included in the response with the Content-Range header.

2xx

3xx: Redirection

Message	Description
300 Multiple Choices	A link list. The user can select a link and go to that location. Maximum five addresses .
301 Moved Permanently	The requested page has moved to a new url .
302 Found	The requested page has moved temporarily to a new url .
303 See Other	The requested page can be found under a different url .
304 Not Modified	This is the response code to an If-Modified-Since or If-None-Match header, where the URL has not been modified since the specified date.
305 Use Proxy	The requested URL must be accessed through the proxy mentioned in the Location header.
306 Unused	This code was used in a previous version. It is no longer used, but the code is reserved.
307 Temporary Redirect	The requested page has moved temporarily to a new url.

3xx

4xx

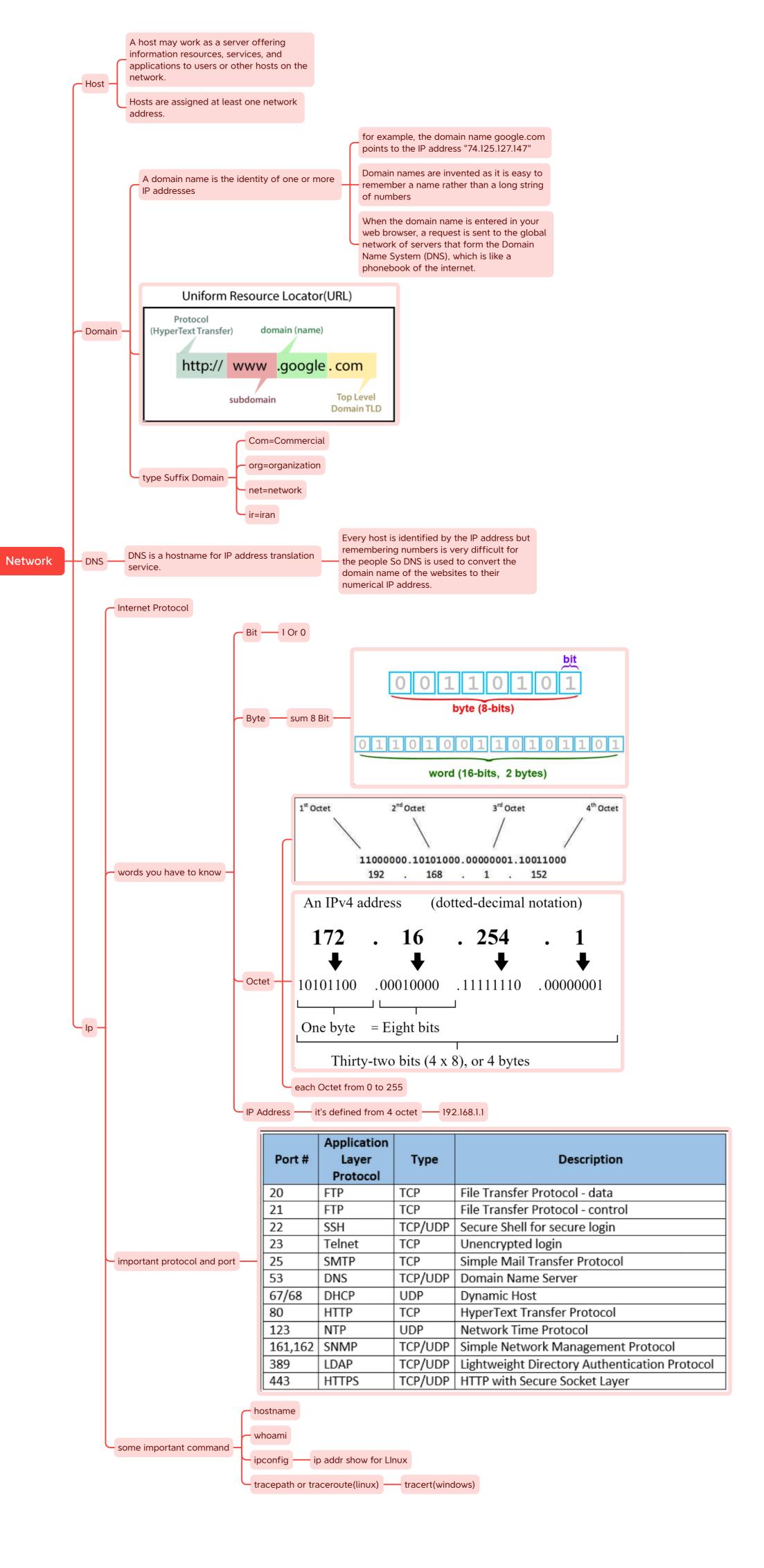|	
400 Bad Request	The server did not understand the request.
401 Unauthorized	The requested page needs a username and a password.
403 Forbidden	Access is forbidden to the requested page.
404 Not Found	The server can not find the requested page.
405 Method Not Allowed	The method specified in the request is not allowed.
408 Request Timeout	The request took longer than the server was prepared to wait.
409 Conflict	The request could not be completed because of a conflict.
410 Gone	The requested page is no longer available .
415 Unsupported Media Type	The server will not accept the request, because the mediatype is not supported .

