COS10004: Computer Systems

Lab 6

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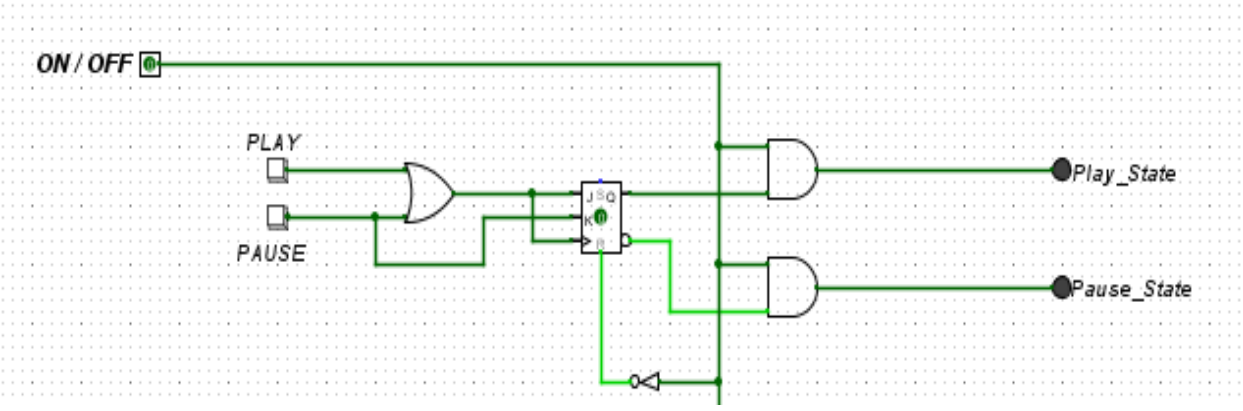
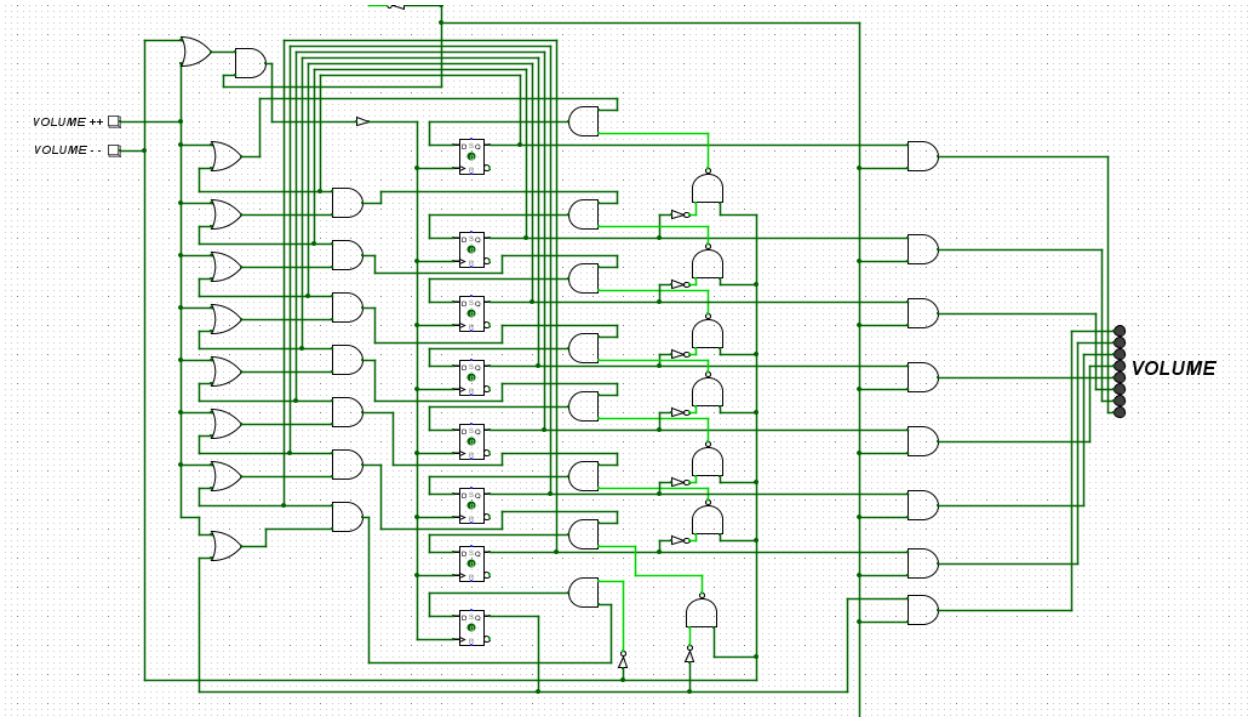
What is the most challenging component of the assignment ? Be as specific as possible.

