Levance Wamley

SMS

This month in SMS we learned about many different things that range from things such as RTA, streaming and many other things. We also learn about Socket.io and Firebase. Going right into streaming is data that is transferred on a continuous stream to someone from a streaming service. Services such as YouTube, Hulu, Netflix and many more. There are different kinds of streaming services: Prerecorded, RTA, and sporting events. We as a class also talked about the early stages of streaming like television and the radio. Another subject we got into was the important of streaming like how we can broadcast a lot of information or content to the viewers, You can live broadcast your information to other, and the quality of how your audience sees your content they would be downloading the highest content that there machine can handle so they can enjoy the content. But there were some downsides to streaming like for video streams on the client side if there were too many users or the files were to big there would be a hit on the performance. There are some bandwidth issues such as the different speeds the connection would produce, and other things. But there are some solutions to fix these problems with such as limiting the amount of user, using less intensive streams so the user machine can download it a lot easier. Going on to the bandwidth issues an simple way to fix those would be to have the sever determine the bandwidth for the user so its not overloading the machine and lowering performance. We also talked about TCP, which stands for transmission control protocol, this is the most used protocol, it resends lost data and delivers the data it has in order. But with TCP it has very long delays. Moving on to Real time transport protocol otherwise known as RTP. It is an application protocol that is very standard for videos and audio. RTP is used closely with UDP, which stands for user datagram protocol. It is a very fast and light transport protocol. The thing with UDP is that it delivers the data as it receives it so if you send things out of order hoping that it will place it in the right spot isn’t something you should rely heavily on with this. Also UDP doesn’t have a lasting connection. Then there was the WebSocket this is another application protocol that was build on top of TCP and WebSocket allows 2-way communication between the users. It also keeps its connection open. Another interesting thing we learned about streaming was that it doesn’t really have direct path so it was kind of hard to download any content that was rich media, but it did allow for live broadcasting and it allowed the delivery of variables. Encoding was another subject that was talked about. Basically what encoding is converting a video into one or multiple compressed streams. We talked about some media servers some of those servers were QuickTime, Red5, and Wowza are some of the services we talked about. Also some of the media is delivered differently such as Unicast, This is where the user has their own stream and can control the stream. Then there are multicast this is where all of the users are watching the same stream, But unlike unicast streams. In a multicast stream the users do not have any control over the stream. One more thing we talked about before I go into talking about firebase it was real time data. First there are four different types: polling, long polling, sockets, and Serve sent Event. Polling request the file from the server and the server would respond back with the file that was requested. Long polling the page questions the file from the server and begins to wait for something new before it sends a response. Once the page receives the file it will post it immediately and waits for the next request to come. Going on to server sent events, the page will open up a connection to the server. When new information is received the server will send out a new event. Last but not least Sockets pages open a new connection to the server and the client and the server can send new data whenever they want. Going on to firebase I learned a lot about firebase this month. Firebase is a really powerful tool and its documentation is really simple and easy to follow and understand. When it came to setting up the authentication for my users email to the firebase database it took little to no effort. I learned how to create a RT drawing game using firebase by sending the location of my mousedown and how long its being clicked its saved to the database. I was also shown that I could use Facebook and firebase together and use the login. So instead of using the Facebook developer I can use that. I learn how to use gulp and bower thanks to brad that made life so much easier. While I was digging through the documentation I learned that firebase could make Tetris for two people to play. I learned that inside of the firebase dashboard if you don’t go ahead and turn on the setting for the user emails and passwords to get saved you would be yelling at your computer for days. I learned more about my git commands this month even though they weren’t in the lectures this class forced me to push my self to learn it a little better so I can turn in my flights the easy way. I learned that in 2014 that Netflix and YouTube are the biggest traffic hogs with Netflix being first between the two of the sites. I learned that when YouTube’s videos are loading they have a gif playing on there for the users. I learned that the first YouTube video was uploaded on 4/23/05. I learned about these types of protocols: transport they move the data, Sessions organizes the data into ongoing units, Presentation this is where it encrypts and decrypts data, and finally the Application this is were the network gets talked too. I also got to learn about RTSP, which stands for real time streaming protocol, this is another application protocol that was built on top of RTP. This gives the option for user control some examples include play, fast forward, rewind, and etc. The final the protocol I learned about was RTMP Real time messaging protocol yet again another application protocol that was built on top of TCP and was a propriety protocol for flash. It can maintain persistent connections, and one connection can support multiple streams. I learned that the adobe flash media server is really expensive to use at 995 dollars for standard and up. I learned that wowza is not that expensive of a service to use starting at 55 dollars per month. I learned that there is something called red5 and its server language is java and its streaming protocol is RTMP.

With that these were the things that I learned this month in SMS I will do my best to retain this information going forward in my career.