A SURVEY ON "CITY TRANSPORT TRACKING USING RASPBERRY PI PLATFORM"

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ABSTRACT

The objective of this paper is to survey the past work of monitoring and alerting system, to categorize different approaches and recognize new patterns. City transport, checking and cautioning framework is testing issue. There are different difficulties experience in city transport, observing and alarming because of inadequacy in appropriate ongoing vehicle area and issue of cautioning framework. GPS (Global Positioning System) is most generally utilized innovation for city transport and keep consistent checking of vehicle. The target of city transport framework is to oversee and control the vehicle utilizing GPS trans receiver to know the present area of vehicle. In number of framework, is most generally utilized for alerting system. Alerting system is fundamental for giving the area and data about vehicle to traveler, proprietor or client. At that point, the data is saved in the database

Keyword: - *Global Positioning System, Global System for Mobile Communication, Raspberry pi, IR sensor*

1. INTRODUCTION

In the daily operation of public transport systems i.e. Frameworks, when travelers go by the transport, now and then they confront the troubles when the transport comes up short amid progressing venture. The transport driver and the conductor attempt all alone to discover the answer for the transport disappointment. To get the vital offer assistance from confirmed sources is truly troublesome and protracted. A mid this feverish procedure all passengers. Don't have some other alternative yet to hold up. Be that as it may, passengers. In the transport has no clue at the point when the real cause will arrive or not. They go into predicament whether to sit tight there for help to arrive or to move by private vehicle. This is truly tedious prepare and irritating for passengers.

2. OBJECTIVE

The objective of the proposed system is given below

1. To support Transportation systems.
2. Proposed a system which decreases traffic congestion and additionally its ecological effect.
3. Develop a location-aware native Smartphone application for BEST Bus that leverages the localization technology in modern mobile devices to quickly provide users with information for nearby stops and improved context-sensitive responses to their searches.

3. LITERATURE SUREVY

In literature, the problem and the previous techniques of monitoring and alerting system is described
Pengfei Zhou, et.al.In this paper, they introduce a group took an interest transport landing time expectation framework. Basically depending on economical also, broadly accessible cell flags, the proposed framework give cost-effective answers for the issue. They extensively assess the framework through an Android model framework.[1]

Amol Dhumal et.al This proposed framework enables associations to track their vehicles and to get correct location of vehicle. The framework enables those organizations to screen the voyaged courses through a web customer that uses the Google Maps API and shows hues on the guide to demonstrate if the gadgets on course. The general assessment result is that the framework ended up being dependable as to view the situating of the devices.[2]

Abid Khan et.al This framework is useful for open transport vehicles, for example, transports and taxicabs, it gives Tele checking and administration framework for the transportation of the cabs and transports inside the city. In this paper the framework said comprises of a ―On-board module‖ which is mounted in the vehicle which is to be followed. This on-board module comprises of Global Positioning System, a GSM modem and ARM processor. The route message which is communicated by the GPS position satellite is gotten and settled by the GPS recipient of the vehicle terminal. This satellite processes the longitudes and scopes of vehicle directions, then change it into the short message shape by utilizing GSM correspondence controller and this message is sent to the observing focus through the GSM network [3]

Pankaj Verma et.al This framework utilizes Global Positioning System (GPS) which is utilized to get the directions of scope and longitude shape the satellite amid the basic data. We as a whole realize that following framework is currently a-days an essential in present day world. This framework can be utilized as a part of the checking of troopers, additionally in following the robbery of the vehicle and in numerous more different applications. This framework utilizes microcontroller, Global Positioning System (GPS) and Global System for Mobile Communication (GSM). This framework utilizes just a single GPS gadget and GSM empower a two way correspondence handle. GSM modem is give a SIM card which utilizes the same and consistent correspondence prepare as we are utilizing as a part of general phone.[4]

Baburao Kodavati et.al This paper uses to a RF transmitted; the RF transmitter is joined with the vehicle which comprises of its own recognizable proof. The information which will be consistently transmitting to the RF recipient that is associated with the microcontroller. The GPS will get the area of the vehicle and will transmit this information to the microcontroller. Evidently the RF transmitter is not getting the flag from the RF transmitter then the accepting unit triggers a flag to the microcontroller, and from this flag we can recognize the burglary. On the off chance that it is distinguished that the vehicle is burglary then it consequently sends area of the vehicle to its client as the proprietor of the vehicle gets the data as SMS through the GSM modem. This framework is substantially more straightforward and financially savvy than the others. The vehicle is naturally halted if a secret word like SMS sent by the client. [5]

