

Module 1

Internet → Network of networks

Web Browsers / Clients

(i) Chrome - 55%

(ii) Safari

(iii) IE + Edge

(iv) Firefox

(v) Opera

Web Servers

(i) Apache

(ii) Microsoft IIS

(iii) NGINX

Internet is a huge collectⁿ of computers connected in a computer network. It is also known as network of networks.

Protocol used:- TCP/IP

IP address is used to uniquely identify a computer / a node in a network. It consists of 32 bits → 4 sets of 8 bits.

Each 8 bit is separated with a period.

eg. 192.168.0.1

World Wide Web (WWW)

In 1989, a small group of people led by Tim Berners-Lee at CERN proposed a new protocol for the internet as well as a system of document access to users. This new system is named as world wide web which allow scientists around the world to use the internet to exchange documents.

describing their work.

(3 marks)

• Web & Internet

Internet is a collectⁿ of computers & other devices communicating with each other.

Web is a collectⁿ of software & protocols.

Mosaic:- 1st web browser that supported GUI

aka
Web
Clients

- Web Browsers:- Documents provided by servers on the web are requested by browsers which are programs running on client machines. The 1st browser with a GUI was Mosaic, which was developed at University of Illinois.
eg: Google Chrome, Safari, Firefox etc

- Web Servers:- are programs that provide docs to requesting browsers. Protocol used for communicatⁿ b/w web browsers & servers → HTTP.

1st task of web server is to monitor a communicatⁿ port on its host machine, accept HTTP commands & perform the operatⁿs specified by that commands. URL identifies the locatⁿ of the docs in a web server.

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• Uniform Resource Locator (URL)

It is used to identify documents in the Internet. The general format of URL is:

scheme: object-address

scheme → communicatⁿ protocol which includes http, ftp, telnet etc.

http: // fully-qualified-domain-name / path-to-document

A path that includes all directories along the way is called a complete path.

MIME

MIME → Multipurpose Internet Mail Extension

MIME was developed to specify the format of different kinds of docs to be sent through internet mail. A web server attaches a MIME format specification to the beg of the doc that it is about to provide to a browser. When a browser receives a doc from the web server, it uses the included MIME format specification to determine what to do with the doc. MIME specification has the form:-

type / subtype

type → image, video, text, voice

subtype → image / img, png
↓
jpg, png, bmp

Imp HTTP (Hypertext Transfer Protocol)

It is used for all web communication transactions. It consists of 2 phases:

- (i) Request
- (ii) Response
- (i) Request Phase

The general form of an HTTP request is as follows:

- (a) HTTP method Domain part of the URL HTTP version
- (b) Header fields
- (c) Blank lines

(d) Message body

GET /static/cont.html HTTP/1.1 → eg of 1st line

• HTTP Methods

(a) ~~GET~~ GET → Return content of specified doc

(b) POST → To execute the doc

(c) PUT → To replace

(d) DELETE → To delete doc

(e) HEAD → To get header info

• ~~Header~~ Header Field

(a) General

(b) Request

(c) Response

(d) Entity

Accept: text/plain → Only plain text format (.txt) is accepted

Accept: text/* → All text formats are accepted

(ii) Response Phase

(a) Status line → eg: HTTP/1.1 200 OK

(b) Response header field

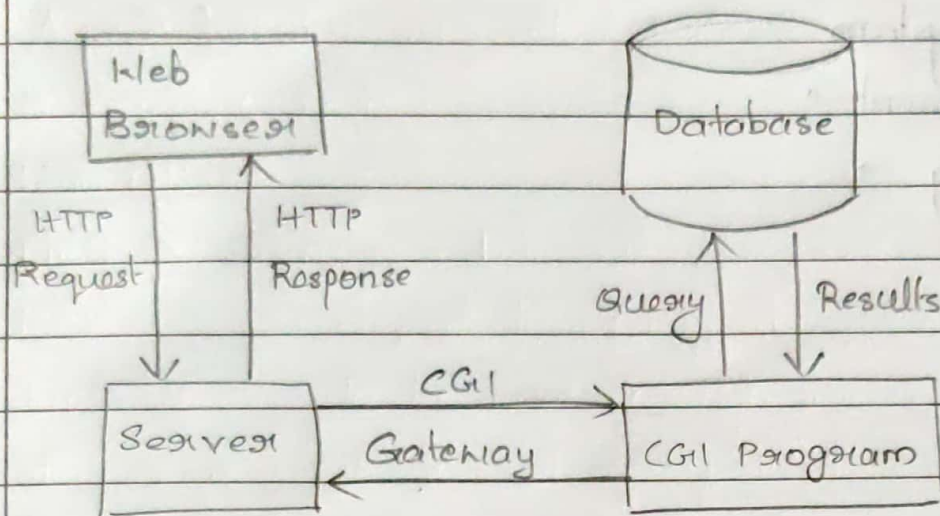
(c) Blank line

(d) Response body

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Common Gateway Interface (CGI)

It is a standard way for a web server to pass a user's request to an app. prog. & to receive data back it is forwarded to the user.



