COLLEGE BUS TRACKING

A report submitted in partial fulfilment of the Academic requirements for the award of the degree of Bachelor of Technology

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CENTRE FOR ENGINEERING EDUCATION RESEARCH

CMR COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous) (NAAC Accredited with 'A' Grade & NBA Accredited) (Approved by AICTE, Permanently Affiliated to JNTU Hyderabad) JNTUH Hyderabad)

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CENTRE FOR ENGINEERING EDUCATION RESEARCH

CERTIFICATE

This is to certify that the report entitled **"COLLEGE BUS TRACKING"** is bonafied work done by **(19H51A0264)C.CHANDRAPAVANESWARAREDDY,(19H51A0280)K.SAIRISHITHA,(19H51A0281)M.UDAYKIRAN,(19H51A0296)P.VARSHITHA,(20H55A0207)K.DIVYA,(20H55A0222)S.CHANDAN** of II BTech, in partial fulfilment of the requirements for the award of the degree of Bachelor of Technology, submitted to Centre for Engineering Education Research, CMR College of Engineering & Technology, Hyderabad during the Academic Year 2020-21.

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EXTERNAL EXAMINER

DECLARATION

We, the students of II year B. Tech of Centre for Engineering Education Research , **CMR COLLEGE OF ENGINEERING & TECHNOLOGY,** Kandlakoya , Hyderabad, hereby declare, that under the supervision of our course coordinators, we have independently carried out the project titled **"COLLEGE BUS TRACKING "** and submitted the report in partial fulfilment of the requirement for the award of Bachelor of Technology in by the Jawaharlal Nehru Technological University, Hyderabad (JNTUH) during the academic year 2020-21.

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ABSTRACT

Students face a problem in boarding college bus on time .To do it more easy for them here is a project that will help to know the location of the college bus.

Hence we decided to come up with 'College Bus Tracking' .It is a useful tracking system with raspberry pi, GPS module and fire base service .It will make students easy to know the location of college bus.

The vehicles movement will be tracked by the students parents and even by the institutes .Every student transportation involves careful routing and schedule of trips .These should be done carefully so that the students reach their destination on time and of course safely.so with this GPS tracking and the app associated with firebase software can help students, parents and the institute to know bus movement details.

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INTRODUCTION

Students who are going to colleges will face difficulty in catching the bus, they exactly don't know at which time the bus will arrive to their stops because of traffic jams and other issues .Every student will face bus related issue in the early morning ,sometimes students will not go to colleges by these kind of bus issues. In our project we use GPS to the buses, to see the GPS location of the college buses. We make users to see the college buses GPS location in their mobile, by this 'COLLEGE BUS TRACKING' students can reach college on time without any troubles and they can see their college buses GPS location ,so that they can manage time and be ready in their bus stops .

2.WORKING PRINCIPLES:

The working principle is very simple. when we open firebase server to know the location of the college bus with the help of GPS module connected to the raspberry pi. When we want to know the location of the college bus with the help of the firebase server we can see the location of college bus.

The GPS sends the location of bus to the raspberry pi, this raspberry pi send the information to fire base server where all the information of bus tracking is available and the app will be connected to the server so with the information stored in firebase server is used by the app to show the location of the bus.

3.LITERATURE REVIEW:

1.Bus Tracking System Using GPS on Smart phones

The system is composed of many pieces, tools, and interfaces:

1.The website

2.The android app

3.The API

4.The service alerts webapp

They have used all these pieces, tools, and interfaces to develop the bus tracking system using GPS on smart phones.

