CONESTOGA

Connect Life and Learning

DETAILED DESIGN REPORT

PROJECT: GPS TRACKING SYSTEM USING RSPBERRY PI MODULE

- Subject: Engineering Capstone Project (EECE8040)
- Group no: 20
- Team name: Trackers
- Team Members:
    1. Patel Meet Sanjaykumar(8765458)
    2. Parth Mehta Sanjaykumar (8725788)
    3. Aviya Janki Ashokbhai (8719638)

➢ Project Description:

- We are going to Implement the IOT based GPS tracking system using Raspberry pi module
- This project will be based on Location tracking of any vehicle and the school going children for tracking the school bus and many more
- We will implement the system in which, we will use the GPS concept and with the help of GPS data we will use this data to make IOT dash board so we can track the real time location of any object.
- We will also track other parameter for vehicle safety and show them on IOT Dashboard.

➢ Problem Statement:

- Now a days there is drastic increase has been shown in the vehicle theft and kids kidnapping and these two issues are increasing day by day
- Vehicle theft problem is now common and for people vehicle safety is the major priority at some parking space and other locations along with this the safety of school going children is also important for the parents in order to protect their child from kidnapping.
- This project proposes the appropriate solutions to these two problems and we will implement the GPS tracking system so we can track the location of our vehicle and school going children and solve these major problems.
- Along with these two problems this project can be implemented in the transportation vehicle to know current location of the truck and other vehicle so transportation's company can know and track the location anytime from anywhere.

➢ Team Member Roles/Responsibilities

Team Leader: Meet Patel

- Team leader will assign the weekly task and divide the work and arrange the weekly meeting.
- And closely monitor the each and every step of the development of the project and communicate with the team members at every steps from designing to testing

Recorder: Parth Mehta

- He will record the each and every process and update the all changes we will make during project implementation.

Project Task:

- **Installing and configuration of the all the software tools:**

  Installation and the configurations of all the software that we will use in this project will be done by Janki and Parth.

- **Testing of the hardware Components:**
  All hardware component testing and interfacing will be done by Meet and Parth
- **Designing the code and other programming task:**

  Code implementation and the other programming task will be done by Meet, Parth, Janki

- **Building the IOT dash board:**

  ALL the IoT configurations and the designing the dashboard in order to show real time date will be done by Meet and Parth

- **Testing and debugging the software:**
  Testing and the debugging of the software will be done by Janki and Parth.
- **Report Writing and Presentation :**

  Documentation and making Project report for each week and preparing Presentation will be done by all the team members.

Project Task Timelines:

Week2:

- We will research about our project and analyse which hardware components and the software tools we will need for implementing our project and also, we will finalize each component and gather the documents and make detailed design report.

Week3:

- We will getting start with raspberry pi zero wireless module and analyze the user manual also we will complete the installation and the configurations of the software tools.

Week4:

- Setting Wi-Fi & SSH without monitor on raspberry pi module and also we will set the static Ip address for our module and access the graphical user interface for raspbrain

Week5:

- Testing of GPS module and gather the require data for project and verify the data also use some software tools to show GPS data. We will also design the python code for extracting required data

Week6:

- We will do Linux tool Automation and GPSD installation for GPS module

Week7:

- Testing the GPS module with Raspberry module and do all the interfacing configurations and resolve interfacing issues. We will also develop the interfacing code

Week8:

- After successfully interfacing GPS module with the Raspberry module, we will implement the IOT dashboard and send the real time data to web server in order to demonstrate our gathering parameters.

Week9:

- we will improve our IOT Dashboard by Advance GPS data Visualization and try to implement more features on Dashboard

Week10:

- Troubleshooting and testing of the hardware and the software together .

Week11:

- We will try to resolve the problems that will occur while testing the entire project

Week12:

- We will prepare the real time demonstration of the entire project.

Week13:

- We will complete the report writing for each and every steps while implementing the project and make all the required documents for final presentation

Week14:

- We will give our final demo of our project.