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Employee Attendance Management System Using Android

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Abstract— This Employee attendance management system is used for keeping the record of an employee in an organized organization such as school, college, universities, etc. Our project aims designing an employee attendance system which could effectively manage attendance of employee at institutes, organisation, etc. This application maintains a database which has the details of the employees such as their name, unique id, image, designation, date of joining etc. An android mobile phone must be placed in the head office of any organisation. Employees instead of signing in the attendance Register, they can simply use this mobile application and enter their unique id. Once ID is given, the front camera of the android mobile phone captures the image of the employee. The captured image is compared with the image in the database for a valid user and attendance is updated automatically. The generated report will be automatically mailed once the time limit exceeds. This image comparison helps in avoiding proxy attendance by other.

Keywords— Android, Open Source, SDK, SQLite

I. INTRODUCTION

In the advancing world of technology, Mobile applications are a rapidly growing segment of the global mobile market. Mobile applications are evolving at a meteor pace to give users a rich and fast user experience. Android is a new, next-gen mobile operating system that runs on the Linux Kernel. Android Mobile Application Development is based on Java language codes, as it allows developers to write codes in the Java language. These codes can control mobile devices via Google-enabled Java libraries. It is an important platform to develop mobile applications using the software stack provided in the Google Android SDK. Android Mobile Application Development can be used to create innovative and dynamic third party applications. Mobile Development India has worked extensively on projects ranging from gaming software, organizers, media players, picture editors to go-cart devices and more.

In general employee attendance management means managing the daily record of a particular employee. A smart employee attendance is one that is able to identify people, interpret their actions, and track their status. Thus, one of the most important building blocks of smart employee attendance management system is an employee identification system. Mobile camera are ideal for such systems, since they have recently become fast, cheap, unobtrusive, and, when combined with some security key are very robust against changes in the environment.

II. RELATED WORK

A. Existing System

Many employee attendance management systems are being developed over past few decades. Types of the technique includes thumb impression technique, record based method and many more. In record based technique employee have to face many problem like maintaining the register, time will be wasted while managing the record of each employee manually. In thumb impression technique, if the employee is having the scar in his/her thumb then the thumb impression technique wouldn't work.

The main drawbacks of the existing system are

- It is time consuming process.
- There is a possibility for loss of records.
- Tedious paper work.
- Manual calculation may be wrong

B. Proposed System

Our system adds some special feature for the attendance of the employee that is to capture the image. A unique id is provided to employee through which he is able to sign in the system. Once he gives the username and password and if the password and user name will be matched then the front camera of the mobile will be open which will take the image of the employee, which can be checked by the admin to generate the report.

The advantages of proposed system includes,

- Reduced Paper Work and man power
- Proxy attendance avoided

- Time consumption is less
- Easy report generation
- Accurate

III. SOFTWARE DESCRIPTION

A. Android

The Android is a software stack for mobile devices that includes an operating system, middleware and key applications. The Android SDK provides the tools and APIs necessary to begin developing applications on the Android platform using the Java programming language. It is developed by Open Handset Alliance led by Google. Android is a mobile phone operating system. It was originally developed by Android Inc, which was acquired by Google in July 2005.7 Today, development is overseen by the Android Open Source Project (AOSP), led by Google. The AOSP is "tasked with the maintenance and further development of Android".

B. Android Architecture

Android is based on the Linux Kernel. Android Developers are able to access all the components of the Application Framework used by core applications when creating an application. These features include the Location Manager, Bluetooth, the Accelerometer, and Email etc. The Android SDK provides the tools and APIs necessary to begin developing applications on the Android platform using the Java programming language [3]. Android based on Linux version 2.6. The system services such as security, memory management, process management are controlled by Linux.

