When you type https://www.google.com, the DNS request is sent out to a DNS server to find the IP address of google.com. The DNS server then replies with the IP address of google.com which is used by your computer or mobile device to make a TCP/IP connection with google's servers. This TCP/IP connection has to be encrypted by HTTPS/SSL because it's sending sensitive information over the internet such as your search queries and browsing history. Once this connection is established, you are redirected to a load balancer that checks if there are any free web servers that can serve your request, in this case it will redirect you to one of Google's web servers where your browser will download Google's homepage and all its content from an application server which also connects to a database for storing data like Google’s search index and other information about their services.

The Domain Name System (DNS) is a hierarchical naming system for computers, services, or other resources connected to the Internet or a private network. It associates various information with domain names assigned to each of the participating entities. Most prominently, it translates human-friendly computer hostnames into the numerical IP addresses needed for locating and identifying computer services and devices worldwide.

In order for us to connect to a website we need an IP address. A DNS request is made when we type in https://www.google.com in our browser's address bar and then our request is sent out to a DNS server which will then return an IP address if it can find one that matches what we've entered into the browser's address bar. If it cannot find one that matches, it will return an error message saying “Unable to resolve host”.

A firewall is software that protects your computer from unwanted outside access by blocking certain types of data packets while allowing others through;