



Student Information Management System using Android

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Abstract:

The application we are developing is about “Student information Management System”. It is an android application used to find out the Information about the College and student details like staff, library, important notices, attendance and results of student. Hence this android application is used to make easy use. It saves a lot of time. This application is very much useful for students to get the information academic details. All this information is available in internet connection is required. All we have to do is to store the information in database. The main objective of “Student Information Management System” is to provide very flexible environment to the mobile users. Now a day each and every person having an android mobile and it is easy to carry so that it is gaining the more popularity compared to the other electronic gadgets. In this competitive world we have different types of mobiles and in these mobiles also we are having different types of applications. Generally, we won't have any application regarding any information about college & student. We have to browse for everything. But this application has that flexibility to have the information and we even have the flexibility to change and delete the information.

Keywords: Utilize Databases, Students Database, Students Academic Performance, College Library, Android Application

I. INTRODUCTION

This project is based on the database in which we can store and retrieve all the information regarding the students, staff & college what all we require. Database is a structured format. So if we store in the database, we can retrieve that particular information by giving a command directly. There is no process for installing database for mobile-phone applications. Whenever the database is needed, then only the database is created through coding. In this project there is a feasibility to change and delete the data which is not required.

A. Objectives

The main objective of “Student Information Management System” is to provide very flexible environment to the mobile users. Now a day each and every person having an android mobile and it is easy to carry so that it is gaining the more popularity compared to the other electronic gadgets. In this competitive world we have different types of mobiles and in these mobiles also we are having different types of applications. Generally, we won't have any application regarding any information about college & student. We have to browse for everything. But this application has that flexibility to have the information and we even have the flexibility to change and delete the information if we feel that it is not helpful anymore. We are proposing a new application in the android to have the information about college, students and according to the user's flexibility called “Student Information Management System Using Android”, as the following objectives,

- To understand the working of Android Development Kit.
- To understand the android application coding and design.
- To design the android application on student information using ADK kit.

B. Some of the features of the Proposed System are

- Student information
- Staff Information

- IA and Attendance Information
- Library Information
- Event and Notification
- Semesters Syllabus and
- Online student feedback

C. Existing System:

Manual Process of this requires a lot of records to maintain College Authorities. So they need to take care to store each and every student details and also their Examination details. Manual process requires man power. Existing System is manual process. Data Security is not provided in this system. Integrating data is also a problem in this system. It is not user friendly system. Its time consuming.

D. Proposed System

Proposed system is windows application. In this application student details are maintained efficiently admin has a facility to view the student details, edit the details. Semester Details and marks details are also maintained in this system. This has an enhanced facility. It is a fast, affordable, low risk solution with easy implementation and lower maintenance and operational Costs.

II. SYSTEM ANALYSIS

The detailed initial study is reduce to documentation, filing and related problems. The system is properly designed to computerized data and easy accessing. Various resources including the software, hardware and manpower requirements are decided and are mentioned in the report. This is also including the collection and study of detailed information and literature regarding the complete existing procedure

A. Input and Output Representation

Users at every level were given opportunity to define their respective information needs. In addition to this exercise a critical through investigation of present reports and feedback.

The needs of users and other related exercise to access particular users are summarized below concisely:

- System provide user interface.
- Redundancy must be reduced at the maximum level.
- All the data base of system is secured.
- Input design is a part of overall system design.

The main objective during the input design is as given below:

- To produce a cost-effective method of input.
- To achieve the highest possible level of accuracy.
- To ensure that the input is acceptable and understood by the user.

B. Input Stages

The main input stages can be listed as below:

- Recording
- Verification
- Control
- Transmission
- Validation
- Correction

C. Output Design:

In general, are:

- External Outputs whose destination is outside the organization.
- Internal Outputs whose destination is within organization and they are the User’s main interface with the computer.
- Outputs from computer systems are required primarily to communicate the results of processing to users. They are also used to provide a permanent copy of the results for later consultation.

III. SYSTEM DESIGN

Software requirements have been analyzed and specified, software design as the first of 3 technical activities design, code generation and test, that are required to build and software. Stages of design of a project are:

- Conceptual Design
- Database Design

A. Conceptual Design

The conceptual structure of a Database is called schema. Schema shows the kind of data that exists in a database and how these are logically related to each other. A schema can be regarded as a blueprint that portrays, both, kind of data used in building a database and logical relationship, and must correctly represent them inter relationships. Schema is frequently depicted pictorially with Data Flow Diagram (DFD) etc.,

B. Database Design

A Database is a stored collection of interrelated data, organized on the basis of relationship in the data rather than the convenience of storage structures. It enables sharing of data among various users as and when required. Database Management System is software that provides more flexibility in the storage and retrieval of data and productive information.

