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SMART VEHICLE TRACKING SYSTEM USING CLOUD COMPUTING

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ABSTRACT
Cloud Computing is internet-based computing for Optimal Resource management Techniques (ORMT). A mobile cloud resource access in Vehicular Ad hoc Network (VANET) presents the resource speed predicting system, resource tracking, resource monitoring, and resource discovery. It also implements the landmark mobile routing service and distance calculation algorithm. This technique is to know the speed of a particular vehicle by the owner, passengers, or people who care for the passengers and are willing to know the speed of their vehicle. Here resource act as a vehicle and monitoring Quality of Service (QoS) parameters are speed and time. This system predicts an over-speed vehicle and sends the message to that particular vehicle. The vehicle tracking system benefits the people in two ways to save the waiting time, one way for public users
and another way for inside passengers for a specific vehicle through VANET. The Way 1 tracks the vehicle's current location for an outside passenger in smart cities. Way 2 indicates the vehicle's current location route map for inside passengers. The resource discovery technique is gathering all the information of vehicles through VANET in Smart Cities.

INTRODUCTION
Travel has always been a man's best pass time, a method to renew from the daily stress, a break from the monotonous life and to experience the thrill of adventure Cloud computing is a well- developed energetic technique for sharing on the Internet. Runtime requirement-based resource sharing in large-scale high-performance computing networks worldwide known as dynamic cloud computing. Time is an important QoS parameter in today's world. But today's all passengers are wasting their valuable time waiting to catch a vehicle or missing the vehicles. For example, public people are waiting for government / private buses. During that waiting time, people can do the many works in their life. This work aims to save the waiting time for people. Here, not only the passenger's time but pick up people and dropping people time is also considered and saved. And in the view of universities, college, school buses students or driver can track the vehicle .They can predict at what speed the vehicle is moving and can also know the estimated time and distance in the interface .So this helps the passengers to find the next upcoming vehicle. Our main objective ofour project the vehicle tracking system benefits people by saving the waiting time in two ways, oneway for public users (outside people for the specific vehicle) and another for passengers inside a specific vehicle, through a Wi-Fi-enabled mobile. The first one tracks the vehicle's current location in real-time for any public service based on Cloud security for an outside passenger. The second one helps to indicate the vehicle's current location on the output screen, and also displays the route map for vehicles traveling, to the passengers inside. The resource monitor monitors all the passengers as well as load or luggage in the vehicle. The Cloud resource monitoring process isbased on cloud sensors. Cloud computing is a well- developed energetic technique for sharing on the Internet. Runtime requirement-based resource sharing in large-scale high-performance computing networks worldwide known as dynamic cloud computing. Time is an important QoS parameter in today's world. But today's all passengers are wasting their valuable time waiting to catch a vehicle. For example, public people are waiting for government / private buses. During that waiting time, people can do the many works in their life. This work aims to save the waiting time for people. Here, not only the passenger's time but pick up people and dropping people time is

also considered and saved. The cloud speedometer is fixed in all vehicles & it monitors the current position of the vehicle based on resource monitoring. The resource discovery gathers all the information about the vehicle.. The vehicle global positioning frameworks are gadgets utilized for following the area of vehicles progressively. This is made conceivable by introducing electronic gadgets in the vehicle. In this way, GPS (Global Positioning System) global positioning frameworks which were initially utilized in military tasks, we have discovered their application here. The business application became a mainstream these days, customer vehicles of different kinds use global positioning.

LITERATURE SURVEY

T. Rahman, Md Marufi, et al. "cloud computing based smart vehicle tracking system" IEEE Cloud Computing is internet-based computing for Optimal Resource management Techniques (ORMT). A mobile cloud resource access in Vehicular Ad hoc Network (VANET) presents the resource speed predicting system, resource tracking, resource monitoring, and resource discovery. It also implements the landmark mobile routing service and distance calculation algorithm. This technique is to know the speed of a particular vehicle by the owner, passengers,or people who care for the passengers and are willing to know the speed of their vehicle. Here resource act as a vehicle and monitoring Quality of Service (QoS) parameters are speed and time. This system predicts an over-speed vehicle and sends the message to that particular vehicle. The vehicle tracking system benefits the people in two ways to save the waiting time, one way for public users and another way for inside passengers for a specific vehicle through VANET. The Way 1 tracks the vehicle's current location for an outside passenger in smart cities. Way 2 indicates the vehicle's current location route map for inside passengers. In monitoring a vehicle's loading, it monitors all passengers and also luggage of the vehicle. The resource discovery technique is gathering all the information of vehicles through VANET in Smart Cities. The cloud user's VANET is used to find any vehicle's traveling location and passenger's online video. In the vehicle speed prediction technique, the cloud speedometer is fixed in all vehicles submit any
U. service request through your mobile/system services to cloud network, like the speed of the vehicle, track the location of the vehicle (In/Outside people), monitor the passenger & loading of the vehicle, and resource discovery is used to display all information in smart cities. This research work can be extended as disaster management basedvehicle tracking application for any smart city with more QoS parameters.

