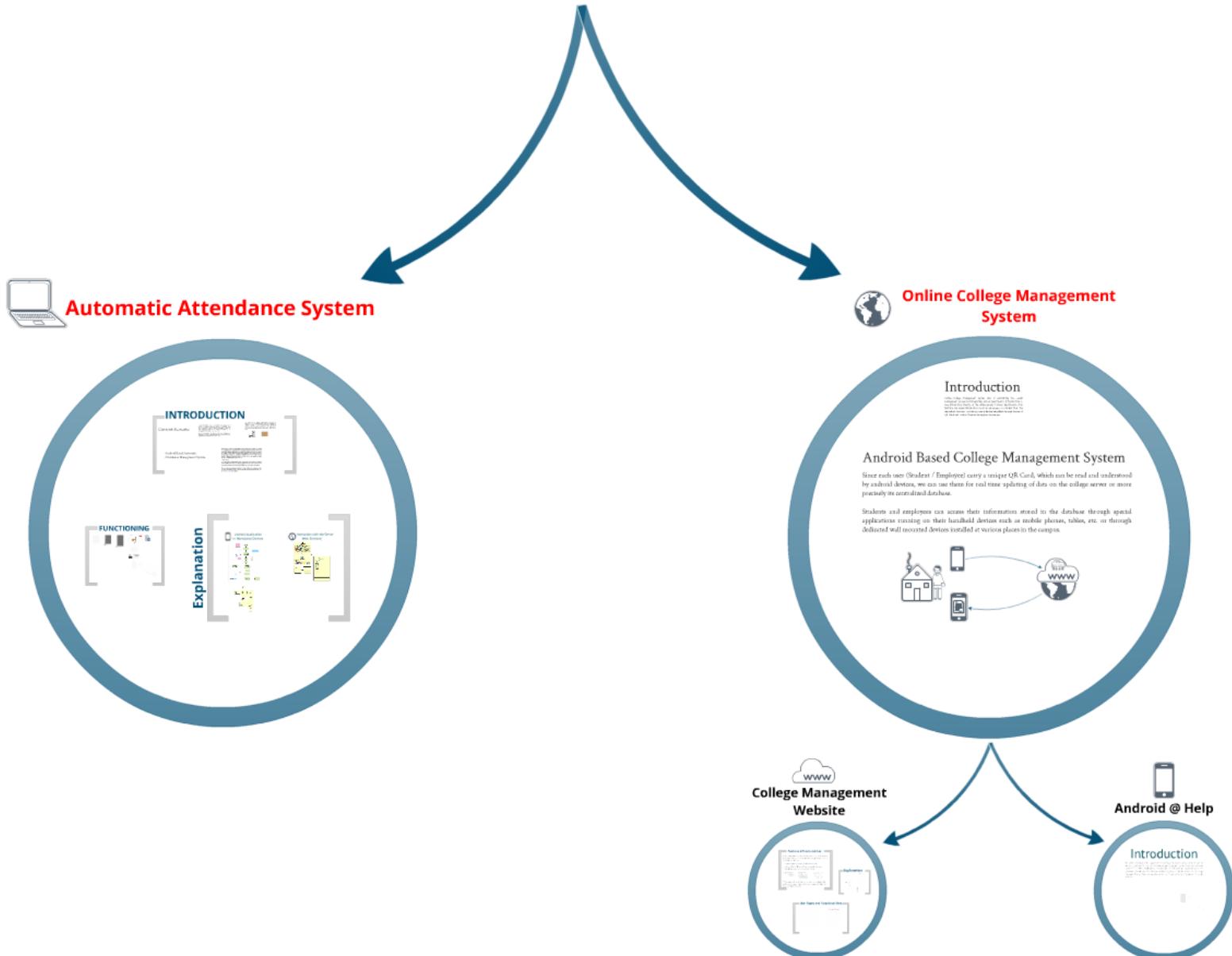
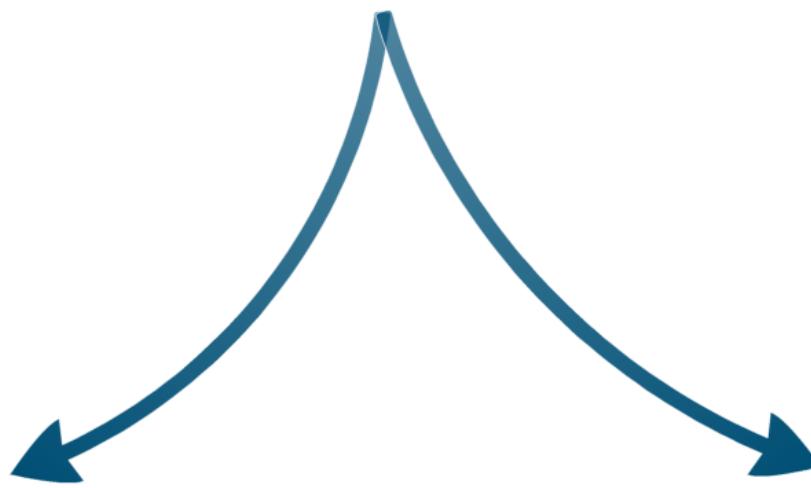


QR Code based Automatic Attendance & Online College Management System - Android + J2EE



QR Code based Automatic Attendance & Online College Management System - Android + J2EE



Automatic Attendance System



Online College Management System

Objective

Objective of the project is to improve the existing college management system and to implement certain advanced smart devices like android based handheld devices and wall mount devices, thus creating an easy and faster way of data updating and deliverance whenever required.

The project aims at providing online management options related to routine work in colleges and other such institutions where different departments are to work in an integrated manner. Different departments can be integrated together to work on centralized database and thus keep the user data updated and provide real time results.

Through the use of smart imaging devices in classrooms, attendance can be automatically fed to the servers and thus not only reduce the use of pen and paper to the minimum possible but also to avoid time delay and human errors in the process.

Tools & Technologies Used

tion Server

Tools & Technologies Used

TECHNOLOGIES

J2EE - Jsp / Servlets / Java Mail API

Android

HTML / CSS

JQuery / JavaScript

AJAX

TOOLS

Eclipse IDE - Indigo

IBM DB2

Web Sphere Application Server

Perspective Users

Administrators

Administrators are referred to as the decision makers, and senior management of the institute like Director, Head of Departments.

The online college management system provides the following functionalities to the Admins –

- i.) To register new employee/student and providing them unique IDs along with QR Cards.
- ii.) To access his online profile
- iii.) To generate request for update or modification in profile
- iv.) To serve update requests from students / employees including teachers and professors.
- v.) To delete old employees and students from database
- vi.) To keep track of various accounting information of students and employees.
- vii.) To review his salary details
- viii.) To update changes in payroll, holidays, timetables, etc.
- xi.) To generate general notifications/ updates for the college
- x.) To generate reports and emails for faculty, students or parents.



Professors / Teachers

Professors and Teachers have the duty to teach students of various classes of the institute. They are generally masters of one or two subjects and thus handle one particular subject for a class.

Apart from basic teaching and class management, Teachers / Professors are allowed –

- i.) To access his/ her online profile
- ii.) To generate queries and update requests.
- iii.) To keep record of various students of his / her classes.
- iv.) To keep record of attendance and marks of his/ her class.
- v.) To schedule periodic tests and update marks of all students on the college website.
- vi.) To have communication with parents in case of a student's less attendance or poor performance, etc.
- vii.) To generate important notifications for his/ her classes or a particular student.
- viii.) To view latest updates and notifications created by Admins.



Students

Students of various classes are allowed to –

- i.) Access their online profiles
- ii.) To view their fee details, attendance reports, marks, etc.
- iii.) To create request for update or change in their profile info
- iv.) To view latest notifications and updates from teachers / Admins, etc.
- v.) To create online queries and send them to intended teacher / professor / admin.
- vi.) To print their reports

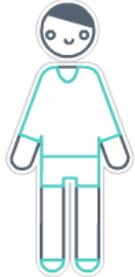


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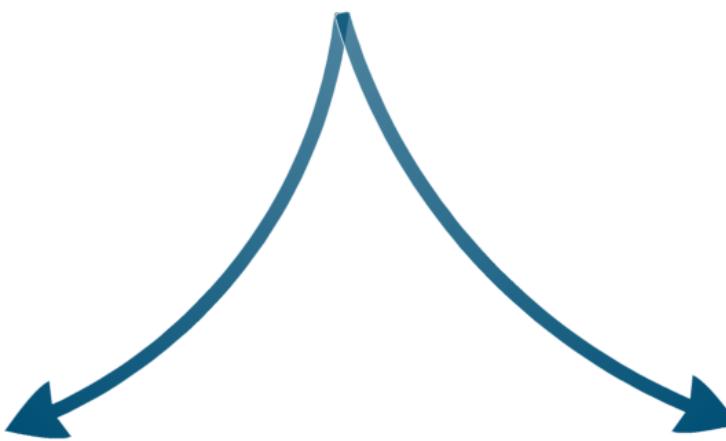
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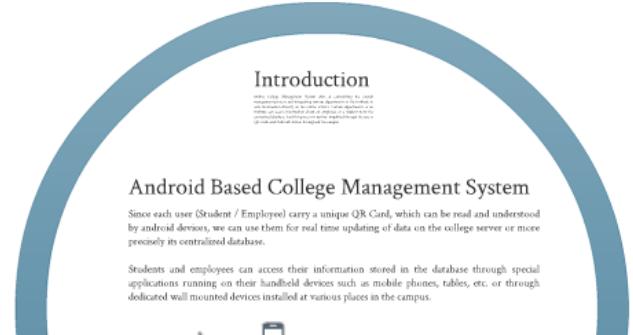
QR Code based Automatic Attendance & Online College Management System - Android + J2EE



