

Android Application for Real Time Asset Tracking

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Abstract: In today's business world tracking asset has become a necessity. Keeping in mind the business requirements of various organization or industries, it has become essential for organization to track their assets in real time and make asset management better and efficient.

Keywords: Real time asset management, Asset, Tracker application, Display application

1. Introduction

Asset tracker are mostly required by organization which have to manage a significant amount of moving assets which may be trucks, bus, car or an individual person based on the type of business. Real-time asset tracking are used to automatically track and display the location of asset in real time. Asset tracking system uses a variety of satellite network this network incorporates of variety of satellites that use various signals that are transmitted to GPS devices to give information of location. Our real-time tracking management system is an open system that uses a free and open source software and is composed of commodity software that is easy-to-find. Our system is composed of three components, a GPS Tracking Device, a Display App and a database. The GPS tracking transmits location information to the server through GPRS networks. The server receives the information and put it in the database. The database converts the information in a special form that can search and display using Google Map.

2. Problem definition

Keeping track of the assets in corporate is a crucial task which can save firm's money and time. Asset management is the process of increasing the assets of the company to produce the good returns to stakeholders. Allows the firm to keep track of all assets. Asset management permits the firm to keep track of all their assets. Manage assets from different locations in an accurate manner. The company can easily produce an inventory report that might be needed by some insurers or lease financiers. It brings more efficient and easy operation. Asset management permits a firm to understand and grasp the capabilities of its assets, and how they can be operated in the most effective manner. With the use of asset management system, incidents of thefts in firm are lowered.

3. Tracker

This application is a Transport Tracker solution. The Tracker application can track the device's location, and upload and store it in Firebase. We'll have an Android Service which will allow location tracking to occur independently. A good practice to apply when tracking the user's location is to ensure they're always aware that their location is being tracked. To do this, we use a persistent notification that shuts the app down when the notification is tapped. Display application can be used to view all of the instances of the running Tracker application services that represent devices being tracked. The Display application will display a map with markers representing to each of the devices being tracked. It will upload to the Firebase Realtime Database, so that it is notified each time one of the device's location is updated. After this step, it will either create a new marker at the device's location, or move the marker for a device if it exists already. We'll also handle moving the map's visible part each time a location changes, so that all of the markers are always visible.

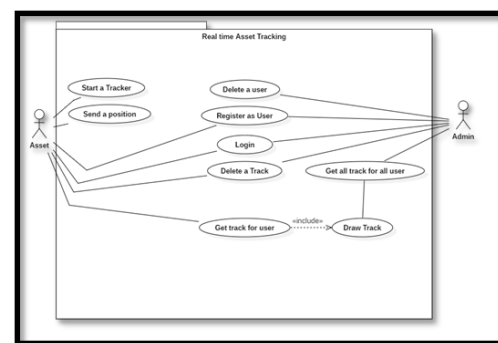


Fig 1. Use case diagram showing the overall structure

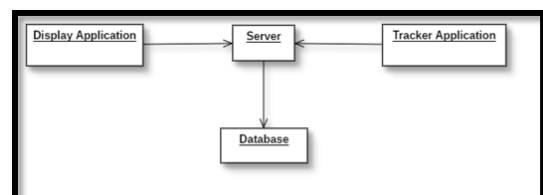


Fig. 2. Object diagram showing the overall structure

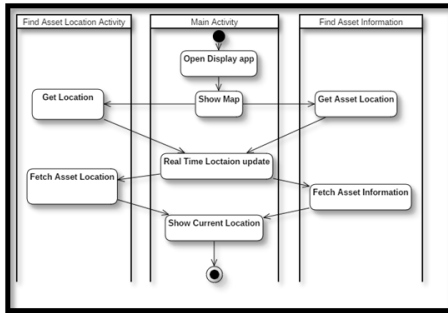


Fig. 3. Activity diagram showing the overall structure

4. Applications

- Locate and find assets within a facility, such as finding a misplaced tool cart in a warehouse or medical equipment.
- Notification of new locations, such as an alert if a tool cart has left the facility.
- To combine multiple items placed in a single location, such as on a pallet.
- To locate person, for example in a restaurant, for delivery of food or service.
- To maintain proper staffing levels of an areas, such as ensuring guards are in the proper locations in a facility.
- To quickly alert all staff after or during an emergency evacuation.
- To track and time stamp the progress of individuals or assets, like following a patient's emergency wait time, time spent within the operating room, and total time until discharge. Such a system is used for method improvement.

5. Advantages

Real-time tracking offers asset location information on an

immediate basis and, if sent directly to an online software application, this data can be viewed 24 hours a day. A Tracker Application is able to monitor vehicles on the ground, spot real-time traffic jams and observe how weather or traffic congestion might be affecting a route. This helps to keep drivers honest. Businesses often choose to be discreet about placement of real-time GPS tracking devices so they can get a truly candid picture of how drivers behave while operating vehicles on company time. Another benefit of real-time asset tracking is that while vehicles are enroute, the administrator can communicate with customers to provide an accurate time for arrival. The customer can be kept informed about delays even before the arrival time.

6. Conclusion

We have proposed an open source GPS tracking, using source software. The tracking system has shown the feasibility of using it for asset management. It can also be used tracking the lost vehicle or marking a particular location of an asset. In the future, we will plan to integrate other related devices in a vehicle such as sensors, chips, etc. The system report vehicle status information to our server, which can be useful for information processing and for intelligent tracking management.

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