

Mobile Phone Monitoring System For Android Operating System

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Abstract

The Purpose of the project is to trace out the status and progress of the employee mobile and the relevant information is transferred to the mobile of the project manager and updated in the web server. The employee's problem related to the company can be monitored by the project manager and he can also track the employee's current location through the GPS. In existing system, the CBI alone can trace the mobile phone of any person with the help of unique IMEI number in telephone exchange. So there is no possibility to trace any information regarding the employee's mobile details by the project manager. So to overcome, this system was implemented.

Keywords.

Android Mobile, Google Maps, Maps API Key, Latitude, Longitude

1. Introduction:

In proposed system, the monitoring system is used to monitor the employee's mobile information. The monitoring system contains Mobile applications and Web applications which bring all the mobile information of the employee to the corresponding project manager mobile and it is updated in the centralized server. Monitoring system is really very helpful for the project manager to monitor the employee through mobile phones. By using this system, the employee's problem related to the company can be monitored by the project manager and he can also track the

employee's current location through the GPS.

2. Software Description:

J2EE (Java 2 Platform, Enterprise Edition) is a Java platform designed for the mainframe-scale computing typical of large enterprises. Sun Microsystems (together with industry partners such as IBM) designed J2EE to simplify application development in a thin client tiered environment. J2EE simplifies application development and decreases the need for programming and programmer training by creating standardized, reusable modular components and by enabling the tier to handle many aspects of programming automatically.

a. J2EE Features and Services

The Java™ 2 Platform, Enterprise Edition (or J2EE™ Platform) includes features and services that are available as resources to all J2EE applications and modules. The Sun™ Open Net Environment (Sun ONE) Application Server 7, a J2EE 1.3 compliant server, provides access to these resources. This guide describes the following features:

- Java™ Database Connectivity (JDBC™) API
- Transaction Service
- Java Naming and Directory Interface™ (JNDI) API
- Java™ Message Service (JMS) API

b. MySQL:

MySQL is one of the most popular relational databases Management System on the web. The MySQL Database has become the world's most popular open source Database, because it is free and available on almost all the platforms. The MySQL can run on UNIX, window, and Mac OS. MySQL is used for the internet applications as it provides good speed and is very secure. MySQL was developed to manage large volumes of data at very high speed to overcome the problems of existing solutions. MySQL can be used for verity of applications but it is mostly used for the web applications on the internet.

MySQL Features

- ◆ MySQL are very fast and much reliable for any type of application.
- ◆ MySQL is very Lightweight application.
- ◆ MySQL command line tool is very powerful and can be used to run SQL queries against database.
- ◆ MySQL supports indexing and binary objects.
- ◆ MySQL is available as a separate program for use in a client/server network environment.
- ◆ The MySQL available for the most UNIX operating platform.

- ◆ MySQL are the available for window operating system window NT, window 95, and window 98.
- ◆ MySQL available for OS/2.
- ◆ Programming libraries for C, Python, PHP, Java, Delphi etc. are available to connect to MySQL database.

3. Design and Implementation:

a. Mobile Application Module

The mobile application runs as a background process in the employee's mobile phone and it will monitor incoming and outgoing SMS, calls and identifies the location change. There are three sub modules in mobile application. They are

(i) Monitoring and alerting about SMS

This applications register for incoming and outgoing SMS and MMS in order to monitor the employee. When the employee sends or receives any SMS or MMS in mobile, the same content and the details about the mobile number will be send to the project manager's mobile with the date and time. At the same time it will send the HTTP request to the web application's Monitoring servlet (Non-UI).

(ii) Monitoring and alerting about calls

The background applications are useful to monitor the call information's like source or destination mobile number, time of call, call duration and missed calls. These details will be sent to the project manager mobile through SMS format. At the same time the same information is send to the web

application's monitoring servlet (Non-UI).

