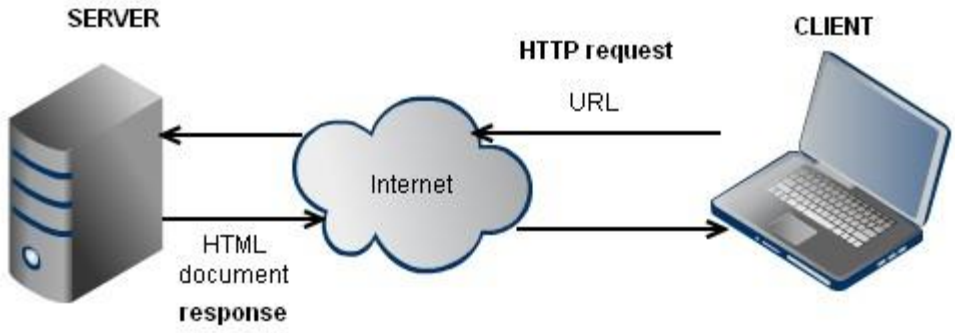
Agenda

1. *Communication between server and browser*
2. *Http Request life Cycle*
3. *HTTP Protocol*
4. *Request and Response Structure*
5. *Difference between Get and Post*

Communication between Browser and Server



Http Request Life Cycle

1. Http Server waits for the request to come on Socket (Port = 80)
2. Web Browser submits a request for a given URL after creating a Socket in local process.
3. Request is submitted to DNS server so that based on domain name IP address is fetched.
4. Browser now submits the request to Http Server.
5. Server accepts the request and shifts the client to another Socket so that the socket on port 80 is released for receiving request from other clients.
6. Now Browser and Server are connected to each other.
7. Browser submits request as per HTTP protocol
8. Server processes the request, renders the response and breaks the connection.

HTTP Protocol

- Its Application Protocol
- The communication between web server and web browser on internet is done using HTTP protocol.
- HTTP is a specification by Internet Engineering Task Force (IETF) and W3C.
- HTTP Protocol is the safest protocol on internet.
- HTTP communicates only in the String Format and is thus virus free and is platform independent.
- HTTP protocol works on PULL technology. i.e. we can pull everything available on webserver but we cannot push content to the server unless server allows for it.
- HTTP is a stateless protocol. This is because it doesn't know whether the request that has been made is part of an ongoing correspondence or just a single message.
- Latest Version is 1.1

HTTP Protocol Structure

HTTP Request Structure (Browser→Server)	HTTP Response Structure (Server→Browser)
1. Request Line. 2. Request Header. 3. Message Body (Posted Data).	1. Status Line. 2. Response Headers. 3. Message Body (Page Content).

HTTP looks like this:

it sends the request, which looks like:

```
GET Demo/default.htm HTTP/1.0
Header1: bla
Header2: blub
{emptyline}
N1=V2&N2=V2&N3=V3
```

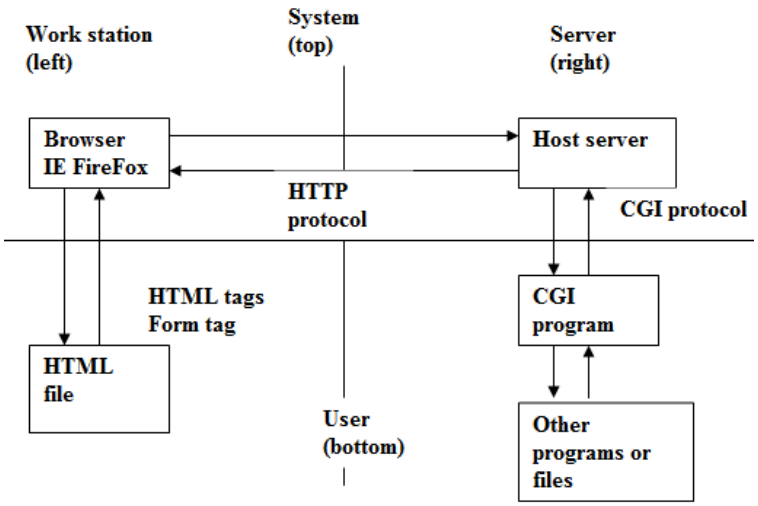
Then the server responds like this:

```
HTTP/1.1 200 OK
 Date: Mon, 23 May 2005 22:38:34 GMT
 Server: Apache/1.3.3.7 (Unix) (Red-Hat/Linux)
 Last-Modified: Wed, 08 Jan 2003 23:11:55 GMT
 Etag: "3f80f-1b6-3e1cb03b"
 Accept-Ranges:  none
 Content-Length: 438
 Connection: close
 Content-Type: text/html; charset=UTF-8

<CONTENT OF PAGE>
```

- **Request Line**: Method Path Protocol / Version
  Example: GET Demo/default.htm http/1.1
- **Request Header**: These are the name value pairs submitted by the browser to the server .It contains the information about the browser and the OS on the client machine.
- **Message Body** is the stream of name value pairs submitted to server when the form is submitted using the method POST.

CGI Environmental Variables: It's a collection of name value pairs including request headers and information about the server in a context of a given request. The names of these variables are based on CGI (Common Gateway Interface) specification. These are also referred as **Server Variables**.



Understanding Message Body

```
<form name="Form1" action="demo.asp" method="post" >
        <input type="…..
        <input type="submit" name="s1" value="Submit">
</form>
```

When the form is submitted by clicking on the submit button it submits the Name/ Value pair of every input element in the form to the server.

About Get and Post Methods:

GET Method:

1. All the name value pairs are submitted as a query string.
2. It's not secured as it is visible in plain text format in the Location bar of the web browser.
3. Length of the string is restricted.
4. If method is not mentioned in the Form tag, this is the default method used.
5. If get method is used and if the page is refreshed it would not prompt before the request is submitted again.

POST Method:

1. All the name value pairs are submitted in the Message Body of the request.
2. Length of the string (amount of data submitted) is not restricted.
3. Post Method is secured because Name-Value pairs cannot be seen in location bar of the web browser.
4. If post method is used and if the page is refreshed it would prompt before the request is submitted again.

Response Structure

Status Line

Status code	Status Description
1xx	Informational

2xx	Success
3xx	Redirect
4xx	File Not Found / Not Authorized / Not Authenticated.
5xx	Server Error

About Web Server:

- Every web server has a default directory and by default on IIS it is: **c:\inetpub\wwwroot**. Only content placed in this folder and its sub folder is accessible to clients on Internet.
- From Browser: http://servername:PortNo/Directory/default.html

What is IIS (Internet Information Server)?

It is a windows component, a web server that accepts requests from client browsers and responds with the requested page(s)

IIS Manager: A tool to configure and manage IIS. To launch IIS Manager one of the below methods can be used.

Control Panel → Administrative Tools → IIS Manager

(Or)

Start → Run → inetmgr.exe

Default Website: Default website is a website provided in IIS at the time of installation of IIS. The physical directory used by the default website of IIS is **c:\inetpub\wwwroot** and the port is 80