Automatic Attendance System



Online College Management System





Automatic Attendance System



INTRODUCTION

Current Scenario
Android Based Automatic Attendance Management System

FUNCTIONING

Explanation





Online College Management System

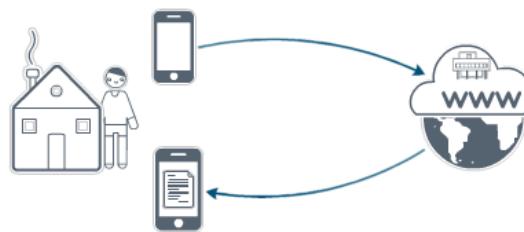
Introduction

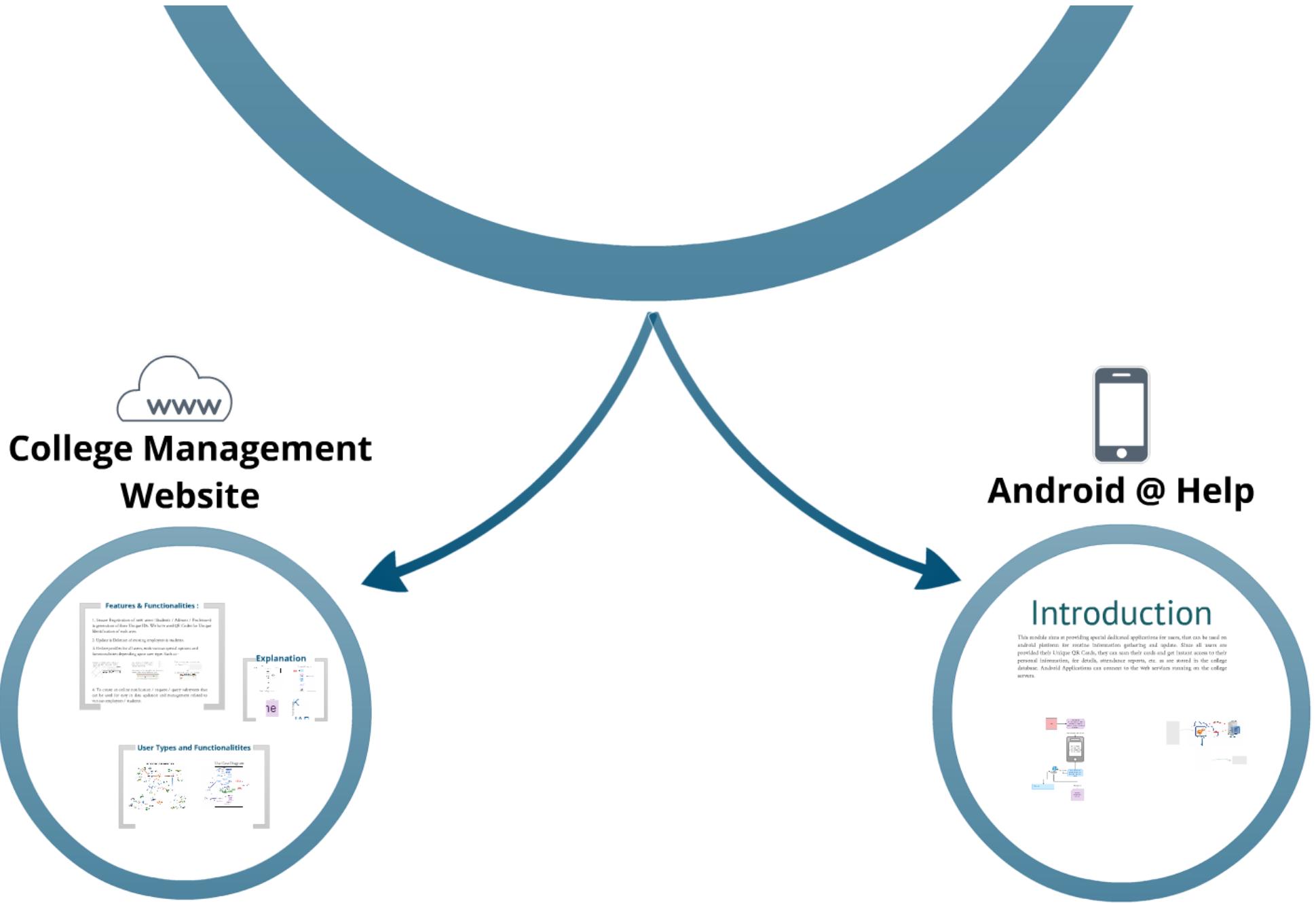
Online College Management System aims at managing the overall management process and integrating various departments of the Institute to store information directly on the central servers. Various departments of an Institute can access information about an employee or a student from the centralized database. And this process is further simplified through the use of QR Cards and Android Device throughout the campus.

Android Based College Management System

Since each user (Student / Employee) carry a unique QR Card, which can be read and understood by android devices, we can use them for real time updating of data on the college server or more precisely its centralized database.

Students and employees can access their information stored in the database through special applications running on their handheld devices such as mobile phones, tables, etc. or through dedicated wall mounted devices installed at various places in the campus.





INTRODUCTION

Current Scenario

Android Based Automatic Attendance Management System

Today, students undergo a tedious task in taking paper based attendance. This system will help in taking attendance in a more effective way. It will reduce the time taken for the process. It will also help in maintaining a record of attendance and it will be stored in a database.



FUNCTIONING



Explanation

Android Application in Attendance Devices



Interaction with the Server (Web Services)



INTRODUCTION

Current Scenario

Almost every institute, college or school in India is using pen-paper based attendance system where in students present in the class are marked present by the teachers themselves. This not only wastes paper but also consumes an ample amount of precious time too. The attendance taken from all classes are then manually feed into database over college servers.

Since most of the work is done by teachers and concerned administrators. Human made errors may easily drop in and later it takes another deal of large paper work & time to find out and correct these errors.

One of the present age solutions to this problem is to provide UID (Electronic Tags) to each student and then use RFID readers to identify each student present in the class and record their attendance automatically. Students are required to mark in their entry in the class by scanning their ID Cards and then again marking out for the final attendance being fed to the database.



Android Based Automatic Attendance Management System

Today, there is a wide range of handheld and wall mounted devices running on Android OS. Our project aims at implementing an automatic attendance system in colleges and other such institutions through the use of certain wall-mounted imaging devices running on Android OS. Each Student / Employee in the institute is also assumed to have been provided with an Unique QR Card which is intelligible to these devices. Thus instead of teachers / professors, now these devices are made to serve the purpose of taking attendance & finally updating it on the servers.

Advantage :

Smart devices like Android include various features like camera, internet connectivity, storage facility, touch screens, etc. Thus not only these devices can be used to scan tags for attendance purpose but also provide flexibility of use and various other options.

They can easily read and decode codes like QR Codes, 2d Bar Codes and thus provides a much cheaper replacement to RFID Tags and other such costly electronic cards. We have used [QR Codes](#) in our project.

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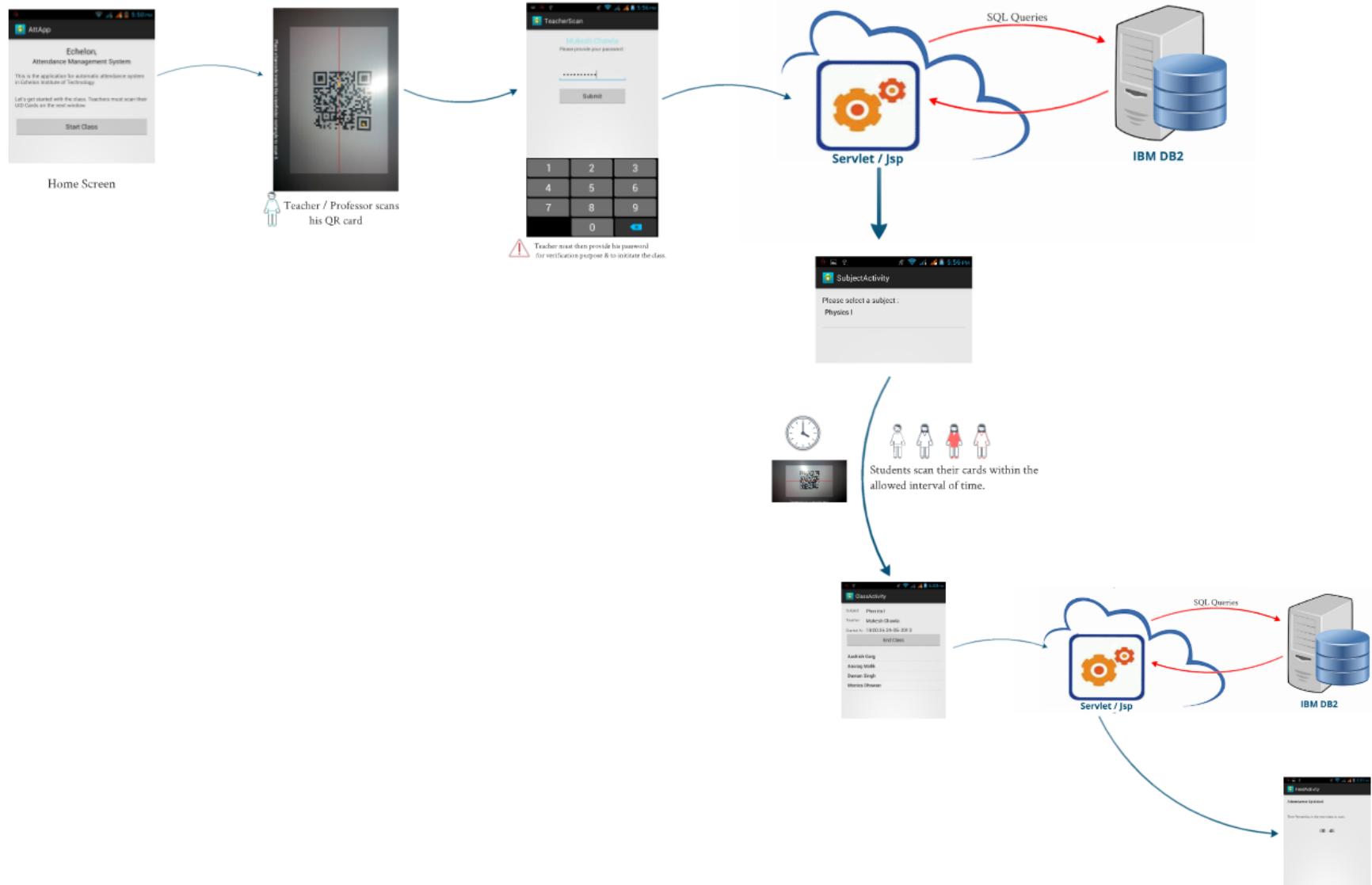
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FUNCTIONING





AttApp

Echelon, Attendance Management System

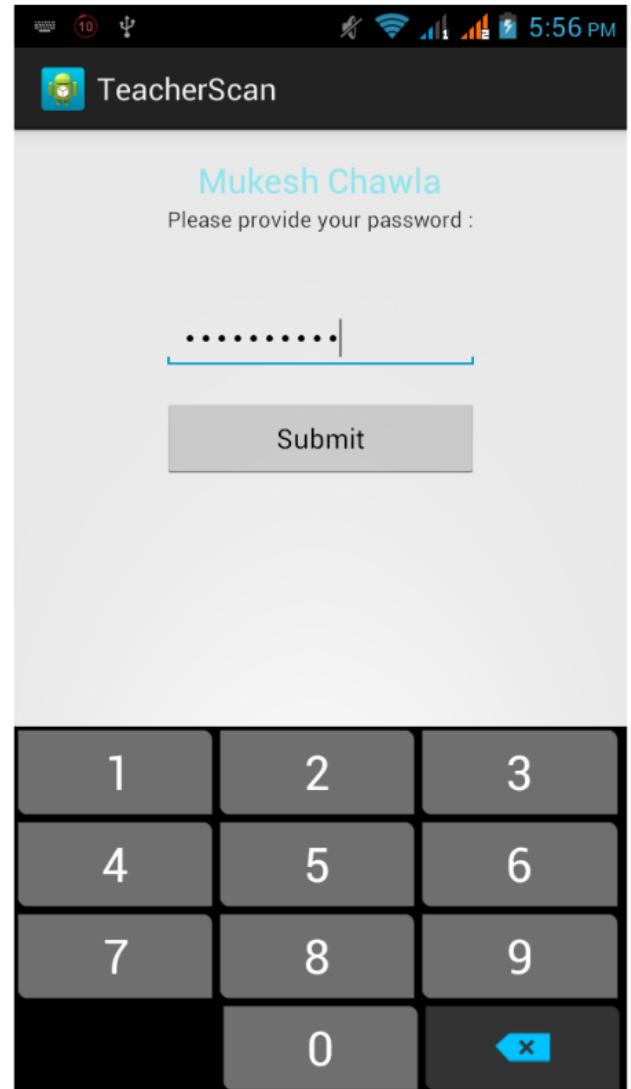
This is the application for automatic attendance system
in Echelon Institute of Technology.

Let's get started with the class. Teachers must scan their
UID Cards on the next window.