C. DFD (Data Flow Diagrams)

Data Flow Diagrams are a graphical tool used to describe and analyze the movement of data through a system. DFD’s are used to capture the essential feature of both existing real system and future physical implementation of the system.

The DFD is a graphical technique that depicts the information flow and the transforms that are applies as data move from input to the output. The DFD is also known as Bubble Chart or Data Flow Graphs or Context diagram. The data flow diagram may be used to present a system or software at any level of abstraction. A fundamental system model or a context model represents the entire software elements as a single bubble with input and output data indicated by incoming and outgoing arrows respectively.

Data Flow Diagram (Level 0)

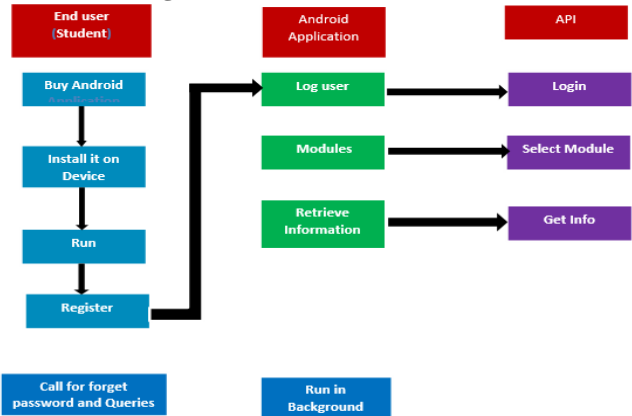


Figure.1. Data flow diagram Level 0

Data Flow Diagram (Level 1)

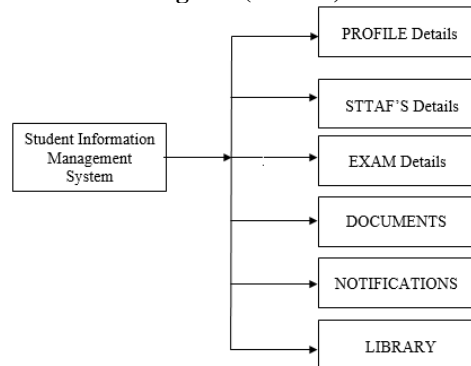


Figure.2. This shows the separation of all external modules, relationship between those modules and the application. Data Flow Diagram (Level 2)

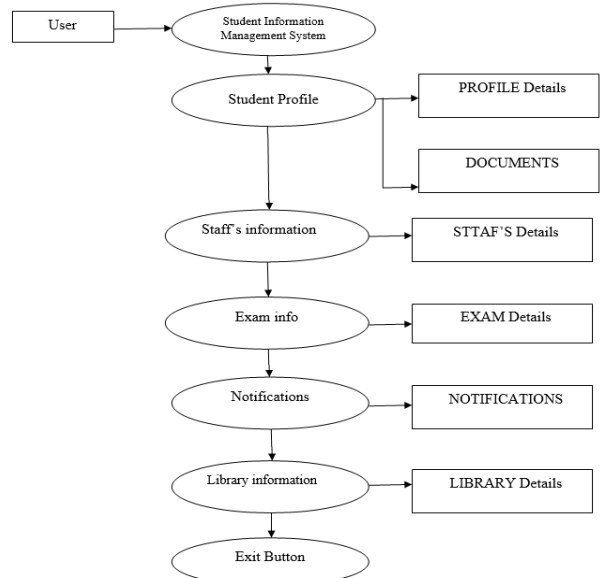


Figure.3. This differentiates the modules frontend and backend

ER-Diagram

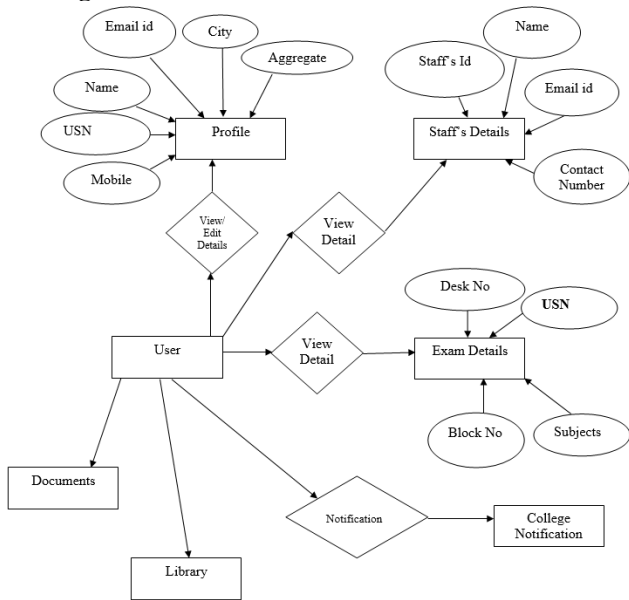


Figure.4. This illustrates the relationships between entities in a database.

