**Microprocessor and Computer Architecture Laboratory**

**UE19CS256**

**4th Semester, Academic Year 2020-21**

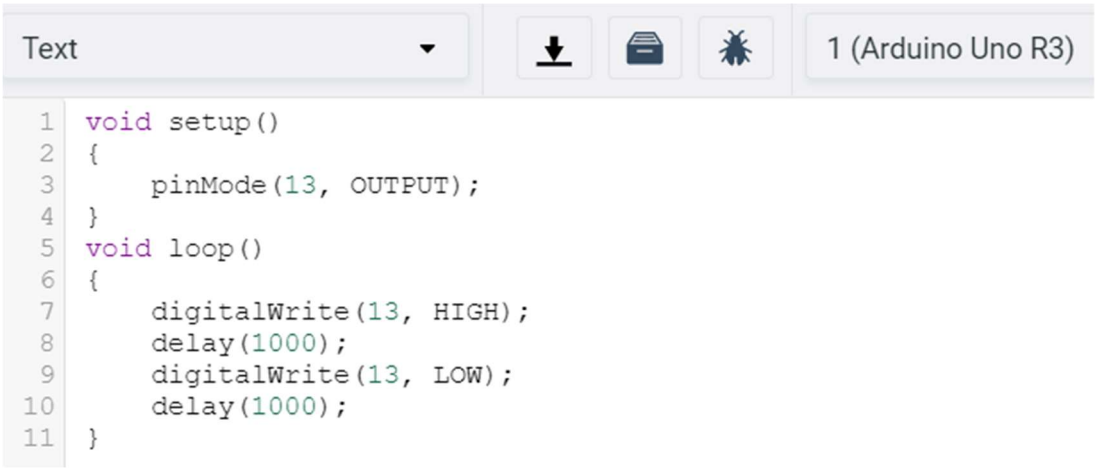
Date:24/03/2021

| Name: B.Pravena | SRN: PES2UG19CS076 | Section: B |
|---|---|---|

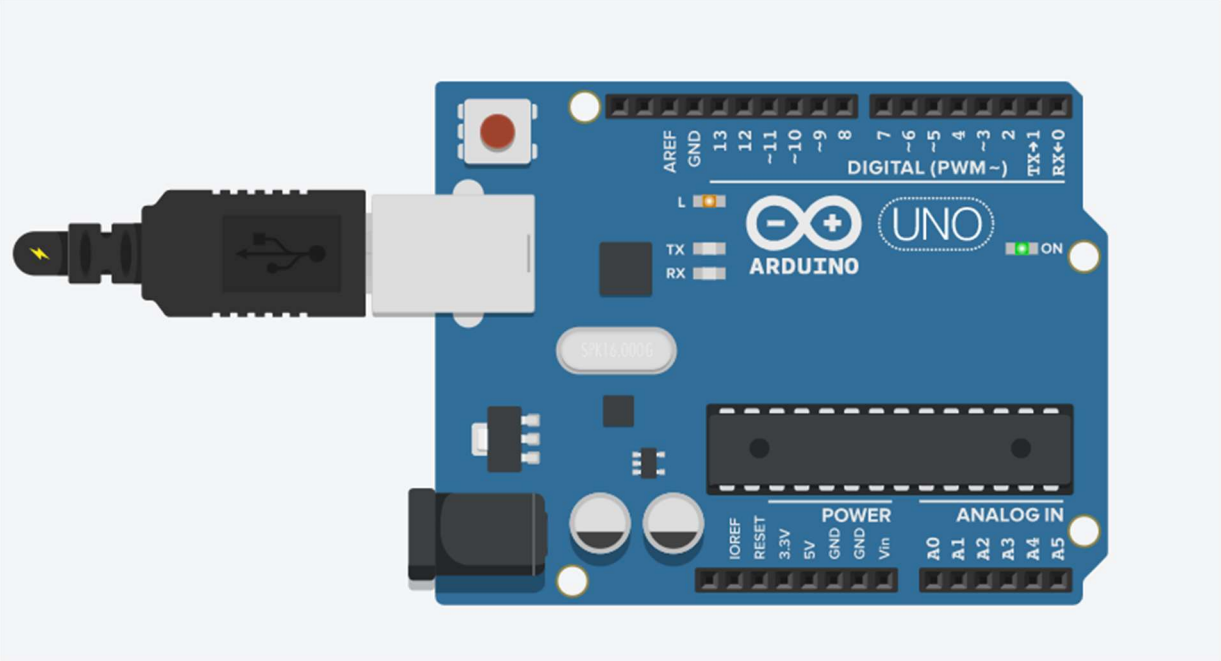
Week#____7_____ Program Number: ____1__

## 1. A) Implement a Tinkercad simulation to turn on and off the Arduino's on-board LED.

Arduino Code -:



Output Screen Shot -:




## B) Implement a Tinkercad simulation to turn on and off an external LED connected to the Arduino board

Arduino Code -:

Text

1 (Arduino Uno R3)

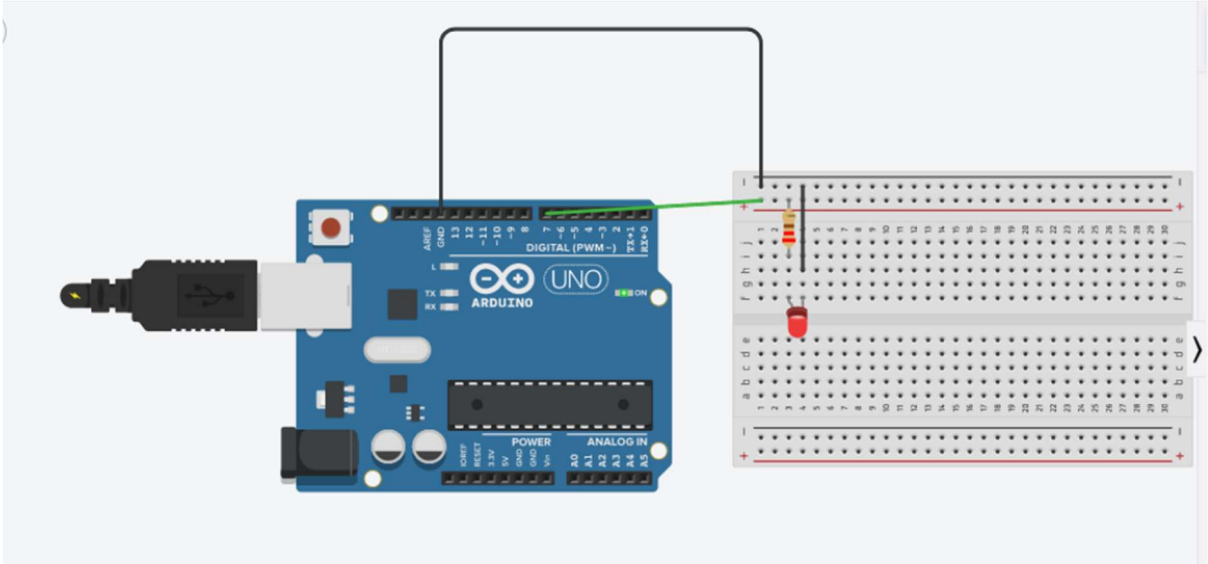
```
int delayTime=2000;
int redLED=7;

void setup()
{
  pinMode(redLED, OUTPUT);

}

void loop()
{
  digitalWrite(redLED,HIGH);
  delay(delayTime);
  digitalWrite(redLED,LOW);
  delayTime=delayTime-100;
  delay(delayTime);
 }
```

Output Screen Shot -:

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Week#____7_____ Program Number: ____2__