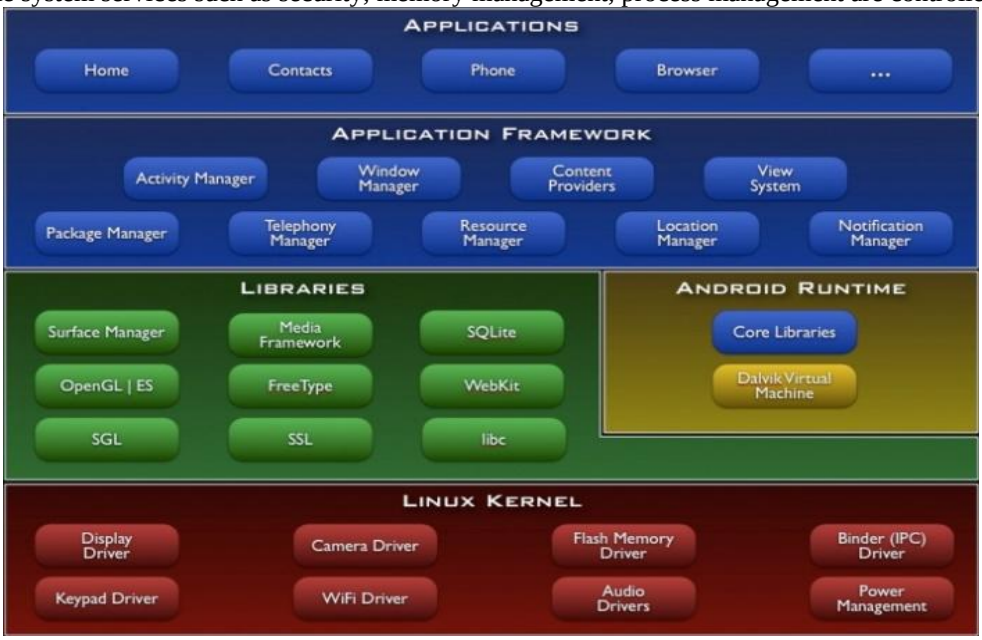

Fig. 1 Android Architecture

C. Application Framework

No An Android Application has four parts-

- Activities- Activities are the visual interfaces for each task in the application. Each activity, despite being linked, is independent class.
- Services- Services are the background tasks that don't have a user interface. Services might be linked to one or more activities. In this application Services would include recording the route over the duration of the journey (this happens even when the map is not displayed)
- Broadcast Receivers -The Broadcast Receiver receives and reacts to broadcast announcements (for example, a low battery message).
- Content Providers - The Content Provider shares the application's data with other applications. This data can be stored in a SQLite database.

✓ An Activity Manager manages the lifecycle of applications and provides a common navigation back stack.
✓ A Resource Manager, providing access to non-code resources such as localized strings, graphics and layout files.

A Notification Manager that enables all applications to display custom alerts in.

IV. SYSTEM DESIGN

Employee attendance management system is used for keeping the record of an employee in an organized organization such as school, college, universities, etc. Our project aims designing an employee attendance system which could effectively manage attendance of employee at institutes, organisation, etc. This application maintains a database which has the details of the employees such as their name, unique id, image, designation, date of joining etc. An android

mobile phone must be placed in the head office of any organisation. Employees instead of signing in the attendance Register, they can simply use this mobile application and enter their unique id. Once ID is given, the front camera of the android mobile phone captures the image of the employee. The captured image is compared with the image in the database for a valid user and attendance is updated automatically. The generated report will be automatically mailed once the time limit exceeds. This image comparison helps in avoiding proxy attendance by other.

A. Module Description

There are three modules employee registration, employee login and report.

1) *Employee Registration:* This module is for enrolling organization employee with details such as name of employee, Date of joining, department etc. This should be verified by admin. To register one should capture their image from the mobile camera placed in the office.

