In the name of God

Final project Logic Circuit Lab

Deadline: 99/10/25

Design a stop-light circuit which has 4 LEDs and a clock. This projects contains 2 parts:

Part A: you should design a clock. The clock gets initial time and starts working normally (the minute should go up after 60 seconds and hour should go up after 60 minutes. you can suppose 1 clock= 1 second) You should show the clock using six seven-segments (two 7-segments for hour, two 7-segments for minute and two 7-segments for second) like this:

- This is 24-hour clock

(you are not allowed to use any ICs for binary to BCD conversion)

Part B: The other part of the circuit works at the same time the clock gets an initial value and starts working, this circuit turns on the green LED and counts 45 seconds, then turns off the green LED and turns on the yellow LED and counts 30 seconds, then turns off the yellow LED and turns on the red LED and counts 1 minute. Then turns off the red LED and the blue LED starts blinking until the end of the day, after that all LEDs turn off.

For example: set the initial value for the clock ’13:50:00’ , when you start the simulation , the clock circuit works correctly and starts counting , at the same time , the green LED turns on from ’13:50:00’ to ’13:50:45’ . At ’13:50:45’, the green LED turns off and from ’13:50:46’ to ’13:51:16’ , the yellow LED turns on , at ’13:51:16’ the yellow LED turns off and from ’13:51:17’ the red LED turns on till ’13:52:17’ .After ’13:52:18’ the blue LED starts blinking till the end of the day .

Notice:

- You are not allowed to use any ICs in this project except 4511 to produce 7-segment inputs.
- Your grade depends on your presentation so do not cheat ☺
- File name format: final_familyName_studentNo
- Send your file to : sara.ki9877@gmail.com