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STUDENT INFORMATION & AUTHENTICATION SYSTEM

A Report for the External Evaluation of Project 2

Submitted by

KAPIL THAKUR

(1613101319)

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Under the Supervision of

Mrs. DEEPIKA SHERAWAT

Assistant Professor

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SCHOOL OF COMPUTING AND SCIENCE AND ENGINEERING
BONAFIDE CERTIFICATE

Certified that this project report “STUDENT INFORMATION & AUTHENTICATION
SYSYTEM” is the bonafide work of “KAPIL THAKUR (1613101319)” who carried out the
project work under my supervision.

SIGNATURE OF HEAD

Dr. MUNISH SABHARWAL
Professor & Dean
School of Computing Science &
Engineering

SIGNATURE OF SUPERVISOR

Mrs. DEEPIKA SHERAWAT
Assistant Professor
School of Computing Science &
Engineering

ABSTRACT

The administration of understudy related data like a scholastic record in an instructive foundation gets a great deal of monotonous work as time passes as all frameworks in this day and age are being automated, there is a necessity for a machine-driven framework for overseeing such data.

The main purpose of this project is to facilitate quality associate with mobility and automate the method of keeping up student data in an institute. Student Information & Authentication System (SIAS) will provide a simple user-interface for the upkeep of student information. It often utilized by educational institutions or colleges/universities, that utilize mobiles and additionally, that reduces personnel. The objective of developing this application is to induce the report regarding attendance, admit card, marks sheet and personal information after the conclave or within the middle of the conclave.

Student Information & Authentication System will provide an instantaneous user-interface between faculty & a student. Here students or their parents can check his/her performance using the provided login-id and password to them. Scholar's and faculty's data are uploaded through the admin account then he will provide login-id and password to the respective. The faculty can update the scholar status by putting present or absent. Finally, students will gain all access to their records.

Keywords: - Student Information & Authentication System, Admin login module, Student data module, Teacher module, Automation System.

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LIST OF ACRONYMS

SIAS.....	Student Information & Authentication System.
DFD.....	Data Flow Diagram.
E-R DIAGRAM.....	Entity Relation Diagram.
SIS.....	Student Information System.
DBMS.....	Database Management System.

1. INTRODUCTION

1.1 Overall Description

The earlier system in universities or colleges used solely paper records for this initiative. Whereas paper records are a standard approach of managing student information there are many disadvantages to the current methodology. It requires some investment of time to pass on the data to the scholars. The board of the paper records is hard to oversee and follow. However, current day's colleges are exploiting smart schooling technology to attain these objectives and therefore the current management system of school already outlines as an ancient generation management system and it already cannot satisfy the user requirements. In this way, the new SIAS framework is an indispensable piece of this innovation. This application handles every understudy of data directly from confirmation, class plans, subject enrolled in general understudy execution, and individual information with respect to the scholars. Every one of these parts is incorporated into a solitary database, getting to and following data of any scholar done by utilizing a mobile phone. This system into consideration is developing as an upgrade version of the recent student management systems or to replace manual paperwork and it resolves the matter that we tend to face throughout the use of the current system or manual system of paper records with an automatic on-line data management system. College staff will increase direct access to all parts of an understudy's advancement in scholastics through a safe, on-line

interface inserted inside the college's database. The framework utilizes staff confirmation, showing exclusively information that is fundamental for a person. The present framework, each sub-framework has verification allowing affirmed users to make a bit of refreshed data in that subsystem. The highlights of the logging to follow all user's entrance and assurance adjustment to data get to so hoping to broaden the strength of the school's record the executives consequently diminishing the time required to get to and convey scholar records.

The staff personnel will be going to update the understudy information which may have the data (like Admission number, class plan, scholar personal information, internal marks, etc.) These measurements are stored inside the database. This application is easily used in any organization. The planned framework goes to collect the individual details of scholar and the individuals who are present and absent from the ongoing classes just as internal marks checks in electronic organization with the goal that administration of participation and evaluation turns out to be simple.

Student information & authentication systems are extending the chances for when and wherever to perform learning for various communities. During this project we significantly address students. This study describes a system referred to as student information & authentication system (SIAS) which supports mobile computing and context-aware application ideas, whose purpose is to supply a lot of user-centric data services to students. Completely different services are planned during this system

combining context-sensitive data services for the scholar at the university and mobile computing is a dynamic approach of communication between faculty and students and may be used effectively to boost educational quality.

