PROJECT OVERVIEW

Introduction

This project uses a web application as well as android application concept to facilitate the attendance system in educational institutes. It uses the most reliable way of uniquely identifying students through an android app. Such type of web application is very useful in school as well as in college for daily attendance. Through this system, we can keep a systematic track of student's attendance. This project enables the easy way of maintaining class attendance with fewer efforts.

Description:

- Class teachers can easily mark students' attendance by using an android application.
- The system also generates a brief report of attendance from the database according to subject-wise or date-wise as required.
- A defaulter list can be generated through a system.
- Admin has the option to generate the reports and defaulter list.

Hence, this project introduces a manageable and systematic approach of maintaining attendance records.

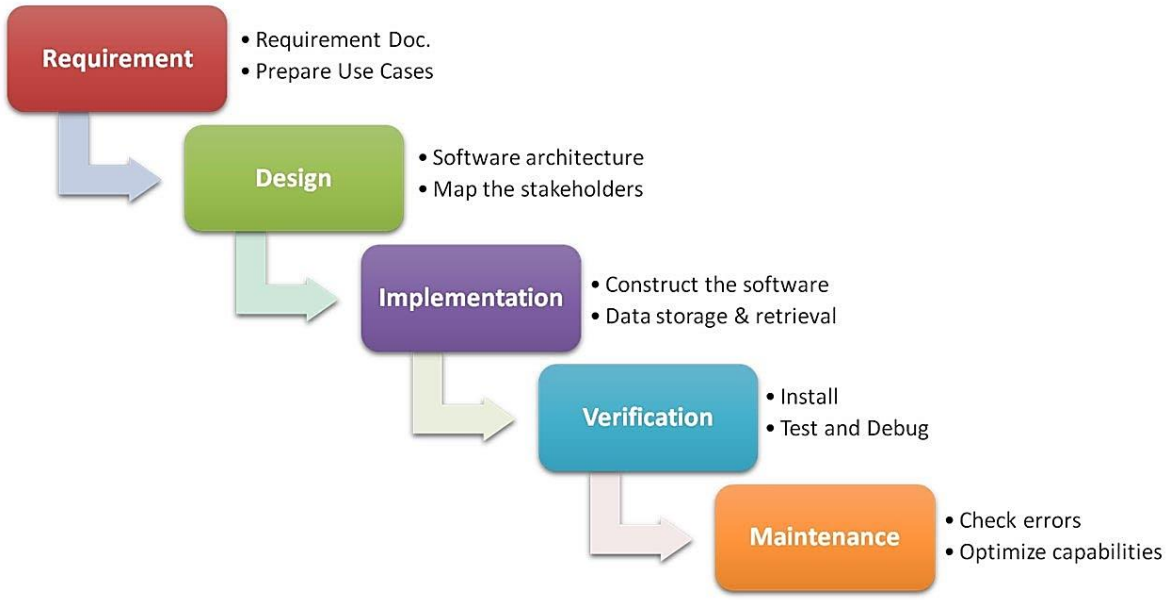
Modules and their Description

This system is having 3 major modules with their sub-modules:

1. **Admin Login:** Need to enter login credentials into the web interface by the admin or the authorized person.
    - **Add/View Course:** Can add a new course into the system and also can view it.
    - **Add/View Subject:** Can add a new subject to the equivalent course into the system and also can view it.
    - **Add/View Student:** Can register new student details into the system and also can view it.
    - **Defaulters Report:** System allows admin to generate student defaulters list.
2. **Teacher Login:** Here, teachers need to enter the login credentials into an android app in order to mark the attendance.
    - **Generate OTP:** Teacher will generate an OTP which will be visible for 30 seconds.
    - **View Attendance:** Teacher will be able to view student attendance with preloaded four options as Present, Absent, Late or Sick.
3. **Student Login:** Here, both Parent as well as student can login using the student roll no. or with an email id.
    - **Mark Attendance:** Once OTP is generated by the teacher, students can input the OTP in their application to get their attendance marked.
    - **View Attendance:** Here, students can view their own attendance.

