Phase 5:Project documentation and submission

Abstract:

- It is expected that in the next decade, the majority of the world's population will be living in cities. Satisfying the demands for mobility through public services and infrastructures in the city is a significant challenge. The use of technology such as the Internet of Things (IoT) can make data collecting and analysis easier. This paper presents the design and development of a smart public transport management system (TMS) to increase system capacity and enhance passenger safety and comfort while lowering costs and risks. The proposed system is an electronic device that is placed in a public bus.
- This device can acquire data from sensors and send it to a cloud server in real-time. The data available on the cloud can be fetched allowing the management to monitor the status of the buses. It will also help commuters plan their trips in an efficient way by tracking the location of the bus. The data can also be analyzed using different analysis and visualization tools. The resultant information can be used to enhance and optimize the services offered by the company. The entire system has been tested thoroughly in real-time and it has proven to function successfully.

Sensor:

- GPS
- Radar
- Position sensor
- Chemical sensor
- Air bag sensor
- Gas composition sensor

Code:

```
#function to simulate a traffic light

#it is required to make 2 user defined functions trafficlight() and light();

Deftrafficlight():

signal=input("Enter the colour of the traffic light.")

if signalnotin ("RED" "YELLOW", "GREEN"}}||

print("Plementer a valid Traffic Light colour in CAPITALS"

else

value=light signal function tighto

if (value)
```

print("STOP, Your Life is Precious.")

if (value)

print("PLEASE GO SLOW.")

else:

Thank you for being patient")

print("GO),

afunction ends here

deflight/colour

Iffcofour "RED")

elif (colour"VELLOW"

return(3)

return(2)

#function ends here

print("SPEED THRILLS HOT KILLIT")

>>SPEED THRILLS BUT KILL

Gas Sensor

Code:

Import time

Import board

Import busio

Import adafruit_sgp30

12c = bunio12C(board.SCL board.SDA, frequency=100000)

Create library object on our 12C port

#gp30=adafruit_sgp30.Adafruit_SGF30(12c)

print("SGP30 serial #", [hax() for 1 in sgp 30.serial)

sgp30.set_laq_baseline (O8973, 0xBAAE) sgp30.set_leq_mlative humidity(celsius-22.1, relative humidity-44)

elapsed_sec=0

while True:

print("uCO2 = %d ppm \t TVOC=%d ppb % (sgp30.CO2, sgp30. TVDC))

time.sleep(1)

elapsed sec+1

If elapsed sec> 10:

elapsed seco

print(

***** Baseline values CO2 = TVOC="

% (egp30.baseline CO2, sgp30.baseline TVOC)

Output:

12:18

4G

75

ets Jul 29 2019 12:21:46

rst:0x1 (POWERON_RESET),boot:0x13 (SPI FAST_FLASH BOOT)

