

Chapter 10:

Web Application Development

Informatics Practices
Class XII

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Introduction

A Web Application refers an application which sends and receive information through World Wide Web over Internet or Intranet.

A typical Web Application may include-

- ❑ **Hyper Text Information:**

Information that contains links to other information resources.

- ❑ **Multimedia Information:**

Text, movies, pictures and sound etc.

- ❑ **Graphical User interface:**

GUI which enables user to point and click to request/submit information instead of typing.

What is Internet?

In simple words, an **Internet is a network of networks**, spread over world-wide network of computers with millions of users.

- ❑ Access to Internet is provided through Internet Service Provider (ISP) such as MTNL, BSNL, Reliance, Airtel and Tata etc. (in India).
 - ❑ Internet begins with Advanced Research Project Agency Network (ARPANet) in 1969 under American Defense Deptt.
 - ❑ In 1986, the National Science Foundation establishes NSFNet, which works as a backbone of Internet.
 - ❑ In 1990, the British Programmer Tim Berners-Lee devised Hypertext and HTML to create WWW.
 - ❑ There is no owner of Internet. The Internet Society (IS) and Internet Engineering Task Force (IETF) regulates the Internet.
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What is Web Browser?

A web browser is an **Web Client** program which allows users to access and navigate the World Wide Web over Internet.

- ❑ It provides an interface to interact with Internet.
- ❑ It send request to Web Server for specified web page and displays at client machine.
- ❑ It also maintains History of visited Web Pages and may provide tools for easy web surfing.

Some commonly used Web Browsers are Internet Explorer, Mozilla FireFox, Google Chrome, Opera and Webkit etc.

What is Web Server?

Web servers are computers on Internet on which Web pages are stored. It is equipped with a program which listens request from the web client (Web Browser) and sends web pages.

The major functions of a web server are-

- ❑ Serving of Web pages on request of Browser.
- ❑ Controlling access and security of the server.
- ❑ Monitoring and logging server access statistics.

Some most popular Web Servers are Apache Web Server (Open Source software for Linux), MS Internet Information Server (IIS) and Netscape Enterprise Web Server etc.

Web Address & URL

A location of a web server is called Website and each Website has a unique address called URL (Universal Resource Locator)

Ex. `http://www.thinkquest.org`

A general structure of URL is-

Protocol type://Address/Path

☐ **Protocol Type:**

It specifies the type of protocol to be followed by server. Some commonly protocols are http, https, ftp, new etc.

☐ **Address:**

It specifies the name of server on the internet including domain name like .com, .org, .mil, .edu or country domain like .in, .ca .au etc.

☐ **Path**

It specifies the location of file/web page on the server in hierarchical format including file name.

Communication with Web Server

The Internet or WWW works on Client-Server computing model. In this model your PC equipped with Web Browser works as Web-Client and other machine which serves the pages called Web servers.

A Web server follows some protocols like HTTP, FTP or SMTP etc.

