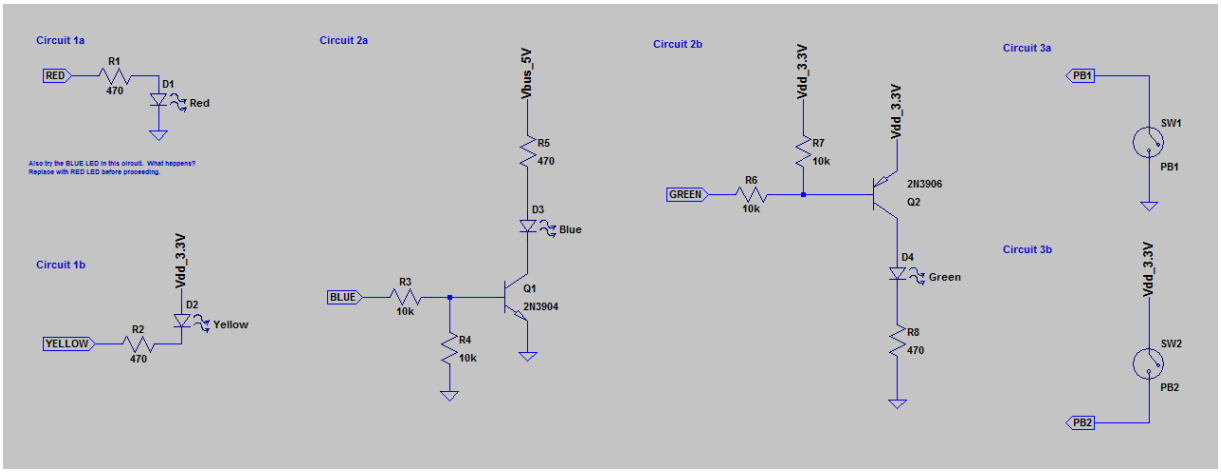
CSE3442 (Spring 2020)
Lab #2

1. Build circuits 1a, 1b, 2a, 2b, 3a, and 3b on an unpowered white breadboard.



2. Connect Vbus (5V), Vdd (3.3V), and GND from your M4F controller board to power the circuit. Plug the jumper leads into the bottom of the black dual-row sockets. Note that circuit 2a uses the 5V supply from the USB bus to provide enough voltage to turn on the blue LED.
(Do not apply an external power supply. All power will come from the M4F controller board.)

3. Connect RED, YELLOW, BLUE, GREEN, SW1, and SW2 to the pins PA2, PA3, PA4, PA5, PE1, and PE2 on your M4F controller board.

4. Write software to configure RED, YELLOW, BLUE, and GREEN to be digital outputs with 2mA of current.

5. Write software to configure SW1 and SW2 as digital inputs with either pull-up or pull-down enabled.

6. Create a #define for the 6 pins that map to the address of the bit-banded address associated with the port for each signal (e.g., RED_LED in class code).

7. Write code to implement the following functionality:

a. Turn-off all LEDs (note some output pins will be high and some pins will be low)
b. Enable the red LED
c. Wait for external PB2 to be pressed
d. Disable the red LED and enable the green LED
e. Wait for 1s (using the waitMicrosecond function from the timing.c file)
f. Enable the blue LED
g. Wait for external PB1 to be pressed
h. Wait for 500ms
i. Toggle the yellow LED
j. Goto step h (yellow LED will continuously flash

8. Note what happens if you replace the red LED in circuit 1a with a blue LED.

9. Show the circuit to the GTA and demonstrate your code.

10. Send a single C file to the GTA with your name in the header of the file. The file name should be lab2_*your_name*.c, where *your_name* is replaced with your name as it appears in MyMav.