import serial

import time

import RPi.GPIO as GPIO

## GPIO - General Purpose Input/Output WHERE THE PIN FOUND ON DEVICE

GPIO.setmode(GPIO.BCM)

##BCM – BOBY CONTROL MODULES

GPIO.setup(21,GPIO.OUT)#Buzzer

GPIO.setup(20,GPIO.IN)

GPIO.setup(16,GPIO.IN)

GPIO.output(21,GPIO.HIGH)

GPIO.output(21,GPIO.LOW)

time.sleep(1)

GPIO.output(21,GPIO.HIGH)

time.sleep(1)

GPIO.output(21,GPIO.LOW)

time.sleep(1)

GPIO.output(21,GPIO.HIGH)

time.sleep(1)

GPIO.output(21,GPIO.LOW)

time.sleep(1)

GPIO.output(21,GPIO.HIGH)

## GSM module is used in many communication devices which are based on GSM (Global System for Mobile Communications) technology.

## It is used to interact with GSM network using a computer. GSM module only understands AT commands, and can respond accordingly.

## AT command – Which is used to control the modem.

## The most basic command is “AT”, if GSM respond OK then it is working good otherwise it respond with “ERROR”. There are various

## AT commands like ATA for answer a call, ATD to dial a call, AT+CMGR to read the message, AT+CMGS to send the sms etc. AT commands should be followed by Carriage return i.e. \r (0D in hex), like “AT+CMGS\r”. We can use GSM module using these commands.

GSM Interfacing with 8051

def GSM\_Init():

print("GSM Initing...")

com\_gsm.write("AT\r\n") ## Run the command

time.sleep(3)

com\_gsm.write("ATE0\r\n")

time.sleep(3)

print("GSM Inited")

# ## ECHO DISABLED

En - "Echo" - This command controls whether the modem echos commands received by the DTE or not.

* E0 - Echo Disabled - In command state, characters are not echoed from the keyboard to the screen.
* E1 - Echo Enabled - In command state, characters are echoed from the keyboard to the scre

## To detect the Temperature in vehicle

def temp\_Messg():

GPIO.output(21,GPIO.LOW)

print("Sending Messages...")

com\_gsm.write(b"AT+CMGS=")

## AT+CMGS – Send SMS Command in Text Mode.

time.sleep(2)

com\_gsm.write("7207011199")

time.sleep(2)

com\_gsm.write(b"\r\n")

time.sleep(4)

com\_gsm.write(b"GSM\_GPS Based vehicle Tracking \r\n Smoke Detected At \r\n http://maps.google.co.in/maps?q=")

time.sleep(1)

com\_gsm.write(gps\_data[25:35])

time.sleep(1)

com\_gsm.write(gps\_data[45:54])

print("Message Sent")

## Detect the smoke in vehicle

def smoke\_Messg():

GPIO.output(21,GPIO.LOW)

print("Sending Messages...")

com\_gsm.write("AT+CMGS=")

time.sleep(2)

com\_gsm.write("7207011199")

time.sleep(2)

com\_gsm.write(b"GSM\_GPS Based vehicle Tracking \r\n Fire Detected At \r\n http://maps.google.co.in/maps?q=")

time.sleep(1)

com\_gsm.write(gps\_data[25:35])

time.sleep(1)

com\_gsm.write(gps\_data[45:54])

print("Message Sent")

def GPS\_GetData():

print("Getting Gps Data")

time.sleep(2);

com\_gsm.write(b"AT+CGNSINF\r\n")

gps\_data=com\_gsm.read(59)

print(gps\_data[25:35])#this is the 35 intex to 44 index which is lat

print(gps\_data[45:54])

time.sleep(1)

print("GPS Data Recived")

else:

print("Gps Ininitng...!")

time.sleep(1)

############################################################

def Writing\_To\_File(str):

#open a File To Write

OF=open("rss.txt")

OF.write(str);

return

############################################################

def Writing\_To\_File1(str):

#open a File To Write

OF=open("rss.txt")

OF.write(str);

return

def Writing\_To\_File2(str):

#open a File To Write

OF=open("rss.txt","wb")

OF.write(str);

return

while True:

GPS\_GetData()

if(GPIO.input(20)==0):

GPS\_GetData()

Str\_pir=Detected

time.sleep(2)

temp\_Messg()

if(GPIO.input(20)==1):

Str\_pir=clear

print(":Str\_pir=clear")

if(GPIO.input(16)==0):

GPS\_GetData()

print("fire:Detected")

smoke\_Messg()

Str\_gas=detected

if(GPIO.input(16)==1):

print("fire:clear")

Str\_gas=Clear

Writing\_To\_File1(Str\_Pir+Str\_gas)

Writing\_To\_File2("http://maps.google.co.in/maps?q="+(gps\_data[35:45])+(gps\_data[45:54]))