CSLR61 : EMBEDDED SYSTEMS
LAB-3

Roll no. : **106119100**

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Section : **CSE-B**

1. Increase the intensity of one LED while decreasing the other LED's intensity at the same unit. Display the intensity value of the LEDs.
   •Libraries Used: pwmout

Code :

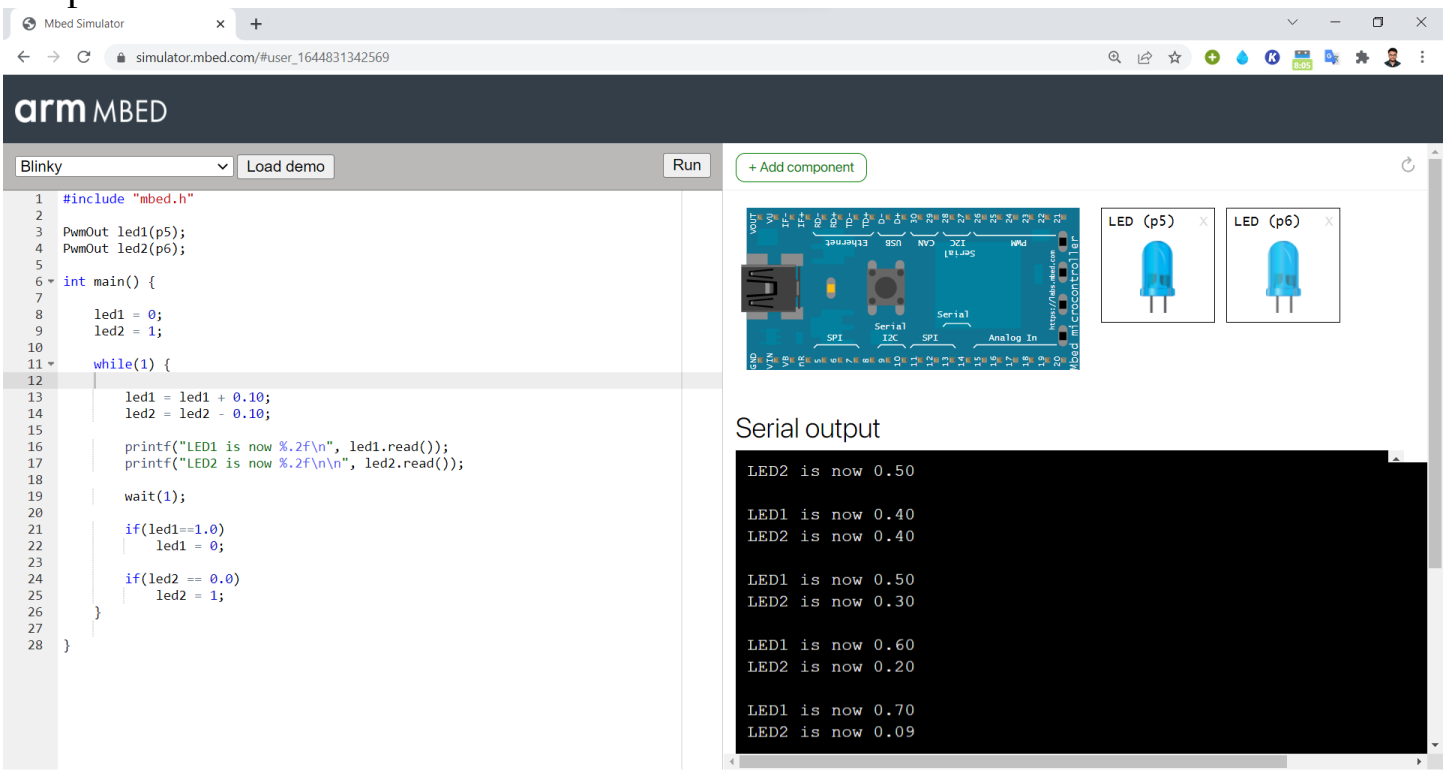
```
#include "mbed.h"

PwmOut led1(p5);
PwmOut led2(p6);

int main(){
    led1 = 0.0;
    led2 = 1.0;
    while (true)
    {

        led1 = led1+0.1;
        led2 = led2-0.1;
        printf("LED1 is now %.2f\n", led1.read());
        printf("LED2 is now %.2f\n", led2.read());
        wait(1);
        if (led1 == 1.0)
            led1 = 0.0;
        if (led2 == 0.0)
            led2 = 1.0;
    }
}
```

Output :




```
#include "mbed.h"

PwmOut led1(p5);
PwmOut led2(p6);

int main() {

    led1 = 0;
    led2 = 1;

    while(1) {

        led1 = led1 + 0.10;
        led2 = led2 - 0.10;

        printf("LED1 is now %.2f\n", led1.read());
        printf("LED2 is now %.2f\n\n", led2.read());

        wait(1);

        if(led1==1.0)
            led1 = 0;

        if(led2 == 0.0)
            led2 = 1;
    }

}
```

