**JATIN STUDENT**

HTTP

HTTP stands for Hypertext Transfer Protocol.

It is a defined language which computer uses to talk to each other.

**HTTP** is a [protocol](https://developer.mozilla.org/en-US/docs/Glossary/Protocol) which allows the fetching of resources, such as HTML documents. It is the foundation of any data exchange on the Web and it is a client-server protocol, which means requests are initiated by the recipient, usually the Web browser.

Clients are often browser but they can be any type of program or device.Diagram

Description automatically generated

HTTP resources such as web servers are identified across the Internet using unique identifiers known as *Uniform Resource Locators* (URLs).

A typical HTTP request / response circle:

1. The browser requests an HTML page. The server returns an HTML file.
2. The browser requests a style sheet. The server returns a CSS file.
3. The browser requests an JPG image. The server returns a JPG file.
4. The browser requests JavaScript code. The server returns a JS file
5. The browser requests data. The server returns data (in XML or JSON).

HTTP is an application‑layer protocol and relies on an underlying network‑layer protocol such as **Transmission Control Protocol (TCP)** to function.

**TCP** is designed to send packets across the internet and ensure the successful delivery of data and messages over networks.

**CHARACTERISTICS**

HTTP is a **Connectionless** protocol i.e when we send request to server the connection is broke and to know the server that to whom server has to send the response we send the identity/IP address so that server will able to know where I have to send the response.

HTTP is a **Stateless** protocol i.e after communicating with the server one time , if again afterwards we go to same server it will treat you as a new client and again the same process of Request and Response will take place.

Diagram

Description automatically generated

HTTPS is HTTP with encryption. The only difference between the two protocols is that HTTPS uses TLS (SSL) to encrypt normal HTTP requests and responses.

BHUSHAN

HTTP

**What is HTTP (Hypertext Transfer Protocol)?**

**HTTP** standard application-level [protocol](https://www.britannica.com/technology/protocol-computer-science) used for exchanging files on the [World Wide Web](https://www.britannica.com/topic/World-Wide-Web). HTTP runs on top of the [TCP/IP](https://www.britannica.com/technology/TCP-IP) [protocol](https://www.merriam-webster.com/dictionary/protocol). Web [browsers](https://www.britannica.com/technology/browser) are HTTP clients that send file requests to Web [servers](https://www.britannica.com/technology/server), which in turn handle the requests via an HTTP service.

**How does HTTP work?**

As a request-response protocol, HTTP gives users a way to interact with web resources such as HTML files by transmitting hypertext messages between clients and servers. HTTP clients generally use Transmission Control Protocol (TCP) connections to communicate with servers.

HTTP utilizes [specific request methods](https://tools.ietf.org/html/rfc2616#section-5.1.1) in order to perform various tasks. All HTTP servers use the GET and HEAD methods, but not all support the rest of these request methods:

* GET requests a specific resource in its entirety
* HEAD requests a specific resource without the body content
* POST adds content, messages, or data to a new page under an existing web resource
* PUT directly modifies an existing web resource or creates a new URI if need be
* DELETE gets rid of a specified resource
* TRACE shows users any changes or additions made to a web resource
* OPTIONS shows users which HTTP methods are available for a specific URL
* CONNECT converts the request connection to a transparent TCP/IP tunnel
* PATCH partially modifies a web resource

Role of a HTTP in Functioning of a website - [link](https://www.khanacademy.org/computing/computers-and-internet/xcae6f4a7ff015e7d:the-internet/xcae6f4a7ff015e7d:web-protocols/a/hypertext-transfer-protocol-http)