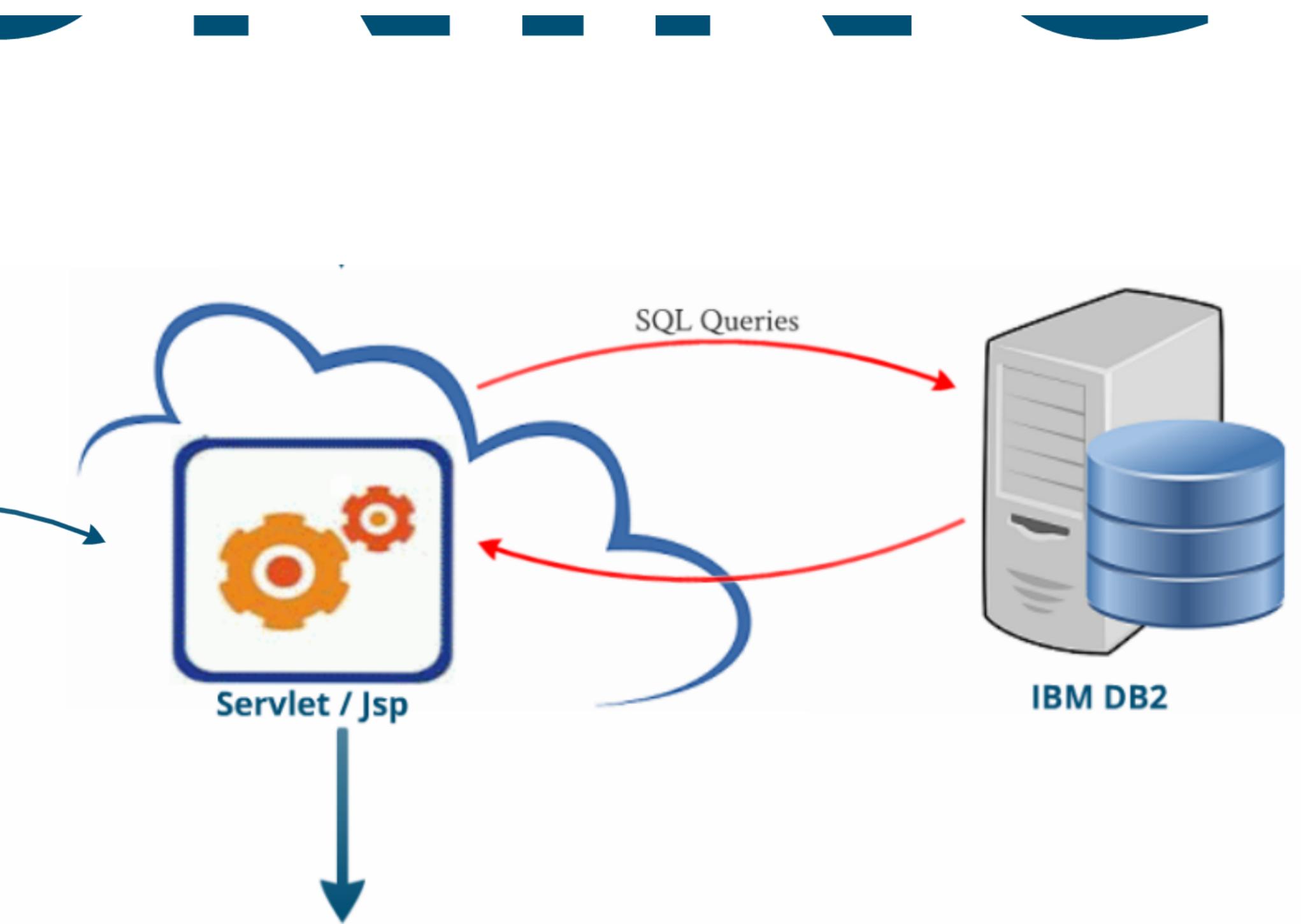
Start Class

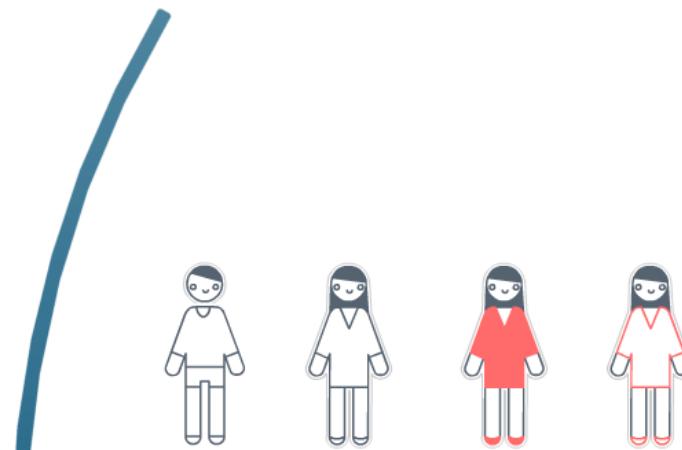
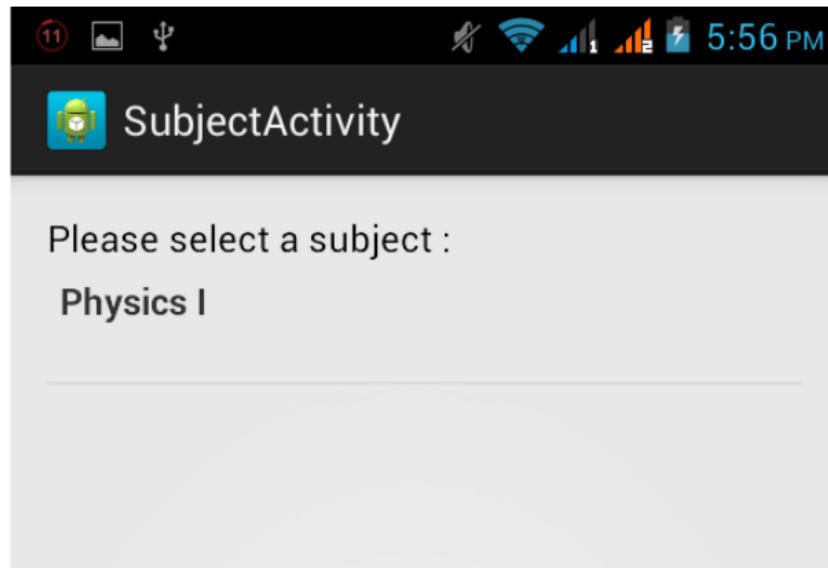


Teacher / Professor scans his QR card

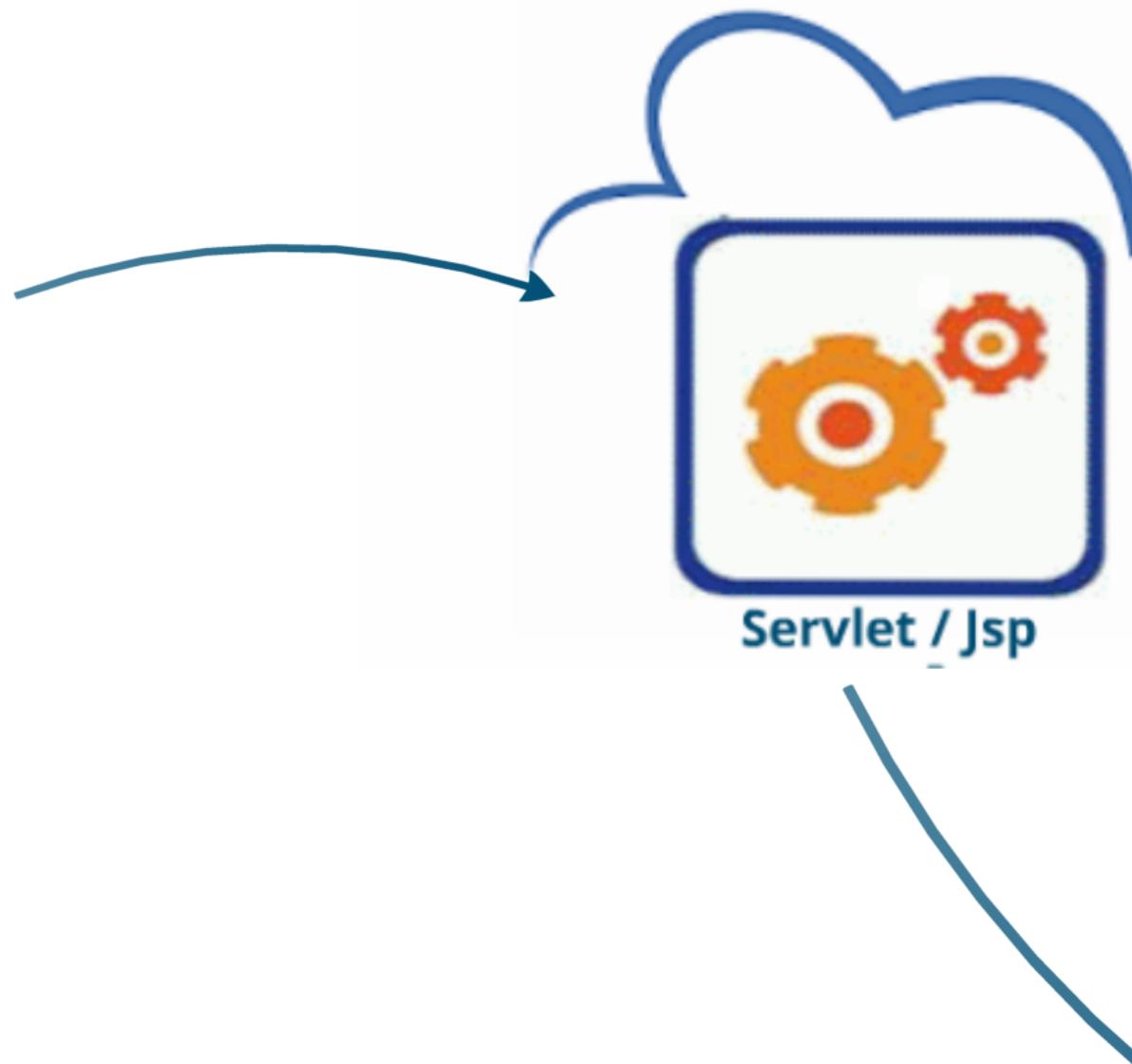
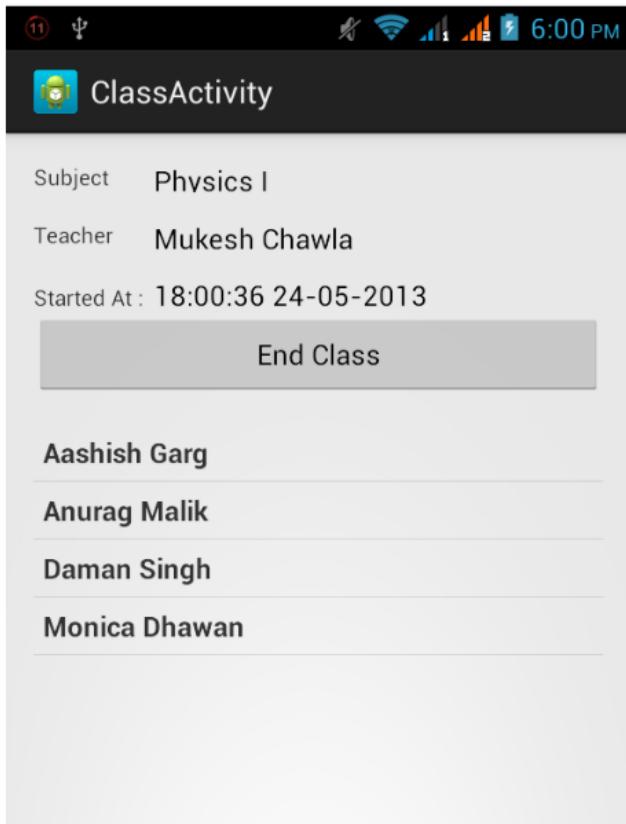