UML (Unified Modeling Language)

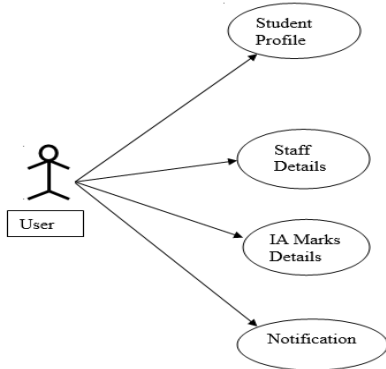


Figure .5. Standard view to visualize the design of a system.

D. Normalization

A Database is a collection of interrelated data stored with a minimum of redundancy to serve many applications. The database design is used to group data into a number of tables and minimizes the artificiality embedded in using separate files. The tables are organized to:

- Reduced duplication of data.
- Simplify functions like adding, deleting, modifying data etc.,
- Retrieving data
- More information at low cost

E. Data Dictionary

Table.1. Profile Details

Attributes	Data type
USN	Number(10)
Name	Varchar(10)
Mobile	Number(15)
Branch	Varchar(15)
Sem	Varchar(5)
Email id	Varchar(20)

Table .2. Staff's Details

Attributes	Data type
Staff id	Number(10)
Name	Varchar(10)
Qualification	Varchar(10)
Phone Number	Number(15)
Specialization	Varchar(15)
Branch	Varchar(15)
Designation	Varchar(15)
Email id	Varchar(20)

Table.3. Exam Details

Attributes	Data type
Serial No	Number(10)
USN	Varchar(10)
SEM	Varchar(10)
Sub	Varchar(10)
IA1	Number(10)
IA2	Number(10)
IA3	Number(10)
Average	Number(10)

IV. IMPLEMENTATION

This project contains the following four process modules:

- Profile Module
- Staff Module
- IA Information Module
- Library Module

A. Profile Module

Profile is an important component to users, which helps the users to get his/her personal details.

- This module provides the details information about particular Login Student (Student name, Sem, Branch, email, etc.). The primary key is USN based on the student USN numbers as primary key in database its unique identification.
- The student data stored into the database according to USN number the all student information can store through internet the administrator has to fill the student data after that the particular login student can be access the own information from android application.

B. Staff's Details

- The user will get information about the Staffs of the College.
- The user(student) can get the information about the staff by select the particular branch where user can view the particular staff details like staff name, qualification, designation, year of joining, email-id & mobile number.

C. IA Information Module

- When IA Information option is clicked in application, the user gets required details of his/her Internal Marks.
- The primary key is USN based on the student USN number the marks are entered on the server side.

- By using the same USN number at the login the particular student view only his/her internal marks & average of all subjects in current studying sem. The waterfall model is a sequential design process, often used in software development processes, in which progress is seen as flowing steadily downwards through the phases of Conception, Initiation, Analysis, Design, Construction, Testing, Production/ Implementation, and Maintenance. In a strict Waterfall model, after each phase is finished, it proceeds to the next one. Waterfall discourages revisiting and revising any prior phase once it's complete. This "inflexibility" in a pure Waterfall model has been a source of criticism by supporters of other more "flexible" models.

The waterfall model shows a process, where developers are to follow these phases in order:

- Requirements specification (Requirements analysis)
- Software design
- Implementation and Integration
- Testing (or Validation)
- Deployment (or Installation)
- Maintenance

Requirements: defines needed information, function, behavior, performance and interfaces.

Design: data structures, software architecture, interface representations, algorithmic details.

Implementation: source code, database, user documentation, testing.

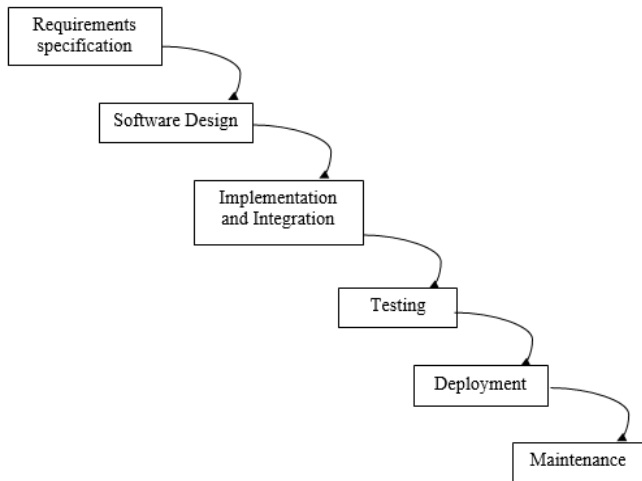


Figure.6. The following diagram shows how a Water model acts like

V. ADVANTAGES

- Easy to use and understand.
- Good for management control (plan, staff, track).
- Works well when quality is more important than cost or schedule.
- Instantly accessible to users via a browser across a range of devices
- A mobile app is much more dynamic in terms of pure flexibility to update content.
- Application are accessible on all devices

VI. OUTPUT SCREEN

A. Client Side

As shown in the below figure 7, it illustrates the general view of the mobile screen on the various application ions in an android phone, then our application has been names as SIS.



Figure.7. Android phone screen and Welcome screen.

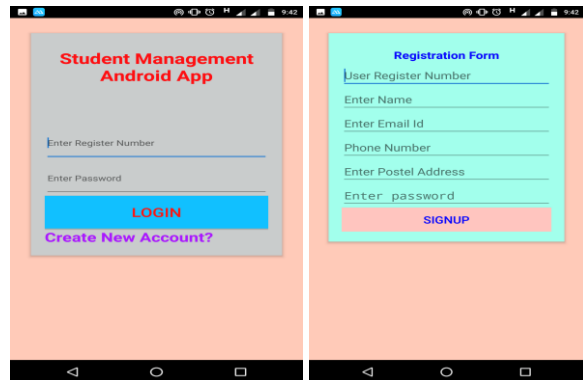


Figure. 8. Login and Registration screen on mobile.



Figure. 9. Application home screen on mobile.

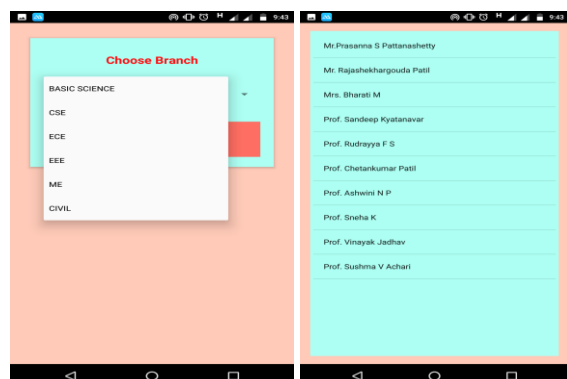


Figure.10. In the Staff information module select the branch and select the faculty and get faculty information.

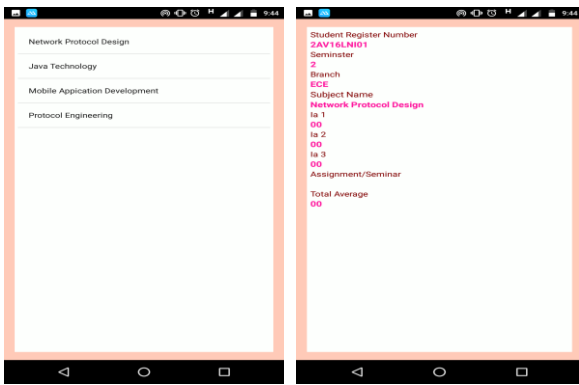


Figure .11. In the IA information module select the subject and get the IA marks and Seminar/Assignment marks of your USN