Truly, upgrading the power of school organization and overseeing scholar's information is simple and straightforward with the SIAS framework programming. This product is basically have accessed to whenever needed. Colleges will run the SIAS on negligible equipment reasonably and increase the upper hand of misusing the latest innovation remaining ahead inside the competition to get to and convey scholar's records.

1.2 Purpose

This document describes the varied functions of our project. The style of the various modules and part of the scholar information & authentication system is represented during this document, which takes care of varied functionalities that our project aims to comprehend and for decisive the operating characteristics of the system.

The System Requirements Specification (SRS) can offer an in-depth detailed description needed for the Student Information & Authentication System (SIAS). This SRS can afford a complete understanding of what is required for the student information system development. The clear understanding of the SIAS and its practicality can afford the correct software to be developed for the end-user and thus are going to use for the development of the future stages of the project.

1.3 Product Scope

Student Information & Authentication System (SIAS) is an android-based application for college students, faculty, academic staff and parents who wish to urge and retrieve student's whole data instantly via the internet. The significant preferred position of this brought together database is to store the understudy's information in one spot (like SERVER) and it might be gotten to by means of online association. The SIAS portal is going to associate with an upgrade version of the recent system or to replace the manual system to solve a problem that facing while using the recent system or manual system of paper records with an automatic. Rather than tedious paperwork, students are going to submit the specified information electronically, and the departments are going to evaluate the submissions with a far faster turnaround.

2. LITERATURE SURVEY

Many context-based mobile services are developed over the last years, in many completely different domains, like educational institutions and schools is a Semantic android environment for context-aware mobile services aimed towards enhancing everyday campus life at Carnegie Mellon University (CMU). MyCampus utilize linguistics automation android technology to provide services to its users, by accessing and processing discourse information like location and personal preferences. A central component of the MyCampus design architecture is used for linguistics information management that accesses to discourse resources. [1] MIT Mobile (2009) is providing a similar solution. This solution gives services like News, Events, Shuttle track service, campus map, people directory, and mobile access to MIT course management system. This solution utilizes mobile web technology to provide these services. The solution is provided for Android especially, but also available for other smartphones. [2] Harvard Mobile (2010) is another solution developed by Harvard University. This solution is based on android technology and provides services like news, events, course updates, map and a directory of people.

According to [3] Swartz(2013), SIS process is typically completed into students school career and encapsulates each of the facets of knowledge built up and literacy value, including learning what type of SIS is available, finding and accessing system sequence, evaluating tools for the information and then synthesizing the student information system

into certain and product for better career patterns as it seemed like the ideal project to focus SIS and relate it to ample literacy instruction around. While the students had all performed database searches before, they were less likely to have taken advantage of the search management tools available to them through the educational database, how to set up automatic searches to help streamline the research process.

According to the Online-Student Information System of [4] Benguet State University (2013), it would be a new way of record management and transaction processing that would achieve efficiency in processing student information. It would be a great help to the administrative personnel, academic personnel, grantors or stakeholders, and students in updating, retrieving and generating student data. The main objective of the study was to design as a standalone student information system of Benguet State University. In order to achieve the general objective, the following specific objectives of the study were identified: To identify the problems encountered in the existing system, to identify the information requirements needed, to determine appropriate security and control measures are needed for a student information system.

[5] Pacio (2013) on her thesis entitled “Online Student Information System of Benguet State University” gave emphasis that as the main goal of the school “to generate and disseminate new knowledge and technologies that will promote sustainable resource development and enrich the competent and effective services geared towards efficiency

and economy” which is inconsistent with the existing student information system of the Kalinga State University Rizal campus.

<http://www.auamii.com/jiir/vol-01/issue-04/4pacio.pdf>

According to [6] Perret (2012), the integration of SIS in the U.S.A. setting with resources to higher education systems determining that certain group of students can acquire and gain effective knowledge literacy skills through the SIS process and understanding the value of education service crafted to provide best teachings as possible.

According to the Student Record System has also reports that provide the AAMC, constituents and other researchers with statistical information on such things as enrolment profiles, student retention patterns, and graduation rates. Custom reports are available on request.

<http://www.aamc.org/services/srs/>

3. PROPOSED MODEL

The goal of the new framework is to totally change the old framework of overseeing and controlling the data necessity of the scholars and to automate the process of paperwork for up keeping of records. This application is developed by utilizing the concept of a centralized database server which can be accessed by users on their own mobile phone through the SIAS application. There'll be a streamlined database on the server related to an improved UI on every user machine for example on the SIAS application introduced on the users Smartphone. This application is used by understudies, instructors, and the executive. The functionalities of the planned system are often divided into three well-defined modules.

