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Android Based College Leave Management System.

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ABSTRACT

Every college or department follows manual procedure for application of leave in which faculty enters information in a record book. At the end of the month or session administration department calculates leaves of every staff member which is a time taking process and there are chances of losing data in the records and increases the paperwork. The android based leave application can be used in college to apply leave in efficient way. The main idea is managing the leave records for staff and students. The Admin is responsible for updating and deleting the details of staff and class teacher. In the staff module the staff can apply for leave and the HOD can approve/reject the leave through the application. Then principal can accept/reject the leave application of HOD. In the same way class teacher will have permission to look after data of every student of that particular class of that department. Class teacher can approve/reject the student leave through the application. The features of the application are registering staff and student, application of leave, approval/rejection of leave, view leave balance, view leave history. The status of the leave and the leave requests to the higher authority will be sent through notifications. Thus, the android based leave management system automates the workflow of leave application process which reduces the paper work and time.

Keyword — Android App, Firebase, XAMPP, PHPMyAdmin, DataMining.

1. INTRODUCTION

We are moving from an era of basic mobile handset to smart phones. The most widely used mobile Operating System these days is Android. It is a powerful Operating System that supports a large number of applications which makes life more comfortable and easy for the users. Android[4][5] is Google created software stack for creating comprehensive Mobile Applications and Software to realize the full potential of one's Mobile handset and its possibilities. Android applications are printed in java programming language. Android is an open source platform that helps developers develop applications. For software increase, Android offers Android SDK (Software development kit). Android delivers a touch-screen user line (UI) for relating with apps. Android's user interface is mostly created on through handling. It provides touch gestures[4] such as swiping, tapping and pinching to manipulate on-screen objects .Along the upper of the display is a rank bar, display material about the device and its connectivity. The Android home display may be complete of more than a few pages, between which the user can swipe back and forth. Android is planned to deliver fast response to manager input. Besides a fluid touch interface, the vibration capabilities of an Android device can provide haptic feedback. Internal hardware such as fingerprint sensor, thermometers and proximity sensors, are used by many apps to respond to additional user actions. These sensors can detect fingerprint pattern of users, rotation of the screen from portrait to landscape for a wider view. Since Android devices are usually battery-powered, Android is designed to manage processes to keep power consumption at a minimum, providing longer battery use. Applications are commonly cracked into logical portions called "tiers", where every tier is allocated a role.

A mobile handset is the first tier (presentation), web server is the middle tier (application logic), and a database is the third tier (storage). The mobile app sends requests to the middle tier, which services them by making queries and updates against the database.

Every institution, whether big or small, has challenges[3] to overcome and manage the information of staff leave, student leave, leave reason, leave status. The android based leave management system has been developed to override the problems prevailing in the practicing of manual system. The application is supported to eliminate and in some cases reduce the hardships faced by the existing system. Moreover the system is designed for the particular need of the department or institution to carry out operations in a smooth and effective manner. The staff needs to submit their leaves manually to their respective authorities. This increases the paper work and maintaining notices in the records becomes difficult. By using the android app to automate the procedure of the leave application, user can apply for leave by providing leave required date and reason makes it more efficient. It decreases the paper work and enables easier record maintenance. It also reduces chance of data loss. The application is designed in a way to avoid errors while entering the data. It also delivers fault message while incoming invalid data. No prior knowledge is required for the user to use the system. Thus it provides a user-friendly interface. Leave management system delivers fault free, safe, reliable and fast management. The main objective of the android based Leave Management System is to manage the leave details of staff and students. The application deals with leave apply, leave grant/reject, leave balance, leave history and leave tracking with the help of notifications. It manages all the information about staff and students of a department. The project is totally built at administrative end and thus only the administrator is guaranteed the whole access to maintain the database.
The application has the features like leave apply, grant/reject, notification, leave history, leave generation based on the requested data by the user. All authorized users will be having unique user-id. Using the user-id the staff and students can login. The administrator can view the user's details. Only authorized users can login. The administrator has full rights to access the database. The staff details can be viewed or deleted only by the administrator. The student details can be viewed or deleted only by the class teacher. The staff and students can view their details and apply for leave.

1.1 SYSTEM ARCHITECHTURE

This section describes how the connections take place between the three tiers of the application which is composed of

1) Mobile handset
2) Web server
3) Database

Figure 1 represents the system architecture of android based leave management system which describes that the user can use the mobile app and can login into the application by providing their credentials. If the details are correct then they can access the application through the network and can request leave. The higher authorities can accept/reject the leave request of the users. The admin have all rights to change the details of staff and students

1.2 IMPLEMENTATION

The application is divided into 3 modules. It contains admin module, staff module and student module. The staff module has users like staff, class teacher, HOD, principal.

