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QR Code based Location Detection and Smart Tracking System for Transportation Service

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Abstract:- In today's world 'Instead of money Time is the major parameter in the public transportation'. That means, people usually loose much of their time waiting for their ride or to pick their bus waiting at the bus stops resulting in anxiety. In this paper, we proposed a dynamic locationtracking public transportation system that any passenger with a smart phone or mobile device waiting at the bus stop can access the bus location with their arriving and departure timings. Apart from the passenger waiting at the bus stop the passenger who is in the bus can also get the information about his further travel, similar way the information can be accessed by the people who are at the remote locations such as home, offices etc. and willing to use the public transportation services. Using the QR (Quick Response) code any person can track the current location of the bus to view estimated arrival and departure time of the bus. GPS (Global Positioning System) and Google Maps are used for navigation and display services, respectively.

Keywords:- *QR codes; GPS; Smart bus stops; Smart phones, Interactive maps.*

I. INTRODUCTION

Public transport has become an essential part of our life. Major part of the human population uses public transport to travel from home to school or workplace. People can lose time in transportation because of unwanted waiting [1].

With the advancement of numerous technologies it becomes an easy job to track and monitor the location of the moving object by using their coordinates. By means of the latest technology like GPS we can make use of features like route optimization, real time traffic based delay prediction and route planning [3].

The above idea is based on one of the problem faced by us in the metro city in India. We had booked a taxi/cab through the official portal of one of the cab services from a location in the metro city. After a while we were left in confused state finding that exact cab which we had booked, as there were identical taxi/cabs in front of us of the same organization. We were not the only one to be in this jumbled state, the driver also had faced the same problem of identifying his passengers among the crowd.

We developed a method, QR code coupled with a website location tracking and notification mechanism technique for public transport. Using this method user will get the information regarding the travel schedule of the transport system like bus, taxi/cab, metro rails, trains, autos etc. this overcomes the unwanted waiting and delays occurred in the services provided by public transport.

II. SMART LOCATION DETECTION AND TRACKING SYSTEM

Fig. 1: QR Code of the Smart Location Detection and Tracking System.

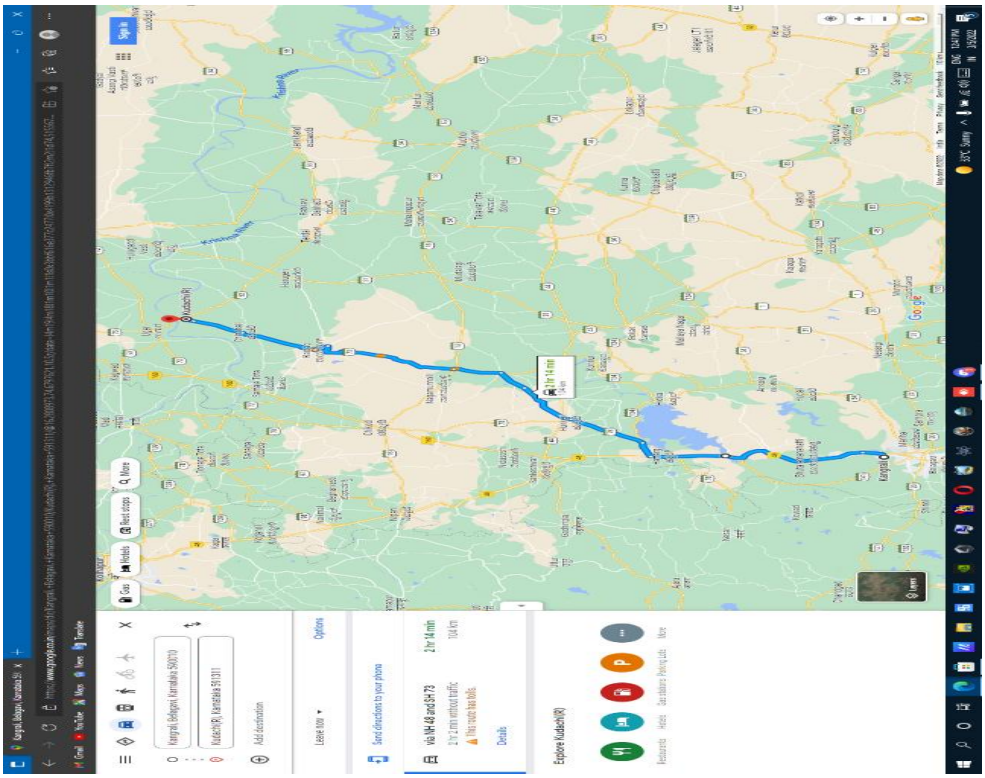

Fig. 2: Travelled route of the transportation object with continuous monitoring and detection and location displayed on the screen.