There is uncountable information needed within the educational institution however, we tend to concentrate on the Authentication System (SIAS) using QR-Code and Fingerprint because it is incredibly essential in day to day life in terms of privacy. The primary reason for developing SIAS framework is to deliver understudy data like marksheet, class plan, admit card, attendance. In this developed application, there are three stages, Admin, Faculty, and Student. The administrator has rights for changing and refreshing the data like admit card, marksheet, and so on. In the understudy stage, scholars exclusively qualified for login.

The present framework has experienced a few impediments. The prompted framework hits the limitations found inside the present framework. There exist numerous advantages

during an planned framework that is the framework could be a finished bundle along these lines there aren't any slip-ups with respect to the measurements of understudy's participation and internal marks, etc. Likewise, it disposes of excess. It's easy to get information from a solitary source. No dormancy while bringing back insights and status of the researcher. Complete insights of an understudy are regularly recouped inside the method of SIAS to the cell phone through one touch.

Notices are sent to the respective guardians through SIAS when a scholar couldn't go to the class according to the college rules after that pie and bar diagrams are frequently produced according to scholar's performance. Additionally, it allows the administrator to store understudy and staff subtleties, and administrator can follow the personnel and understudy subtleties. The application grants access to courses encompassed by a class space. It has profile-based supervision like head, staff, and scholar. It grants resources to oversee understudy participation and their inside appraisal marks. It licenses understudies to see their subtleties and might produce a report.

4. EXISTING SYSTEM

The current system has encountered several limitations. So, the new student information & authentication system (SIAS) is developing as an associate upgrade version of the recent student management systems or to replace manual work to resolve the matter that we are facing throughout the utilization of the current system or manual system of paper record with an automatic on-line data management system.

Now a day's instructional institutes are exploiting smart schooling technology to attain these objectives and the current management system of the institute is already outlined as an ancient generation management system and it already cannot satisfy the user requirements. So, the new student information & authentication system is an associate integral part of this technology.

The main purpose of this project is to facilitate quality associated with mobility and automate the method of keeping up student data in an institute. There aren't any slipups regarding the statistics of student's attendance and assessment marks etc. Also, it eliminates redundancy. It's straightforward to get data from a single source. No latency once transfers back the statistics and status of the student. Complete statistics of a student is recovered within the method of SIAS to the mobile phone through one touch.

3.1 The main objectives are as follow:

- I. To design and develop a Student Information & Authentication Software for educational institutes.
- II. To include the function of student's performance with graphical representation using Pie Chart or Bar Graph.
- III. To sends students results or academic performance report to their parents through email at the end of the semester or year.
- IV. To add mobility and full automation in the process of attendance using QR-Code.
- V. To authenticate the mobile software application of SIAS using fingerprint.

5. IMPLEMENTATION & METHODOLOGY ADOPTED

This application is designed by utilizing Android Studio and Firebase database. It additionally incorporates OOPS concepts and programmed through languages like JAVA and XML. In this application server is Google Firebase. The Front end is developed by utilizing XML (Android Studio) and JAVA Language for the back end as Android Studio. We have utilized Google Server (Play Store) to deploy the application. Structures and Reports is a third generational l programming language tool that was built by Oracle which have GUI support. To build up an application utilizing Android Studio and Firebase a lot simpler on the grounds that it is a GUI instrument that was planned for primary language as Kotlin-programming. XML is utilized for creating screens that connect with the Firebase database. It has an IDE, object guide, property button, code supervisor, content View, menus, libraries.

Firebase API is utilized for recovering the information which is put away in the database. Through Firebase API we can produce reports like diagrams, pie graphs, web format, paper design, and so on. We can produce various sorts of reports like tabular, matrix form, form letter and mailing label. Firebase is an easy to use, secure and stable item. In the Firebase database, we are utilizing compositions and tree schema to store the information. We have actualized a reinforcement technique to re-establish the information which is lost unintentionally. Client the board like secret key security, secret key encryption will be dealt with in the undertaking. Information insurance is a significant concern, Google (Firebase)

gives 100% information security. It forestalls unapproved information access and it confines information hacking or control. Firebase server is utilized to convey the Android application on a internet based condition. The end-client will associate with the Firebase server then it will course to the Firebase database and he will get the outcome according to his solicitation. In the application server, end-user sessions will be taken care of. We have utilized a heap balancer to disperse the associations going to the application server.

4.1 Software and Hardware requirements

For this project, software and hardware that we employed are as below: -

1. Database: Firebase (Google)
2. Android Studio
3. Window 10 platform operating system with 8 GB RAM, Core i5, HDD 256 GB
4. JAVA, XML
5. Mobile (Android 9), API Level 26

Steps to run a student information system application: -

1. The first download executable file of Android Studio creates an android environment by installing Android SDK and different API Levels available for android.
2. After developing the SIS Application run as Android Application. It will start the SIS Application on Emulator.

3. Then connect Android device to computer via USB and run a program as Android Application it will load the Apk file of SIS Application on the device.
4. Connect Android device with Wi-Fi to get a connection with database and Application.

4.2 Software Requirement Specification

The plan of the framework manages the information stream outline and class diagram. It delineates, be that as it may, our framework can work inside, its different modules in like manner the phases of SIAS.

4.2.1 Data Flow Diagram: - An information stream outline is a graphical delineation of the progression of information present in SIAS. It encourages us to comprehend the progression of the framework.

From the below Data Flow Diagrams, we will in general get a nearby comprehension of anyway the progression of each function will be worked. DFD level 0 gives a diagram of SIAS. Though DFD Level 1 of the functions offers extra inside and out data about the methodologies and database utilization.

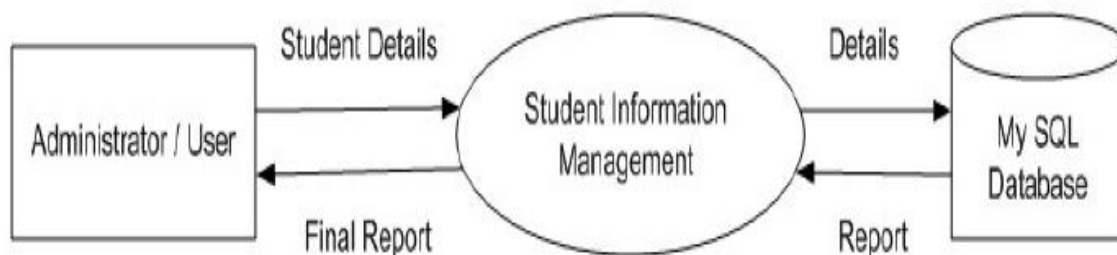


Fig. 1 DFD Level 0 for SIAS

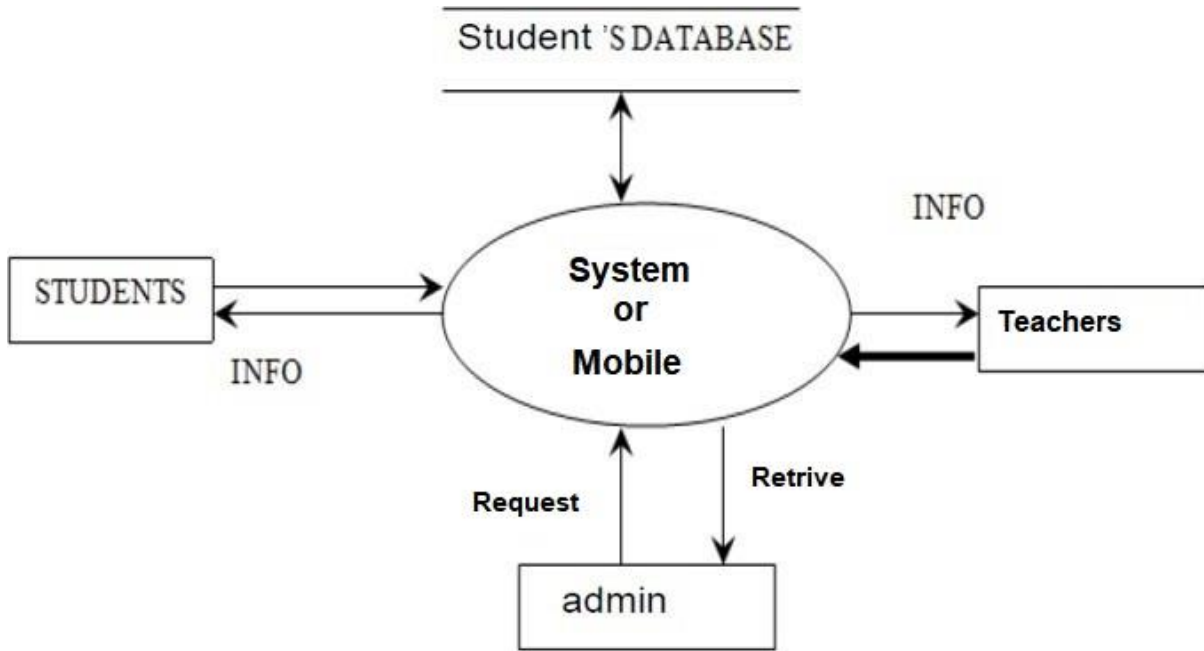


Fig.2 DFD Level 1 for SIAS

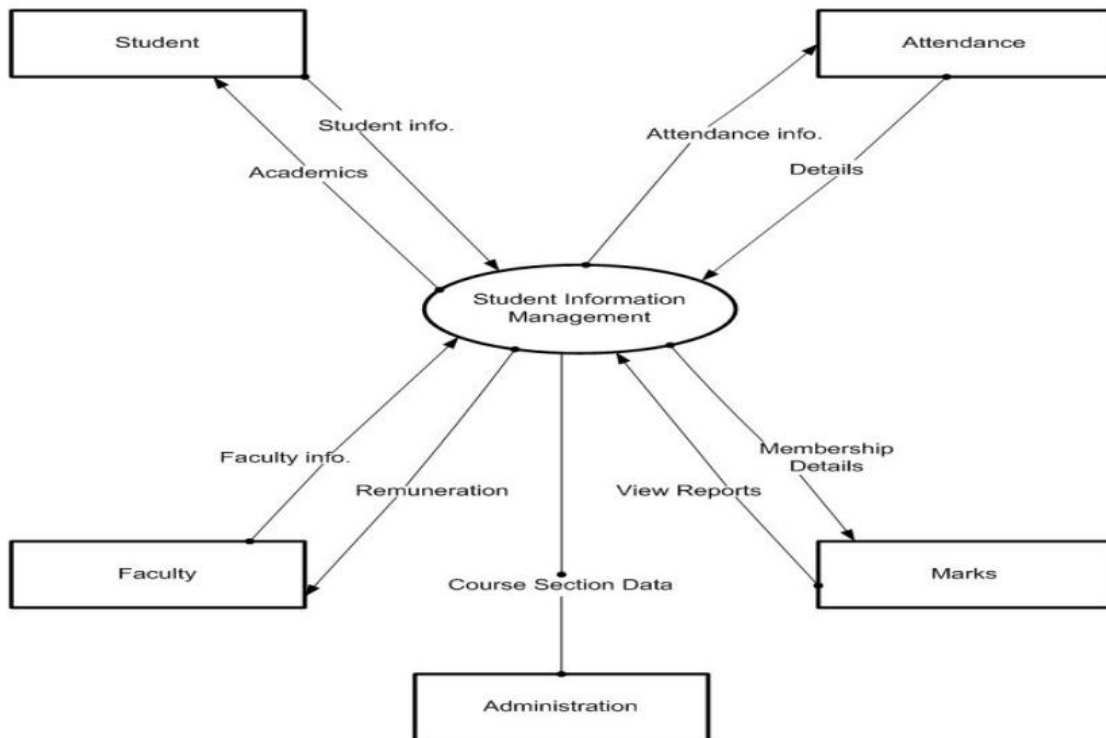


Fig.3 DFD Level 2 for SIAS

4.2.2 E-R Diagram: - An entity relationship model outlines interconnected thing of enthusiasm during an area and data. For the most part, E-R model is comprised of entity types and indicates connections that may exists between two or more entity.

