ECE 241
Name: Graham Wood Lab 5 Prelab Spring 2018
Section A

```
int ButtonState; //integer that tracks the state that the system is in
unsigned long ButtonTime; //Time to maintain how many milliseconds since the
button was pushed

int ButtonNextState ( int input ) { //function whose purpose is to manage the
button press procedure on the arduino
  switch(ButtonState) { //switch case that's executed depending on the
current state the button is in
    case 1 : //Idle state
         if (input == LOW) {
          ButtonTime = millis();
          ButtonState = 2; //if input is LOW the state transitions to Wait
          digitalWrite(13, HIGH);//turn on LED turns on the LED

         }
    case 2:
      if (input == HIGH) {
        ButtonState = 1; //sets the state back to idle if input is HIGH
      }
      else if (millis() - ButtonTime >= 5) {
        ButtonState = 3;
        digitalWrite(13, LOW); //sets the LED back off
        return 1; //returns a one indicating that the button has been pressed
      }
    case 3:
      if (input == HIGH) {
        ButtonState = 1; //sets the state to Idle
      }
     return 0; //returns a zero
  }
}

void setup() {
  pinMode(13,OUTPUT); //sets pin 13 (LED) to an output
  ButtonState = 1; //initial state is 1
  Serial.begin(9600); //sets the baud rate to 9600
}

void loop() {
  if (ButtonNextState(digitalRead(4) == 1)){ //if the buttonNExtState returns
a 1 then the program will print "Button Pressed"
    Serial.println("Button Pressed");
  }
}
```