EGR 1200 – Smartbeam
Group 1
Homework Assignment 8, #3

3a. See .fzz file submission
3b. Modified code for Tutorial 1

```
/*
Blinking Light
TUTORIAL 1
EGR 1200
*/

int red = 13; // digital pin for red light

void setup() {
  pinMode(red, OUTPUT);
}

void loop() {
  blink();
  blink();
  blink();
  delay(1000);
}

void blink() {
  digitalWrite(red, HIGH);
  delay(100);
  digitalWrite(red, LOW);
  delay(100);
}
```

3c. Modified code for Tutorial 2

```
/*
Stoplight
TUTORIAL 2
EGR 1200
*/

int red = 13; // digital pin for red light
int yellow = 12; // digital pin for yellow light
int green = 11; // digital pin for green light

void setup() {
  pinMode(red, OUTPUT);
  pinMode(yellow, OUTPUT);
  pinMode(green, OUTPUT);
}

void loop() {
  signalgo();
  signalwarn();
  signalstop();
}

void signalwarn() {
  digitalWrite(yellow, HIGH);
  delay(5000);
  digitalWrite(yellow, LOW);
}

void signalstop() {
  digitalWrite(red, HIGH);
  delay(20000);
  digitalWrite(red, LOW);
}

void signalgo() {
  digitalWrite(green, HIGH);
  delay(35000);
  digitalWrite(green, LOW);
}
```

3d. Tutorial 3:

i. The six subroutine fns are signalgo(), signalwarn(), signalstop(), crosstrafficgo(), crosstrafficwarn(), & crosstrafficstop();

ii. In order as called – signalwarn(); signalstop(); crosstrafficgo(); crosstrafficwarn(); crosstrafficstop(); signalgo();

iii. Digital pin 6 controls xyellow (The yellow crossing light)

iv. It takes 75s (3s yellow + 42s green + 27s xgreen + 3s xyellow), to cycle through the full pattern.

3e. Tutorial 4:

i. Digital pin 2 controls the cross walk button. It is an input pin.

ii. The white crosswalk light is controlled by digital pin 8. It is not turned on when the program runs, because buttonpressed is initialized as false & thus pedcross() doesn't runs to turn the light on.

iii. While loops continually execute some action *while* some condition is met. In this case, the while loops are used to continually check for a button press *while* a given duration (eg. 3s in the signalwarn & crosstrafficwarn fns) has not yet passed - the condition. This check happens continually during yellow lights, green lights, and during cross walk go/warn. If the button is pressed during these times, the while loop will set buttonpressed to true, allowing pedcross() to run at its appropriate time.

iv. The blue "ped stop" light will turn on when the program runs, and during the pedcross() for loop it will blink five times. Each time the loop runs, it will turn the light on for 500 ms, then turn it off for 500 ms.