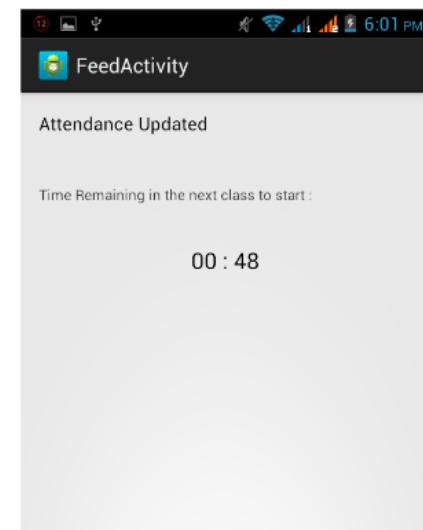
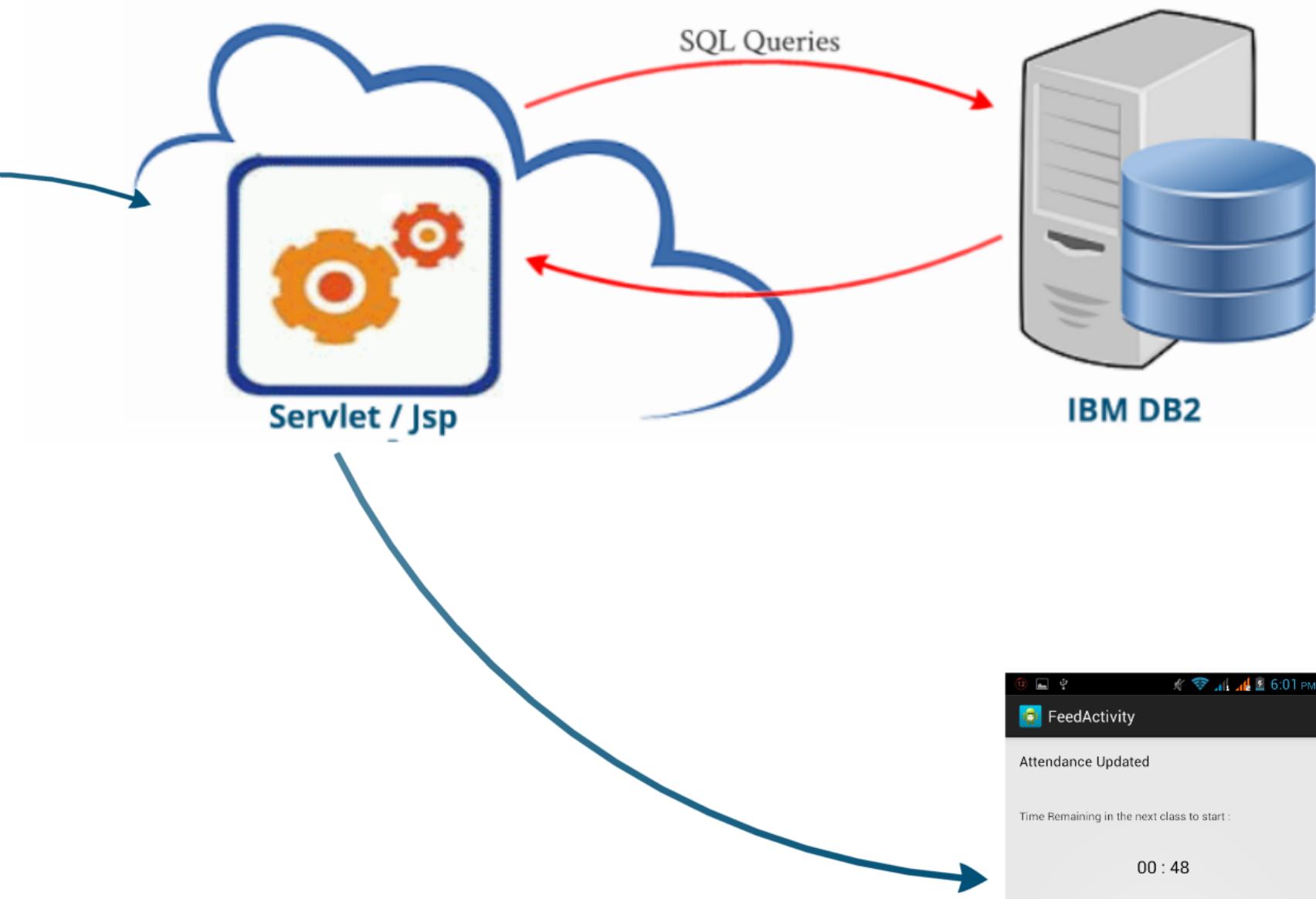
Teacher must then provide his password for verification purpose & to initiate the class.





Students scan their cards within the allowed interval of time.