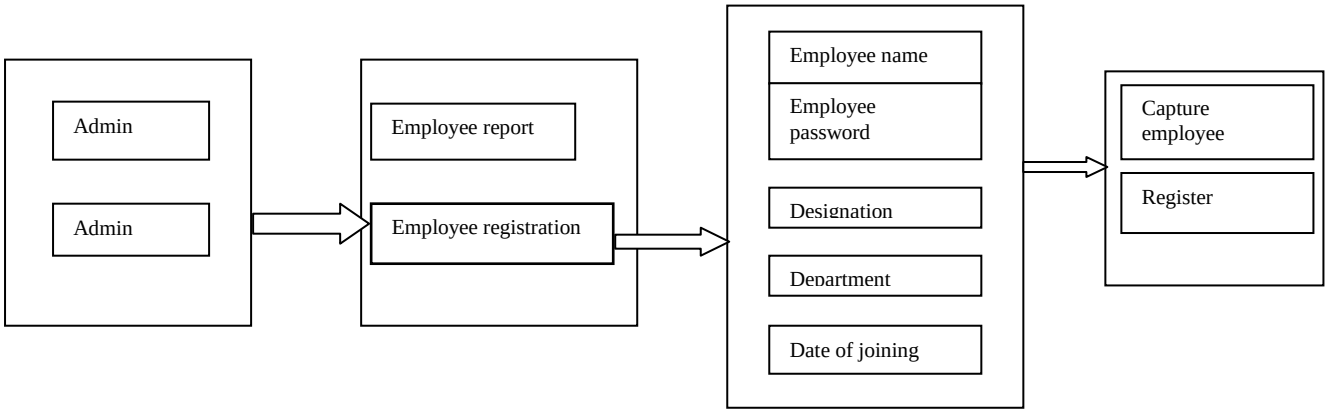

Fig. 2 Employee Registration

The administrator log in using their unique password and is responsible for registering a new employee or generating a report .For registering, admin after logging in chose the employee registration option and enter all the required details about the employees. Finally the image of employee is captured and updated in the database.

2) *Employee login:* The registered employee can simply login by providing their username and password, if the password and username are matched to the database , then the user will be logged in. once the username and password are matched with the database the front camera of the mobile will be opened which will capture the image of the employee.

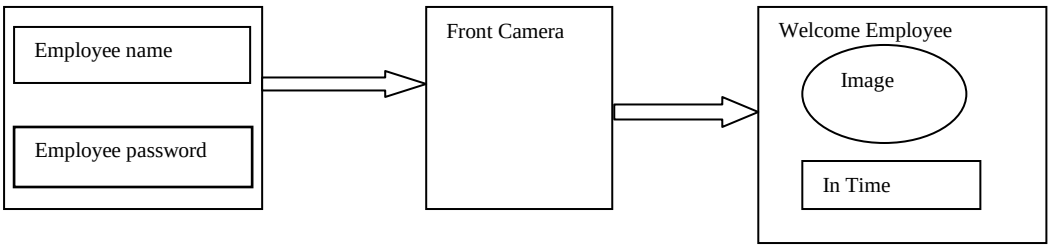

Fig. 3 Employee Log in

3) *Report:* The report generation has been easier in this project. Simply tapping on the mobile screen we can get the report of the entire employee whether they are present or not. As we are concerned of the time therefore we have made it easier by providing the absentees name in separate window.

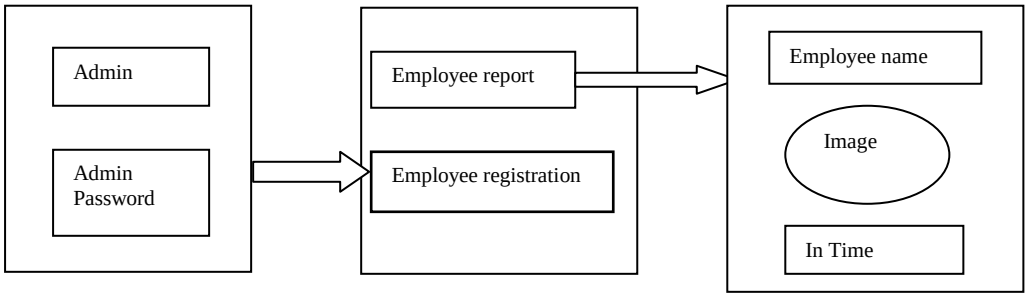

Fig. 4 Employee Report

The administrator who is responsible for report generation, after logging in he chooses employee report. Then the details about the employee with their in time will be retrieved from the database.

V. CONCLUSIONS

The fundamental problem in managing and maintaining the work by the administrator is hence overcome. Prior to this it was a bit cumbersome for maintaining the database and also keeping track of the employee. But by developing this mobile based application the administrator can enjoy the task, doing it ease and also by saving the valuable time.

The amount of time consumption is reduced and also the manual calculations are omitted, the reports can be obtained regularly and also whenever on demand by the management. The effective utilization of the work by proper sharing and by providing the accurate results will ease the job of the operator.

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