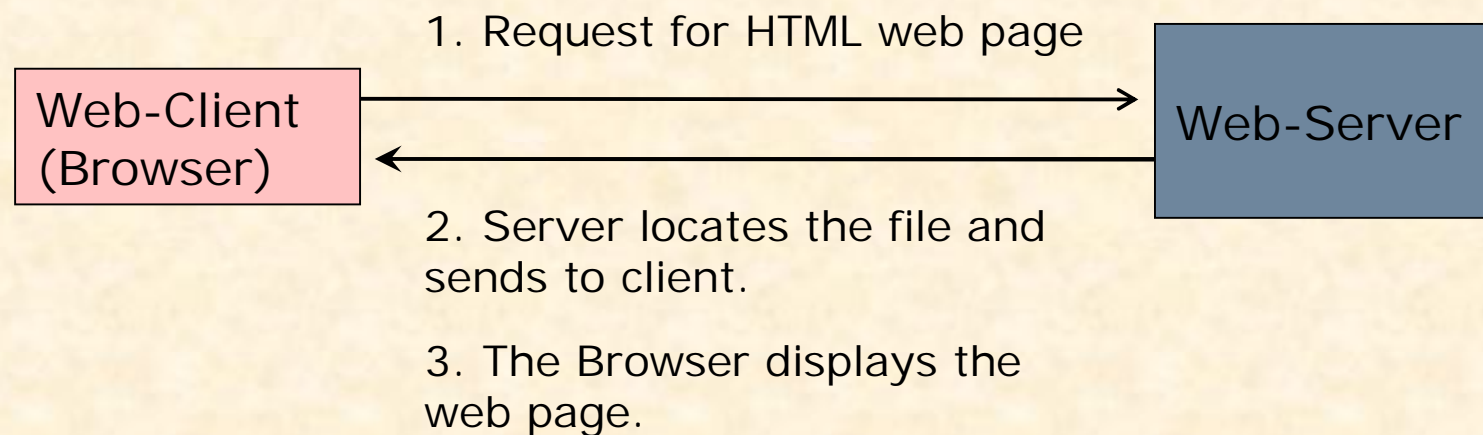
The communication model between Client and Server can take place in two forms-

- ❑ Client-Server Communication- Static Web Pages.
 - ❑ Client-Server Communication- Dynamic Web Pages.
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Client-Server Communication- Static

In this model Browser (Web-Client) request for a HTML pages stored on a remote machine through Web-Server. The server locates the file and passes it to the client. The client displays the page.

In this model HTML pages are static i.e. They do not change until the developer modifies them.



Client-Server Communication- Dynamic

In this model Web pages may have different contents depending upon the location, language and environment of the client machine.

For eg. A dynamic web page can show different weather report when opened at different location or country. Most of Multi-Lingual websites are designed in this model.

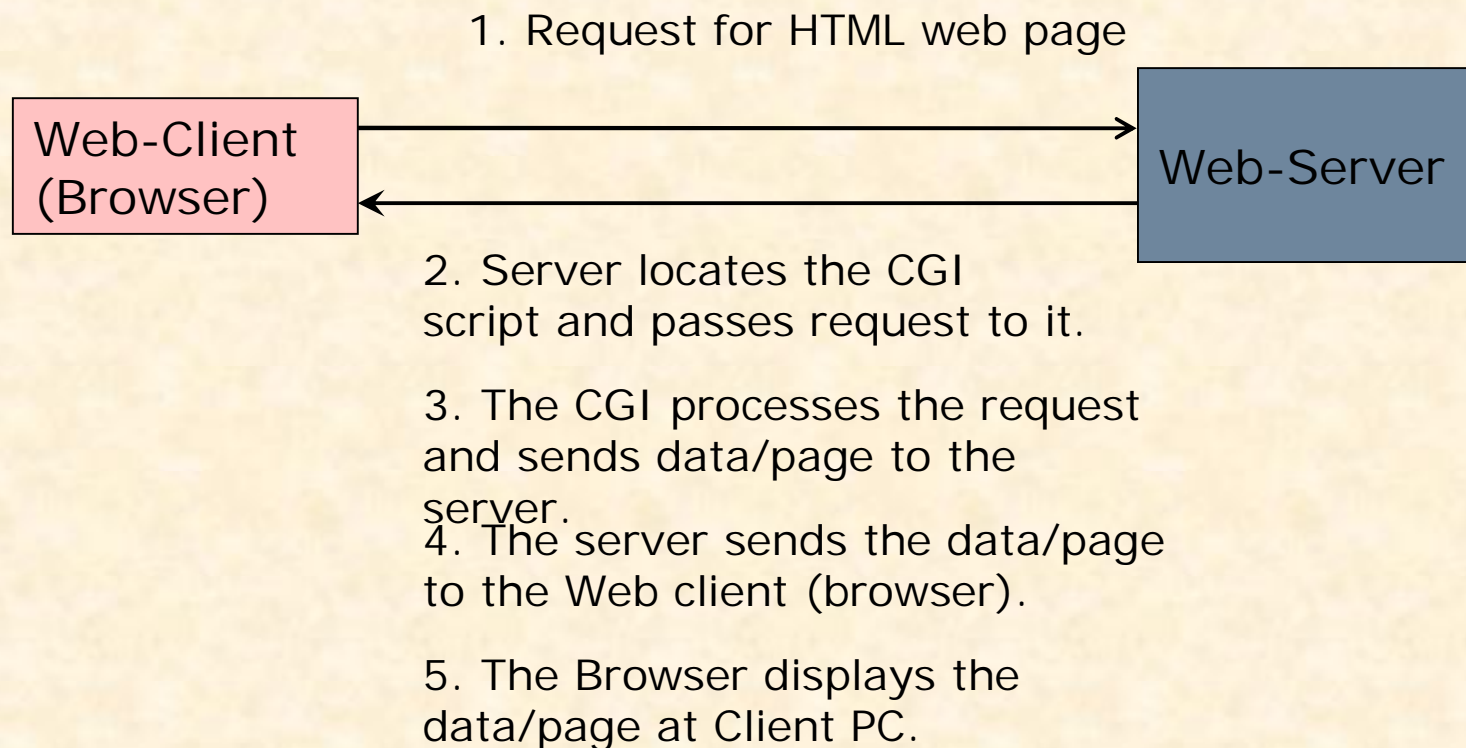
In this model, Dynamic Web pages are generated on demand using two technologies.

