

Assignment-4

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Question-3:

Write python code for blinking LED and Traffic lights for Raspberry pi.

CODE:

```
import RPi.GPIO as GPIO
```

```
import time
```

```
LED_PIN = 17
```

```
GPIO.setmode(GPIO.BCM)
```

```
GPIO.setup(LED_PIN, GPIO.OUT)
```

```
GPIO.output(LED_PIN, GPIO.HIGH)
```

```
time.sleep(1)
```

```
GPIO.output(LED_PIN, GPIO.LOW)
```

```
GPIO.cleanup()
```

```
from gpiozero import LED
```

```
from time import sleep
```

```
red = LED(22)
```

```
amber = LED(27)
```

```
green = LED(17)
```

```
red.on()
```

```
sleep(1)
```

```
amber.on()
```

```
sleep(1)
```

```
green.on()
```

```
sleep(1)
```

```
int t=2;
```

```
int e=3;
```

```
void setup()
```

```
{
```

```
  Serial.begin(9600);
```

```
  pinMode(t,OUTPUT);
```

```
  pinMode(e,INPUT);
```

```
  pinMode(12,OUTPUT);
```

```
}
```

```
void loop()
```

```
{
```

```
  //ultrasonic sensor
```

```
  digitalWrite(t,LOW);
```

```
  digitalWrite(t,HIGH);
```

```
  delayMicroseconds(10);
```

```
  digitalWrite(t,LOW);
```

```
  float dur=pulseIn(e,HIGH);
```

```
  float dis=(dur*0.0343)/2;
```

```
  Serial.print("Distance is: ");
```

```
  Serial.println(dis);
```

```
  //LED ON
```

```
  if(dis>=100)
```

```
{
```

```
  digitalWrite(8,HIGH);
```

```
digitalWrite(7,HIGH);  
}
```

```
//Buzzer For ultrasonic Sensor
```

```
if(dis>=100)  
{  
for(int i=0; i<=30000; i=i+10)  
{  
tone(12,i);  
delay(1000);  
noTone(12);  
delay(1000);  
}  
}
```

```
//Temperate Sensor
```

```
double a= analogRead(A0);  
double t=((a/1024)*5)-0.5)*100;  
Serial.print("Temp Value: ");  
Serial.println(t);  
delay(1000);
```

```
//LED ON
```

```
if(t>=100)  
{  
digitalWrite(8,HIGH);  
digitalWrite(7,HIGH);
```

```
}
```

```
//Buzzer for Temperature Sensor
```

```
if(t>=100)
```

```
{
```

```
for(int i=0; i<=30000; i=i+10)
```

```
{
```

```
tone(12,i);
```

```
delay(1000);
```

```
noTone(12);
```

```
delay(1000);
```

```
}
```

```
}
```

```
//LED OFF
```

```
if(t<100)
```

```
{
```

```
digitalWrite(8,LOW);
```

```
digitalWrite(7,LOW);
```

```
}
```

```
}
```