(iii) Monitoring and alerting about Geo-Location

The background application identifies the location change and sends the Geo-Location details like Latitude, Longitude, speed and time to the project manager mobile in SMS format and also to the centralized server at the configured interval of time and distance. Date/time, speed and the address details are also shown in the Google map with the routes plotted in the map and the route paths are in the different colors according to the speed of that vehicle.

b. Web Application Module

Web application runs in the web server and performs request-response and database operations. There are two sub modules in web application. They are

(i) Monitoring servlet (Non-UI)

This servlet application runs in the web server without UI. The primary reason of this servlet is to receive the request parameter from the mobile phone like the incoming, outgoing SMS, Call and location details and storing it into corresponding tables in the database.

(ii) Dashboard servlet (UI)

This servlet application runs in the web-server with UI associated with it. This web-application allows the project manager to login into the application and view the employee's phone history like the history of SMS, calls and location details.

Date/time, speed and the address details are also shown in the Google map with the routes plotted in the map and the route paths are in the different colors according to the speed of that vehicle.

c. Input Design

The Input is designed with the following objectives:

- ◆ To track the employee activities effectively through mobile.
- ◆ To control the unwanted usage of the mobiles from employee.

The major steps followed in input design are:

- ◆ Data is collected from the employee's mobile via the monitoring software.
- ◆ The collected data is forwarded to the project manager's mobile and web server.
- ◆ The collected data is verified.
- ◆ Data is checked for its accuracy.
- ◆ Data is transmitted to the database.

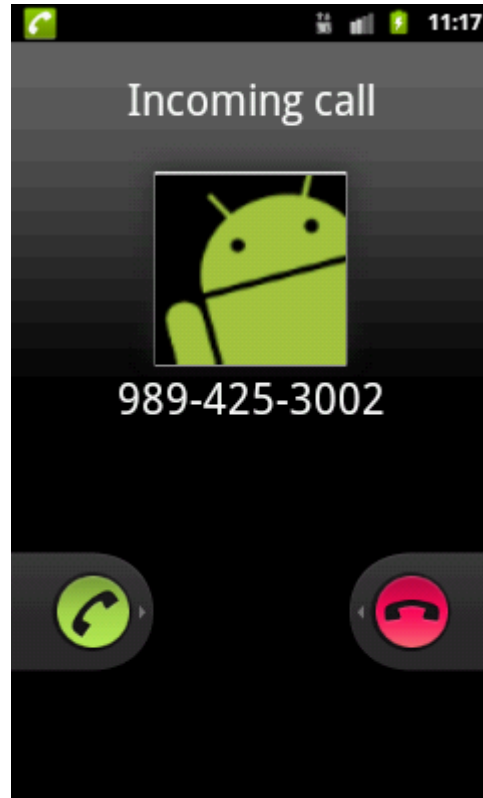
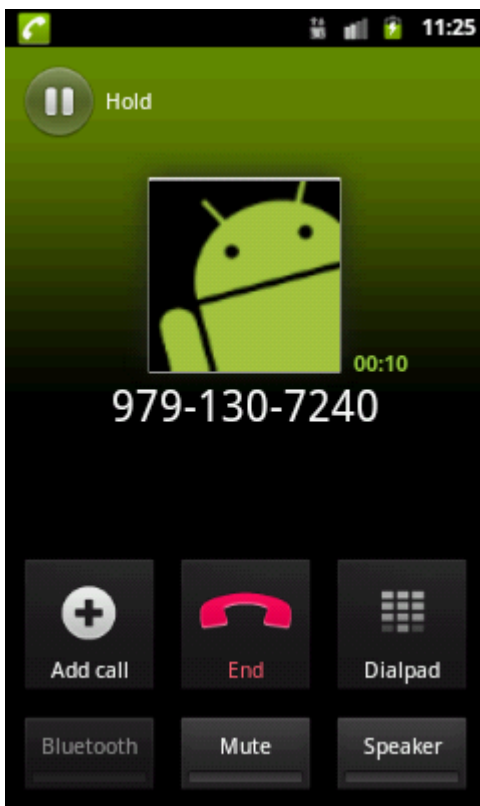
Input Stages

- ◆ Data provided in the employee's mobile can be viewed.
- ◆ Data Verified in the project manager's mobile.
- ◆ Store the results to the database.
- ◆ Date and Time information in the UI Server.
- ◆ Username and password to login the web page.
- ◆ Feed the location information in the database.

