Brian Sheridan
EET207
04/16/15

HW #2

1: Summing 1 to 100

```c
#include <stdio.h>
#include <stdlib.h>
#include <math.h>

int main()
{

// Problem 1
int n = 0;
int sum = 0;
while(n<=100){
sum = sum + n;
n++;
}
printf("%d\n", sum);
return 0;
}
```

2: LED Dimmer

```c
// HW probelm 2. Dimmer LED
int tOn = 15;

// the setup routine runs once when you press reset:
void setup() {
  // initialize the digital pin as an output.
  pinMode(A0, OUTPUT);
  pinMode(A1, OUTPUT);
  pinMode(A2, OUTPUT);
  Serial.begin(9600);
  digitalWrite(A0, LOW);
  digitalWrite(A1, LOW);
  digitalWrite(A2, LOW);
}


// the loop routine runs over and over again forever:
void loop() {
  //digitalWrite(A0, HIGH);
  //digitalWrite(A1, HIGH);
  digitalWrite(A2, HIGH);
  delay(tOn);
```

```
    digitalWrite(A2, LOW);
    delay((30-tOn));

}
```

As tOn is increased, the LED becomes brighter and the color more vibrant. As tOn is moved closer to O, the color looses saturation and becomes less bright. This makes sense as it is similar to duty cycle on PWM.

3: Sin Angle Calculator
```c
#include <stdio.h>
#include <stdlib.h>
#include <math.h>

int main()
{


while(1){
float PI = 3.14159265;
float sine, angle = 0;
printf("Please enter an angle in degrees: \n");
scanf("%f",&angle);

sine = sin(angle* PI/180);
printf("sin of %f degrees is %f \n", angle, sine);
}

return 0;
}
```

4: Fibonacci
```c
#include <stdio.h>
#include <stdlib.h>
#include <math.h>

int main()
{

int n = 0;
int xNew = 1;
int xOld = 0;
int temp = 0;

while(xNew<=10000){
temp = xNew;
xNew=xNew+xOld;
```

```c
    xOld = temp;
    printf("%d ", xNew + xOld);
    }



    return 0;
    }
```