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An Android based Employee Monitoring System

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ABSTRACT :The development of android applications is Rapidly expanding and which greatly affects our life. In a few organization, office phones are given to the worker. A worker does loads of exercises which are obscure to the director also, it might influence in corrupt the development of the organization. "Worker Monitoring System utilizing Android Smartphone" is an android application for log the information on the server naturally. This application is useful for the administrators to track their Employees office mobile phone exercises. This application is use to kept up straightforwardness amongst administrator and worker. It makes and kept up logs of call and message, Browsing history, Data use, Location. Furthermore, create a report of a representative on a server. It additionally sends ready message to chief's telephone if a worker goes outside the grounds. The Worldwide Positioning System is utilized to follow the area of the worker. By utilizing this framework, the association can maintain a strategic distance from the superfluous exercises done by the representative. The point of this "Employee Monitoring System" is, to screen exercises of their Employee's office mobile phone and furthermore enhance the authoritative development of the organization.

KEYWORDS: Employee monitoring system, Android, GPS, AES Encryption Algorithm, K-means Algorithm

I. INTRODUCTION

Google built up an android working framework for a cell phone which depends on Linux kernel. Android for the most part concentrate on touch screen cell phones. A UI is mostly in view of direct control. We can give include on-screen questions by utilizing a virtual console. Application system has Dalvik Virtual Machine and local libraries. Local libraries bolster the different functionalities of sight and sound information preparing, web perusing, database get to, and GPS gathering streamlined with asset constrained equipment condition. The DVM (Dalvik Virtual Machine) runs Java code with low memory request as being register-based. At the most noteworthy purpose of the layers, Android gives a segment based programming structure with the goal that designer can undoubtedly produce their own particular applications. Android has four Application segments. Application segments are vital building squares of an Android application. These parts are roughly consolidated with the AndroidManifest.xml which is application show document that portrays every segment of the application and connection between them. The main part is Activity, which is only activity on screen and furthermore handles the client cooperation with a cell phone screen. Any screen on Android telephone is movement. Second is Services, They handle foundation preparing related with an application. at that point third is a Content supplier, Provide information to your action. also, the last one is Broadcast Receivers, They handle correspondence between Android OS and applications.

The association's prosperity relies on upon workers' execution. There are various motivations to screen an worker's versatile exercises. The supervisor needs to guarantee a nature of administration, distinguish abuse of organization telephones, and maintain a strategic distance from a presentation of classified information. Worker checking framework utilizing android framework have Employee application, Server and Centralized mysql database.

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In this information or data recovery from an incorporated database. It employs communication director framework for distinguishing proof of employee. All approaching and active call log, writings, and media messages, perusing history, information utilization can be seen by the Managers, who can likewise track their Employee area through GPS. Cautions message is sent on directors telephone if their Employee goes outside the affirmed topographical zone. Subsequent to observing all information is put away in Array List. This application is easy to use. It enhances a precision of overseeing workers create report and furthermore decreases administrator endeavours. It gives representative conduct whether it is real/Average/Bad. It stays away from a pointless utilization of office mobile phones which are accommodated office utilize as it were.

This application gives capacities like, ready to oversee numerous workers proficiently, Security, Low cost. This application is genuinely to a great degree obliging to expand the development of the association.

II. EXISTING SYSTEM

A worker may utilize their office gave a mobile phone to their own utilization. Our framework can screen all portable exercises of worker's phone. In the existing framework, labels are utilized to discover the position of a worker yet it doesn't cover the bigger territory. What's more, the current framework can track just call log and SMS history. This framework proposed representative observing framework screen all information like Call log, SMS history, Web perusing history, Data utilization, and furthermore gives an area of a worker over a vast range.

III. PROPOSED SYSTEM

A worker may utilize their office phone for their own utilization. This framework maintains a strategic distance from such abuse by following all exercises, for example, Call Logs, SMS, Browsing History, Data use, and Location of representative's office wireless. All exercises are put away in SQLite database. In the event that an information association is off then information is put away in SQLite database and updates on the server when a web association is accessible. "MasterDB.dat" record is kept up to store information in Array list organize. It likewise keeps up the banner of all information. In the event that information is refreshed on the server then the estimation of that information move toward becoming '1'. On the off chance that information is not transferred then estimations of that component is '0'. Next time just those information is transferred to the server whose esteem is '0'. The client of the framework is any worker and director. The principal client is a representative, Application keeps running on worker's office wireless which must be an android telephone. Another client is Manager or group pioneer who has an expert to check every one of the points of interest of worker.