Project Lifecycle Details

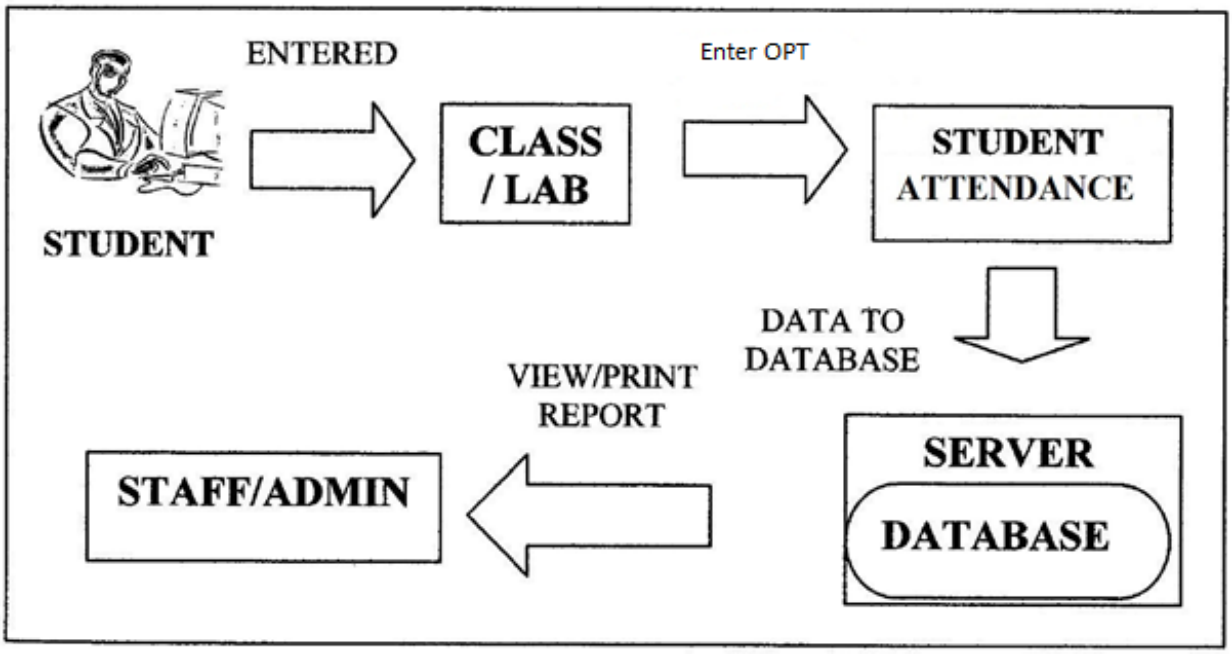
Waterfall Model



Description

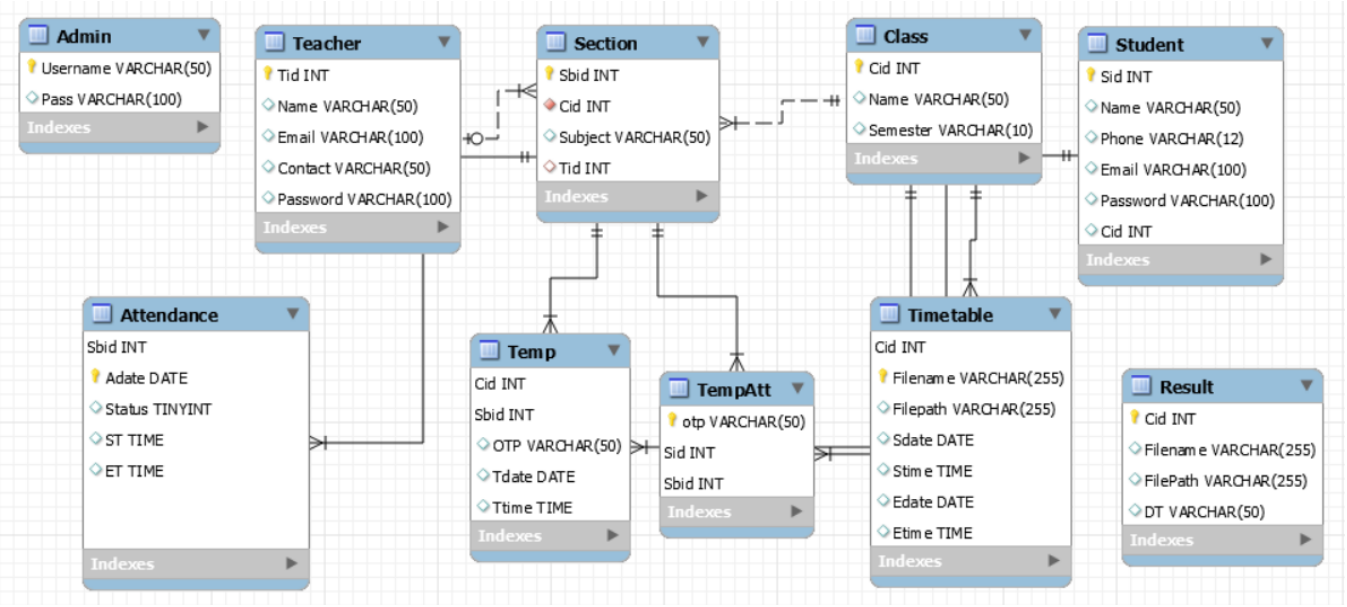
The waterfall Model is a linear sequential flow. In which progress is seen as flowing steadily downwards (like a waterfall) through the phases of software implementation. This means that any phase in the development process begins only if the previous phase is complete. The waterfall approach does not define the process to go back to the previous phase to handle changes in requirement. The waterfall approach is the earliest approach that was used for software development.