Iman M. Almomani, et.al proposes the system in which the Global Positioning System (GPS) is ending up noticeably broadly utilized for tracking and monitoring vehicles. Numerous frameworks have been made to give such administrations which make them prominent and required like never before some time recently. In this paper a "GPS vehicle tracking system" is proposed. This framework is helpful for armada administrators in observing driving conduct of workers or guardians checking their high schooler drivers. In addition, this framework can be utilized as a part of robbery anticipation as a recovery gadget likewise of filling in as a security framework joined with auto cautions. The principle commitment of this paper is giving two sorts of end client applications, a web application and a portable application. Thusly the proposed framework gives an omnipresent vehicle following framework with most extreme openness for the client at whatever time and anyplace. [6]

Advantages: - Stolen. Tracking vehicles in our system utilizes a wide range of new technologies and communication networks including GPRS, GSM.

Disadvantages: - It is not applicable for mobile application [6]

Hsu-Yung Cheng*et.al in this work, a vehicle tracking system is created to manage daytime and evening time traffic surveillance videos. For daytime recordings, vehicles are distinguished by means of foundation demonstrating. For

evening recordings, headlights of vehicles should be found and matched to instate vehicles for the following reason. A calculation in view of probability calculation is produced to combine the headlights of vehicles. Likewise, we apply a specific framework state move model of the Kalman channel to adjust to basic settings of activity observation cameras. The exploratory outcomes have demonstrated that the proposed strategy can adequately track vehicles in both daytime and evening time surveillance videos. [7]

Advantages: - However, it is difficult to segment out the entire vehicles at night. For nighttime surveillance videos, foreground objects that can be detected are usually headlights, auxiliary lights, or reflections of lights of the vehicles. Headlights are important features for initializing vehicles for tracking at night.

Disadvantages: - Some problem in nighttime surveillance video. [7]

Sokèmi René et.al [8] Description:- Visual surveillance of dynamic objects, particularly vehicles on the road, has been, over the past decade, an active research topic in computer vision and intelligent transportation systems communities. With regards to activity checking, critical advances have been accomplished in condition displaying, vehicle discovery, following, and conduct examination. This paper is an overview that locations especially the issues identified with vehicle checking with cameras at street convergences. Actually, the last has variable designs and speaks to a basic zone in activity. Mischances at crossing points are amazingly perilous, and the vast majority of them are brought on by drivers' mistakes. A few activities have been completed to improve the wellbeing of drivers in the unique setting of crossing points. In this paper, they give a diagram of vehicle discernment frameworks at street crossing points and delegate related informational collections. The per user is then given an early on diagram of general vision-based vehicle checking approaches. Along these lines or more all, they exhibit an audit of studies identified with vehicle location and following in crossing point like situations. As to Monitoring, they recognize and think about roadside (shaft mounted, stationary) and in-vehicle (portable stages) frameworks. At that point, they concentrate on camera-based roadside observing frameworks, with extraordinary consideration regarding unidirectional setups. At long last, they introduce conceivable research headings that are probably going to enhance the execution of vehicle recognition and following at crossing points

Advantages: - in environment modeling, vehicle detection, tracking, and behavior analysis

Dis advantages: - In congestion of vehicle tracking of vehicle is difficult

Ronald de Feijter et.al [9] proposes the system in which the congestion of our infrastructure, particularly (urban) motorways, keeps on expanding. Proficient arranging, for example in cargo transport, is ruined by the subsequent lack of quality of travel times. Another impact of this blockage is a diminished usage rate of the street. This paper presents trip booking; a technique went for development of the unwavering quality of travel times and in addition an expansion in the compelling utilization of street limit. Expanded dependability encourages better strategic arranging. Besides, it permits the sharing of foundation between various modalities, with every methodology having its own operational time window. The framework goes for open committed foundation, for example, transport paths and devoted cargo paths, and jellies the self-governance of both the supplier and client of the framework. The preferred standpoint cases are bolstered by recreation comes about for essential system designs.

Advantages: - Increased reliability facilitates better logistic planning.

Disadvantages: - Disturbances such as capacity drops

Thuong Le-Tien, Vu Hung et.al [10] The paper describes a practical model for routing and tracking with mobile vehicle in a large area outdoor environment based on the Global Positioning System (GPS) and Global System for Mobile Communication (GSM). The supporting devices, GPS module-eMD3620 of AT&S company and GSM modem-GM862 of Telit company, are controlled by a 32bits microcontroller LM3S2965 implemented a new version ARM Cortex M3 core. The system is equipped the Compass sensor-YAS529of Yamaha company and Accelerator sensor KXSC72050 of Koinix company to determine moving direction of a vehicle. The device will collect positions of the vehicle via GPS receiver and then sends the data of positions to supervised center by the SMS (Short Message Services) or GPRS (General Package Radio Service) service. The supervised center is composed of a development kit that supports GSM techniques-WMP100 of the Waveform Company. After processing data, the position of the mobile vehicle will be displayed on Google Map

Advantages: - A practical system for routing and tracking mobile vehicle was presented in this paper.