A. Admin module

In the Admin module, admin can log in to the system by using their credentials. The functionalities of admin are adding a staff and class teacher, updating their details and deleting them. Most of addition and maintenance about staff will be done in this module. Figure 2 explains the admin functionalities**.**

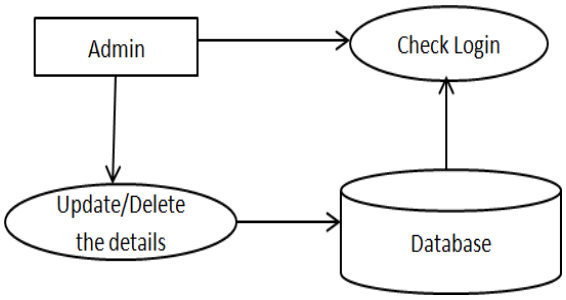


Figure 2: Admin functionalities

B. Staff module

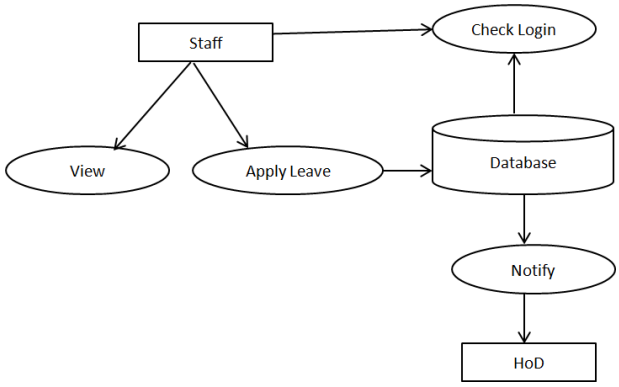


Figure 3: Staff functionalities

Staff logs in the application using their unique id and password and can apply for leave, check leave history and check leave balance. When a leave is applied by staff the leave request is sent to the HOD. The HOD will receive a notification for the same. The HOD accept/reject the leave and the leave status is updated to the staff through notification. Figure 3 explains the staff functionalities**.**

C. CLASS TEACHER

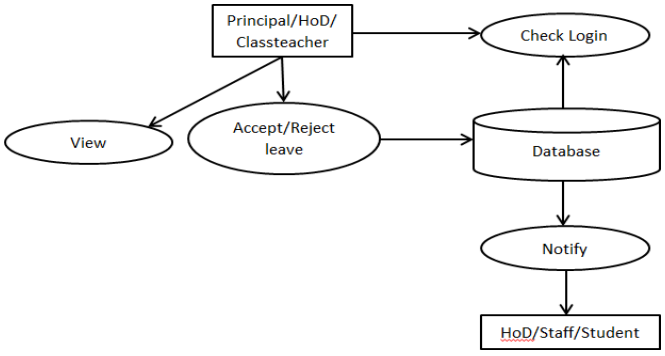
Class teacher logs in using the application, and can apply for leave, check leave history, check leave balance and check leave request by the students. When a leave is applied by class teacher the leave request is sent to the HOD. The HOD will receive a notification for the same. The HOD accepts/reject the leave and the leave status is updated to the class teacher. The class teacher can accepts/reject the leave and the leave status is updated to the student through notification. Figure 4 explains the class teacher functionalities**.**

D. HOD

HOD logs in using the application, and can apply for leave, check leave history, check leave balance and check leave request by the staff. When a leave is applied by HOD the leave request is sent to the Principal. The Principal will receive a notification for the same .The Principal accepts/reject the leave and the leave status is updated to the HOD through notification. The HOD can accepts/reject the leave and the leave status is updated to the staff and class teacher. Figure 4 explains the HOD functionalities**.**

E.PRINCIPAL

Principal logs in using the application, and can check leave request by the HOD and can view leave history of staff and student. The Principal accepts/reject the leave of HOD and the leave status is updated and notification will be sent to HOD. Figure 4 explains the principal functionalities**.**



E. STUDENT MODULE

Student logs in using the application and can apply for leave, check leave history and check leave balance. When a leave is applied by student the leave request is sent to the class teacher and a notification is sent to class teacher. The class teacher accept/reject the leave and the leave status is updated to the student through notification. Figure 5 explains the class teacher functionalities**.**