System Flowchart

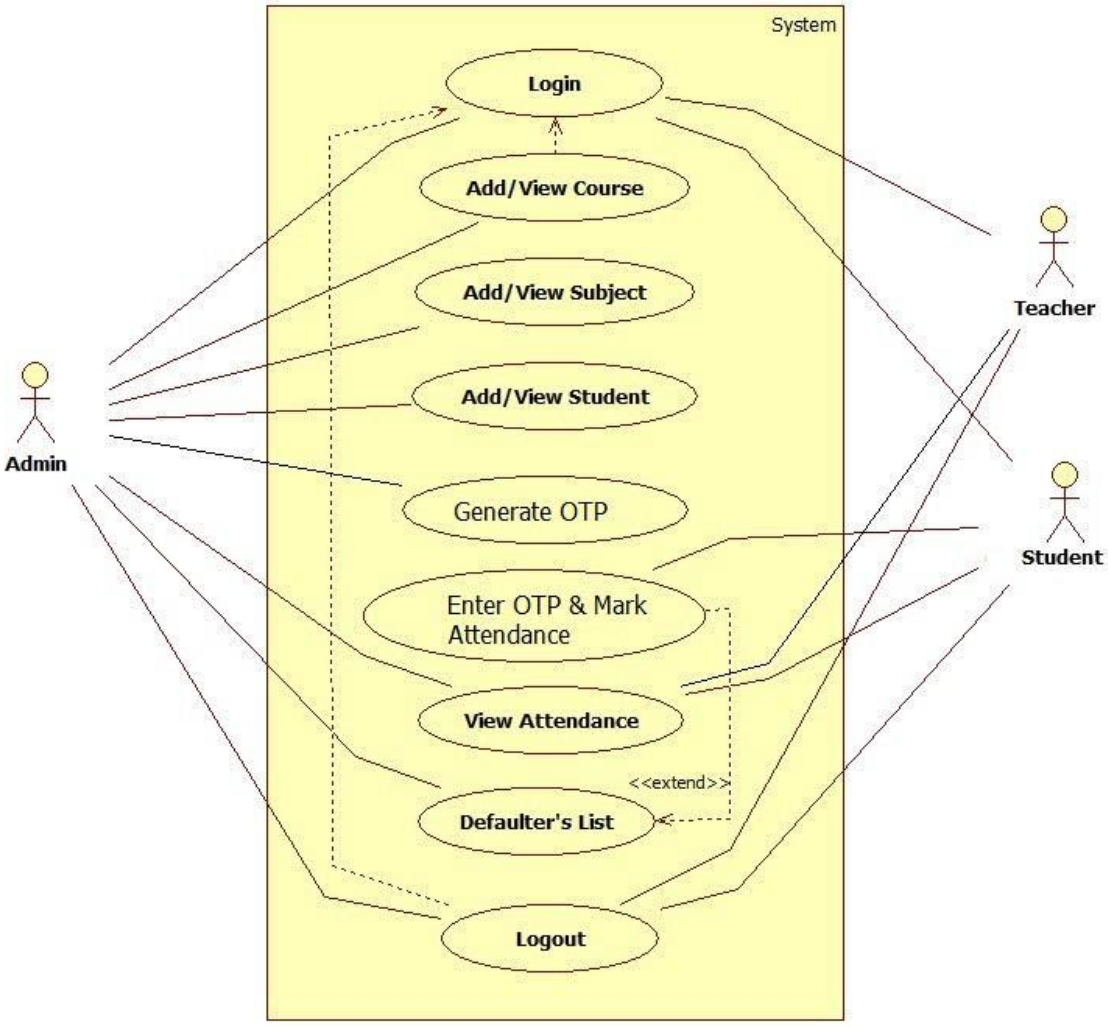


PROJECT DESIGN

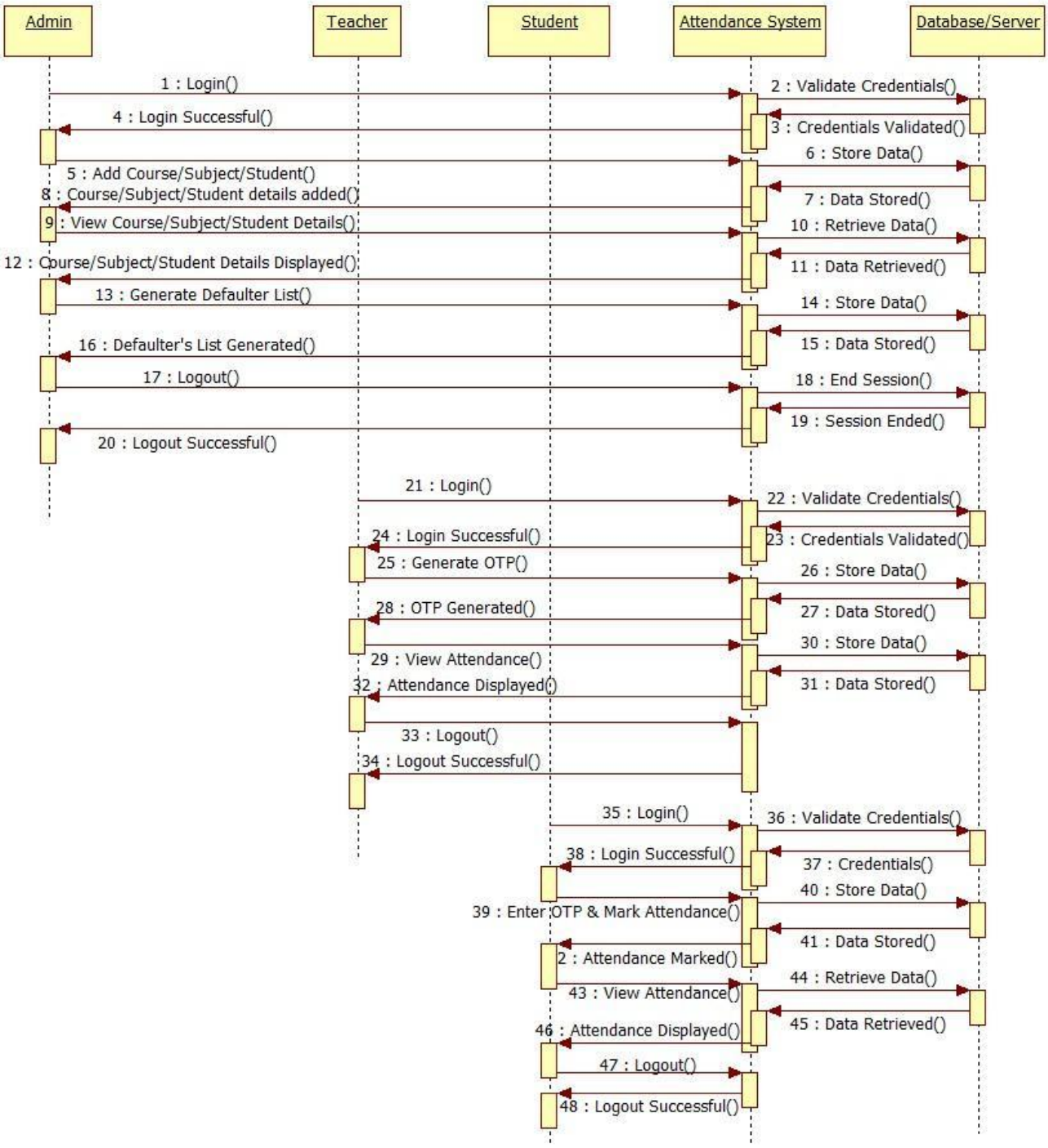
E-R Diagram



Use Case Diagram



Sequence Diagram



Activity Diagram

