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Abstract

In modern world, the transportation plays a vital role in every individual’s survival. Now days the transportation is becoming a riskiest acts in everyone’s life. To minimize the accidents and to reduce the journey time using this proposed system, it helps the road takers by suggesting the alternative route. The multi route discovery algorithm helps to keep track of the various routes for traveling form source to destination to reach with. This is useful in identifying the multiple routes. This helps the people to reach their destination very faster and easier by using this system. This alternative route finding and suggestion broadcasting using VANET is fully depends on the inter-vehicular communication among vehicles and this provides the alternative routes by updating the time series database and this gives the users current transportation details through spatial visualization and shows the users the alternative routes and this suggests them to take the shortest routes to reach their destination.

Keywords: Noise Temperature Sensors, Carbon Emission Sensors, Time Series Database, Spatial Visualization, RSS, Multiple path route discovery algorithm, RSU.

Introduction

In today’s world, the increase in traffic level is a major issue. This paper presents the alternative route finding system which helps the road takers to keep track of the current traffic level in their traveling route and makes them to reach their destination easier and without any issue. The alternative route finding system was implemented using themulti route discovery algorithm which provides the various routes are shown to the users between the source and the destination, from the suggested route the user can choose any one path for traveling. The level of traffic is gathered using the RSU sensors. Then the information sensed using the RSU units and that information are given to the TIME SERIES.
**Database:** The database is updated simultaneously whenever the traffic level in the streets or road gets changed. Then the data is given spatial visualization this gives the visualized map with the traffic level details to the road takers using the RSS. As we are using VANET, this model works in all case of weather conditions, as we are able to make the inter-vehicular communication of vehicles effectively and efficiently.

**Architecture:** The alternative route finding system mainly consists of RSU unit, Database, Receiver unit. Using the units the alternative route was found with the help of the multi route algorithm.

2.1. Road Side Units

Road Side Units is the measure or method to reduce the risk of a person using the road network. Using this RSU the traffic level is analysed and the traffic level is displayed in the spatial visualization and using the analysed details of the traffic alternative route is found. The alternative route finding system was implemented using the the multi route discovery algorithm and the data will be sent to the road takers using the RSS feed.

2.2. Time Series Database

The information sensed by the RSU is stored into the database. Then the data gets processed and sent to the user about the traffic level by showing them through the spatial visualization. This spatial visualization makes the user to understand clearly the traffic level at each area through the different colours to identify. Then the alternative route finding and suggestion is broadcasted to the users according to the users input. This database is developed with the help of RSS (RICH SITE SUMMARY). This provides the current updates to the subscribers in all weather conditions.

2.3. Spatial Visualization

It is the modern technology which provides the multiple datasets. To show the datasets clearly and effectively to the users, this spatial/Geo visualization is used. This provides the users datasets in the form of fully digital environment (computerized). This gives them in the visual representation of the traffic level and makes them easier to identify. This works according to the input which is given by the users.
2.4. Infotainment Display: This is helpful for the users to interact with the website developed through the infotainment display. This provides the users the information and the entertainment. So by this way this helps the developer to create the website with more entertainment and user interactive display to attract with the website.

2.5. Alternative Route Finding and Suggestion Broadcasting

So by the datasets gathered and according to the input which is given by the user the database works and this gets the source and destination from the user and this computes according to the user needs. This stores the source and destination in the database and then this provides the multi path routes for the users to easily arrive in their destination. This also reduces the traffic level easily.

2.6. Database Connectivity and Software Training

The database connectivity for the user is provided through the mobile communication or through the wireless transmissions. This uses the inter-vehicular communication so this may not get the loss of the transmission at any cost.

The training of the website, about how to use it will be trained to them by the developer to the user.

2.7. Website Development with RSS

The website we are going to develop is with RSS (RICH SITE SUMMARY). This presents the user the frequently updated web pages contents. This feature is effective for only the people who subscribes to our website. The information of alternative routes is shared only to the people who are subscribing to us. This helps us to simply stay informed by extracting the updated contents from the websites easily which we are interested to want from the database.

2.8. Route Roadcasting to Receivers

This information processed from the database gets displayed to the user through the infotainment display and this presents the information only to the subscribers. So, this provides the alternative routes and broadcasts the multiple paths as suggestion to the subscribers, so that they can select the easiest and shortest path to reach the destination with less effort and with high accuracy of travelling time.

Fig (1) system architecture of the alternative route finding and the suggestion broadcasting.
Multipath Routing Algorithm

This algorithm helps the user to identify the multiple paths. This helps the efficient transportation system for the users. This algorithm also helps the users by showing the multiple paths to reach the destination from source and this also makes them easily identify the distance of each path and the users can be able to select the shortest path to reach the destination from the source. So, this helps the users via a better communication and the best transportation system for the users.

Conclusion and Future Works

In this paper we proposed an alternative route finding system to alert the road takers about the present traffic conditions via the vehicle’s infotainment system or to their hand held devices directly. This can be still enhanced by training the traffic officials with the help of collected datasets will helps to predict traffic situationsearlier and to divert the vehicles to alternate routes. The multi route finding algorithm was used to implement the alternative route finding system and the users can choose their path from the suggested routes by the alternative route finding system and minimizes the risk and time consumption on journey.

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