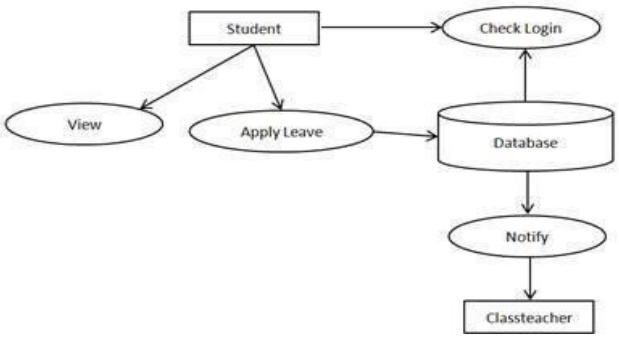
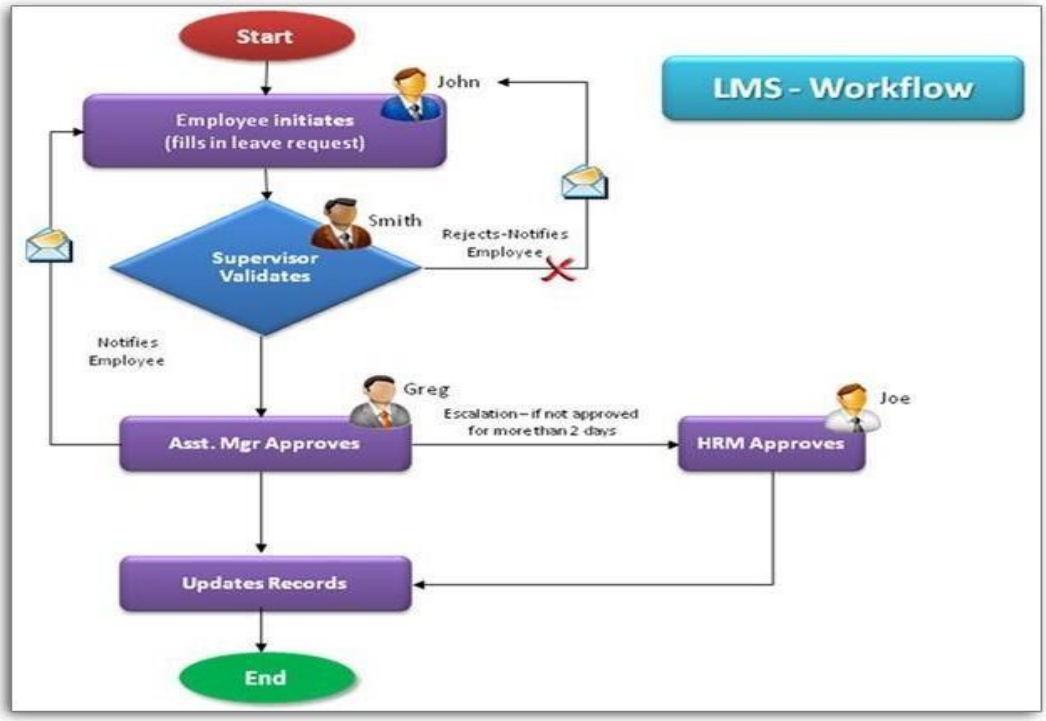


Figure 5: Approval Operation

1.3 PROPOSED SYSTEM

Leave management includes the methods staffs use to request time away from work and manager use to allowance or deny leave based on institute plans. Plane mechanization of current manual systems based on an organization's single business processes. Simply available and combined leave material for analysis and writing. Workflow joins with the leave database to show supporter leave past through login, Allows for leave wish routing based on ladder and user details indicated in the Active Directory. The workflow can be enabled to build in growth in case of unavailable manager or if more than one approval is required. Once a manager confirms an employee's leave status and updates the leave balance, the LMS cycle is completed.

LMS Workflow:



3.1 SOFTWARE REQUIREMENTS:

- Operating system : Windows XP.
- Coding Language : Java 1.6
- Tool Kit : Android 2.2
- IDE : Eclipse

4. CONCLUSIONS

The Android Based Leave management application has been developed to overcome the problem of applying leave manually which is time consuming. It helps staff and student to apply the leave through the app and get approval from higher officials. The application provides notification to higher officials upon apply of leave and leave status is notified to the respective user. Thus the application provides an optimized solution for leave request, approval and tracking of leaves. Further, the application can be improved by attaching time table management system where a staff applies for leave and assigns a substitute teacher for that class and thenotification will be sent to that staff.

6. REFERENCES

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