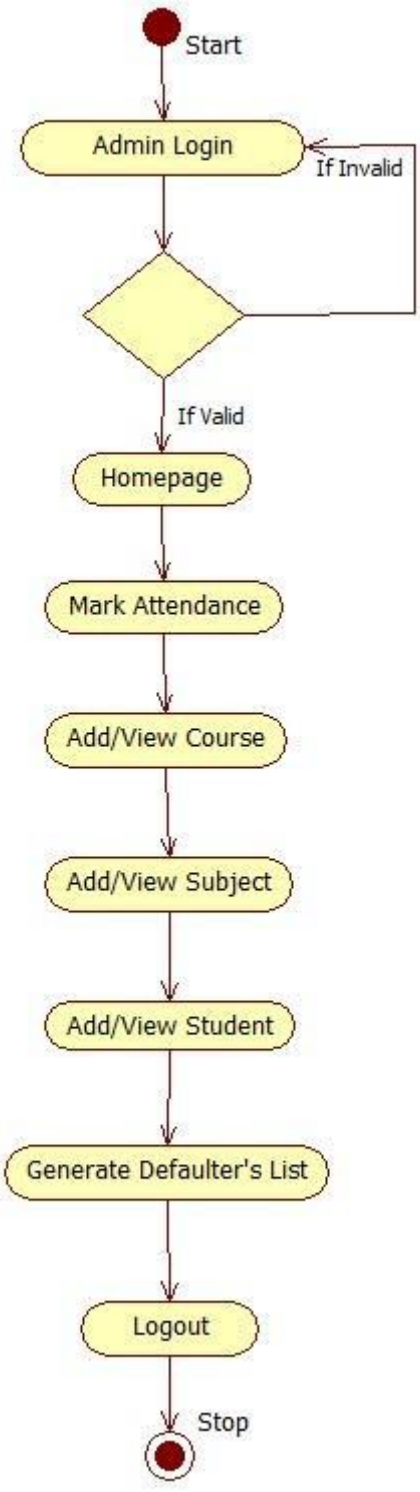


Fig. Activity Diagram of Admin

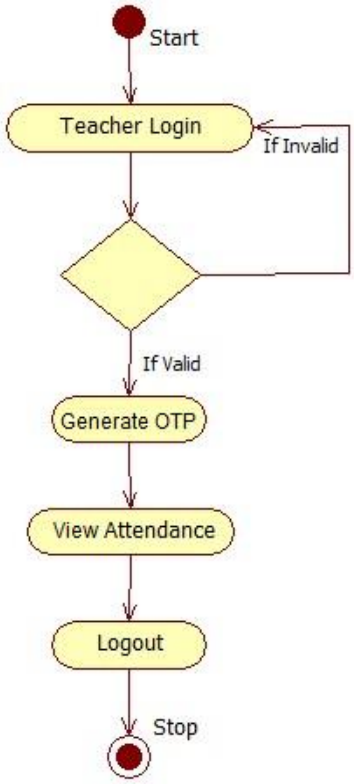


Fig. Activity Diagram of Teacher

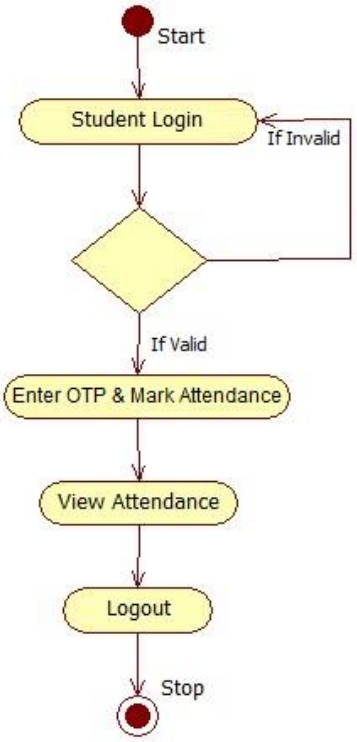
