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Design and Development of a Live Location Tracking Android Application

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Abstract - *The aim of our project was to build an Android application that retrieves the locations of friends and family in real time, on an interactive platform. The application enables the sharing of locations on a map by utilizing custom icons, and provides a space for communication.*

Key Words: **android, location, family, real time, interactive, communication.**

1. INTRODUCTION

With changing times, the mobile technology has changed a lot and in the last few years we have seen the arrival of various new kinds of gadgets in the form of Smartphone, camera-phone, Android and tablet phones. In fact, the handset industry has turned from simple budget handsets to ultra-modern high end mobile phones. Now android application can trace a person's real time location that can be identified to be not safe by monitoring multiple IDs parallel. Tracking is done with the help of GPS satellite which basically gives latitude and longitude to the specific GPS device.

1.1 Purpose

The existing system has proposed applications where the materials present in the application are to be downloaded and opened in different applications based on the type of the material and the access given is not authorized and secured. Also the piracy of contents cannot be controlled in the existing system as they are to be downloaded and viewed.

1.2 Scope

With the development and awareness of social affairs concerning locating missing people and tracking a person for a security level, location detection services has been widely on demand. This project explains the design and development of incorporating the GPS positioning technology to deliver a location-based service for tracking and detecting human

1.3 Problem Statement

To design and develop an Android application that enables registered user to track the people with comprehensive safety features in real time. Additionally, the app should provide a platform for efficient communication among the users.

1.4 Objectives

- To develop a system that will be able to locate the GPS position of device.
- To send notification to the tracking device if a tracked device changes location after every specified interval of times
- To create an interface to Google Map and obtain data.
- To Install and test the application in an Android mobile operating system

2. Methodology

The methodology is a system of methods used in a particular area of study or activity and the methodology can be defined as a particular procedure or a set of proceedings. The main focus of this project method consists of eight phase which are initial planning, requirements, analysis, design, implementation, testing, evaluation and deployment phase.

2.1 Planning

This phase about to described the step planning is carried out before go through to another phase. During this stage, consulting with support personnel is needed. Then, the software that suitable to develop the project is known and being set up to achieve the several objects that state in this project. The android Studio is being installed and set up in windows 10 virtual machine and set up while Android SDK is being integrated with it. Throughout this phase, many things must be prepared before the other part can be continued.

2.2 Requirement

In requirement phase, the researcher must know every know requirement needed for the project to be developed. This phase we must understand about requirement function of the system. On the base of functional categorization, the researcher decided how to accomplish the task completely in step by step modulation. This requirement phase plays an important role in the development of product under the incremental model of software life cycle. While in this project the requirement is Android Studio Software need and with condition using Windows base with minimum 2GB RAM. Android SDK, emulator system images, and caches required at least 1 GB. If not, the performance of the running system quite slow.

2.3 Analysis & Design

By the research and study of the previous paper, the limitation of this project is identified. Based on studies and studies on previous papers, new requirements for applications to be developed are identified. In other words, the weakness of existing application must become out with particular proposals to enhance the existing application. The detail of scope and function of the system development project must be analyzed well. Therefore, it can emphasize the system that needs to be done. This phase also identifies the existing system and determines system contributions developed for the future.

2.3 Implementation

This phase includes code writing as per project requirements to be developed. Encoding for interface list, login, and tracking and user details must be written. Location sharing encoding is a rather difficult requirement of generating coordinates and sending it to the server. After the process is complete, system evaluation is carried out. Then looking for bugs and mistakes are noticed. If there is a problem, it may undergo a reconstruction process.

2.4 Development

After writing completes the code, the interface design and coding join to become a new mobile app. Once this software has been thoroughly tested and no major top-level problems remain in the software, it's time to be used for production where customers can use the system. Once the software version is released for production, there is usually a maintenance team that takes care of every post-production issue. If the problem is found in the development team's production is informed and depending on the extent of the problem, it may require the quick fix made and transmitted in short or if not too severe, it can wait until the next software version.

3. Literature Review

3.1 Need for research

Security is very important in some activities. Like Free ride, mountain walking or climbing, paragliding and also when our family members are out in odd hours, are those where accidents can be serious or fatal. Having the possibility to follow physically the position of a person on regular basis can be comfortable for family, relatives or others. This project is meant to propose a simple and portable solution for people to get traced.

3.2 Existing System

"SMART WAY TRACKING TO IDENTIFY INDIVIDUALS LOCATION USING ANDROID SYSTEM WITH GPS"

Introduction

A Smart Location Tracker is an android application that traces a person location that can be identified to be not safe by monitoring multiple IDs parallel. Tracking is done with the help of GPS satellite which basically gives latitude and longitude to the specific GPS device.

Proposed System

Author has tried to develop an application where the children or students are required to have smart watch which will have the GPS device equipped with it. Parents or Guide should have the android application in his/her hand-held device (smart phone). Before going to outdoor visit, students have to get register themselves to get their ID from the application with the guide and after that guide can trace the individuals.

Conclusion

This application would help in tracking the location of children or student which will help in monitoring them and prevent them from missing in crowd.

Drawback

Smart watch is little expensive now in future maybe it become cheaper. This application is useful only for smaller kids.

"Applications of location–based services"

Introduction

Now a day, the mobile technology has changed a lot of thing and in the last few years we have seen the arrival of many type of gadgets in the form of Smartphone, iphone , Android and tablet phones. In this generation device is almost everything - it is fashionable, innovative, appealing, high-performing, durable, stylish and multi-tasking. Now a day Technology can be used for various purposes like browsing mobile, internet, playing games, Emailing, and blogging, messaging, GPS, YouTube, Google search, Gmail and more.

Proposed System

Vehicle tracking system resulted in improving overall productivity with more specifically management that in turn offers best result return on your spending. More scheduling can enable you handle larger jobs loads within a particular time

Conclusion

Vehicle tracking system working both cases of personal as well as business purpose improves safety and security, communication medium, performance monitoring and increases productivity. So, in the upcoming days, it is going to play a major role in our day-to-day living. This system has many advantages such as large capability, wide areas range, low operation costs, effective, Strong expand ability and Easy to use in vehicle traffic administration.

Drawbacks

It is difficult to track more than one device at a time.

"Android Based Mobile Smart Tracking System"

Introduction

In this Lead Paper for the Journal of Location Based Services author aim to review a selection of published applications studies in the field and assesses the way they implement the theoretical developments. The dealing out of the papers found in a thorough but selective literature review is also assessed as an indication of the real domain of utility for location based services

and to indicate that where more theoretical work is needed. This type of work is intended to be including of all disciplines in which location can be a driver for information selection, processing and delivery, so that the Journal can facilitate the exchange of experiences between application sectors developing location based services.

Proposed System

Inevitably in such a fractured and multi-disciplinary field, many applications will have escaped our attention or will lie in the gap between implementation and appearance in the literature. This review represents the state of knowledge as close to this date as possible.

Conclusion

This application would help in tracking the location of student which will help in locating them and prevent them from missing in crowd. This application has many advantages such as large capability, wide areas range, low operation costs, effective.

Drawback

It takes lot of power to run.

Conclusion

This application helps to track people wherever they are on out or on trip so that we can ensure they are safe or not. It helps to locate our family members, Vehicle tracking and many other things. It helps us to improve safety of a person. It also provides a chat window for user. The future scope of the application includes geo fencing, a feature that restricts the functioning of the application within a limited predefined area, adhering to privacy and security concerns, and additional user interface for administrators.

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