When a user fills out a form on a webpage & sends it, it usually needs to be processed by an app prog. The web server passes the form info to a small app. prog. that processes the data & sends back a confirmation message. This method of passing data back & forth btw the server & app. is called CGI. CGI prog. is mentioned in the URL code in an HTML file.

eg: `<FORM METHOD=POST`

`ACTION="http://www.mybiz.com/cgi-bin/formprog.pl">`

Server at mybiz.com passes control to the CGI app `formprog.pl` to process the entered data.

Content Management System (CMS)

CMS is an app that is used to manage web content, allowing multiple contributors to create, edit & publish. It helps you to build a website without writing code from scratch.

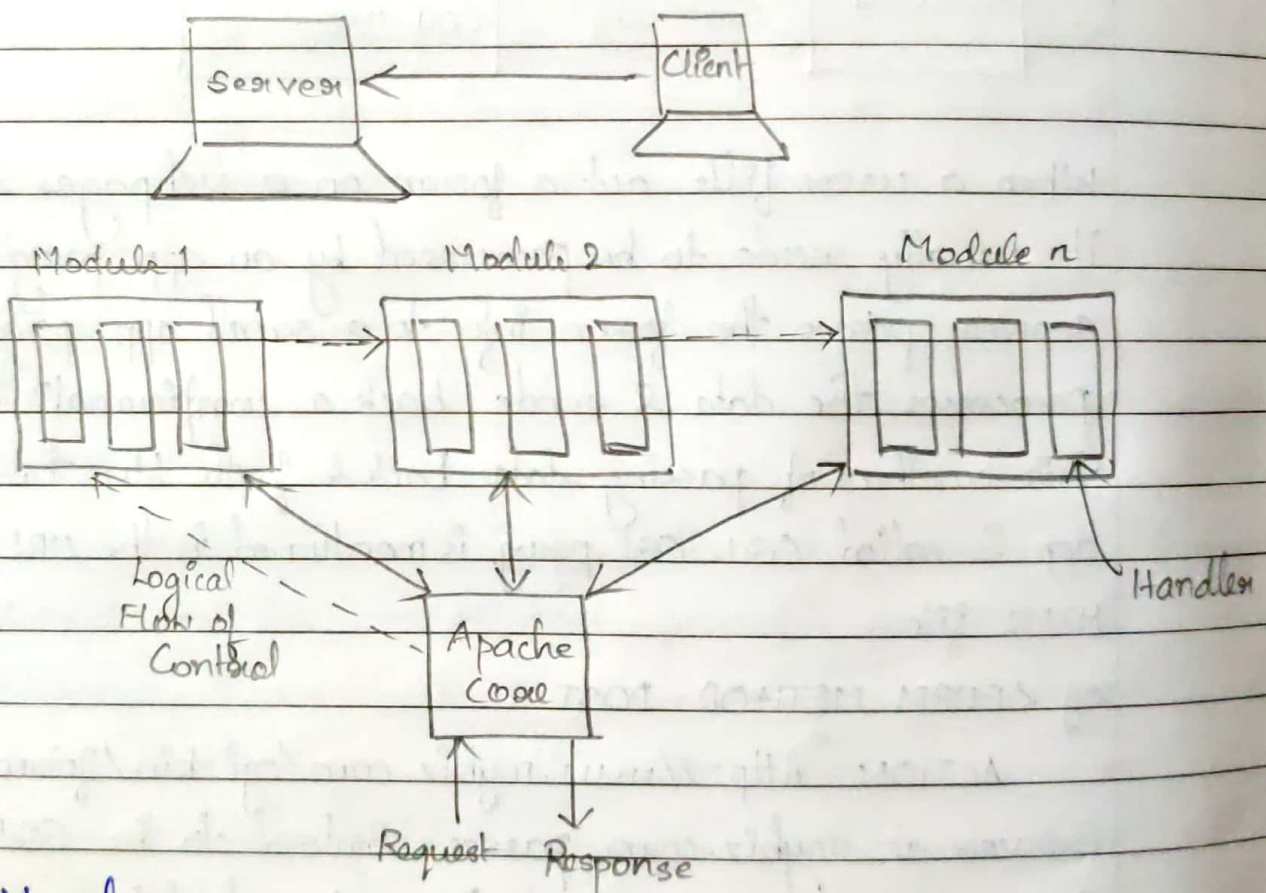
eg: Wordpress, Wix, Squarespace

It consists of 3 parts:

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- (i) "Collect" system
 - (ii) "Management"
 - (iii) "Publishing"
- Apache

- "a patchy" HTTP
- A web server



Kloordpress

- It is a content mgmt system (CMS)
- It was started in 2003
- Developed using PHP & MySQL
- It has a plug-in architecture & template system