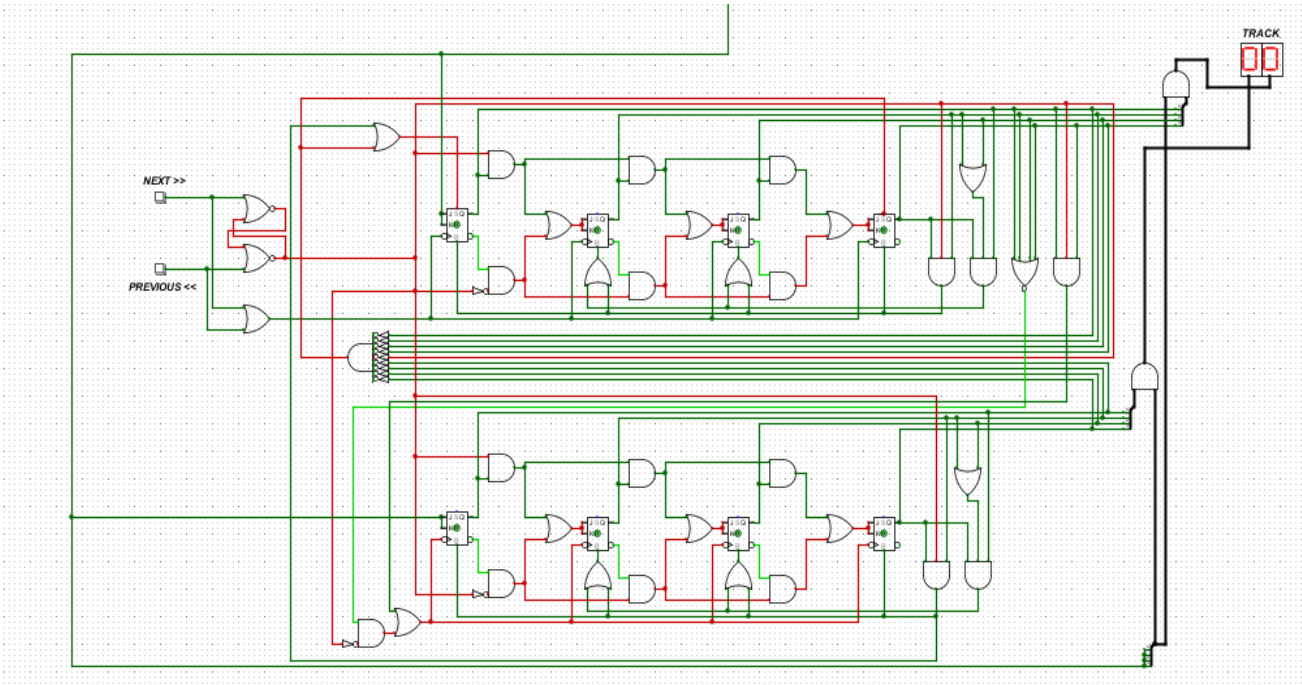
Throughout this week to complete the assignment, I had done with the part of display ON/OFF, PLAY/PAUSE state, and adjusting the volume of the music player. The first part can be easily to use the J-K Flip Flop for some of the states required, and so on the volume part with the D Flip-Flop, although it might take more amount of time for me to create. I did have some difficulties at how to make the volume part can save the previous settings if the ON/OFF button is being turned off, since it did require the Buffer gate that we had not been taught during the course. This might require some self-research, but then I had successfully satisfied the requirements of this part.

Nevertheless, I had some obstacles at creating the circuit for part 3, the part that using HEX Digit Display to show the track of the music player. To elaborate, although we had connected the HEX Digit Display with some gates while doing the lab assignment weeks ago, I sill found it difficult in this circumstance, since we had to know how to combine all the knowledge that we had receive throughout the COS10004 course. Therefore, I had to research some information online, and found out the way to solve this part, is to use the Asynchronous Up/Down counter. As a result, I had divided this part into two parts, one for the first Digit Display, and one for the other Digit. The circuit might look quite complicated, but it had worked successfully based on the requirements.

Document your progress so far and plans







Plan:

Part 1,2: Connecting all the Flip Flops to the LED light output.

Part 3: Using the Asynchronous Up/Down counter for two mini parts, one for the first Digit Display, and one for the other Digit.