Input Media

Data is processed and displayed by installing the MONITORING SYSTEM software in the employee's mobile.

Outgoing Call In Emulator Incoming Call In Emulator



d. Output Design

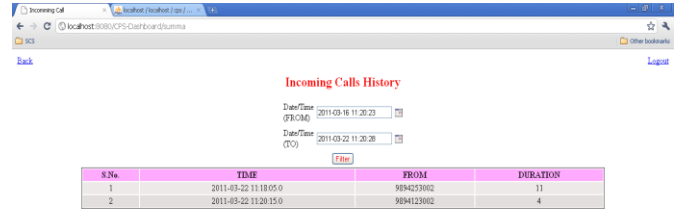
The output form can be seen either by monitor or in the project manager mobile. In output design, the necessary information is viewed based on the idea of the project manager. The output is in the form of contents, menus and templates in the WebPages.

The project is designed to view the employee mobile information regarding history of incoming and outgoing SMS, call details, Location information to the project manager and to the web server.

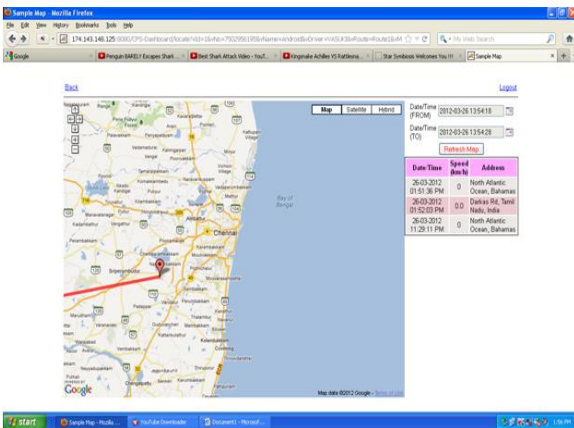
Project Manager Information Viewing Page



Incoming Call History



Geo Location Tracking Page



4. Testing

Software testing is a practical analysis conducted to provide stakeholders with information about the quality of the product or service under test, with respect to the environment in which it is planned to operate. This includes the process of executing a program or application with the plan of finding software bugs.

5. System Implementation

After the system has been tested, the implementation type or the changeover technique from the existing system to the new system is a step-by-step process. In the system, at first only a module of the system is implemented and checked for suitability and efficiency. When the end-user related to the particular module is satisfied with the performance, the next step of implementation is proceeded with.

The mobile with android operating system is implemented in monitoring system. Monitoring system is really very helpful for the project manager to monitor the employee

through mobile phones. By using this system, the employee's problem related to the company can be monitored by the project manager and he can also track the employee's current location through the GPS.

The implementation stage involves careful planning, investigation of the existing system and its constraints on implementation, designing of methods to achieve changeover and evaluation of changeover methods. Implementation is the process of converting a new system design into operation.

After the system is implemented and conversion is complete, a review should be conducted to determine whether the system meeting expectations and where improvements are needed.

A post implementation review measures the system's performance against predefined requirements. It determines how well the system continues to meet performance specification. Unexpected change in the system that affects the user or system performance is a primary factor that prompts system review.

6. Conclusion

Monitoring System is used to track the status of the employee android mobile and sends the messages to the Project Manager mobile contain any operating system. The project manager can save the company's project from unknown persons.

This System sends the information such as SMS, Call Histories to the project manager. With the help of GPS all the information is stored in web

server which can be referred for future use. Since, by this system the project manager can protect the employee from unwanted usage of the mobile phones.

7. Future Enhancements

The system is used for monitoring day to day activities of their employee's mobile phone, which is done under android operating system.

The future enhancement is that the project manager can trace the employee's day to day activities of mobile phone using various operating systems like

- Symbian
- RIM BlackBerry
- iPhone
- Windows Mobile 6
- Linux
- Palmweb

Presently the performance of the system is acceptable by the users. When the Organization insists any ideas to be implemented on the system, Changes can be made.

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