lifecycle

How the internet works from a font-end developer point of view?

The internet is a network of networks. It links a lot of devices together all around the world. The internet is a wire buried into the ground. Two servers can communicate if they are connected directly to this wire.

The most common use of the internet is access in the World Wide Web (WWW). The WWW is not the internet, it represents one of many applications built on the top of the internet. The internet is the way computers connect to each other in order to share information (in small packets of data) through a protocol named TCP/IP suite (Transmission Control Protocol/Internet Protocol). This protocol is used to transfer data from a client to a server through 4 layers (application, transport, network, data ink) which subsequently use other protocols (HTTP, SMTP, IP, UDP, ARP, PPP). TCP establish a connection with the server. Break down, transmit, transport, and order packets of data when arrived at the destination in order to have a clear information in the end. Until the data are not completed as in the initial request, TCP will retransmit the information.

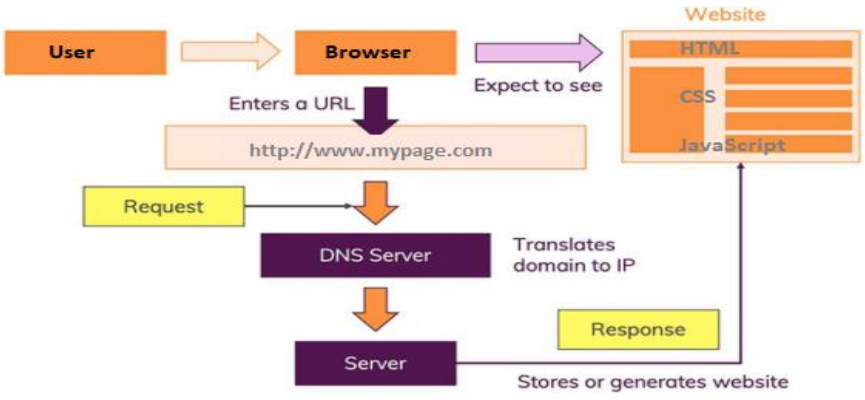

Fig.1 The communication process for Client -Server architecture
Source : https://www.youtube.com/watch?v=hJHvdBlSxug

When a **user** is making a request in a **browser** (Chrome, iPhone, etc.) to a **server**, it is getting response back in milliseconds in an HTTP (Hypertext Transfer Protocol) language. A server is just another machine on the internet which is directly connected to the internet. Every server has a unique internet protocol address (IP address) and have the capabilities to store multiple websites. Because of the unfriendly form of an IP (ex 69.63.176.140) we give names to the pages (ex: google.com, facebook.com, etc.). Our computer from home is not a server because is not connected direct to the internet, is connected through an internet service provider (ISP), but that does not mean our computer does not have an IP address.

If I type in a web **browser** my page address (ex: **mypage.com**) I tell the browser to go get something out on the web with an **URL**. So the browser will send a request to DNS server to get the corresponding IP address. In the first instance it will not work because it does not know the **IP** address of the website. For this I should connect to the public internet via **ISP** (internet service provider) which is going to associate a **DNS** (domain name service lookup) to my request, through *mypage.com* will be translated into an IP address and sent it to the server box.

After getting the IP address my browser forwards the request to the data center (sever). Once the server gets a request to access a particular website the data which is in digital format it is divided in small packets and sent to my browser through a lot of optical fiber cables (choosing the best route). The format of the data (digital) it will be converted through a router in electrical signals and through a cell tower in electromagnetic waves.

The server turns back with a response in browser in the form of image, graphics, videos, etc. My browser knows what to give to me by the content type (HTML file, CSS style sheet, JavaScript file etc.) The information is stored in the web site in a web language (HTML and JavaScript). When we are looking for websites, our browser is able to take all the code on the site and turn into words, images, graphics, and videos.

The server will return data and my initial request (my webpage) will appear on the browser into the original message without losing dates.