**ASSIGNMENT-3**

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| Project Name | Real-Time River Water Quality Monitoring and Control System |

**Question:**

PYTHON CODE FOR BLINKING LED AND TRAFFIC LIGHTS FOR RASPBERRY PI.

**Solution:**

**For LED:**

import RPi.GPIO as GPIO # Import Raspberry Pi GPIO library from time import sleep #Import sleep function from the time module

GPIO.setwarnings(False) #Ignore warning for now

GPIO.setmode(GPIO.BOARD) #Use physical pin numbering

GPIO.setup(8,GPIO.OUT,initial=GPIO.LOW)

#Set pin 8 to be an output pin and set initial value to low(off) while True: #Run forever

GPIO.output(8,GPIO.HIGH) #Turn on sleep(1) #Sleep for 1 second GPIO.output(8,GPIO.LOW) #Turn off sleep(1) #Sleep for 1 second **For Traffic Lights:**

import Rpi.GPIO as GPIO import time import signal import sys

#Setup

GPIO.setmode(GPIO.BCM)

GPIO.setup(9,GPIO.OUT)

GPIO.setup(10,GPIO.OUT)

GPIO.setup(11,GPIO.OUT)

#Turn off all lights when user ends demo def allLightsOff(signal,framer): GPIO.output(9,False)

GPIO.output(10,False)

GPIO.output(11,False) GPIO.cleanup() sys.exit(0) signal.signal(signal.SIGINT,allLightsOff)

#Loop forever while True: #Red

GPIO.output(9,True)

Time.sleep(3)

#Red and amber

GPIO.output(10,True)

Time.sleep(1)

#Green

GPIO.output(9,False)

GPIO.output(10,False)

GPIO.output(11,True)

Time.sleep(5)

#Amber

GPIO.output(11,False)

GPIO.output(10,True)

Time.sleep(2)

#Amber off(red comes on at top of loop)

GPIO.output(10,False)