Erik Olson
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Final Project
ECE 3740
April 25, 2017

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The basic idea for this project is very basic but became very complicated when we tried to keep everything in one module. This was impossible so we decided to have 2 different modules as counters and one major module to select the different states. We enable the counter and waited until the counter is finished counting down before the states switch to the next one. The first counter is used to count down from four seconds and the second counter is used two times; once for the yellow light and once for the red lights where both the red lights are on. Both the yellow and red lights are on for the same amount of time so the program uses the second timer twice.

Depending on the state, the light switches back and forth between red, green and yellow lights being enabled. We concatenated the light to make it easier to enable and disable the lights being used. Once we knew that one of the counters was 50 MHz it was easy to code the counter. We have it count down from 50 million times the number of seconds that we wanted to count down from. We both spent hours on this assignment to make it work the way it does now and we feel that both of us deserve 50% of the grade.

This project was good because it was a little tricky to figure out how to implement everything. It was a good thing to work with partners because it makes it so that we can both work on it when we had time. Below are the schematics, code, and ASM charts:

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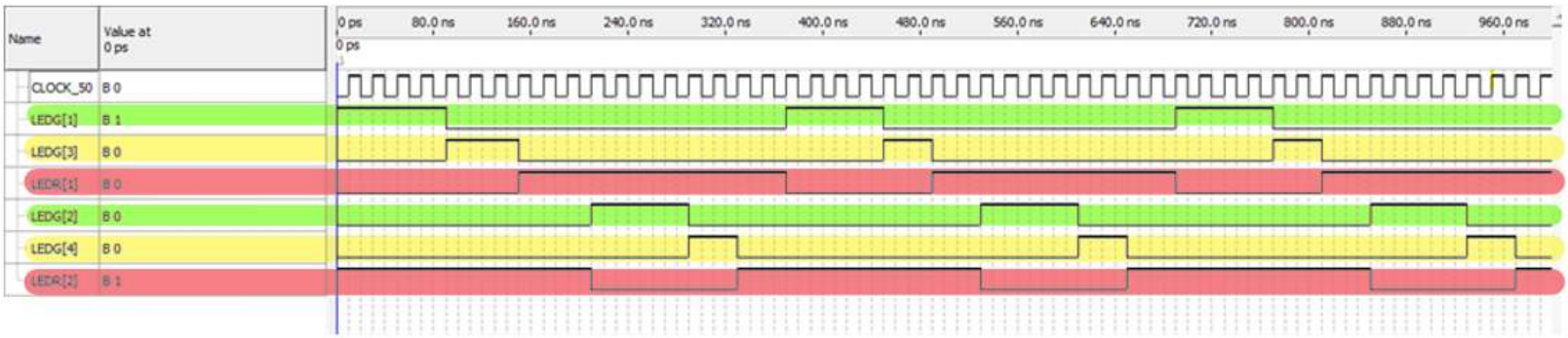

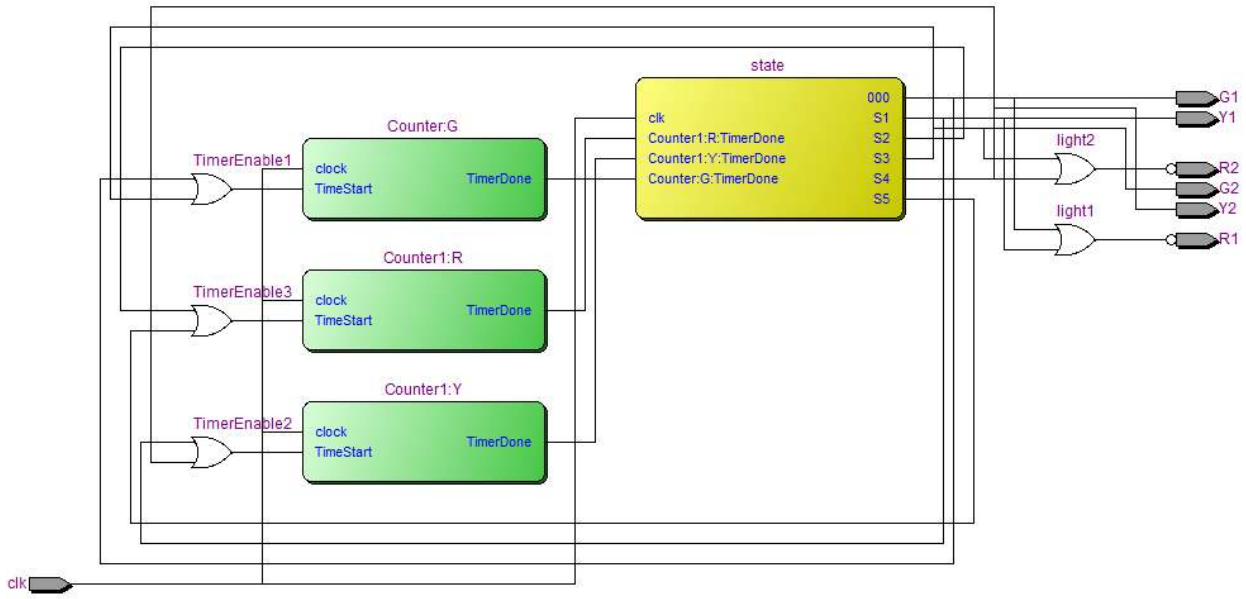

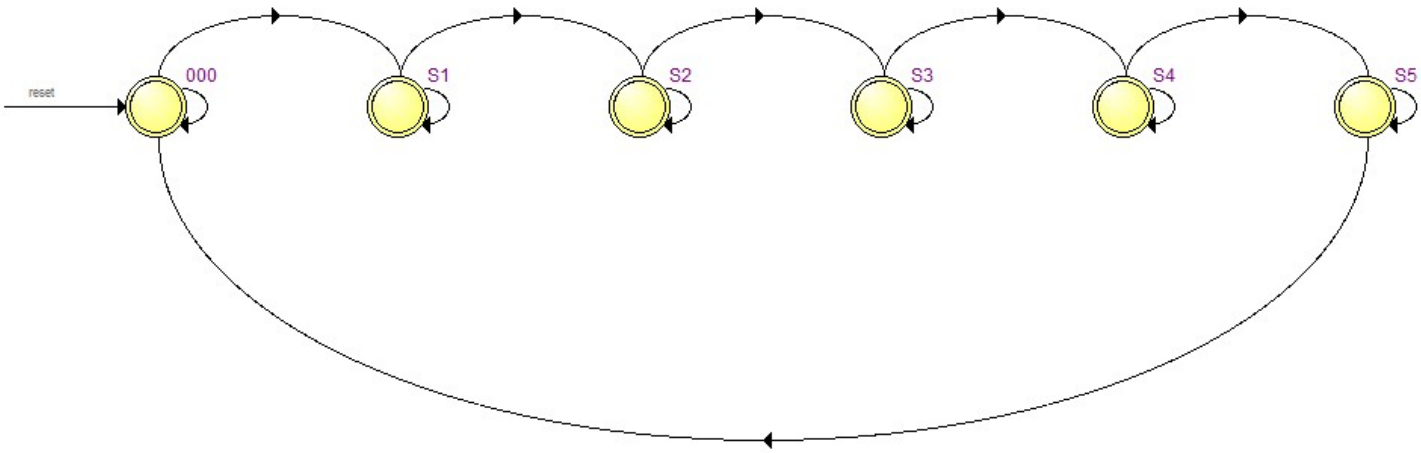

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