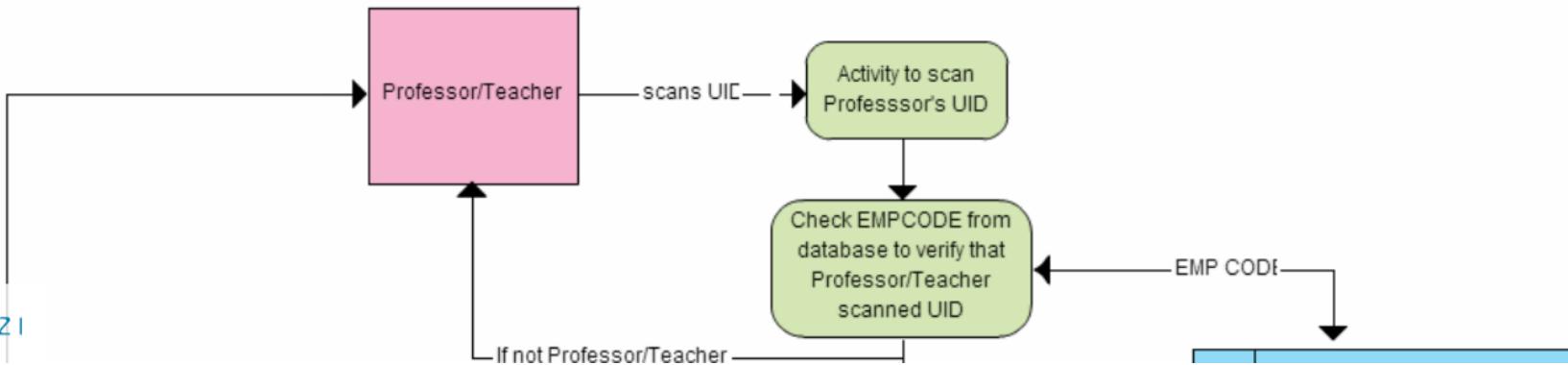


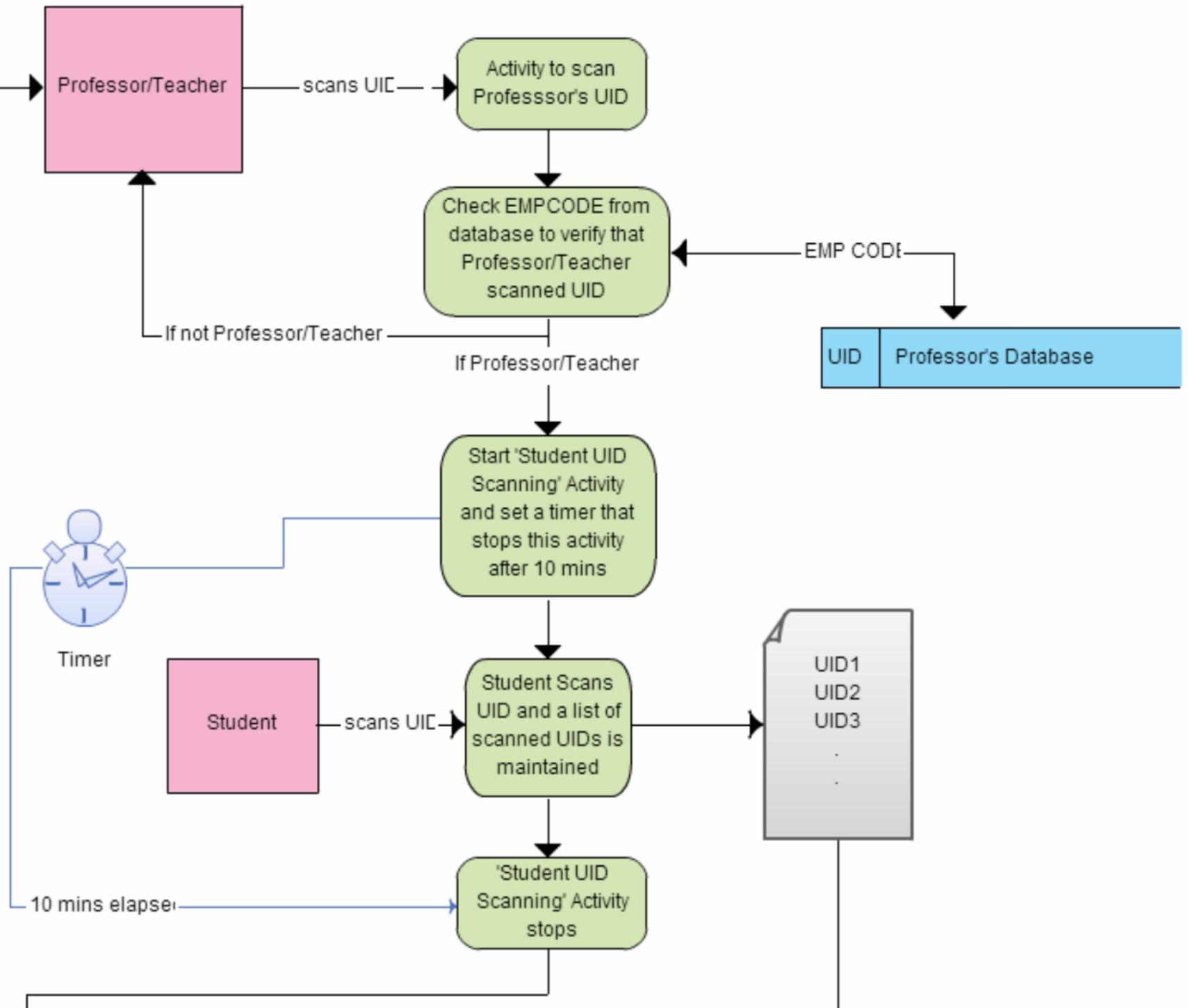
Explanation

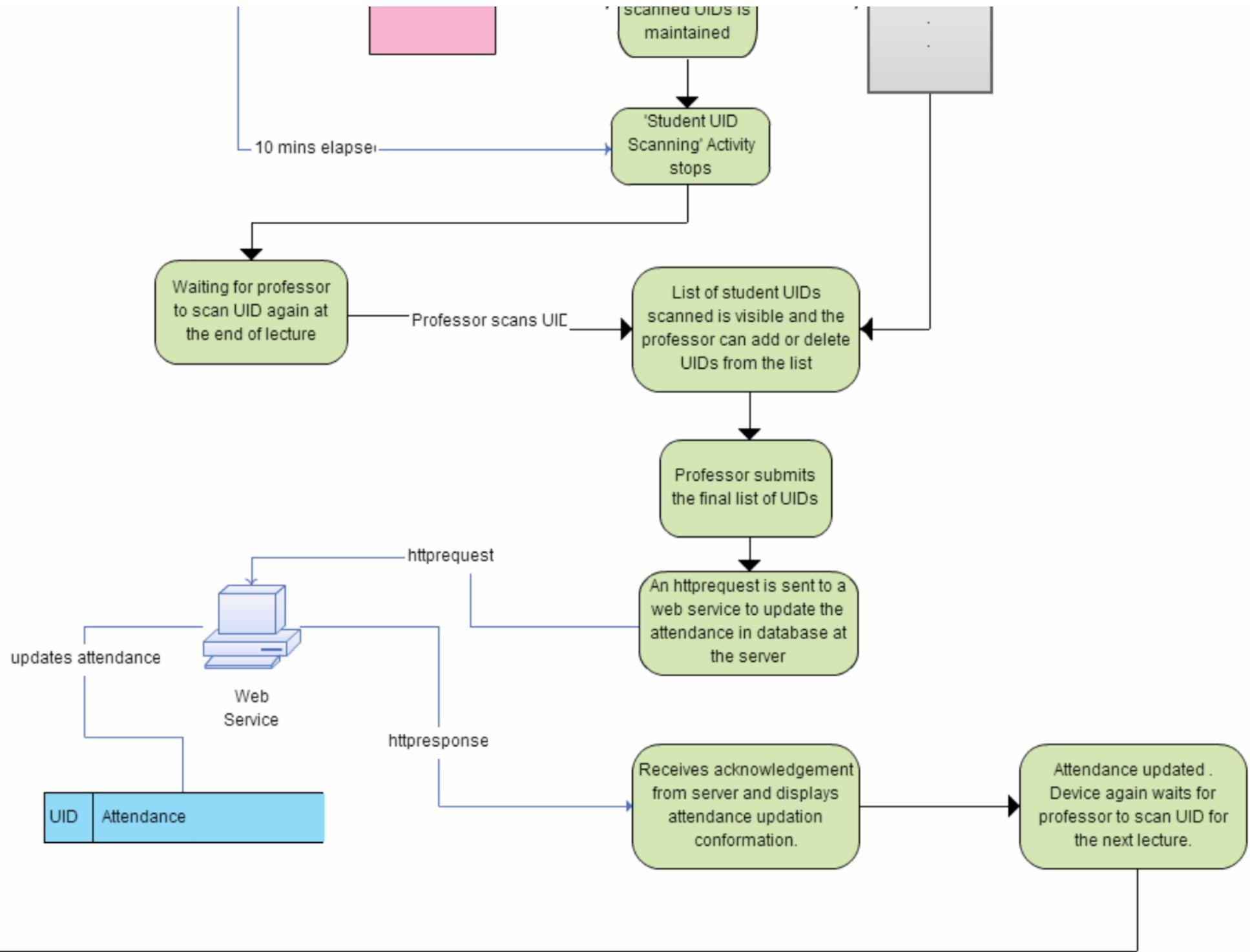


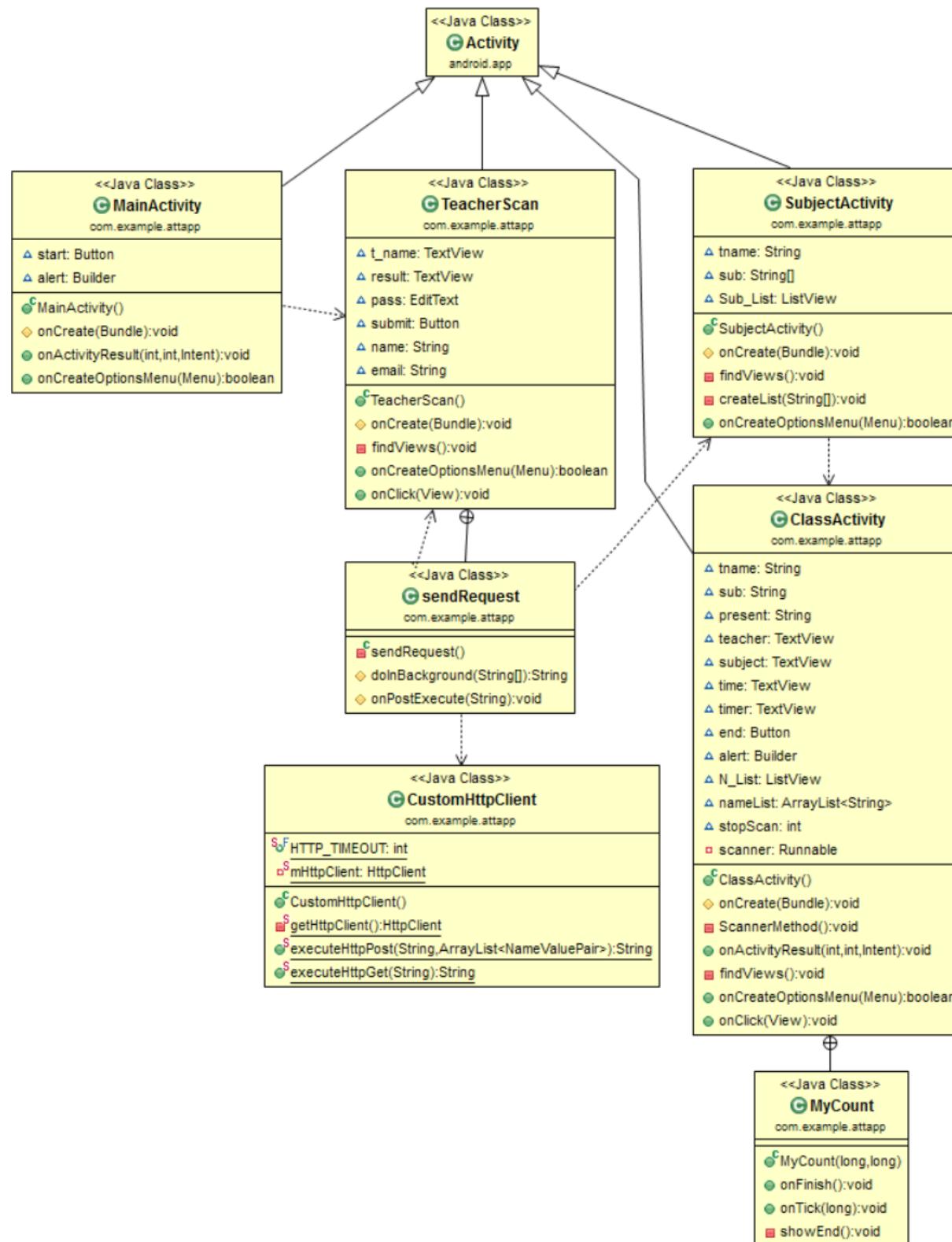


Android Application in Attendance Devices



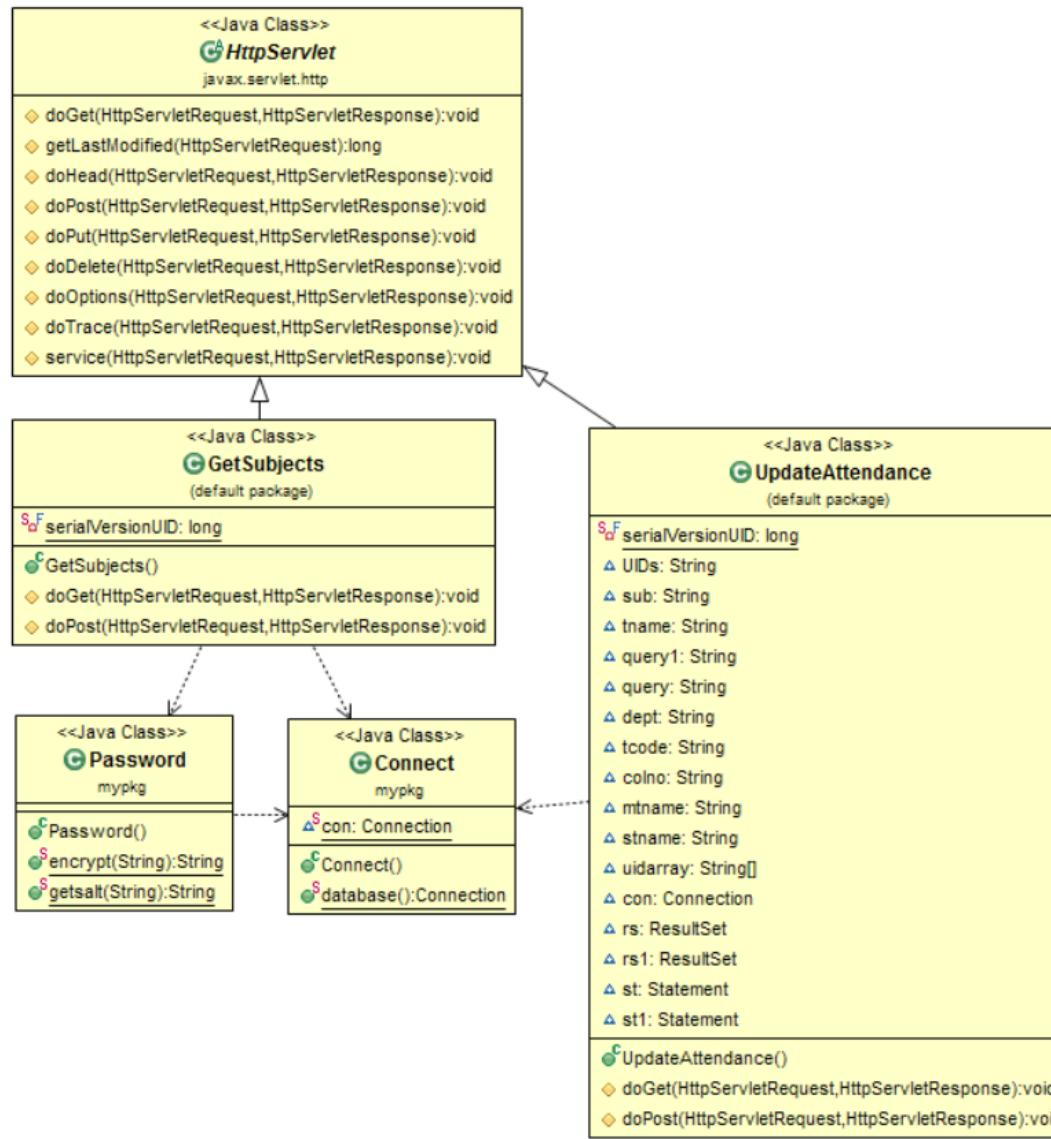








Interaction with the Server (Web Services)





Online College Management System

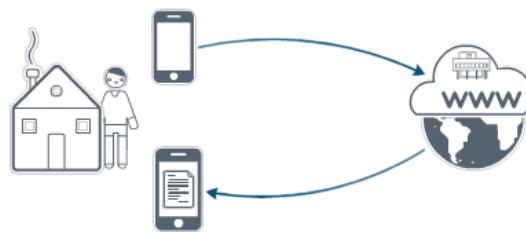
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Since each user (Student / Employee) carry a unique QR Card, which can be read and understood by android devices, we can use them for real time updating of data on the college server or more precisely its centralized database.

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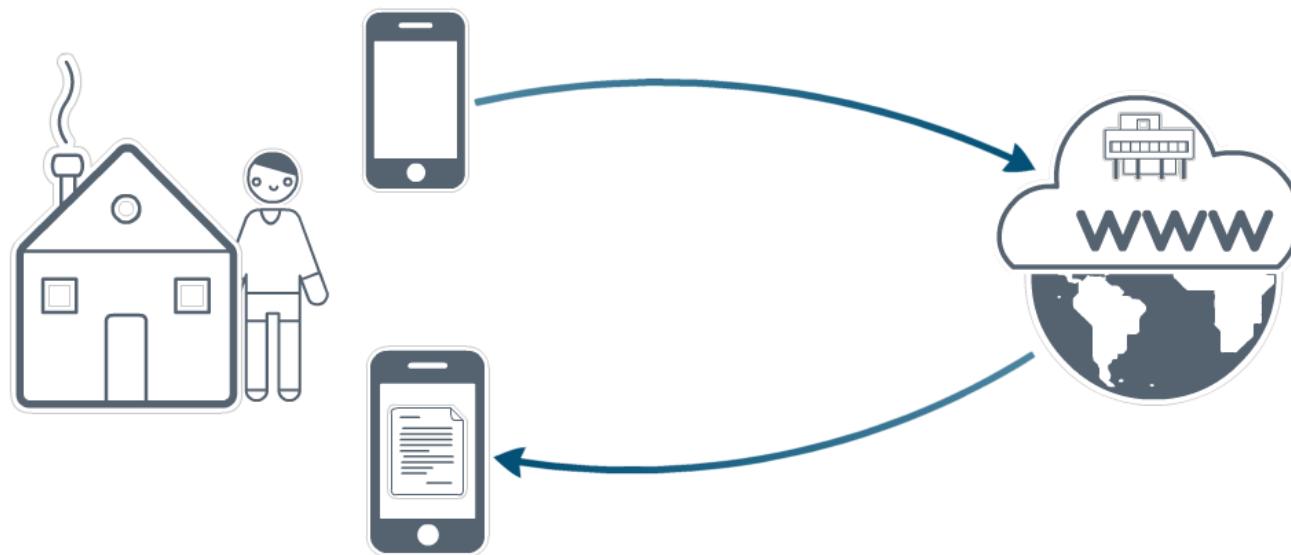
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College Management Website



Features & Functionalities :

1. Secure Registration of new users (Students / Admins / Professors) & generation of their Unique IDs. We have used QR Codes for Unique Identification of each user.
2. Update & Deletion of existing employees & students.
3. Online profiles for all users, with various special options and functionalitites depending upon user type. Such as -

Students are allowed to see their attendance reports, new tests /assignments, results & notes /links.