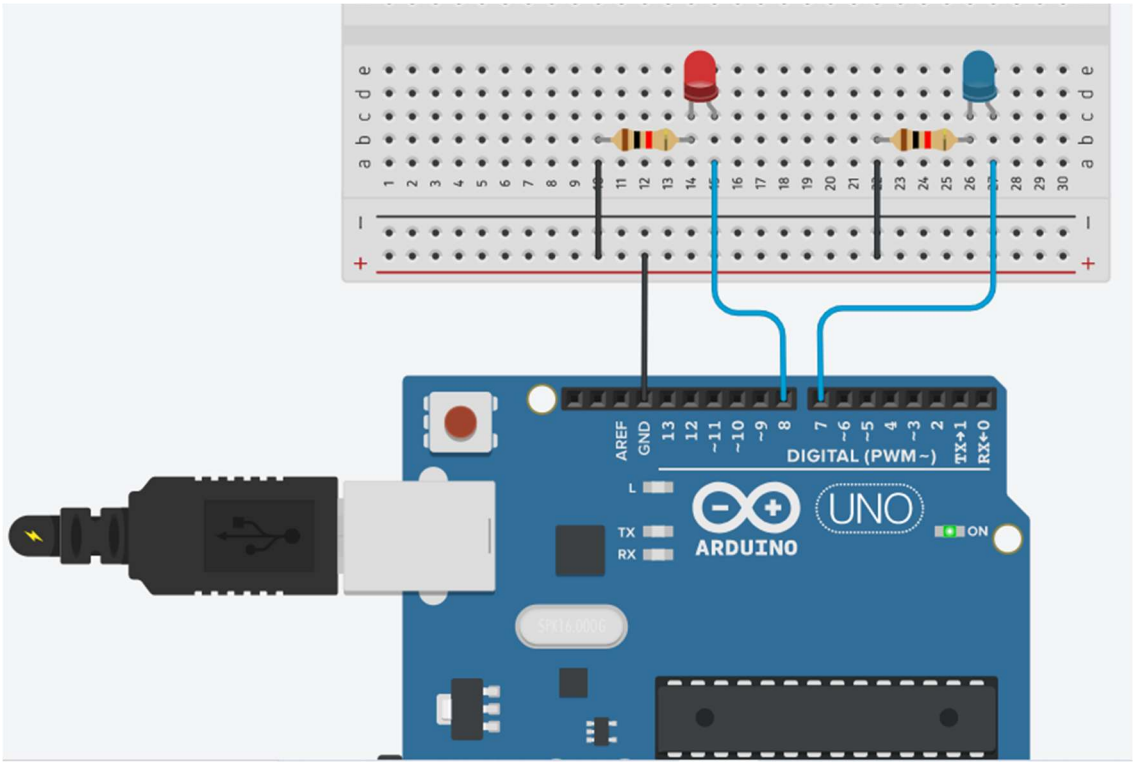
**Implement a Tinkercad simulation to alternately turn on and off two external LEDs connected to the Arduino board**

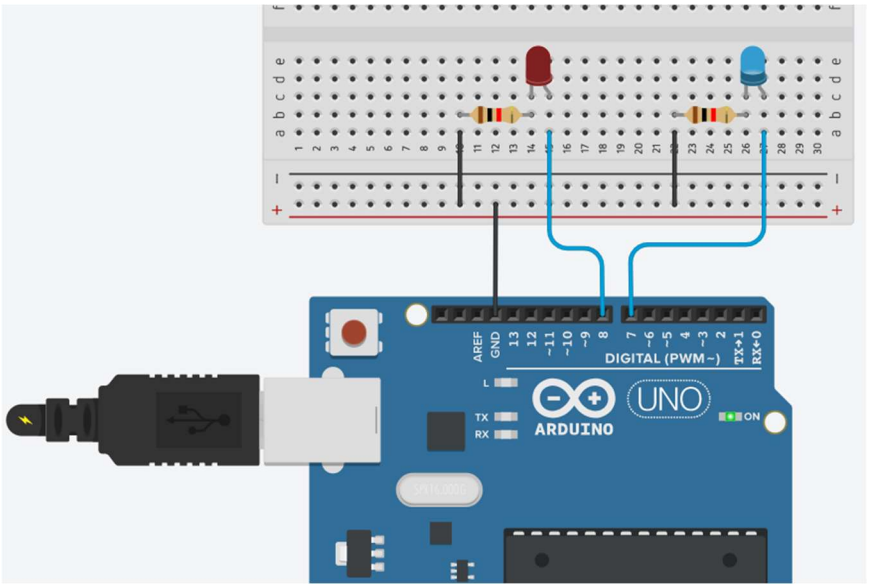
## Arduino Code -:

Text | 1 (Arduino Uno R3)

```
int delayTime=2000;
int flag=1;

int redLED=7;
int blueLED=8;

void setup()
{
  pinMode(redLED, OUTPUT);
  pinMode(blueLED, OUTPUT);
}

void loop()
{
  if(flag==1)
  {
    digitalWrite(redLED,HIGH);
    digitalWrite(blueLED,LOW);
    flag=0;
  }
  else
  {
    digitalWrite(blueLED,HIGH);
    digitalWrite(redLED,LOW);
    flag=1;
  }

  delay(delayTime);

}
```

## Output Screen Shots -:



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Week#____7_____ Program Number: ____3__