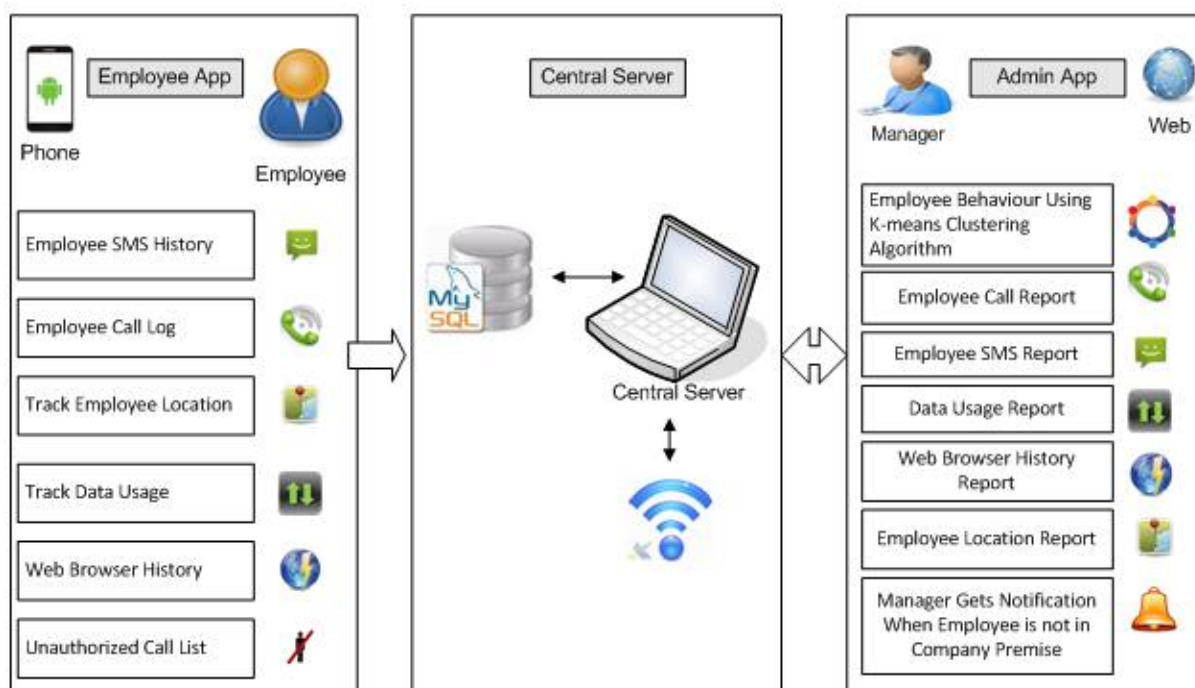


Fig. 1 Block Diagram



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Functional Requirements

1. Call Logs

Employees should not use their company phone for personal use, if they call to an unapproved number from employee list, it will be logged on to server. Calls Logs should show the details of incoming and outgoing calls history from employee's phone like date, time, and phone number.

2. Message History

Manager should get the message history from employee cell phone like text messages (inbox/sent/draft) and multimedia message with date and time.

3. Web Browser History

The module should show the web browser history of employee's phone and store web details on server. List of authorized sites is maintained in server database.

4. Data Usage

The module should show data usage statistics in the form of MBs of data. Manager can easily watch on data usage of employee cell phone.

5. Track Employee Location By using GPS

Employee location gets by using the GPS. If employee goes outside of approved geographical zones then a notification is sent to managers.

6. Unauthorized Call/Website List

Managers should be able to update list of unauthorized websites that should not be accessed by employee. Managers can disapprove the international calls for the employee.