V. Ashritha, M., Sridhar, C.S. vehicle tracking system using VANETs. IEEE 9th International Conference on Intelligent Systems and Control (ISCO) The increasing number of on road vehicles has become a major cause for congestion, accidentsand pollution. Intelligent Transportation Systems (ITS) might be the key to achieve solutions that help in reducing these problems significantly. The connected vehicular networks stream is a rapidly growing field for research and development of various real-time applications. In this paper, novel techniques have been proposed to serve the speed based lane changing, collision avoidance and time of arrival (TOA) based localization in Vehicular Ad Hoc Networks (VANETs). As GPS requires clear line-of-sight for accurate services of positioning and localization applications, we designed a Time of Arrival (ToA) based algorithm for areas where strong GPS signals are unavailable. Collision avoidance using automatic braking and camera- based surveillance are a few other applications that we addressed. We prototyped a working hardware and tested it on actual vehicles to assess the effectiveness of the proposed system. We designed a mobile app interface for the on-board unit for smart, efficient and remote traffic monitoring. The integrated VANET Cloud Computing architecture acts as the platform for the proposed application.

W. Karkera, A. Dubey, S. Kamalnakhawa, & S. Mangale, - GPS GSM based Vehicle Tracking System,‖ International Journal of New Technology and Research. The increased rate of vehicle theft led to increasing concern among vehicle owners. In addition, most of the smaller car rental companies

or personal car rental are also a concern when their rented vehicles are not returned on the date line. Thus, the purpose of this project isto study and analyse the existing vehicle tracking system. Next, a tracking system is configured and developed using the Internet of Things platform (Arduino) and web-based application. Then, the usability and functionality of the Global Positioning System and Global System for Mobile Communications module are tested together with Arduino to get the location for vehicle tracking. This project is developed using the Extreme Programming methodology. During the planning phase, requirements are gathered through a questionnaire from 40 participants. Requirements and data collected are analysed, and features that need to be included are identified. Iteration starts at design phase where every time there are changes to the system, the design needs to be changed first The code is tested before small release of part of the system. Feedback is gathered from the user after every small release of the system during the iteration. The completed system enables vehicle owners to track their vehicle through web application or Short Message Service (SMS) anytime, anywhere. The completion of this project can ease the vehicle owner to track their own vehicle when their vehicle is missing. Besides that, vehicle owners that are doing personal vehicle rental or run small rental businesses can benefit from 7this system as well. They can monitor their own vehicle anytime besides during critical times when their vehicles are not returned after the date-line. The proposed Vehicle Tracking System consists of a web-based system and an IoT platform. The web-based system is developed using Vue.js as front-end and Laravel as back-end. Meanwhile, the IoT platform is the tracking device of the system, which consists of Arduino as a microcontroller, SIM800L as a GSM module, GY- NEO6MV2 as a GPS module and other modules which is required for assembling the modules together.

[12] Design and implementation of vehicle navigation system in urban environments using internet of things (IoT). Advanced vehicle monitoring and tracking system based on embedded Linux board and android application is designed and implemented for monitoring the school vehicle from any location A to location B at real time. The present system would make good use of new technology that based on embedded Linux namely Raspberry Pi and Smartphone android application.

PROPOSED SYSTEM

This proposed system came with the drawbacks of the existing like monitoring and controlling as well in the previous system we cannot predict speed .So in this system we introduced vanet which can predict the speed of the vehicle. And at the same time it helps in predicting the next coming public transport such as buses.

