

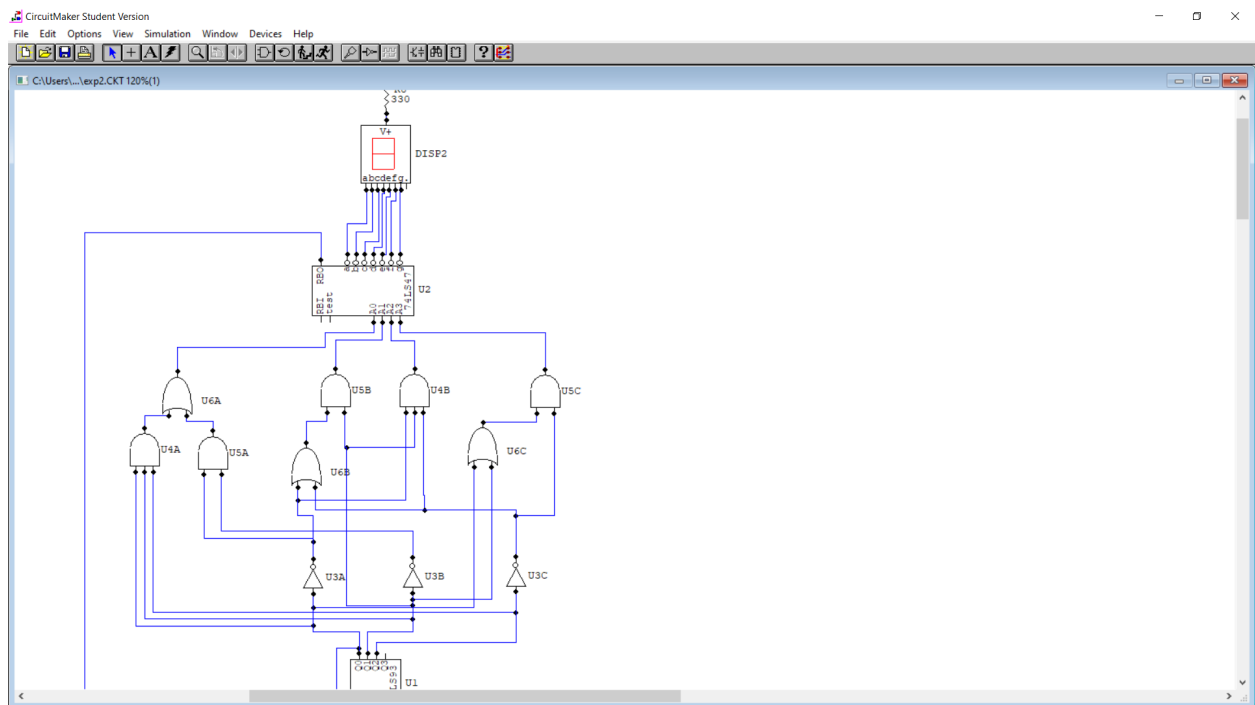
Digital Electronics Circuits lab

Lab Experiment:2

Name:Harshavardhan Alimi

Roll No:18EC10021

AIM: To display our roll number using the 7-segment display.



Circuit:digital circuit for displaying the roll number-18EC1021

RESULT:

Link for the simulation of above circuit:

<https://drive.google.com/file/d/15Ultvubf0VLEXVo6lsobEQgatCB5kekM/view?usp=sharing>

Calculations:

<https://drive.google.com/file/d/15TsIQ8j7Ws5asnTqTQ-CXC-8pW55b03T/view?usp=sharing>

observations/Discussion:

- It is the extension for the experiment.1,In the experiment 1 circuit we will be placing some black box(which contains the circuit specifically for my roll no:18EC1021) which is inserted between the IC7447 and IC7493(counter).
- In this we will not be using the 7490 counter because it is a decade counter and counts only upto 9 but we want more than to display the digits E&C.so we use a 4-bit binary counter which is 7493 counter
- From the output of 7493 we will be considering the a0,a1,a2 outputs which gives the values range from 000 to 111(8 different outputs),leaving aside the a3 output.
- For each value in these 8 outputs we will assign my 8 digit roll no.as given in the figure of calculation.
- The construction of blackbox:-we draw truth table for A,B,C and each function x,w,v,u.
- using the concept of k-map we will find the functions:x,w,v,u.
- In constructing the black box after deriving the functions for each output we can use a wide variety of gates but I preferred to use and,not,or gates which provides an easier way to construct and easier way to understand the circuit.
- I had connected the RBO to pulse to show the blink between 2 displaying digits,this happens because when the clock pulse is in low level then RBO also becomes low which trigger the IC 7447 to give all the outputs off i.e.,no LED blows.