IBM ASSIGNMENT 3

Assignment Date	October 5, 2022
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Maximum marks	2 Marks

Question-1:Write python code for blinking LED and Traffic lights for Raspberry pi

PROGRAM:

Program for LED interface with Raspberry pi:

```
import RPi.GPIO as GPIO #
RPi.GPIO can be referred as
GPIO from now
import time

ledPin = 22    # pin22

def setup():

GPIO.setmode(GPIO.BOARD)
# GPIO Numbering of Pins
      GPIO.setup(ledPin,
GPIO.OUT)   # Set ledPin as
output
      GPIO.output(ledPin,
GPIO.LOW)  # Set ledPin to
LOW to turn Off the LED

def loop():
      while True:
            print 'LED on'
            GPIO.output(ledPin,
GPIO.HIGH)   # LED On
            time.sleep(1.0)
# wait 1 sec
            print 'LED off'
            GPIO.output(ledPin,
```

```
GPIO.LOW)   # LED Off
            time.sleep(1.0)
# wait 1 sec
def endprogram():

      GPIO.output(ledPin,
GPIO.LOW)     # LED Off
      GPIO.cleanup()
# Release resources

if __name__ == '__main__':
# Program starts from here
      setup()
      try:
            loop()
      except KeyboardInterrupt:
# When 'Ctrl+C' is pressed, the
destroy() will be  executed.
            endprogram()
```

Program for traffic light interface with Raspberry pi:

```
 import turtle  # Allows
     us to use turtles

turtle.setup(400, 600)  #
 Determine the window
              size
 wn = turtle.Screen()  #
  Creates a playground
         for turtles
   wn.title('traffic light
 using different turtles')
  # Set the window title
wn.bgcolor('skyblue')  #
      Set the window
    background color
 tess = turtle.Turtle()  #
Create a turtle, assign to
              tess
```

```
alex = turtle.Turtle()  # Create alex
henry = turtle.Turtle()  # Create henry


def draw_housing():
    """ Draw a nice housing to hold the traffic lights"""
    tess.pensize(3)  # Change tess' pen width
    tess.color('black', 'white')  # Set tess' color
    tess.begin_fill()  # Tell tess to start filling the color
    tess.forward(80)  # Tell tess to move forward by 80 units
    tess.left(90)  # Tell tess to turn left by 90 degrees
    tess.forward(200)
    tess.circle(40, 180)  # Tell tess to draw a semi-circle
    tess.forward(200)
    tess.left(90)
    tess.end_fill()  # Tell tess to stop filling the color


draw_housing()


def circle(t, ht, colr):
    """Position turtle onto the place where the lights should be, and
```

```
    turn turtle into a big
circle"""
    t.penup()  # This
allows us to move a
turtle without drawing a
line
    t.forward(40)
    t.left(90)
    t.forward(ht)
    t.shape('circle')  # Set
tutle's shape to circle
    t.shapesize(3)  # Set
size of circle
    t.fillcolor(colr)  # Fill
color in circle


  circle(tess, 50, 'green')
circle(alex, 120, 'orange')
  circle(henry, 190, 'red')
```