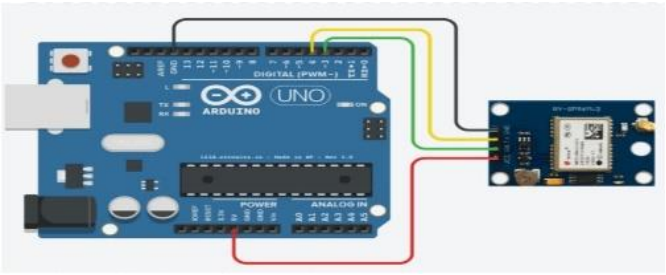


Fig 3.2.1: GPS Tracker

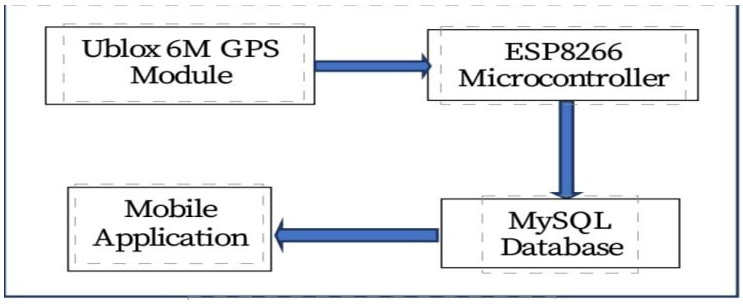


Fig 3.2.3:Flow chart

2.Real Time College Bus Monitoring and Notification System

Components

1.GPSTrack

2. ESP8266 Microcontroller

3.MySQL Database

4.Mobile Application

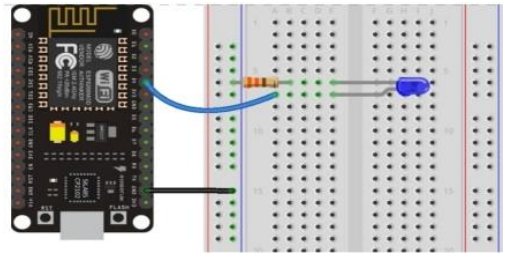


Fig 3.2.3 Flow Chart

They have developed this with the help of IOT and android studio. This can track the bus activity and makes to converse more time and work efficiently.

And the disadvantage is that the accuracy of the device is still be tested and it may cause problem accordingly to the service and device maintenance.

4.GAPS IN EXISTING SOLUTIONS:

→Students will not know where their collage bus is exactly there, so there is a chance of missing bus.

→They have used the many number of components.

5. PROPOSED SOLUTIONS

By connecting raspberry pi ,GPS module and firebase service to the bus module we know the exact location of college buses by using app in mobile.

GPS transmit location co-ordinates. Raspberry pi reads the transmission data from GPS module and raspberry pi send location data to the server. For every 3 seconds raspberry pi sends location data to server, application is developed by android studio, in android studio java language is used. The application reads the data from the server(firebase). Then the application shows the location coordinate in the map.

6.Problem definition:

Every student in their life will face issues with college bus or school bus in early morning, sometimes they will miss their bus due to soon arrival of the bus or sometimes they will wait so much time for the arrival of the bus. Sometimes students miss their classes because of college bus related issues. This situation is making every student to waste their time in waiting for bus.

6.2. REQUIREMENT ANALYSIS:

HARDWARE REQUIREMENTS

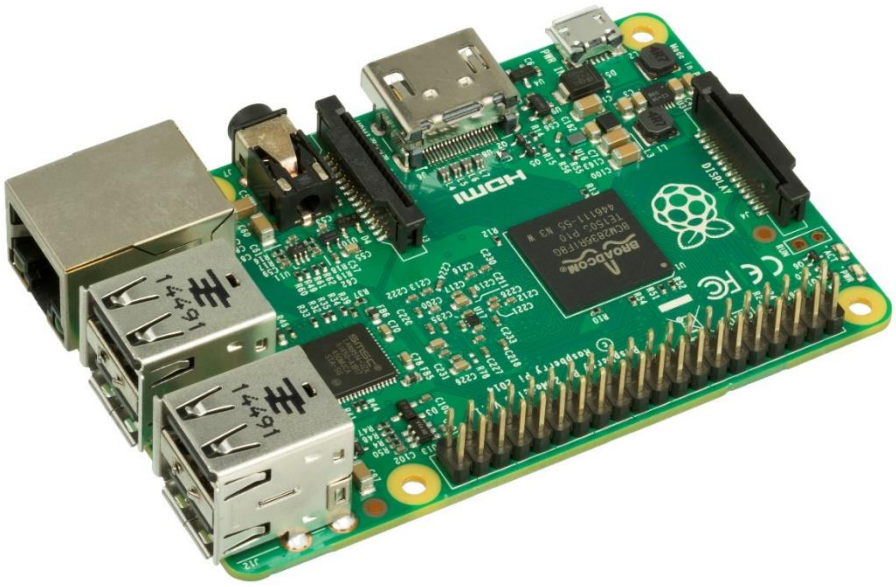
Raspberry pi, GPs module ,bus module

Fig 6.2.1:Raspberry pi

Fig 6.2.3: GPS module

Fig 6.2.2: Bus module

6.2.1 RASPBERRY PI



Information:

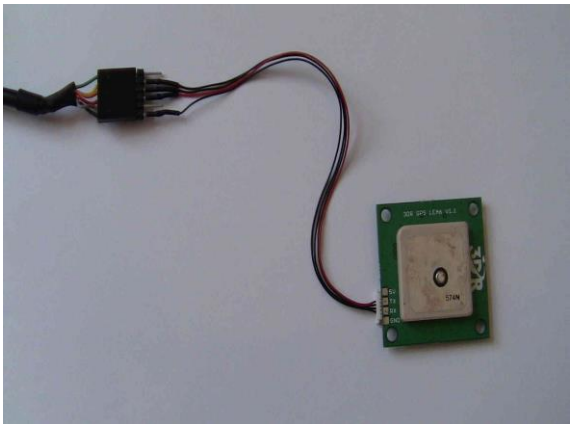
→ The Raspberry pi is a low cost, credit-card sized computer.