**Implement a Tinkercad simulation to use a pushbutton to control an LED.**

## Arduino Code -:

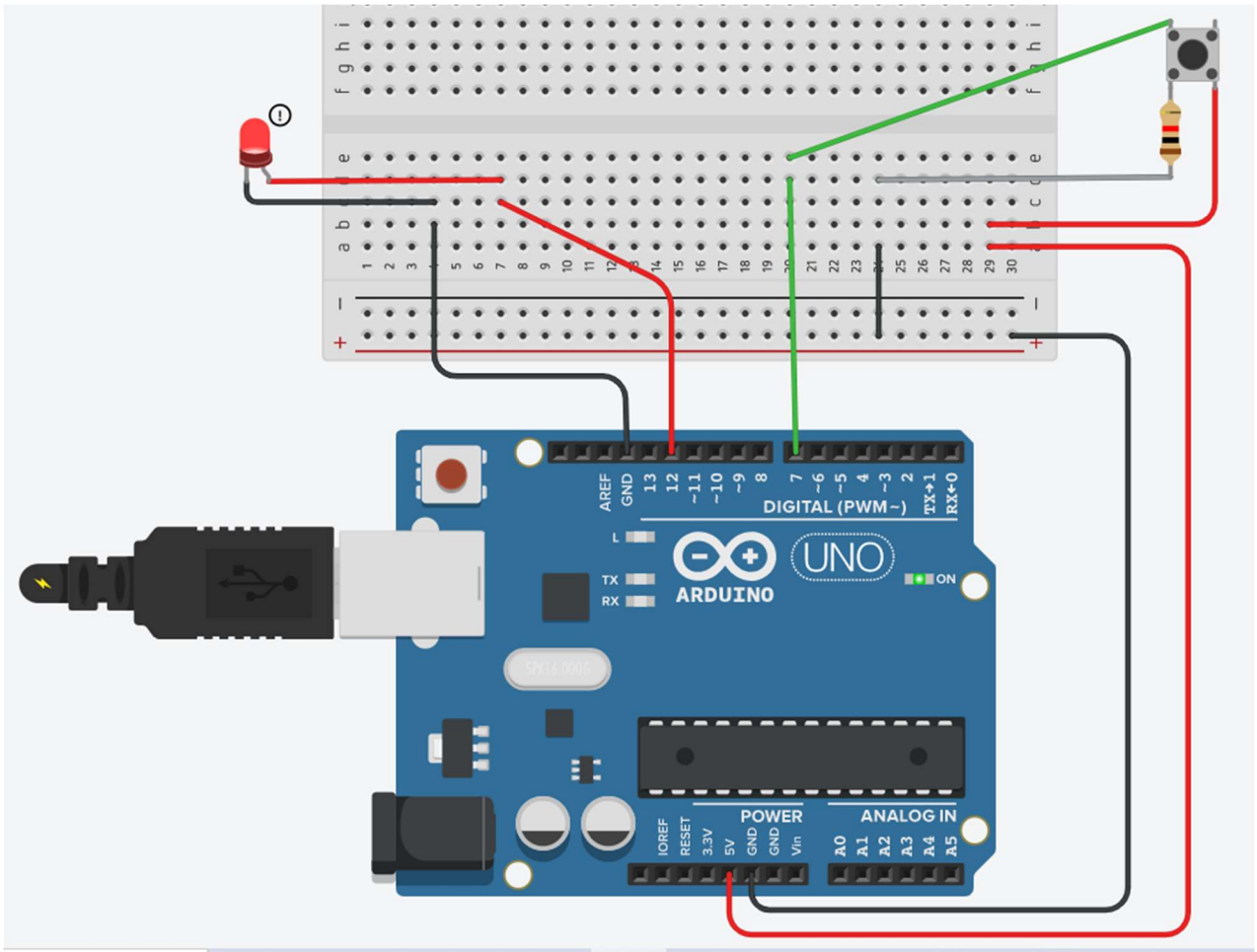
Text

```
int btn_state;
int led=12;
int push_btn=7;

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

void loop()
{
  btn_state = digitalRead(push_btn);
  if(btn_state==1)
    digitalWrite(led, HIGH);
  else
    digitalWrite(led, LOW);
  delay(20);
}
```

## Output Screen Shot -:



## 2. Microprocessor and Computer Architecture Laboratory

## UE19CS256

## 4th Semester, Academic Year 2020-21

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Week#____7_____ Program Number: ___4__

**Implement a Tinkercad simulation to demonstrate fading of an LED (zero to maximum brightness slowly)**

Arduino Code

Text

```
int LED=9;
int brightness=0;
int fading=5;
void setup()
{   pinMode(LED, OUTPUT);
}
void loop()
{analogWrite (LED, brightness);

brightness=brightness + fading;
delay(25);
if(brightness==0 || brightness== 255)
{
fading= -fading;
}
}
```

Output Screen Shot -: