

Attendance Management System an Android Application

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Abstract— In the last few years due to improvement of technology education system in India has developed. Smart Class, video conferencing is some of the examples of modern trends in educational system. Student Attendance Management System is an android based application which helps the institute to move forward, fulfill their vision accomplish their goals. It generates the attendance of the student on basis of their presence in class. It is maintained on the daily basis of their attendance. The staffs will be provided with the separate username & password to take the student's status. It helps the teacher to take attendance through their smart phone and to keep the record of the attendance in their pocket for any time use.

Keywords— Attendance Management System ANDROID APPLICATION

III. FEASIBILITY STUDY

I. INTRODUCTION

Nowadays, mobile devices have become a way of life for students especially in higher education. Computers are now replaced by compact smart phones that can fit into pocket and can be carried anywhere. Attendance Management System is an application for taking daily attendance in schools and colleges. It provides minimal error in report generation of a particular student's attendance. The main motive behind this software is to replace the traditional pen and register system. Another reason for developing this software is to generate the report automatically at the end of the session or in the between of the session. Smart phones are based on operating systems like blackberry, IOS and Android. To design this project, smart phones with Android operating system are chosen because penetration rate of Android OS is 70 percent. It is an open source and free ware operating system. The application is compatible with all Android versions starting from 4.2 Jelly Bean.

II. PROGRAMMING LANGUAGE USED

- Java is the primary language used for programming in the back end.
- XML is mainly used for designing the front end.

This system is feasible because of the following reasons:

Economically Feasibility: This software is economic from school or colleges point of view. It is cost effective as use of paper has been eliminated. It is time effective since evaluation of attendance and report generation is done in less amount of time with minimal errors.

Technical feasibility: This software is technically feasible since there are no extra hardware requirements. The only requirement is an android smartphone with minimum version 4.2 jelly Bean.

Behavioral Feasibility: This software is very simple to use. The user doesn't need any special training to use this software. The software has been designed keeping the users point of view.

IV. PREVIOUS SYSTEM

Following traditional systems are used to mark attendance in the teaching process-

Manual Attendance System-It is the conventional method of taking attendance by calling names or signing on paper but it is inefficient due to more chances of malfunctioning and more paper work as well.

RFID with Object Counter-Radio Frequency Identification (RFID) based attendance system is one of the solutions to address this problem, but that is time

consuming and unsafe. Anyone can carry others card to mark proxy attendance

Bluetooth Based Attendance System-In this, attendance is being taken using instructor's mobile phone. Application software is installed in instructor's mobile telephone, enables it to query student's mobile via Bluetooth. It transfers student's mobile Media Access Control (MAC) addresses to the instructor's mobile phone and presence of the student can be confirmed. The problem of this proposed system is student's phone is required for attendance. In case if the student is absent and if his mobile is with his friend keeping it in coverage area then also his presence would be marked.

V. CHARACTERISTICS OF THE PROPOSED SYSTEM

All the above systems are time consuming and unsafe. In the proposed project Android based attendance system is designed which is less time consuming, safe and easy to implement because-

User Friendly: - This software is user friendly as it is simple to use and the user doesn't need any special training to use this software. Data evaluation, data storing and retrieval is easy and doesn't need any heavy calculation or method. The UI is simple and easy to understand.

Easy and Fast report generation: Reports are generated automatically fast in an easy way after each month for the teacher to keep a track on the students attendance record and notify the students with minimum attendance to attend classes.

Minimal paper work: There is no paper work required. Data are stored automatically in the system. Evaluation are done automatically. Hence it is cost effective too.

Time Saving: Data storing, data retrieval, data evaluation is done at minimum time hence it is time saving producing data with minimal errors.

VI. METHODOLOGY USED

Our project on Attendance Management System is based on some concepts and methodologies that we devised during our initial study and visualization of the project. We have planned our project keeping in mind the Object Oriented Concepts that can be applied to the project. The project is strongly supported at the back end by Java-the most popular and successful object oriented programming language. The front end is developed using Extensible

Mark-up Language (XML). For the database connectivity we are using SQLite database. It is a light weight database which is pre-installed with every android device and is capable of handling and managing various queries, cursors and more.

The initial idea was to improve the attendance system which is being in use for the past decades. The idea was to develop an application which would be portable enough so as to carry it to the classrooms as an attendance register. This stuck us with an idea of developing an android application which can be easily installed in an Android enabled cell-phone and be used seamlessly by a teacher while taking the roll calls.

In this process we designed a database for the application. It contains various tables like register, subjects, students and attendance for various purposes. These tables hold data for particular purposes which shall be dealt later.

The flow includes the addition of subjects by the teacher and then adding the students to the respective subjects. When a subject becomes ready it is then visible in the selection area for giving attendance, checking the percentage and even checking the date wise attendance. The attendance can be checked periodically, date wise or as desired by the teacher. The final attendance can then be used for various purposes.

VII. STEPS TO START WITH AND SET UP

As it becomes impossible to write a sentence without being able to write words properly and with correct grammar and punctuation marks, hence a pre-requisite is essential in every scenario. Our project is no different when it comes to pre-requisites. It requires the user to create a csv file which would contain the student details in the following format (roll no., stream, year, sem, sec, name). The csv file can easily be created if we have an MS-Excel file of the same format which can easily be saved to csv format of comma separated delimiter.

The saved csv file containing the student details can then be kept back to the Android device which would be used when we pick the students for the particular subject. This can be considered as one of the basic pre-requisite of our project.

After the application has been installed in the android device the following steps are to be implemented: -

1. Navigation screen appears for the teacher registration and login, after the splash screen has been navigated to the present screen.

2. The teacher shall then register with a proper user name and password which they must remember for further login.
3. Next the teacher needs to login from the login or register screen, by pressing the login button and providing the correct credentials without which they would not be able to log-in to the application.
4. After successful login the teacher would be navigated to the “Select or Add Subject Screen”, from where they must first add the corresponding subjects which they desire to teach by clicking the “ADD SUBJECT” button at the bottom of the screen.
5. The “Add Subject” screen requires three parameters namely: - subject name, subject code and the corresponding section where they must teach. A “BROWSE” button is provided below to choose the students for the section and finally a ‘DONE’ button to save the changes made.
6. On successful entry of the above task, the entered subject is seen in every screen namely –“Select or Add Subject”, “TotalAttendance” and “DatewiseAttendance”.
7. Now the attendance register can be accessed from the “Select or Add Subject Screen” for the previously added subjects.
8. Now accordingly attendance can be given for the present date or any previous date, or can be checked in the below two options of “Total Attendance” and “Date-wise Attendance”.

- roll_no
- name
- stream
- year
- sem
- sec

- attendance(table for storing date, roll, name, sec, status, cumstatus, per)
 - date
 - roll
 - name
 - sec
 - status
 - per

Registration Table:

Sl No	Code	Name
Number	Text	Text

Subject Table :

Sl No	Subject Name	Subject Code	Section	Count
Num	text	text	character	number
Num	text	text	character	number
Num	text	text	character	number

VIII. DATABASE TABLES

The database used in this project is a SQLite database named “Attendance Management System.sqlite”. It contains the following tables according to the schema:-

- register(for the teacher to register for the application)
 - code
 - name
- subjects(for storing name, subject code, section and count of attendance for the particular subject)
 - subject_name
 - subject_code
 - section
 - count
- students(table for storing the student details in the following order- roll, name, stream, year, semester, section)

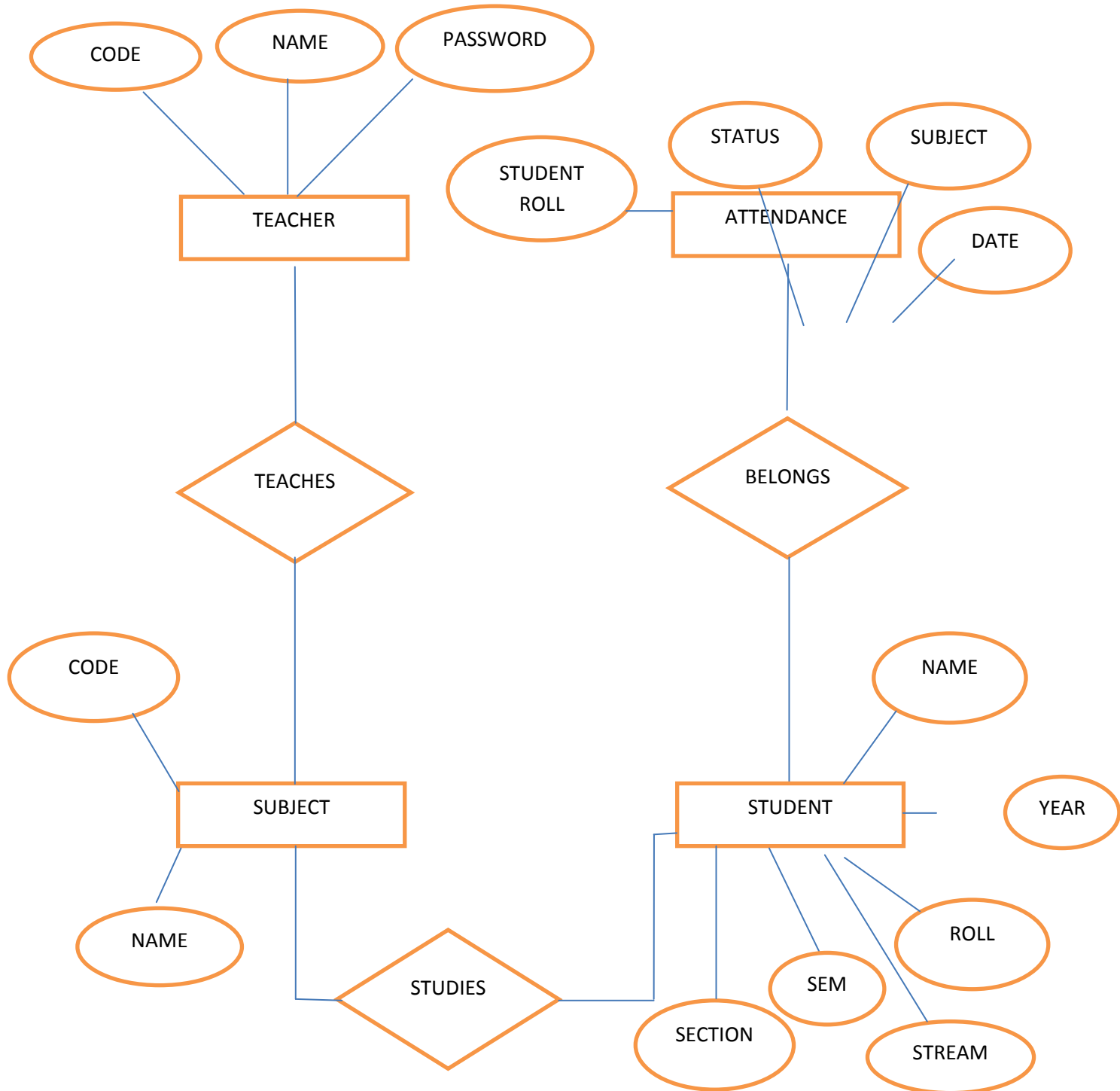
Student Database Table :

Roll No	Name	Stream	Year	Sem	sec
Num	text	text	text	number	character
Num	text	text	text	number	character
Num	text	text	text	number	character
Num	text	text	text	number	character

Attendance Table :

Date	Roll	Name	Sec	status	%
Date format	Num	text	char	num	num
Date format	Num	text	char	num	num
Date format	Num	text	char	num	num

IX. ER DIAGRAM



X. CONCLUSION AND FUTURESCOPE

By this system Attendance marking and report generation becomes easy. Less chances of malfunctioning are there. The system has reached a steady state where all bugs have been eliminated. The system is operated at a high level of efficiency and all the teachers and user associated with the system understands its advantage. It was intended to solve as requirement specification. In future this system can be implemented to automate most of the educational systems and it can be designed for cross platform.

This project is intended to replace the age old system of attendance register with a digital register which can show its worthiness by its features and ease of use. With due course of time we intend it to establish a connection with the college server so as to access and update the attendance over the college LAN.

Features like sending warning messages to the students with low attendance, and a student portal to check their attendance are planning to get added.

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