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When I search the URL from the Seneca lab there are several numbers of processes are involved. Although the processes are very faster it can revert the response to the client within few milliseconds. First, when I press Enter it will be converted to Hyper Text Markup Language (HTTP). Then, from there it will first go to the transport layer where the transport layer will convert the request into the packet and then it will send it to the internet layer. The function of the internet layer is to add the host information into that packet which will then pass on to the data link layer. The data link layer will add the MAC address and it will add the frame to the data packet. Then, it will move to the physical layer here the physical layer will run the frame and it will check for any error in the value or information send to the data packet. If everything is correct, then the physical layer will move on and then it will convert the information given into that data packet to the binary value and it will transmit that binary value to the host server. Now from here onwards all the reverse process will be done by the host server and by its TCP layers. Firstly, it will remove the MAC and frame from the data packet, which was sent, and it will sent this data to the nearest router where a new mac address will be generated. Then, the router will send that data to the http where it will move from link to link until it finds its destination. If the link-to-link connection is successful, then it will arrive to the destination network. In the destination network, it will go to the datalink layer in that layer it will add the MAC address and the LAN headers will also be added. It will passed to the physical layer where the frame will again check if there's any error present in the layer. Then, it will go the proxy servers of the destination address the proxy here acts as a firewall where there will be many other methods which will check for any errors in the data packet. After that it will arrive to the google server where it will remove all the headers and the data is

passed to the application layer of the google server. From there the application layer will create another http message which will respond to the client which is in our case is Seneca case. So, this how the request from the laptop will reach to the Google web.

11.)

b.) To save and convert the analog signal we use the simple conversion method which is known as Pulse Code Modulation. This method is involved in three stages. Firstly , in the fixed interval of timings take the picture of the type of waveform the analog signal is generating. The first step is very important as all the main logic of the analog signals carried by the digital signals is dependent on the waveform. Secondly, based on the height of the waveform it will convert the value into the binary format. The binary value which is created is then transmitted to the digital encoding format. Then the digital value will be stored and after that the digital value needs to convert back to the analog form for that a special type of hardware chip is used which is known as PAM, which converts the binary value back to the electric pulse which was created from the height of the waveform. So, this is how we can save a song and we can do many more items where we can convert the analog to digital and we can save that analog signal into the digital format.

D.) Nowadays, when the whole world is using at least one of the cloud applications to store the data and many more information it became very important for programmer to learn about the data communications because with the help of data communications programmers can create applications which will be very useful to the humans, and it will add some value in someone's life. Secondly, computer helps us in completing our work in various of different languages, but computer understands only one language that is the

language of binary, so it is very useful for us to know about how the computer is working with the help of binary values. Computer is using binary values in every task and all the data which we are sending to the different devices are done using the binary, so this is very important part to know that how computers work. Hence, because of these reasons it become important for the programmers to learn data communications.