Disadvantages: - The accuracy of system is affected by some factors such as weather, environment around the mobile vehicle

Pham Hoang Oat.et.al [11] et.al portrays the Tracking vehicles is a vital and testing issue in video-based Intelligent Transportation Systems and has been comprehensively examined previously. This paper introduces a powerful and ongoing technique for following vehicles and the proposed calculation incorporates two phases: protest district extraction, vehicle following. Protest district extraction is a key stride and the idea of following vehicle is based upon the vehicle-division technique. As indicated by the portioned vehicle shape, we propose a three-stage foresee technique in view of Kalman channel to track every vehicle. The proposed strategy has been tried on various monocular activity picture arrangements and the test comes about demonstrate that the calculation is strong and constant. The right rate of vehicle following is higher than 85 percent, free of environmental conditions

Advantages:- robust and real-time method for tracking vehicles

Disadvantages:- We present a new algorithm to vehicle tracking in a video-based ITS.

4. PROPOSED METHODOLOGY

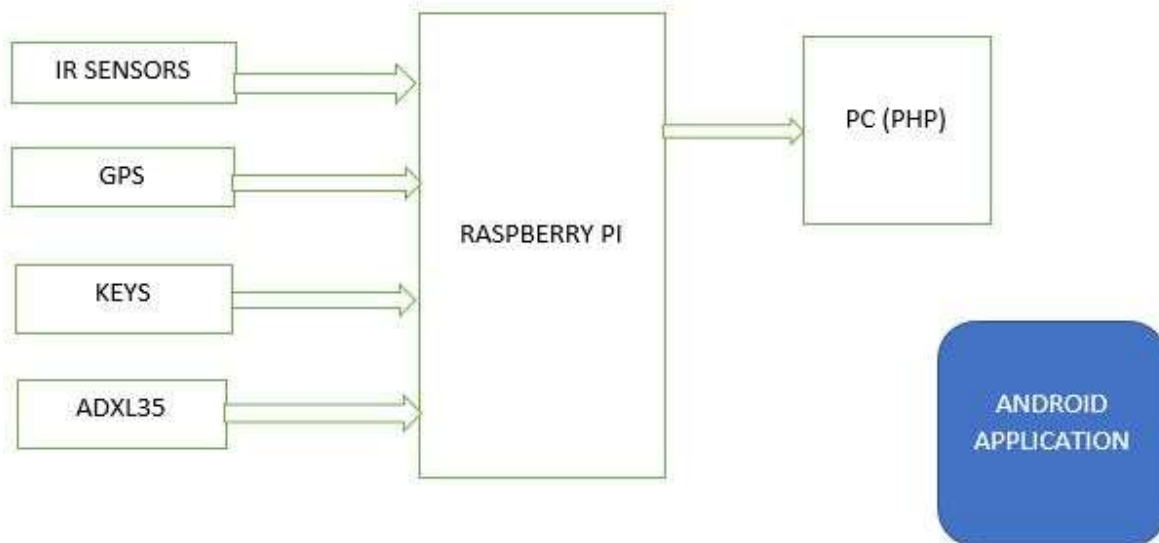The block diagram of the proposed system is given below.

Fig -1: Proposed system Architecture

The raspberry pi is used for the programming purpose. The GPS is used for the positioning of the bus the availability of the seats are calculated and then the vacant seat count is displayed.

The GPS is used for tracking the systems the input of GPS is given to the raspberry pi board for programming .The ADC is used for the analog to digital conversion. The IR sensor is used for the detecting the person in the bus and the vacant seats in the system. The 2 keys are applied for the tracking i.e. S1 and S2. The keys are incremented using the tag and the output is displayed on the system.

5. CONCLUSION

In this paper, we've got reviewed a varied existing techniques of town bus, observance and alerting system. We've got studied varied technologies, algorithms and strategies for town bus, observance and alerting system. Each system has its own importance; completely different authors have tried different strategies supported applications. Still there's scope to optimize totally different methodologies and algorithmic program to form system additional users friendly and wide application areas.

6. REFERENCES

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