→The raspberry pi has a tool to create or to communicate by sending and receiving the information.

6.2.2 Bus module:

→This Arduino car module, which are using it for as bus.

6.2.3 GPS Module:



→This GPS module helps to give coordinates of longitude and latitude.

→This module is connected to raspberry pi to send information to the server, about the location of the bus.

Services used:

→This is google free web server services.

→This we use for our application to store users data and to communicate with internet.

7. CONCEPTUAL DESIGN:

1.Gps transmit location co-ordinates.

2.Raspberry pi reads the transmission data from GPS module and raspberry pi send location data to the server.

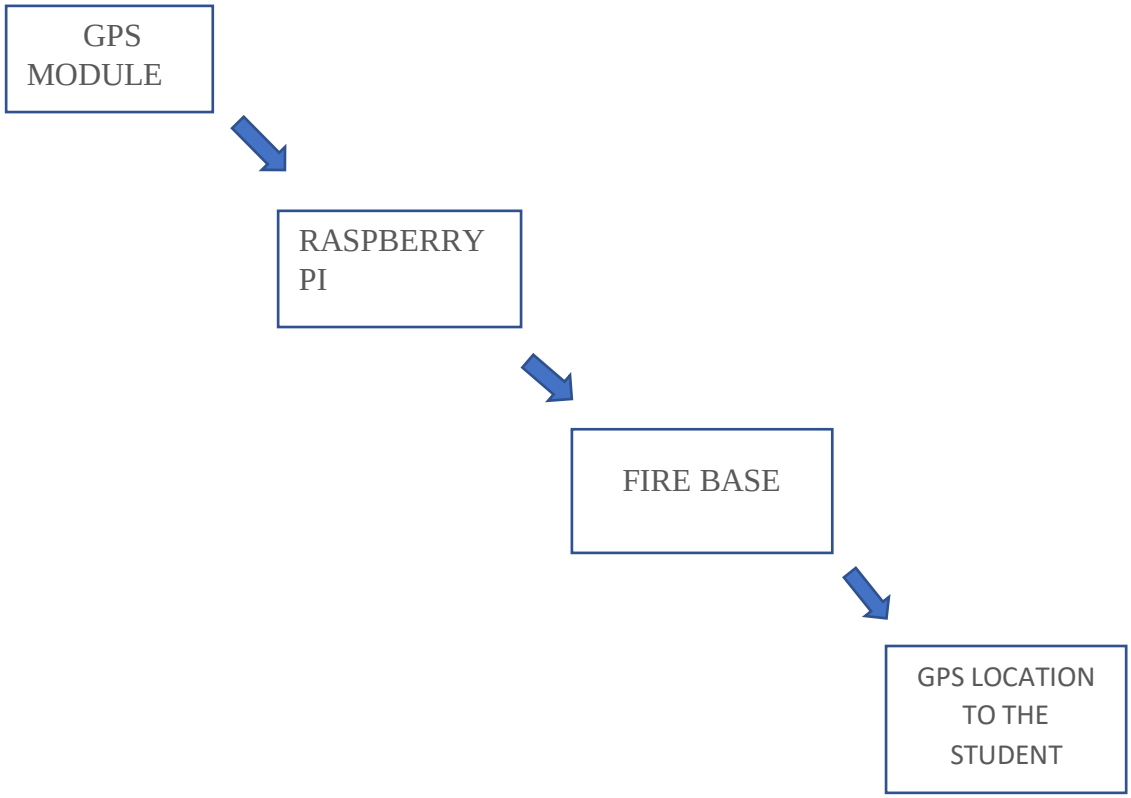
3.for every 3 second raspberry pi sends location data to server.

4.application is developed by android studio, in android studio java language is used.

5.the application reads the data from the server(firebase).

6.then the application shows the location coordinate in the map.

8.BLOCK DIAGRAM



9.IMPLEMENTATION:

9.1 RESULT AND DISCUSSION:

With the help of firebase service when the student want to know the location of the college bus, firebase service with the help of GPS module connected to the raspberry pi students can able to find the location of the college bus.

9.2 CONCULSION:

The complete software and hardware which are used in this project is explained in the above headings. As mentioned firebase services used it is one of the effective that have made the task of the app developers simpler to much extent. It not only helps in the development process, but also offers variable solutions to reach out more targeted customers do comprehension app marketing and enhance the app revenue. This project can be applied in all collage and school buses. The cost practical application is very less and designing a model for this Unit is easy. The simulation model is constructed.

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