LOCATION TRACKING OF MULTIPLE OBJECT AND COMMUNICATION BETWEEN OBJECT

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***Abstract*—**Nowadays android system is largely used in markets by the user. It has many applications which are used by the user in daily routine. One such application is navigation apps. Navigation is a technique which basically focuses on the process of monitoring and controlling the movement of person or vehicle or craft from one place to another place. In this project, the user registers on Android App with all information. User logs in with user name and password. The user selects type of ride - individual/Group ride. In Individual Ride, Find Route, make the individual ride with source and destination and show route on a map then start a ride. Current Ride shows current ride on the map. In Group Ride, Find Route and Make Group Ride select group with source and destination. Current Ride - Show Current Ride; if a user wants to stop then stop it. Rider Location - Show Current Rider Locations. Chat Make Group-User able to create a group with the selected user. Group Chat User chat with us. Setting Update user info and Notification ON/OFF, Show all ride of the user and also show on a map. User can logout from App.

***Keywords*—** *Android, MySql, JDK 7, Eclipse, GPS.*

I. INTRODUCTION

Navigation is a field of study that focuses on the process of monitoring and controlling the movement of a object or vehicle from one place to another. We have used same in our system in ANDROID. All users register themselves and login to our app. Then user will select type of ride-individual/Group. In Individual Ride, enter source and destination and route is generated on a map and we can start a ride. In Group Ride, make Group, select source accordingly and destination. User can resume or stop ride. Any user of a particular group can view location of other users of same Group. Also, chatting feature is enabled in our app to chat within a group. We will also show User Ride History.

II. PROBLEM STATEMENT

"To design and implement Android app for Location Tracking of multiple object using GPS and communication between object using GSM."

III. MOTIVATION

Motivation is improve recommendation feature in the app. A website will be created to enable users to edit routes manually and more conveniently behind a personal computer. Users will be able to add venues and points of interest within the application. Make individual ride with source and destination and show route on map then start ride. Show Current Rider Locations. User able to create group with selected user.

IV. OBJECTIVE

- Start Ride - user selects 'type of ride' - Individual/Group ride

1. Individual Ride –

- Find Route - Make individual ride with source and destination and show route on map then start ride.
- Rider Location - Show Current Rider Locations.

2. Chat-

- Make Group - User able to create group with selected user.
- Group Chat - User chat with us.

V. LITERATURE SURVEY

[1] A similar research experiment on the use of global positioning system (GPS) had successfully been published in 2014. In this paper, the research was continued by combining radio-frequency identification (RFID) and GPS in order to get better human tracking in both indoor and outdoor area. For indoor tracking, an RFID tag was carried by a user and continually read whenever he/she accessed a room while GPS was used mainly when the user was staying outdoor. GPS would be automatically activated

whenever the user leaved the room 3 meters away. The accuracy of this tracking was 100% and the GPS could allocate the user every 3.27 meters. Thus this application is suitable to track the human position for both indoor and outdoor.

[2] A good number of object tracking devices have been developed so far and are commercially available. However, the tracking features on most of these devices lack flexibility, and also the operational cost of most of these systems is high. On the other hand, various theft incidents involving vehicles, assets, kidnapping, etc. are on the increase. The objective of this paper is to develop a cost-effective and simple-to-use real-time object tracking system using off-the-shelf components. In this work a portable battery-operated object tracking system has been developed that can also sense environmental parameters like temperature.

[3] Vehicle navigation systems rely on the correct positioning information and GPS is the best solution. However, in situations of GPS outage, like in tunnels and dense woods, the vehicle can lose track quickly. Modern vehicle navigation systems are mostly based on the vehicle dynamics; proprietary algorithms keep navigating for quite some time. But these solutions are expensive and add much to a vehicle's cost. This paper proposes a Kalman filter based dead-reckoning algorithm that fuses GPS information with the orientation information from a cheap IMU/INS, and the vehicle's speed accessed from its ECU. This low-cost system uses GPS and IMU/INS in a loosely coupled manner along with vehicle's speed and keeps supplying quite accurate position information with GPS outage for significantly long intervals. With proper tuning and initialization, the proposed scheme has a potential to keep working in a completely GPS-denied situation.

[4] In Malaysia, five million children commute to school daily. There are approximately 40 percent of children use public and private vehicles to school. The busy schedule and hectic working lives of the parent are causing them not able to monitor the safety of their children in commuting to and from school. This project presents the design of a prototype, called KidBus.Tracker that tracks schoolchildren in school vehicles. The design includes the use of global positioning satellite (GPS) tracking as a way to track the school vehicle, while passive radio frequency identification (RFID) technology was used to record the children's presence in the vehicle. The data logged by the hardware would then be extracted and fed to a website in real-time. Parents would be able to monitor the school vehicle's movement while their children are on board through the KidBus.Tracker website.

[5] Since GPS signal is not applicable indoors, vehicle tracking has proven a hassle in underground parking structures. Recent solutions highly rely on floor map to constraint inertial sensors noises. In this paper, we propose VeMap, a road map construction system using only smartphones inside vehicles. It saves effort-intensive and time-consuming business negotiations with building operators, and expensive personnel cost to gather such data. It fuses multiple sensors to calibrate inertial noises, and uses Dynamic Time Warping to align multiple trajectories. We represent the floor plan with occupancy grid mapping, and explore a vision-mobile joint algorithm to extract its skeleton and form the road map.

