SCS2213 Electronic & Physical Computing

Practical 02

PWM

Question 01)

1.)

```
void setup()
{
  pinMode(9, OUTPUT);

}

void loop()
{

  analogWrite(9, 255);
  delay(500);
  analogWrite(9, 0);
  delay(500);


}
```

ii.)

```
int bn = 0;

void setup()
{
  pinMode(9, OUTPUT);

}

void loop()
{
```

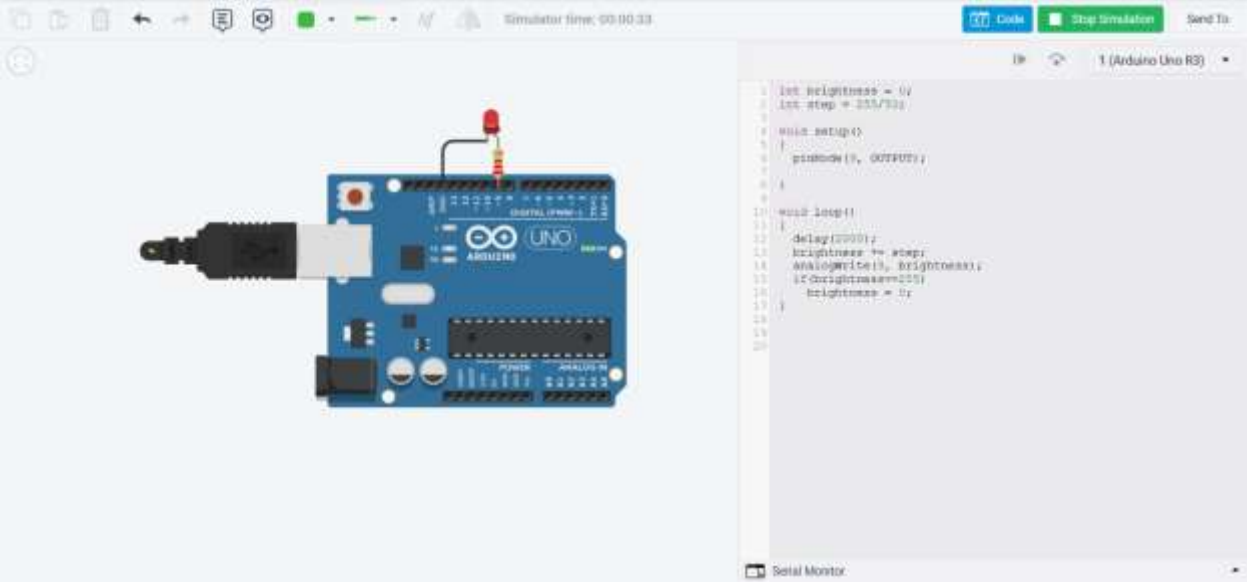
```
  for(int i = 0; i<=255; i+=10){
    analogWrite(9, i);
    delay(50);
  }

  for(int i = 255; i>=0;i-=10){
    analogWrite(9, i);
    delay(50);
  }
}
```

Question 02

```
void setup()
{
  pinMode(9, OUTPUT);
  pinMode(5, OUTPUT);
  pinMode(6, OUTPUT);

}

void loop()
{
  analogWrite(6, 255);
  delay(5000);
  analogWrite(6, 0);




for(int i=0; i<5; i++){
    for(int bn = 0; bn<=255; bn+=10){
    analogWrite(9, bn);
    delay(10);
  }

  for(int bn = 255; bn>=0;bn-=10){
    analogWrite(9, bn);
    delay(10);
  }
```

```
}

  analogWrite(5, 255);
  delay(5000);
  analogWrite(5, 0);

for(int i=0; i<5; i++){
    for(int bn = 0; bn<=255; bn+=10){
    analogWrite(5, bn);
    delay(50);
  }

  for(int bn = 255; bn>=0;bn-=10){
    analogWrite(5, bn);
    delay(50);
  }
}
  analogWrite(5, 0);

  analogWrite(9, 255);
  delay(5000);
  analogWrite(9, 0);

}
```

Question 03



Question 04

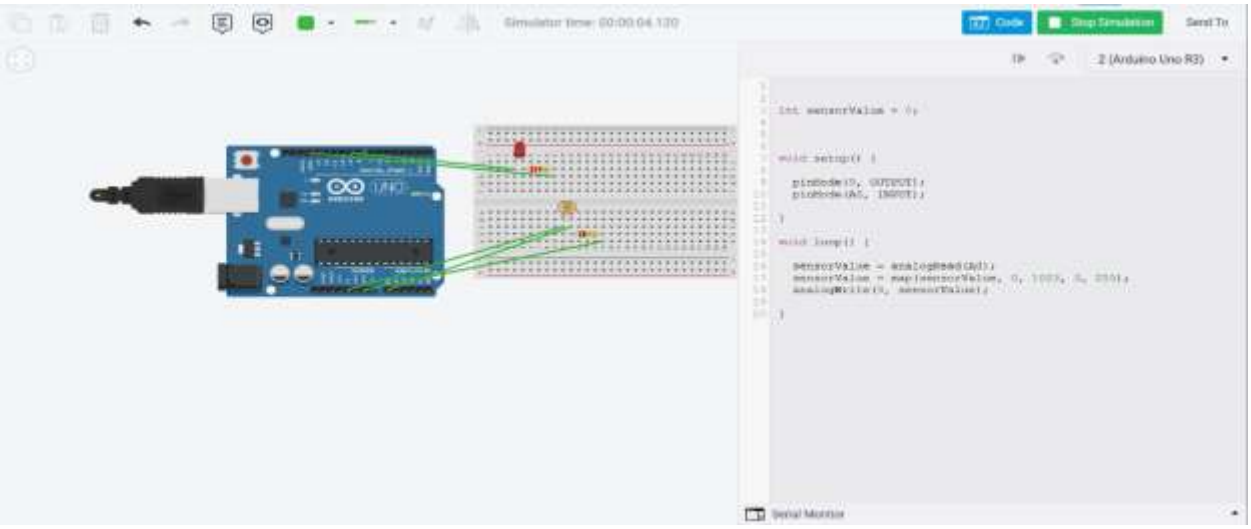
We cannot get a 9v output directly from the Arduino because the maximum output voltage is 9v (255). Therefore, we have to use a transistor to amplify the output.

ADC

Question 01

```
int sensorValue = 0;
int analogValue = 0;

void setup()
{
  pinMode(A0, INPUT);
  pinMode(9, OUTPUT);
}

void loop()
{

  sensorValue = analogRead(A0);
  analogValue = map(sensorValue, 0, 1023, 0, 255);
  analogWrite(9, analogValue);

}
```

Question 2



Question 03