Administrators are allowed to create general notifications for all college or individual departments.



Administrators are also responsible for taking actions on requests and queries generated by other users.



Teachers are allowed to create new tests / assignments

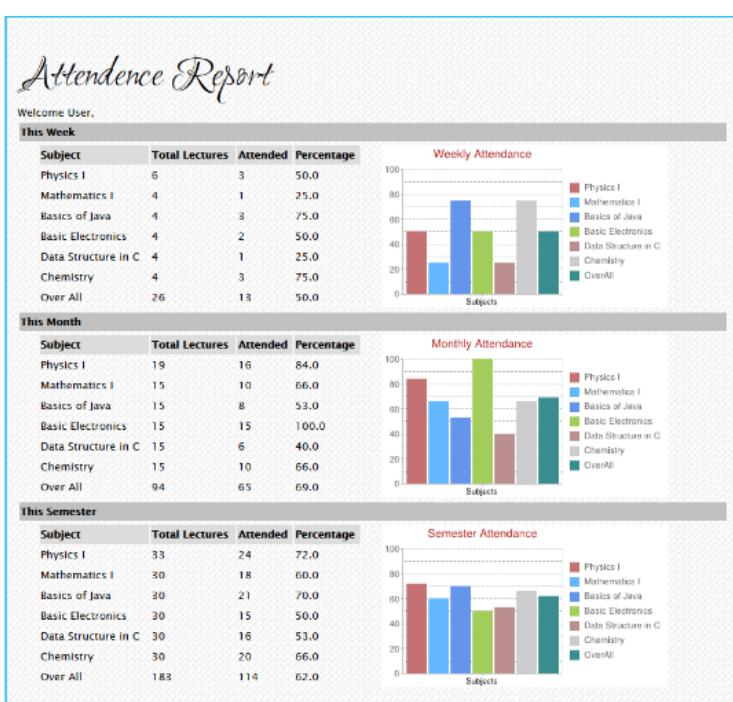


& to update results / notes / links for students.



4. To create an online notification / request / query subsystem that can be used for easy in data updation and management related to various employees / students.

Students are allowed to see their attendance reports, new tests /assignments, results & notes /links.



View Updates		View Attendance		Fee Details		Results/Notes	
Latest Results :							
Test Code	Subject	Result Status	Updated By	Last Updated On	Options		
R1001	Mathematics I	Updated	Vikas Nagpal	2013-4-8	View		
R1002	Mathematics I	Pending	-----	-----	-----		
R1003	Physics I	Updated	Mukesh Chawla	2013-4-10	View		
Latest Notes / Links :							
On Topic	Shared by	Shared At				Type	
Optics (Physics I)	Mukesh Chawla	http://www.dropbox.com?top=optics				Notes	
Differentiation (Mathematics I)	Vikas Nagpal	http://www.diffworld.com				Notes	
Electro magnetics (Physics I)	Mukesh Chawla	www.w3schools.com				Link	
Algebra (Mathematics I)	Vikas Nagpal	http://www.easyalgebra.com				Link	

Administrators are allowed to create general notifications for all college or individual departments.

Create Notification

TO : All Administrators Teachers Students

DEPARTMENT : All CSE ECE ME IT

SUBJECT*:

MESSAGE*:

Your Message Here

URGENCY :

Default

Send

Administrators are also responsible for taking actions on requests and queries generated by other users.

± Queries / Requests New						
Request Code	Sender	Details	Status	Options		
Req-1	S13-CSE-1	Change My Details	Pending	View	Accept	Reject
Req-12	S13-CSE-5	Profile Update Request	Rejected	View	Accept	Reject
Please Update following details in my profile Email - vikramsharma@gmail.com						
Req-2	S13-CSE-2	Leave Application	Accepted	View	Accept	Reject
Req-6	S13-ECE-1	Provide Fee Receipt	Accepted	View	Accept	Reject

Teachers are allowed to create new tests / assignments

The screenshot shows a user interface for managing tests and assignments. At the top, there are four buttons: 'View Updates' (white), 'Test / Assignment' (black), 'Update Results' (white), and 'Share' (white). Below these, a sub-menu titled '± New Test / Assignment' is open. It contains fields for 'CLASS' (a dropdown menu), 'TOPIC' (with a note 'Topic of the test'), 'DESCRIPTION' (with a note 'Message Body'), and 'TEST DATE' (with a note 'DD-MM-YYYY'). A 'Create Test' button is at the bottom.

&

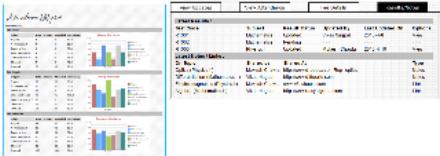
to update results / notes / links for students.

The screenshot shows a user interface for sharing notes or links. At the top, there are four buttons: 'View Updates' (white), 'Test / Assignment' (white), 'Update Results' (white), and 'Notes / Links' (black). Below these, a sub-menu titled '± Share Notes/Links' is open. It contains fields for 'CLASS' (a dropdown menu), 'Subject / Class' (a dropdown menu), 'Share' (radio buttons for 'Notes' and 'Link' - 'Link' is selected), 'TOPIC' (with a note 'Topic of the shared note / link'), 'SHARED LINK' (with a note 'document shared at this link'), and a 'Share' button. To the right of the 'SHARED LINK' field, there are icons for cloud storage services: OneDrive, Google Drive, and Box.

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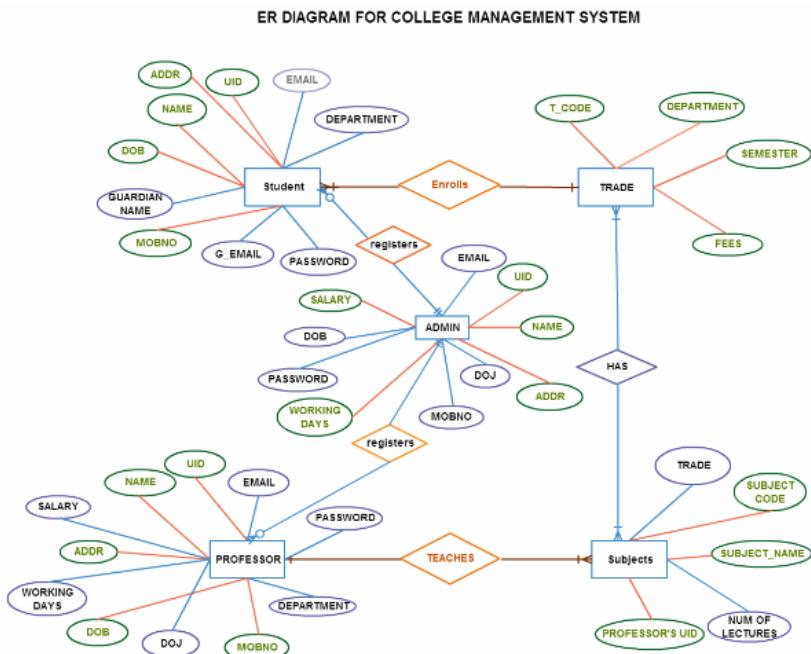


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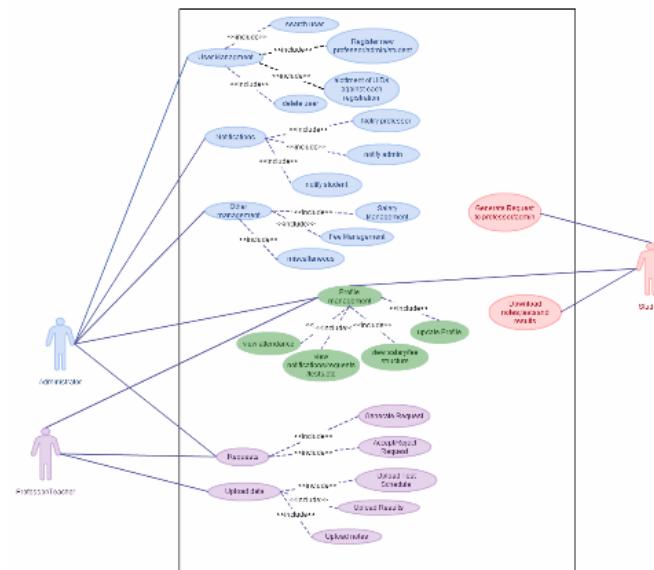


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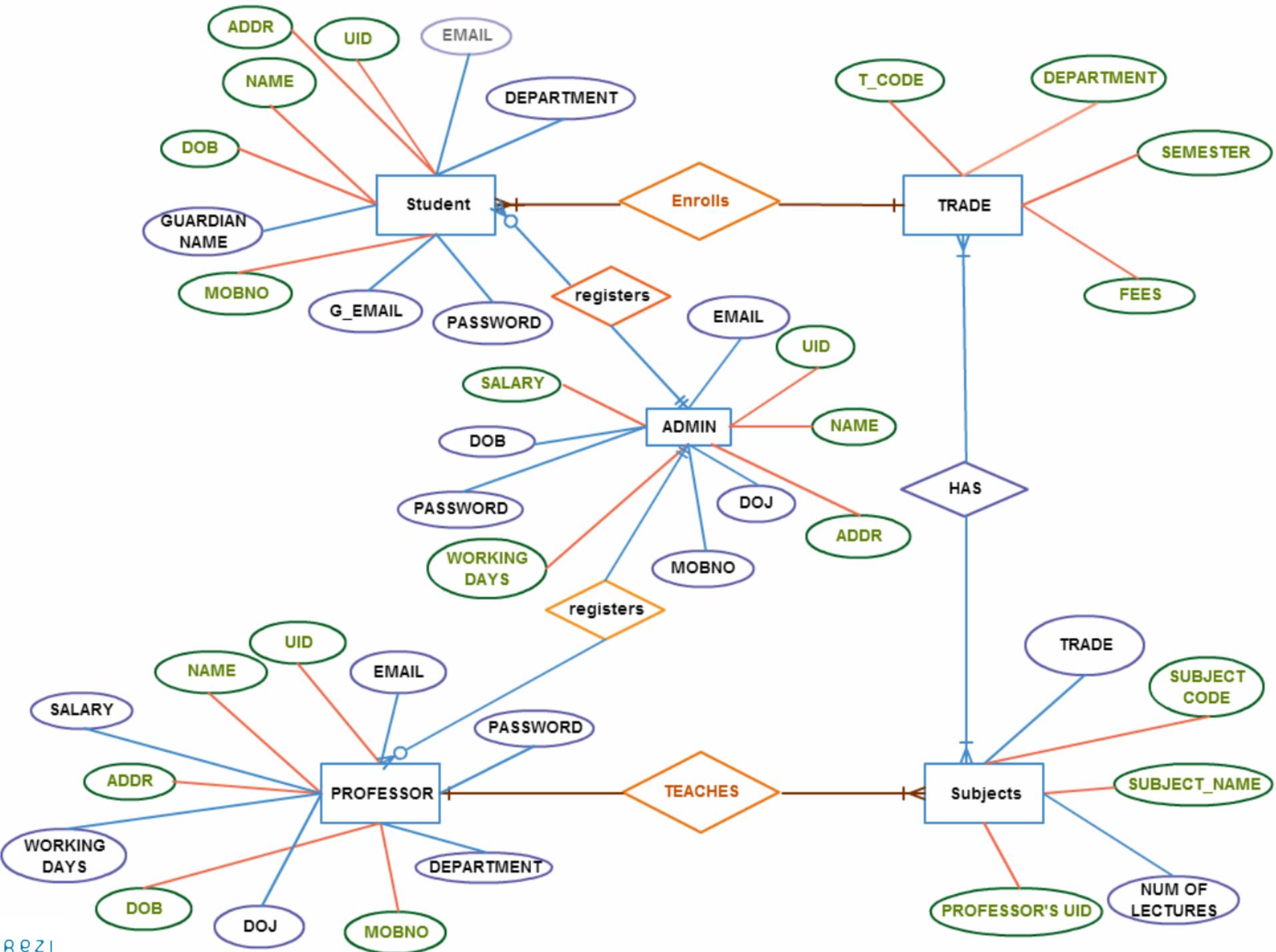
User Types and Functionalities



