

## **ASSIGNMENT-3**

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**MAXIMUM MARKS:** 2 Marks

**QUESTION 1:** Blinking of Traffic lights using Raspberry pi

**QUESTION 2:** Blinking of LED using Raspberry pi

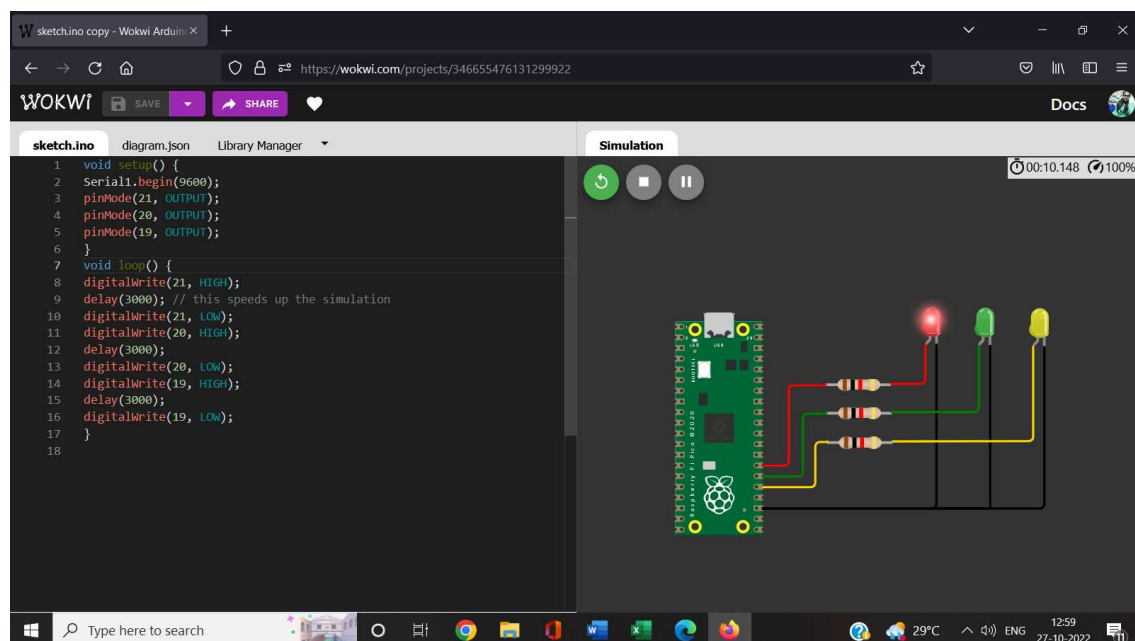
## TRAFFIC LIGHTS

### PROGRAM:

```
void setup() {  
  Serial1.begin(9600);  
  pinMode(21, OUTPUT);  
  pinMode(20, OUTPUT);  
  pinMode(19, OUTPUT);  
}  
void loop() {  
  digitalWrite(21, HIGH);  
  delay(3000); // this speeds up the simulation  
  digitalWrite(21, LOW);  
  digitalWrite(20, HIGH);  
  delay(3000);  
  digitalWrite(20, LOW);  
  digitalWrite(19, HIGH);  
  delay(3000);  
  digitalWrite(19, LOW);  
}
```

### OUTPUT:

#### (i)RED LIGHT:



## (ii) GREEN LIGHT

Wokwi Arduino IDE interface showing a sketch for controlling three LEDs (Red, Green, Yellow) using a Raspberry Pi Pico. The sketch is as follows:

```
1 void setup() {  
2   Serial.begin(9600);  
3   pinMode(21, OUTPUT);  
4   pinMode(20, OUTPUT);  
5   pinMode(19, OUTPUT);  
6 }  
7 void loop() {  
8   digitalWrite(21, HIGH);  
9   delay(3000); // this speeds up the simulation  
10  digitalWrite(21, LOW);  
11  digitalWrite(20, HIGH);  
12  delay(3000);  
13  digitalWrite(20, LOW);  
14  digitalWrite(19, HIGH);  
15  delay(3000);  
16  digitalWrite(19, LOW);  
17 }  
18
```

The simulation shows the Raspberry Pi Pico connected to three LEDs (Red, Green, Yellow) via breadboard wiring. The Green LED is currently lit, indicating the current state of the simulation. The simulation is running at 100% speed, and the timer shows 00:22.394.

## (iii) YELLOW LIGHT

Wokwi Arduino IDE interface showing the same sketch as above, but the simulation is now showing the Yellow LED lit, indicating the next state in the sequence. The sketch is as follows:

```
1 void setup() {  
2   Serial.begin(9600);  
3   pinMode(21, OUTPUT);  
4   pinMode(20, OUTPUT);  
5   pinMode(19, OUTPUT);  
6 }  
7 void loop() {  
8   digitalWrite(21, HIGH);  
9   delay(3000); // this speeds up the simulation  
10  digitalWrite(21, LOW);  
11  digitalWrite(20, HIGH);  
12  delay(3000);  
13  digitalWrite(20, LOW);  
14  digitalWrite(19, HIGH);  
15  delay(3000);  
16  digitalWrite(19, LOW);  
17 }  
18
```

The simulation shows the Raspberry Pi Pico connected to three LEDs (Red, Green, Yellow) via breadboard wiring. The Yellow LED is currently lit, indicating the current state of the simulation. The simulation is running at 100% speed, and the timer shows 00:15.544.

## **BLINKING OF LED**

### **PROGRAM:**

```
void setup() {  
  Serial1.begin(9600);  
  pinMode(22, OUTPUT);  
}  
void loop() {  
  digitalWrite(22, HIGH);  
  Serial.println("LED ON");  
  delay(2000); // this speeds up the simulation  
  digitalWrite(22, LOW);  
  Serial.println("LED OFF");  
  delay(2000);  
}
```

### **OUTPUT:**