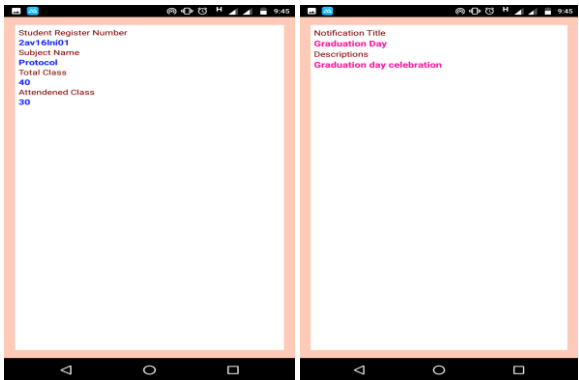


Figure.12. In the attendance module and notification module

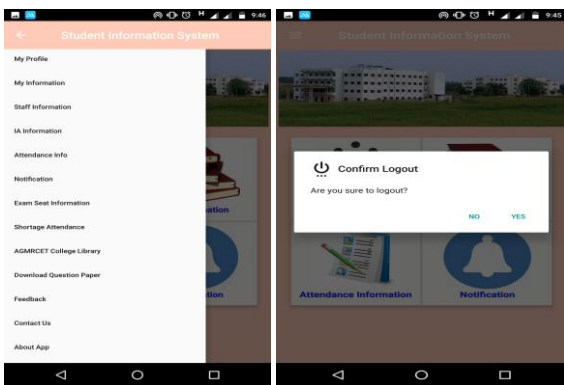


Figure.13. In the menu you the other module information and then logout your profile.

B. Server Side

As shown in the below figure 14, it illustrates the general view of the admin panel on the computer.



Figure.14. System admin pannel and it contain different module and login the admin module and add the all information

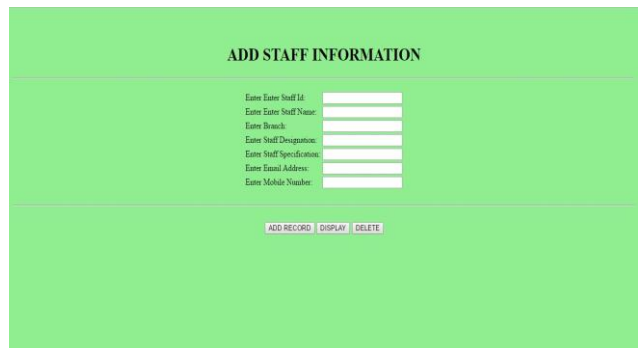


Figure.15. In this module add the staff information and view the information as in document format and edit/delete the information.

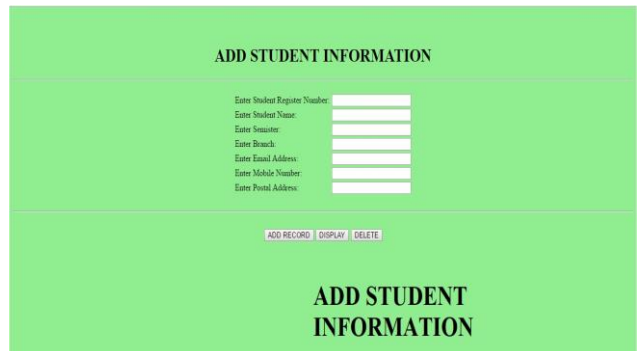


Figure.16. In this module add the student information, it contains the his/her USN, branch, semester, contact number and email address and displays in the document format and edit/ delete the his/her information.



Figure.17. In this module add the IA information, it contains the his/her USN, branch, semester, IA marks, seminar/assignment marks and displays in the document format and edit/ delete the his/her information.

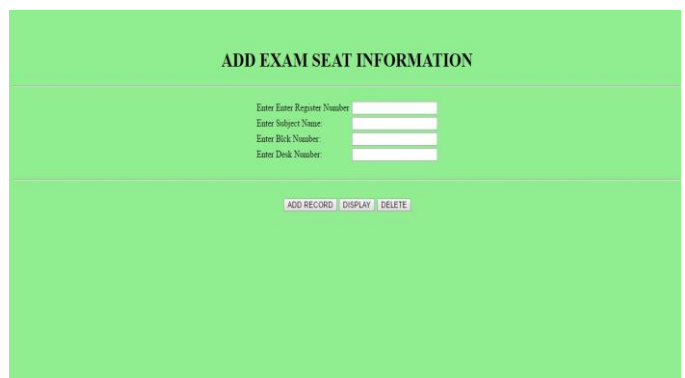


Figure.19. In this module add the notification and exam seat information, it contains the his/her USN, branch, semester and displays in the document format and edit/delete the his/her information.

VII. CONCLUSION

This paper assists in automating the existing manual system. This is a paperless work. It can be monitored and controlled remotely. It reduces the man power required. It provides accurate information always. The data which is stored in the repository helps in taking intelligent decisions by the management. So it is better to have an android application for student information management. All the students, faculty and management can get the required information without delay. This system is essential in the colleges and universities. Our application works on Android, a phone that adds the mobility feature. The application acts as a rich tool for sending predetermined message to the registered contacts including a call for any help. The user can access the data from anywhere anytime through the mobile phone. It can also estimate the cost of the project. It provides the facility to analyze and control the execution of project.

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