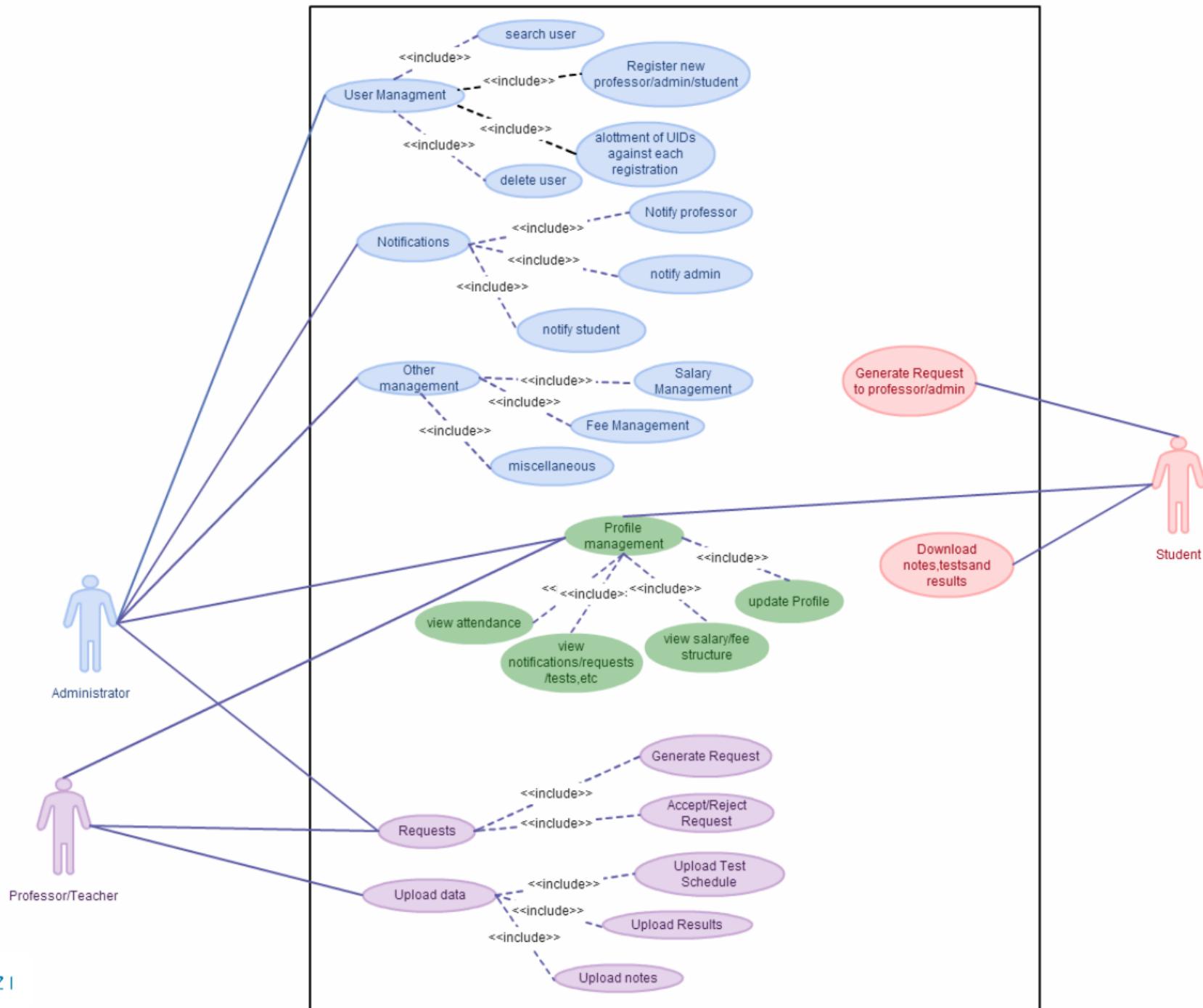
Use Case Diagram



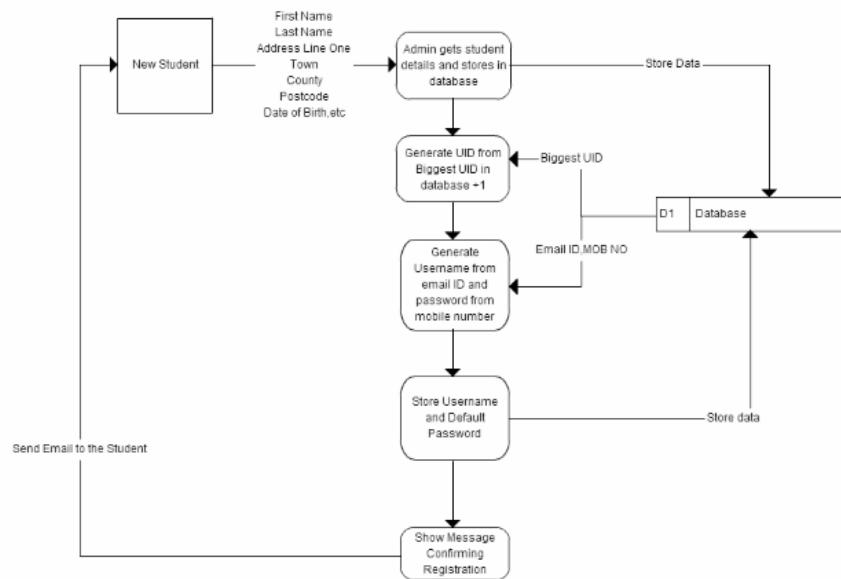
ER DIAGRAM FOR COLLEGE MANAGEMENT SYSTEM



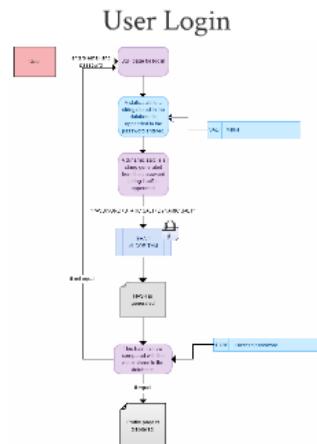
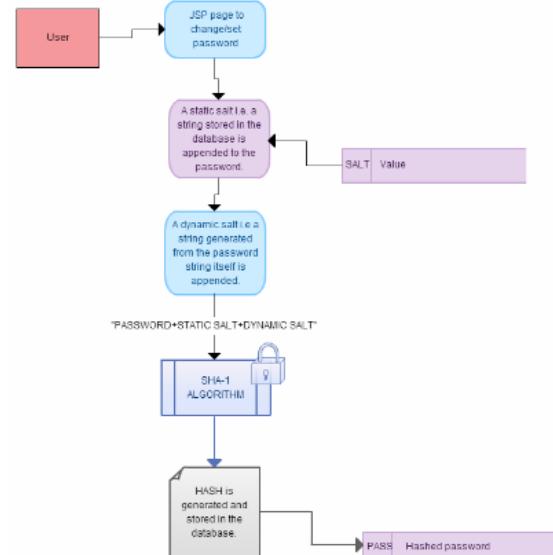
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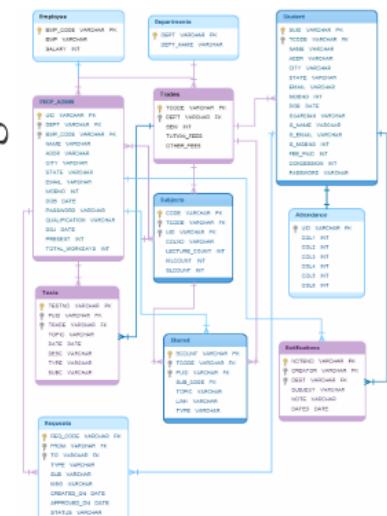
Capitaillium