Fig. 3: QR code scanning on mobile/ on the user's device with the use of Google lens app.

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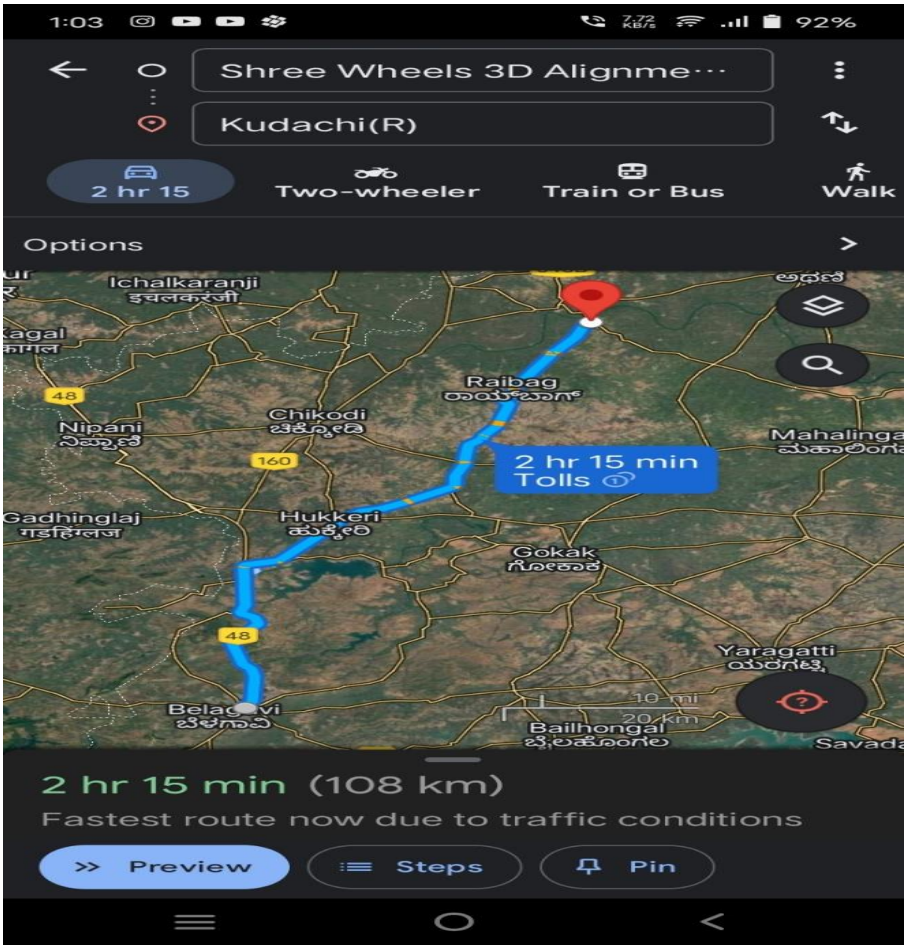

Fig. 4: User's mobile interface showing the result of total travelled route of the transportation service.

In the proposed system, QR (Quick Response) code is generated from the URL (Uniform Resource Locator) available on Google Maps regarding the travel route, this is done using the QR code generato. Once the QR code is generated it is then uploaded on the website interface to make it available to the customers and passengers so the travel route is shared with them and the QR code is updated every 5minutes to update the travel route. Any user can get access to the location of the bus and its travel route with time. In future any user intended to use this transportation system can easily book the ticket from his/her mobile device or PC.

III. ADVANTAGES

- The system is accurate & reliable.
- The system is precise to use for detection and continuous monitoring of moving objects.
- System also has provisionto send the live data through cloud directly.
- System users can access the data from any remote location.
- This system helps to save the user's time.
- In Future the system can be modified to make the ticket booking feature of the transportation services available from any remote location.
- Since the system uses GPS services which makes the users travel safer.
- The system allows the users to schedule their future travel in advance.

IV. DISADVATNTAGES

- The system requires manpower in handling data and maintenance of the website.

V. CONCLUSION

The QR Code Based Location Detection & Smart Tracking System for Transportation Services is having several advantages as it provides live detection, monitoring and location tracking of the transportation services. As this system makes use of Google maps which makes it easy and accurate tracking of the location of the transportation service. The exact location of the transportation service will be acquired by this system. The live data is sent through the cloud continuously which makes the system more useful in tracking the route of the travel and allows the users to plan their upcoming travel. The system saves much of the user time by preventing unnecessary waiting for the transportation service and allows them to use their time more efficiently. In the future, the system can be extended for other provisions this might be used not only by public users but also by the many transportation service providers. Moreover, since the system is developed with open standards and open sources, it is easily extended with future technologies according to users' needs.And also we can improve the whole Transportation scenario.

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