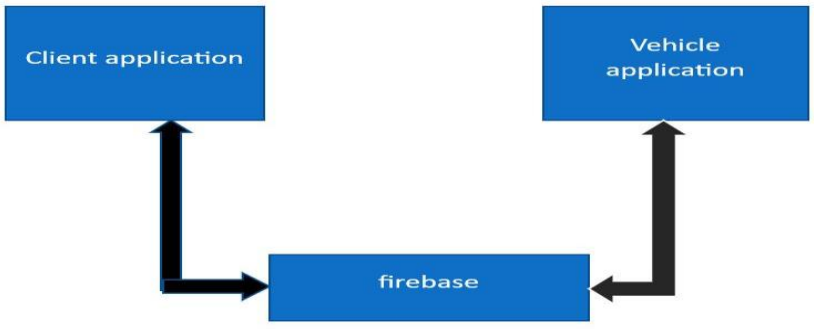

Fig: block diagram of proposed system

RESULTS AND DISCUSSIONS

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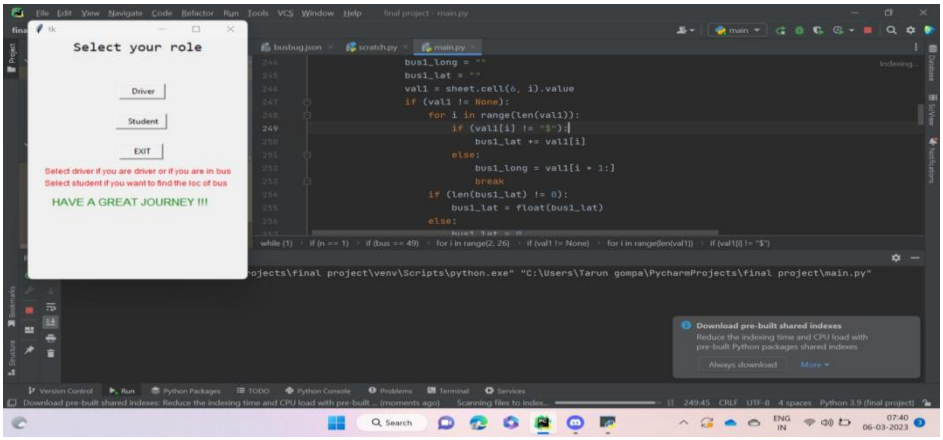

Fig : Opening the Interface and Selecting the Role

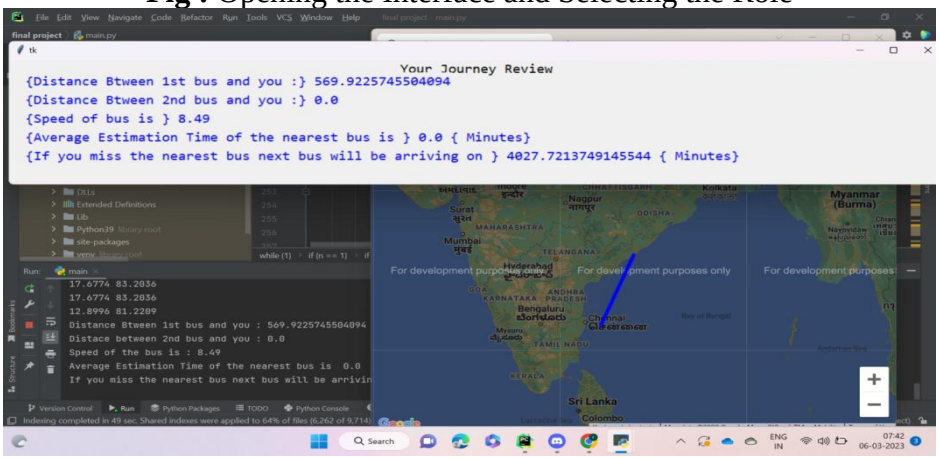

Fig: predicting and finding the distance

CONCLUSION

In conclusion, predicting the next vehicle in cloud computing using VANET can provide an efficient and accurate solution for managing transportation networks. By leveraging GPS tracking devices and VANET networks, we can obtain real-time location information from each vehicle and use cloud computing to process and analyze this data. This system can offer numerous benefits, including improved safety, reduced congestion, and increased efficiency in transportation networks. It can also provide valuable insights into vehicle behavior and enable fleet managers to optimize their operations. Overall, utilizing VANET in cloud computing to predict the next vehicle can enhance transportation management systems and contribute to a safer and more efficient future for transportation.

FUTURESCOPE

There are several future enhancements that can be made to the tracking and predicting the next vehicle using VANET in cloud computing. Some of these enhancements are: Integration of other sensors: The addition of other sensors such as cameras and radar can provide more data for accurate prediction of the next vehicle's location and behavior.

Edge Computing: By processing data at the edge of the network, near the sensors or devices, we can reduce latency and improve real-time performance. This can be achieved by deploying computing resources closer to the sensors, reducing the need for data to be sent back to the cloud.

Block chain: The integration of block chain technology can provide a secure and transparent way of sharing data among different vehicles and stakeholders in the transportation network. 5G Network:

With the deployment of 5G networks, we can achieve faster data transfer rates, lower latency, and higher capacity, allowing for more vehicles to be tracked and predicted in real- time.
Predictive Maintenance: By analyzing vehicle data such as engine performance, fuel consumption, and maintenance records, we can predict when maintenance is needed, reducing downtime and increasing vehicle efficiency. Autonomous Vehicles: The integration of autonomous vehicles into the transportation network can provide more accurate data for predicting the next vehicle's behavior and location. Overall, these enhancements can further improve the accuracy, efficiency, and safety of tracking and predicting the next vehicle using VANET in cloud computing, leading to a more sustainable and efficient transportation network.
Overall, these enhancements can further improve the accuracy, efficiency, and safety of tracking and predicting the next vehicle using VANET in cloud computing, leading to a more sustainable and efficient transportation network.

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