configsip: 0, SPIWP:0xee

clk_drv:0x00,q_drv:0x00,d_dr:0x00,cs0_drv:0x00,hd_drv:0x00,wp_drv:0x00

mode:DIO, clock div:2

load:0x3fff0030,len:1156

load:0x40078000,len: 11456

ho 0 tail 12 room 4

load:0x40080400,len:2972

entry 0x400805dc

100

200

100

200

100

200

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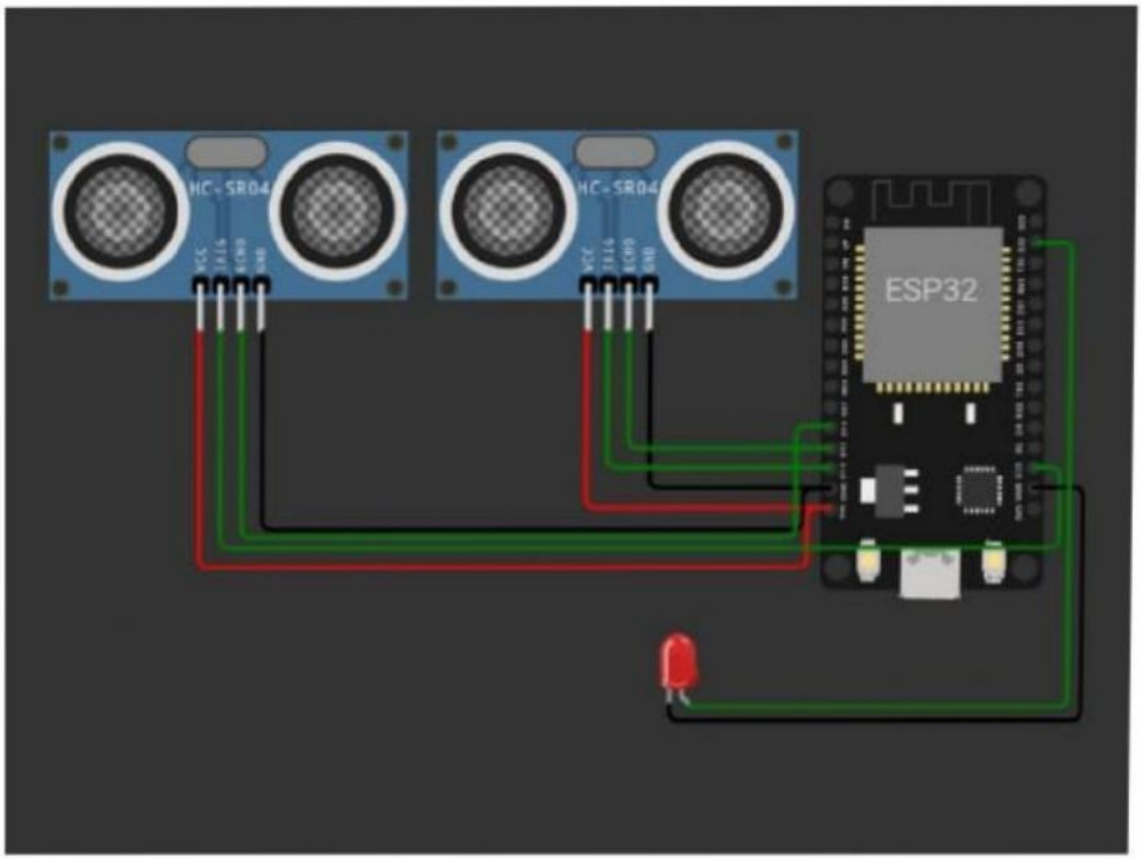
200

Circuit diagram :

Public transport optimization how to use it:



- Today's public transportation systems, especially in large cities, face many challenges. Some common challenges of the public transportation systems are a surge in the number of passengers and transportation costs, continuous driver shortage due to an income decrease caused by hours-of-service regulations and limiting the number of miles drivers can drive, and increasing demand for real-time reporting for improving efficiency and service levels. Moreover, the main reasons for many complaints about public transportation in many transportation systems are delays.

- When a vehicle is delayed, not only its passengers will reach their destination with delay, but also, they may miss their connection bus or train even when small delays occur. Public transportation managers should focus on customers' convenience by analyzing the roots of these issues and efficient transportation planning to avoid them as much as possible.

Block diagram:

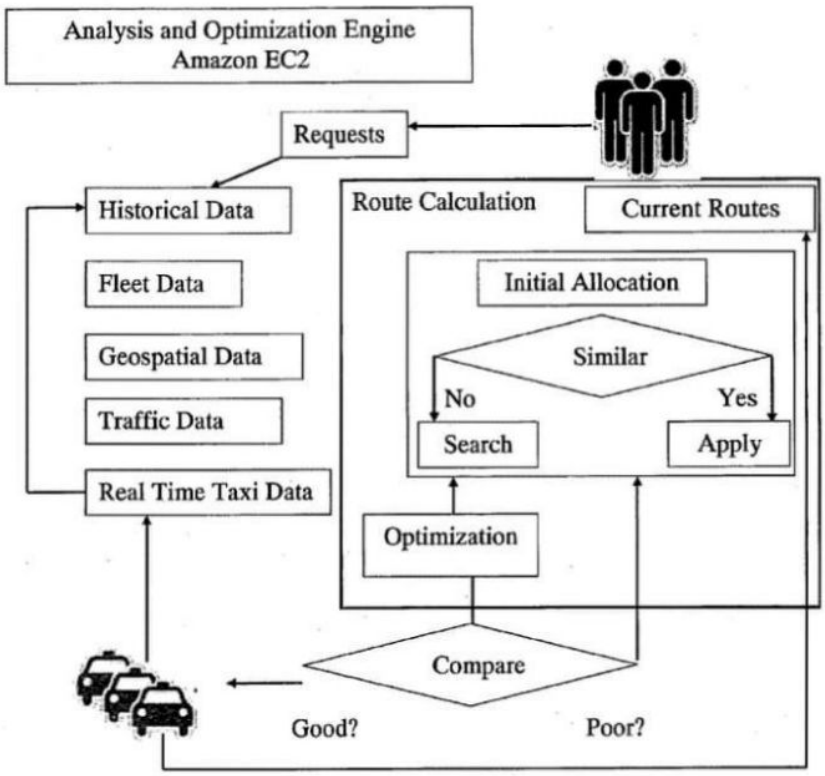


FIG. 2

FIG. 3