**Assignment** -3

**Write a python code for Blinking LED and traffic lights for raspberry Pi code**

**Blinking LED Code**:

import RPi.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

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()

**Traffic lights code:**

import argparse

import os

import time

import RPi.GPIO as GPIO

if os.getuid() != 0:

raise SystemExit('Expecting root privileges. Root privileges needed for GPIO pin usage.')

parser = argparse.ArgumentParser(description = 'Control Traffic Signal State')

parser.add\_argument('color', choices = ['red', 'yellow', 'green'], help = 'Color of light')

parser.add\_argument('state', choices = ['on', 'off', 'blink'], help = 'State of light')

parser.add\_argument('--verbose', '-v', action = 'store\_true')

args = parser.parse\_args()

if args.verbose:

print('Setting ' + args.color + " light to " + args.state + ".")

# Determine the GPIO pin

if args.color == 'red':

pin = 8

elif args.color == 'yellow':

pin = 10

elif args.color == 'green':

pin = 12

else:

raise SystemExit('Bad color specified.')

# Determine the state

if args.state == 'on':

state = False

elif args.state == 'off':

state = True

else:

raise SystemExit('Bad state specified.')

# Set up the GPIO interface

GPIO.setmode(GPIO.BOARD)

GPIO.setwarnings(False)

# Trigger the GPIO output

GPIO.setup(pin, GPIO.OUT, initial=state)

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