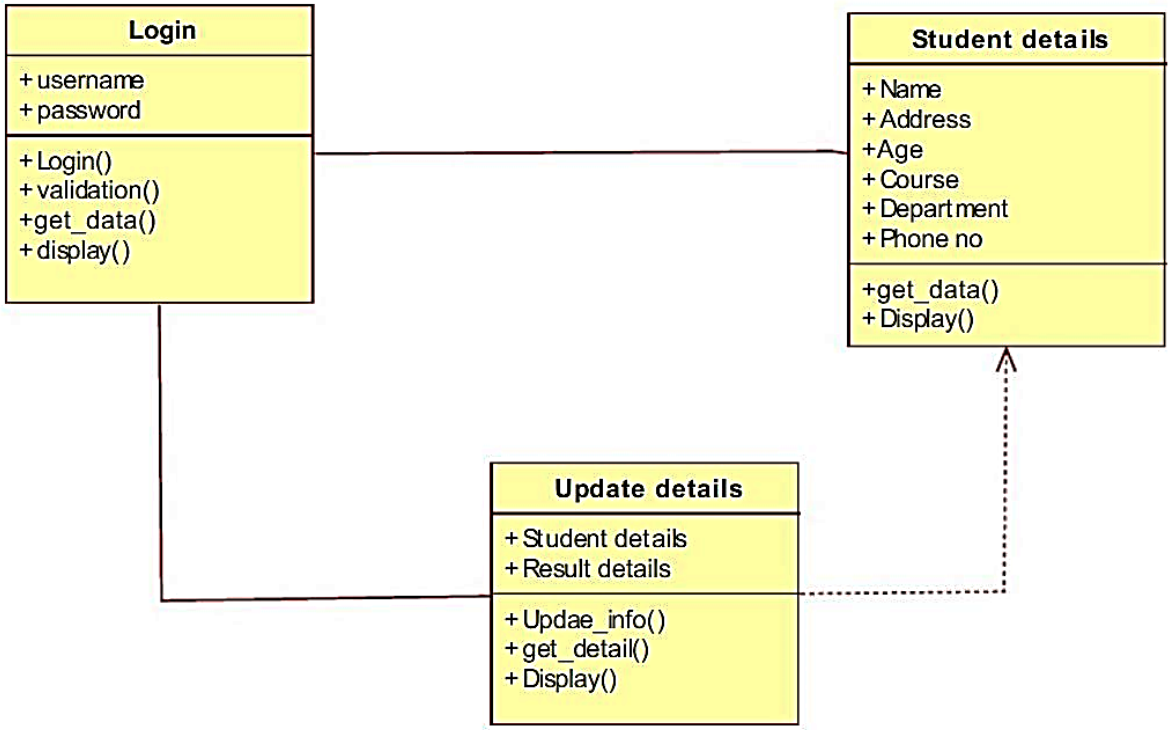


Fig. Activity Diagram of Student

Class Diagram



PROJECT IMPLEMENTATION

Project Implementation Technology

The Project application is loaded in Android Studio. We used Android Studio for Design and coding of projects. Created and maintained all databases into My SQL, in that we create tables, write query for store data or record of projects.