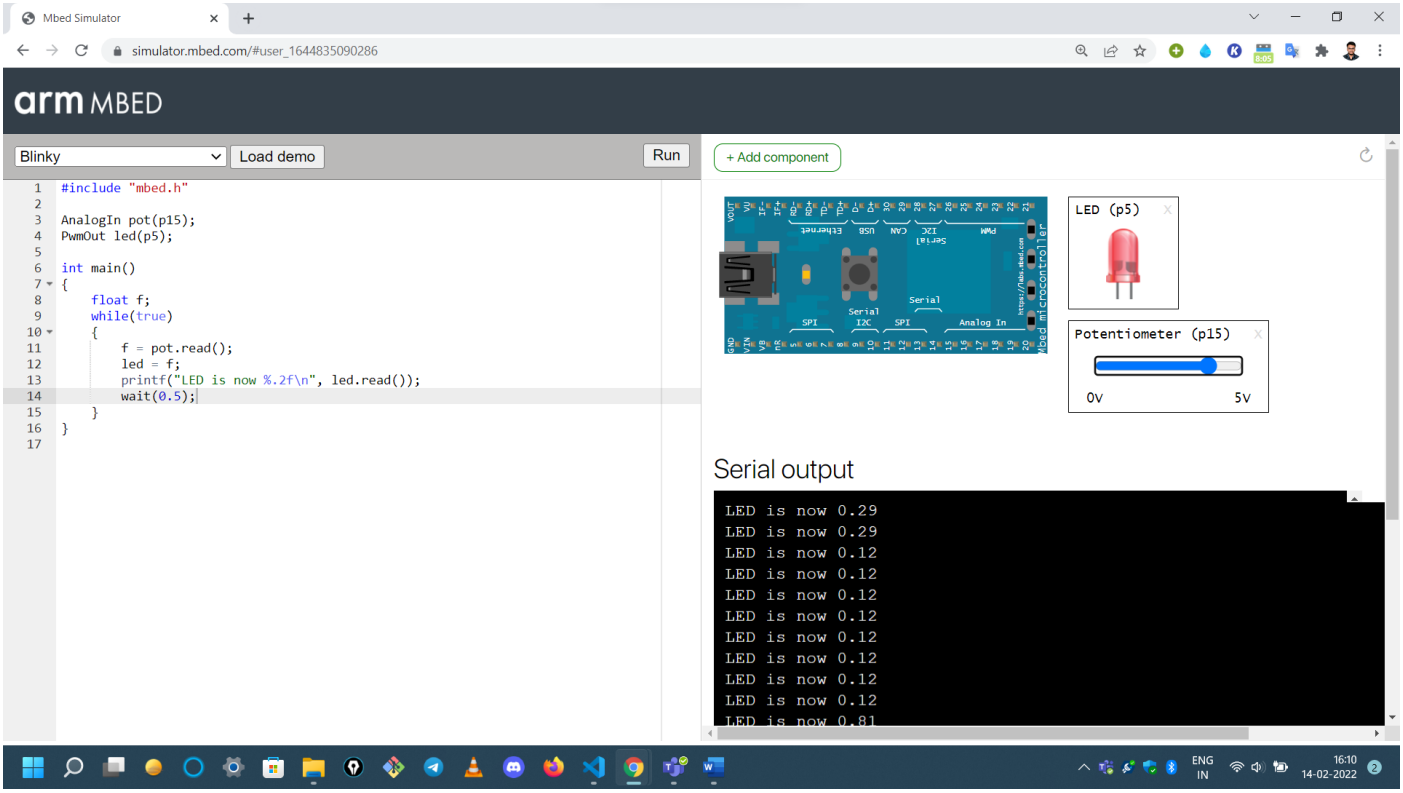
2. Interface potentiometer with mbed board and based on the value of potentiometer, adjust the intensity of an external LED.
    - •Libraries To Be Used: pwmout, analogin

Code:

```
#include "mbed.h"

AnalogIn pot(p15);
PwmOut led(p5);

int main(){
    float f;
    while (true)
    {
        f = pot.read();
        led = f;
        printf("LED is now %.2f\n", led.read());
        wait(0.5);
    }
}
```



3. Interface switch, 2 LEDs, potentiometer with the mbed board. If the switch is on, control the intensity of the LEDs using potentiometer (one LED should be increasing and other should be decreasing at the rate given via potentiometer). If the switch is off, blink LEDs one at increasing rate and other at decreasing rate (same rate) and loop back.

Code:

```
#include "mbed.h"

AnalogIn pot(p15);
PumOut led1(p5);
PumOut led2(p6);

InterruptIn swt(p7);

void on()
{
    float f;
    while(true){
        f = pot.read();
        led1 = f;
        led2 = 1-led1;
        printf("LED1 is now %.2f\n", led1.read());
        printf("LED2 is now %.2f\n", led2.read());
        wait(1);
        if (led1==1.0)
            led1 = 0.0;

        if (led2 == 0.0)
            led2 = 1.0;
    }
}
void off(){
    led1 = 0.0;
    led2 = 1.0;
    while (true)
    {
```

```
        led1 = led1+0.1;
        led2 = led2-0.1;
        printf("LED1 is now %.2f\n", led1.read());
        printf("LED2 is now %.2f\n", led2.read());
        wait(1);
        if (led1 == 1.0)
            led1 = 0.0;
        if (led2 == 0.0)
            led2 = 1.0;
    }
}

int main(){
    swt.rise(&on);
    swt.fall(&off);
}
```

Output :