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CECS 346 Embedded Systems I

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21 April 2022

Project 2 - Drag Race

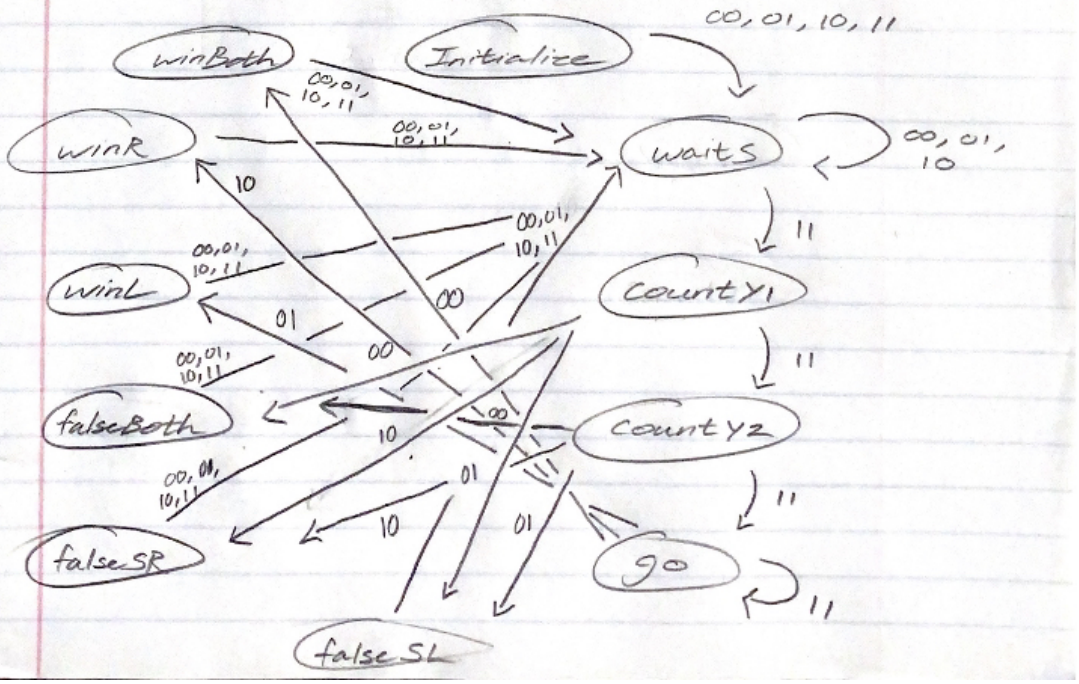
In this project we will be building a circuit that represents a “Christmas Tree’ light signals for a drag race. The purpose of this project is to use concepts from interfacings switches and LEDS, a Moore finite state machine and interrupts. Our goal is to replicate the drag race light by using 2 sensors which will detect the two cars from start to finish. Start would represent the push button being pressed and the finish will be when the button is let go. We will go through 11 different states for our logic.

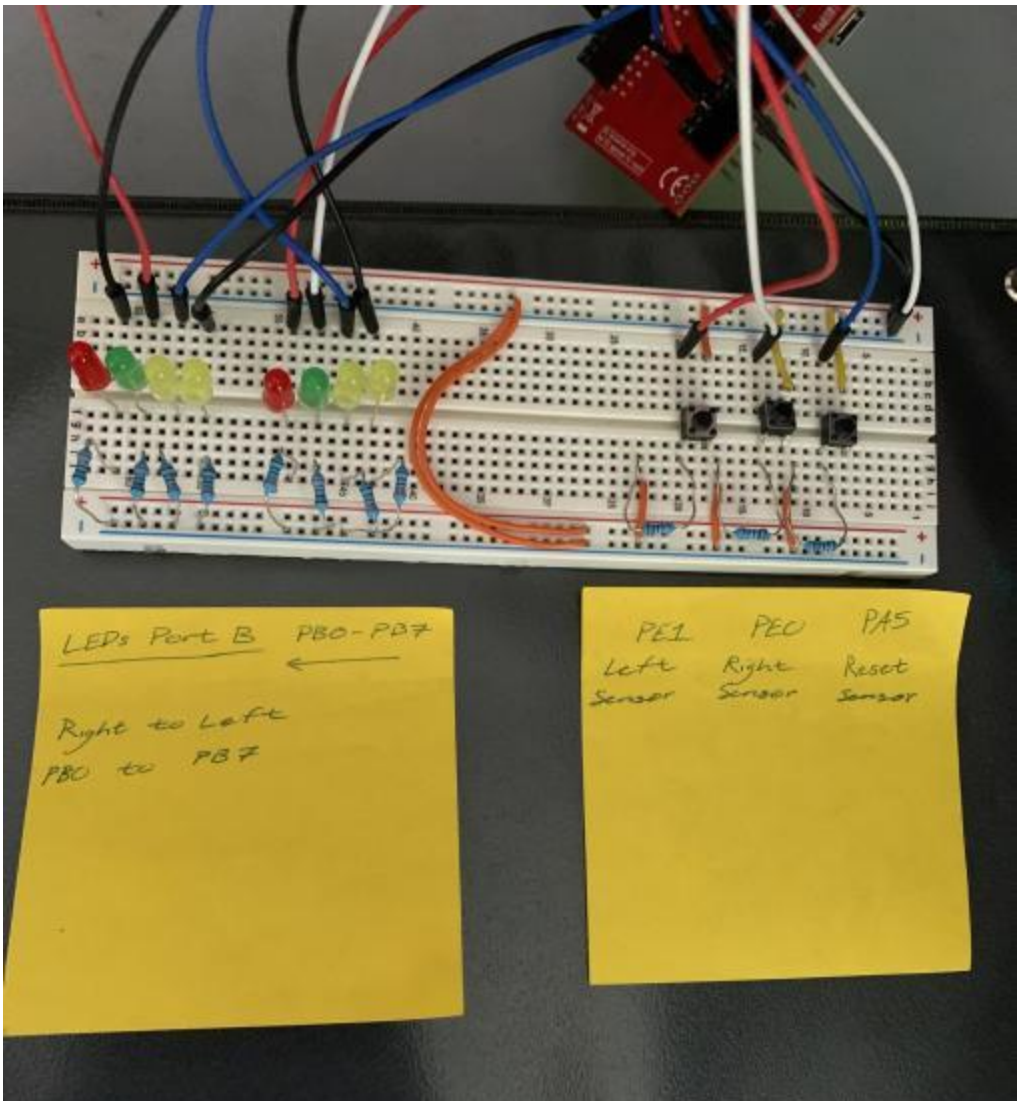
Project 2 Drag Race

State Table

State	Name	00	01	10	11
1	Initialize	waitS	waitS	waitS	waitS
2	waitS	waitS	waitS	waitS	countY1
3	countY1	falseBoth	falseSL	falseSR	countY2
4	countY2	falseBoth	falseSL	falseSR	go
5	go	winBoth	winL	winR	go
6	falseSL	waitS	waitS	waitS	waitS
7	falseSR	waitS	waitS	waitS	waitS
8	falseBoth	waitS	waitS	waitS	waitS
9	winL	waitS	waitS	waitS	waitS
10	winR	waitS	waitS	waitS	waitS
11	winBoth	waitS	waitS	waitS	waitS

State Graph




LEDs Port B PB0-PB7
Right to Left
PB0 to PB7
PE1 PE0 PA5
Left Right Reset
Sensor Sensor Sensor