- ❑ **CGI Script**

- ❑ **Server-Side Script**

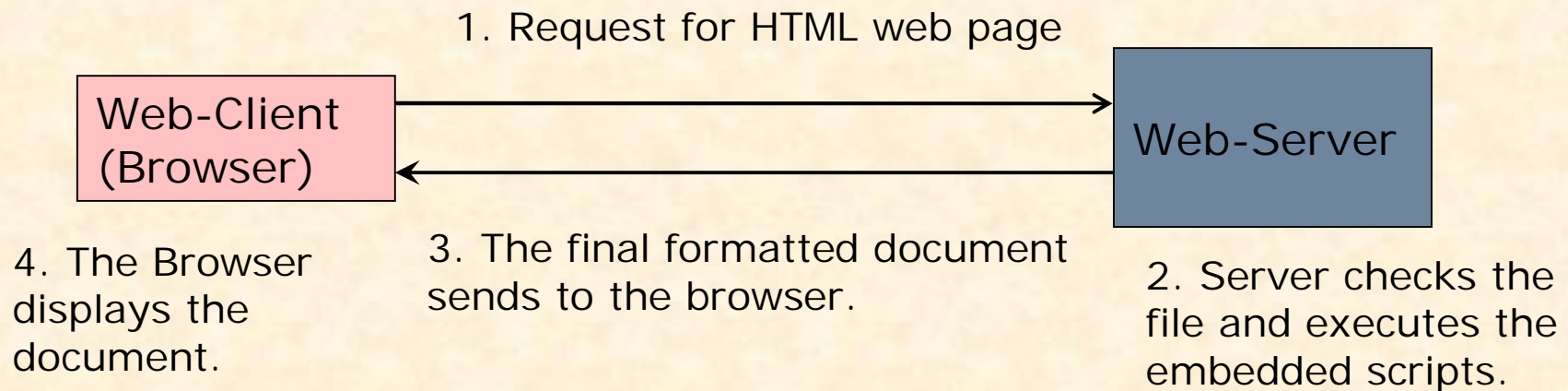
Dynamic Web server- CGI Script

In this technology, the Server stores Scripts called Common Gateway Interface (CGI), which generates web pages when requested.



Dynamic Web server- Server-Side Script

In this technology, the Server stores Scripts embedded in web pages itself. These embedded scripts generates Web Pages as per need.



The commonly used Server-Side Script technologies are Active Server Pages (**ASP**), Personal Home Page (**PHP**), Java Server Pages (**JSP**) and Server Side Includes (**SSI**) etc.

➡ The server-side scripts are embedded in web pages but not visible as source code of the web page.