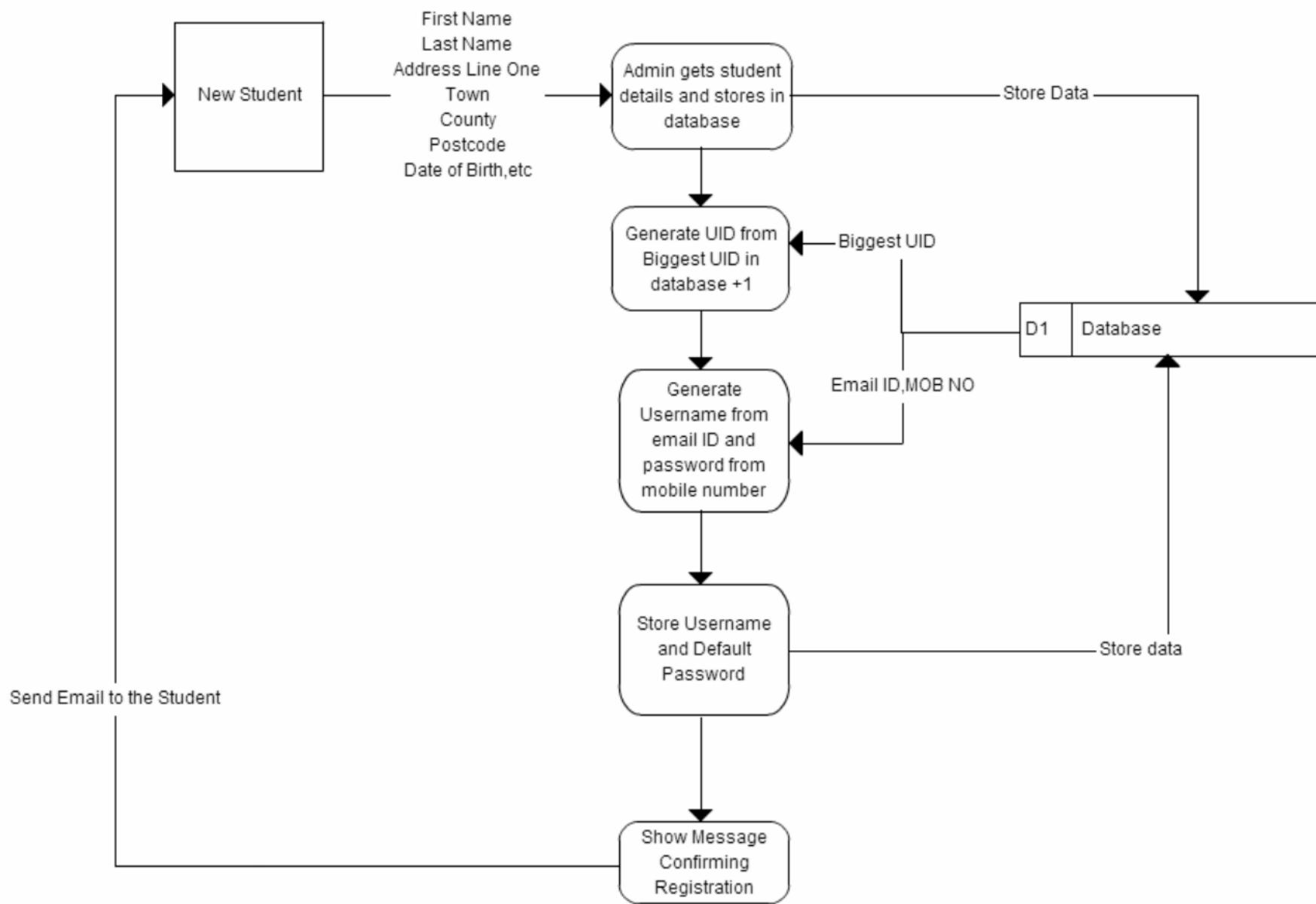


Password Encryption



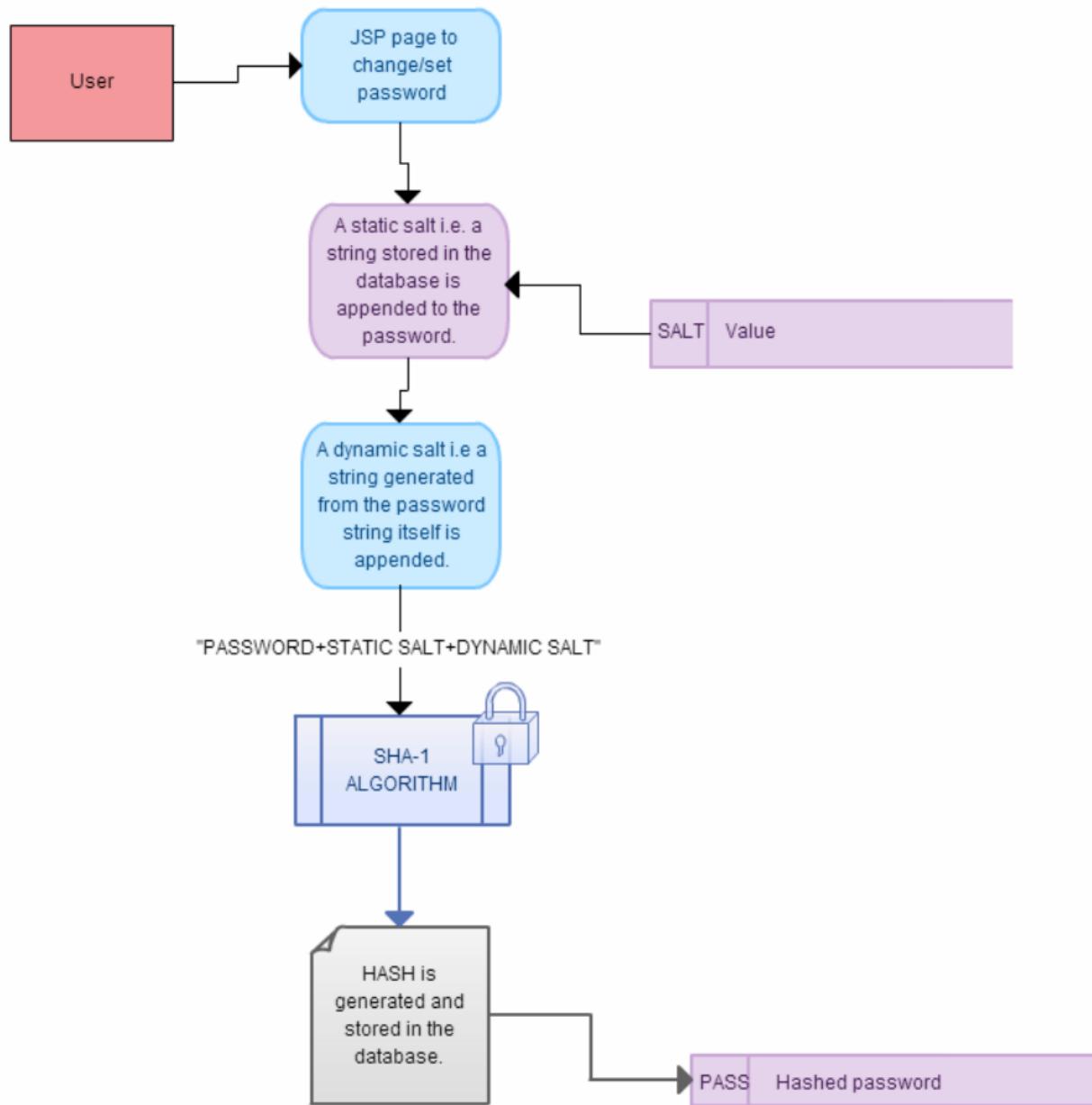
Database Design



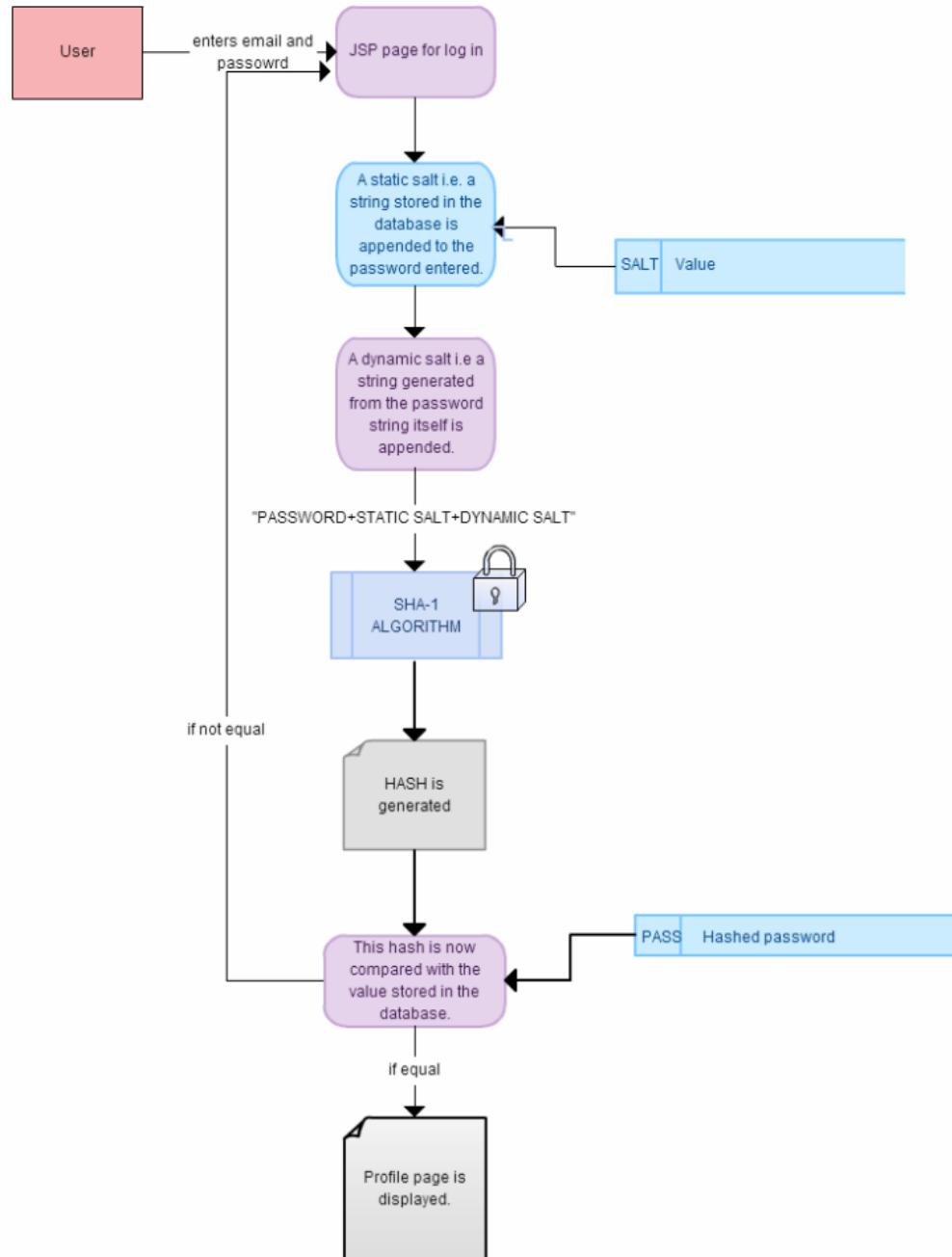


New User Registration

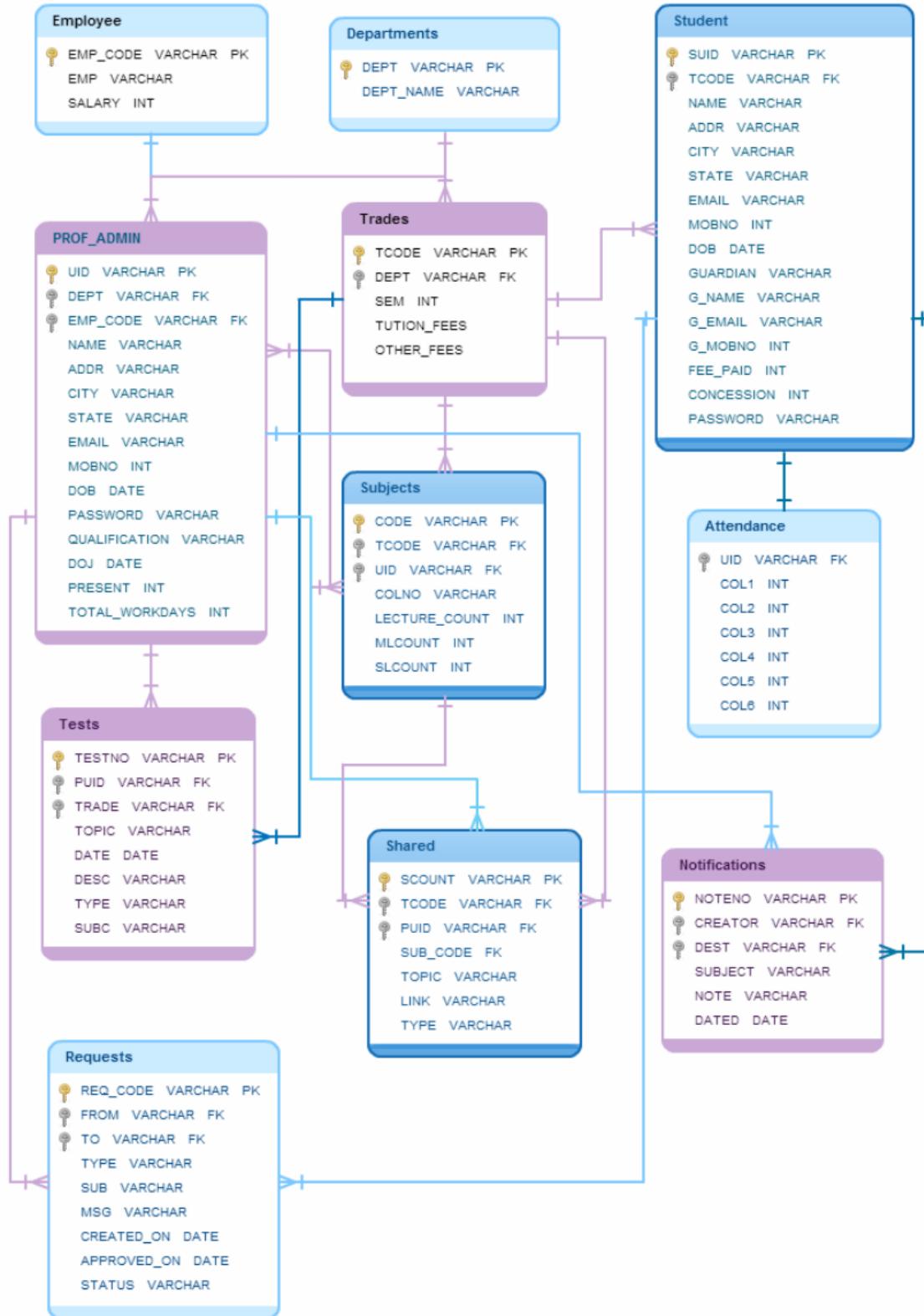
Password Encryption



User Login



Database Design





Android @ Help



Introduction

This module aims at providing special dedicated applications for users, that can be used on android platform for routine information gathering and update. Since all users are provided their Unique QR Cards, they can scan their cards and get instant access to their personal information, fee details, attendance reports, etc. as are stored in the college database. Android Applications can connect to the web services running on the college servers.



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