❖ Hardware Requirement:

1. **Laptop or PC**
    - i3 Processor Based Computer
    - 1GB RAM
    - 5 GB Hard Disk
2. **Android Phone or Tablet**
    - 1.2 Quad core Processor or higher.
    - 1 GB RAM

❖ Software Requirement:

1. **Laptop or PC**
    - Windows 7 or higher.
    - Java
    - Android Studio
2. **Android Phone or Tablet**
    - Android v5.0 or Higher

OVERVIEW OF TECHNOLOGIES USED

- Android Studio
- Microsoft .NET Framework
- Active Data Objects.Net
- Microsoft SQL Server

❖ Technical Feasibility

In this step, we verify whether the proposed systems are technically feasible or not. i.e., all the technologies required to develop the system are available readily or not.

Technical Feasibility determines whether the organization has the technology and skills necessary to carry out the project and how this should be obtained. The system can be feasible because of the following grounds:

- All necessary technology exists to develop the system.
- This system is too flexible and it can be expanded further.
- This system can give guarantees of accuracy, ease of use, reliability and data security.
- This system can give instant responses to inquire.

Our project is technically feasible because all the technology needed for our project is readily available.

Operating System	**:**	Windows 7 or higher
Languages	**:**	Java and ASP .Net with C#
Database	**:**	SQL Server 2008
Documentation Tool	**:**	MS - Word 2018

TESTING

As the project is on a big scale, we always need testing to make it successful. If each component works properly in all respects and gives desired output for all kinds of inputs then the project is said to be successful. So the conclusion is-to make the project successful, it needs to be tested.

The testing done here was System Testing checking whether the user requirements were satisfied. The code for the new system has been written completely using Java and ASP .Net with C# as the coding language & Android Development Toolkit (ADT) and Visual Studio as the interface for front-end designing. The new system has been tested well with the help of the users and all the applications have been verified from every nook and corner of the user.

Although some applications were found to be erroneous these applications have been corrected before being implemented. The flow of the forms has been found to be very much in accordance with the actual flow of data.

ADVANTAGES OF PROJECT

Advantages of the proposed project: -

- It excludes the use of paper work and human efforts.
- The system is helpful as it generates a systematic overall report of every class attendance.
- The system helps the faculty to easily find out defaulters in a single click.
- It maintains the records in a large database instead of the conventional method of maintaining a register which further simplifies the process of searching for a particular record.
- Users may easily get the attendance history of a particular student.
- The system introduces a manageable and systematic approach of maintaining attendance records.
- It saves user time, cost and institute resources.

Disadvantages:

- The only disadvantage is that every teacher requires an android phone to access the system.
- There should also be a Wi-Fi or internet connection available in every class.

Applications:

- The system can be used for schools, colleges, or universities for taking attendance.
- The system can be used during parents meetings to show parents about their children's attendance performance.
- It can also be implemented in organizations for attendance.

Project Benefits:

1) Load Balancing:

Since the system will be available only the admin logs in the amount of load on the server will be limited to the time period of admin access.

2) Easy Accessibility:

Records can be easily accessed and store other information respectively.

3) User Friendly:

The system will be giving a very user friendly approach for all users.

4) Efficient and reliable:

Maintaining the all secured database on the server which will be accessible according to the user requirement without any maintenance cost will be very efficient as compared to storing all the customer data on the spreadsheet or physically in the record books.

5) Easy maintenance:

The Android Attendance system is designed in an easy way. So maintenance is also easy.

CONCLUSION

This Android Attendance System replaces the manual system that does transformation of information that can be delivered without a hitch. This system will ease school/college to monitor the student. The system can reduce manpower. Although there are different methods of tracking students, our system is very easy to handle and very convenient for college/university level. This system gives time saving, easy control and reliability.