7. Know the Employee behaviour

No of unapproved calls, exceeding data usage is calculated for each employee then k-means clustering algorithm is applied on these parameters to calculate the mean and different clusters. Each cluster indicate a different employee behaviour (Good-Loyal/Average/Bad)

IV. ALGORITHM

K-Means Clustering Algorithm:

k -means clustering is a method of vector quantization, originally from signal processing, that is popular for cluster analysis in data mining. k -means clustering aims to partition n observations into k clusters in which each observation belongs to the cluster with the nearest mean, serving as a prototype of the cluster. This results in a partitioning of the data space into Voronoi cells.

Given a set of observations $(\mathbf{x}_1, \mathbf{x}_2, \dots, \mathbf{x}_n)$, where each observation is a d -dimensional real vector, k -means clustering aims to partition the n observations into k sets ($k \leq n$) $S = \{S_1, S_2, \dots, S_k\}$ so as to minimize the within-cluster sum of squares (WCSS):

$$\arg \min_{\mathbf{S}} \sum_{i=1}^k \sum_{\mathbf{x}_j \in S_i} \|\mathbf{x}_j - \boldsymbol{\mu}_i\|^2$$

where $\boldsymbol{\mu}_i$ is the mean of points in S_i .

AES Encryption Algorithm :

AES is based on a design principle known as a substitution-permutation network, and is fast in both software and hardware. Unlike its predecessor DES, AES does not use a Feistel network. AES is a variant of Rijndael which has a fixed block size of 128 bits, and a key size of 128, 192, or 256 bits. By contrast, the Rijndael specification *per se* is specified with block and key sizes that may be any multiple of 32 bits, both with a minimum of 128 and a maximum of 256 bits.

AES operates on a 4×4 column-major order matrix of bytes, termed the *state*, although some versions of Rijndael have a larger block size and have additional columns in the state. Most AES calculations are done in a special finite field.

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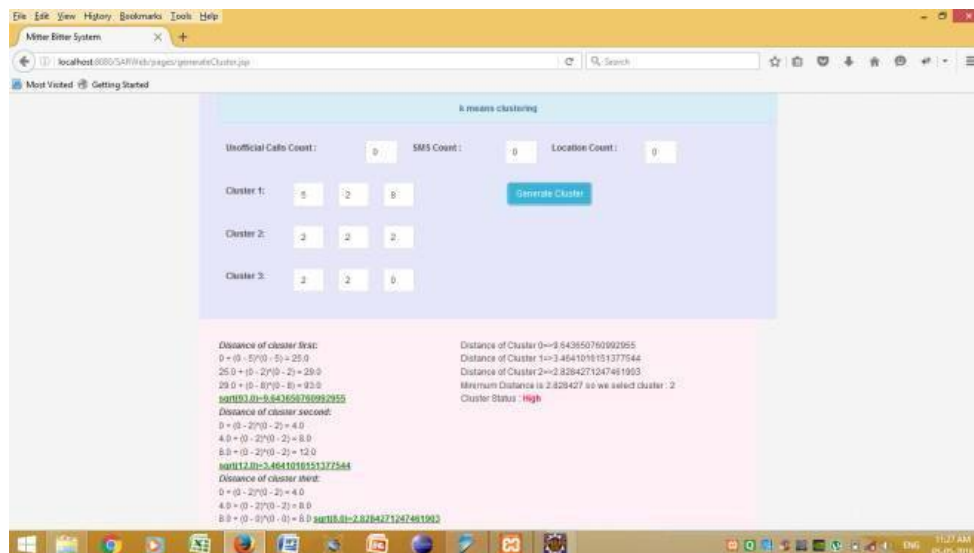
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The key size used for an AES cipher specifies the number of repetitions of transformation rounds that convert the input, called the plaintext, into the final output, called the cipher-text. The number of cycles of repetition are as follows:

- 10 cycles of repetition for 128-bit keys.
- 12 cycles of repetition for 192-bit keys.
- 14 cycles of repetition for 256-bit keys.

Each round consists of several processing steps, each containing four similar but different stages, including one that depends on the encryption key itself. A set of reverse rounds are applied to transform cipher-text back into the original plaintext using the same encryption key.

V. RESULT



VI. CONCLUSION

In this Project, New era worker observing application is actualized. Utilizing this application director can without much of a stretch screen their workers' office mobile phone exercises like all call log, SMS history, perusing history, information use. An administrator can likewise follow representative area in the association. This application can compute by and large execution of their workers. It is a totally better approach for figuring representatives execution.

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