[6] Today's state-of-the-art methods for object tracking perform adaptive tracking by detection, meaning that a detector estimates the position of an object and adjusts its parameters to the objects appearance at the same time. We propose a novel learning framework for tracking multiple unknown objects in a video stream by detection. Proposed system tracks multiple objects in presence of occlusion, clutter and scaling. The object is defined by its location and extent in a single frame. The tracker follows the object from frame to frame. The detector localizes all appearances that have been seen so far and corrects the tracker if required. The learning estimates detectors errors and updates that in the future to avoid these errors. A novel learning method (P-N learning) which estimates the errors by a pair of experts: (i) P-expert observes missed detections, and (ii) N-expert observes false alarms. First, instead of heuristically defining a tracking algorithm, we discovered that a discriminative structure prediction model from labeled video data and capture the interdependence of multiple influence factors

VI. SYSTEM ARCHITECTURE

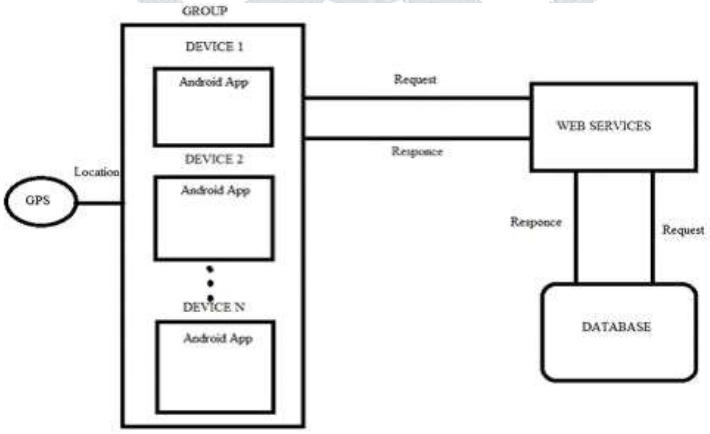
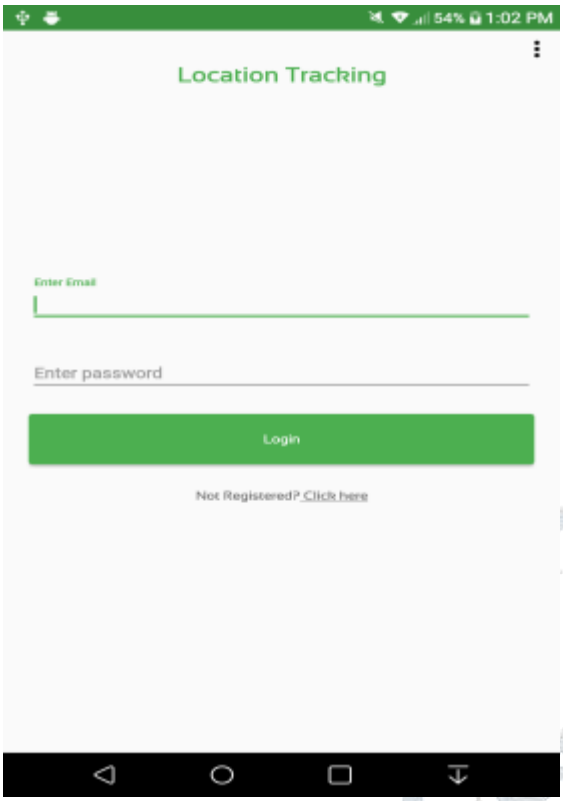
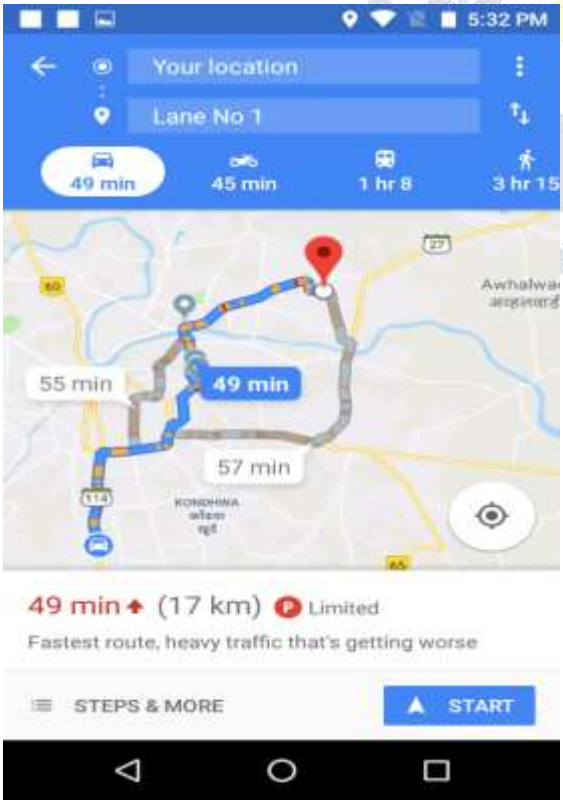


Figure 1: System architecture

VII. RESULTS/OUTPUT





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IX. CONCLUSION

We presented a system, which shows User location using a Trilateration Algorithm. Using such Application we can find out the exact location of user and update the user information accordingly. Also we will be capable to see the location of join members. We can observe the travelling route of all members and if someone from the group does not know the route so using this application every user will find the route so easily.

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