5xx: Server Error

Message	Description
500 Internal Server Error	The request was not completed. The server met an unexpected condition.
501 Not Implemented	The request was not completed. The server did not support the functionality required.
502 Bad Gateway	The request was not completed. The server received an invalid response from the upstream server.
503 Service Unavailable	The request was not completed. The server is temporarily overloading or down.
504 Gateway Timeout	The gateway has timed out.
505 HTTP Version Not Supported	The server does not support the "http protocol" version.

5xx

S.N.	Code and Description
1	1xx: Informational — It means the request has been received and the process is continuing.
2	2xx: Success — It means the action was successfully received, understood, and accepted.
3	3xx: Redirection — It means further action must be taken in order to complete the request.
4	4xx: Client Error — It means the request contains incorrect syntax or cannot be fulfilled.
5	5xx: Server Error — It means the server failed to fulfill an apparently valid request.

created by github.com/farzadafi

Network

Host

- A host may work as a server offering information resources, services, and applications to users or other hosts on the network.
- Hosts are assigned at least one network address.

Domain

- A domain name is the identity of one or more IP addresses
  - for example, the domain name google.com points to the IP address "74.125.127.147"
  - Domain names are invented as it is easy to remember a name rather than a long string of numbers
  - When the domain name is entered in your web browser, a request is sent to the global network of servers that form the Domain Name System (DNS), which is like a phonebook of the internet.

Uniform Resource Locator(URL)

Protocol (HyperText Transfer) | domain (name)

http:// www .google .com

subdomain | Top Level Domain TLD

- type Suffix Domain
  - Com=Commercial
  - org=organization
  - net=network
  - ir=iran

DNS

- DNS is a hostname for IP address translation service.
  - Every host is identified by the IP address but remembering numbers is very difficult for the people So DNS is used to convert the domain name of the websites to their numerical IP address.

Ip

- Internet Protocol
- words you have to know
  - Bit : 1 Or 0
  - Byte : sum 8 Bit

```
0 0 1 1 0 1 0 1    bit
byte (8-bits)

0 1 1 0 1 0 0 1 1 0 1 0 1 1 0 1
word (16-bits, 2 bytes)
```

  - Octet

```
1st Octet   2nd Octet   3rd Octet   4th Octet
11000000.10101000.00000001.10011000
192    .   168   .   1    .   152
```

An IPv4 address (dotted-decimal notation)

172 . 16 . 254 . 1

10101100 . 00010000 . 11111110 . 00000001

One byte = Eight bits

Thirty-two bits (4 x 8), or 4 bytes

- each Octet from 0 to 255
- IP Address — it's defined from 4 octet — 192.168.1.1
- important protocol and port

Port #	Application Layer Protocol	Type	Description
20	FTP	TCP	File Transfer Protocol - data
21	FTP	TCP	File Transfer Protocol - control
22	SSH	TCP/UDP	Secure Shell for secure login
23	Telnet	TCP	Unencrypted login
25	SMTP	TCP	Simple Mail Transfer Protocol
53	DNS	TCP/UDP	Domain Name Server
67/68	DHCP	UDP	Dynamic Host
80	HTTP	TCP	HyperText Transfer Protocol
123	NTP	UDP	Network Time Protocol
161,162	SNMP	TCP/UDP	Simple Network Management Protocol
389	LDAP	TCP/UDP	Lightweight Directory Authentication Protocol
443	HTTPS	TCP/UDP	HTTP with Secure Socket Layer

- some important command
  - hostname
  - whoami
  - ipconfig — ip addr show for LInux
  - tracepath or traceroute(linux) — tracert(windows)