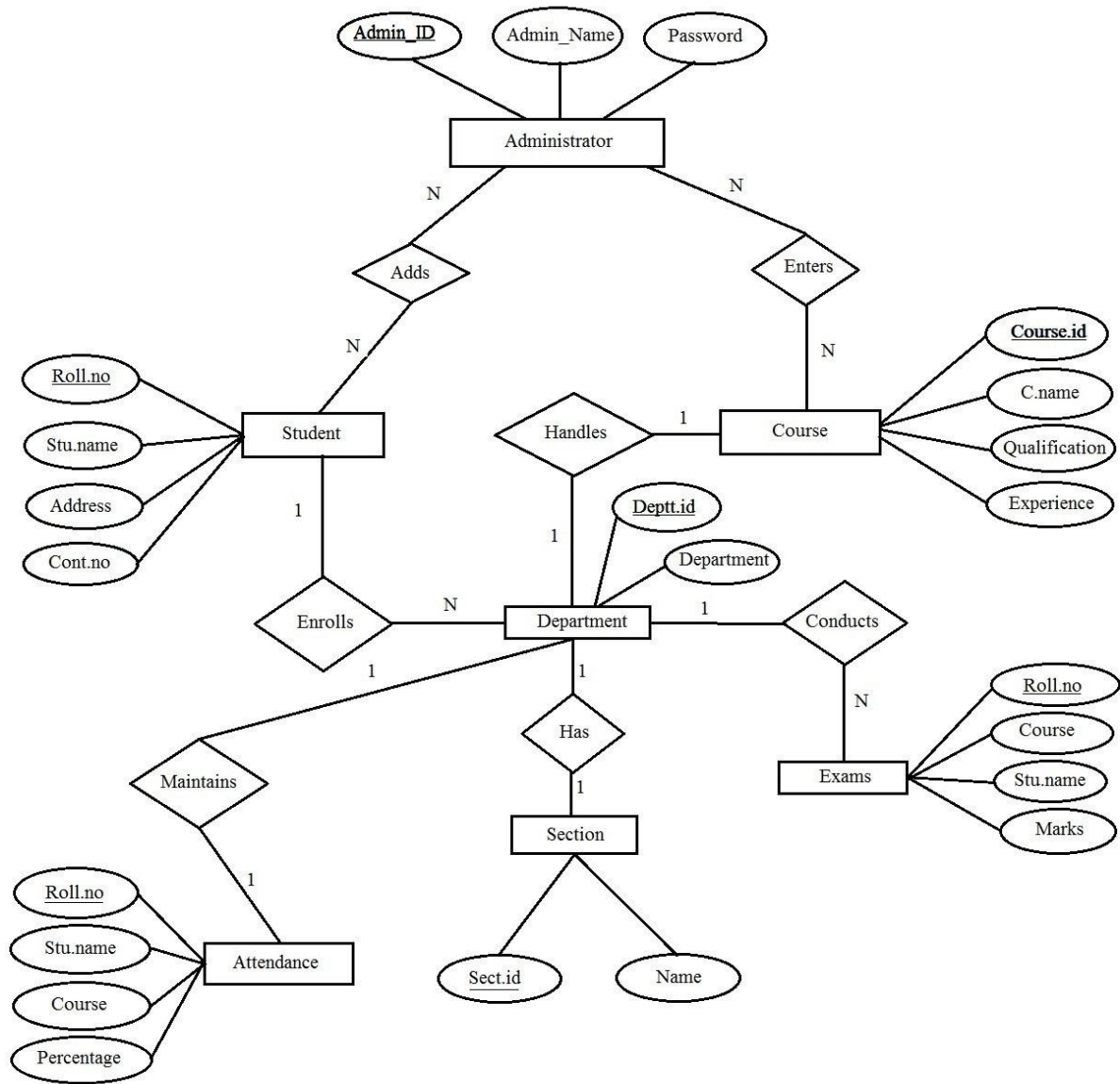


Fig. 4 E-R Diagram for SIAS

From the above E-R Diagram, we tend to get a close understanding of the relationships of every entity that may manifest itself. Graphical illustration of the entities and their relationships with each other for obtaining an overview of the project.

6. RESULTS

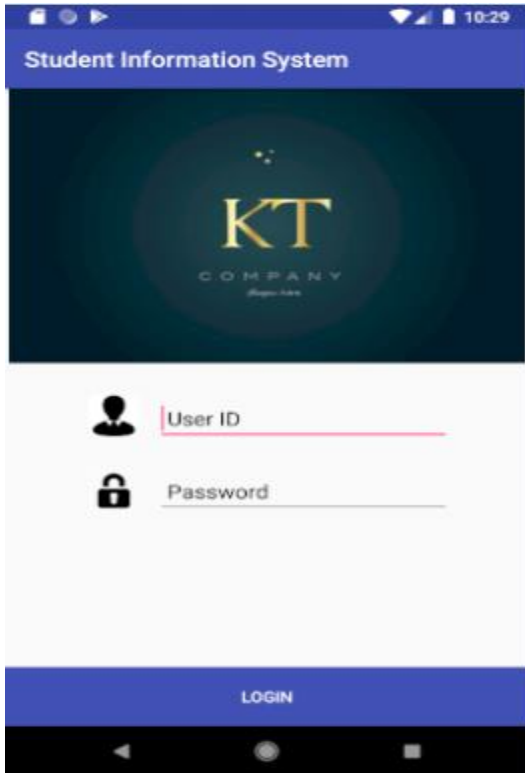


Fig.5 Login Activity of SIAS

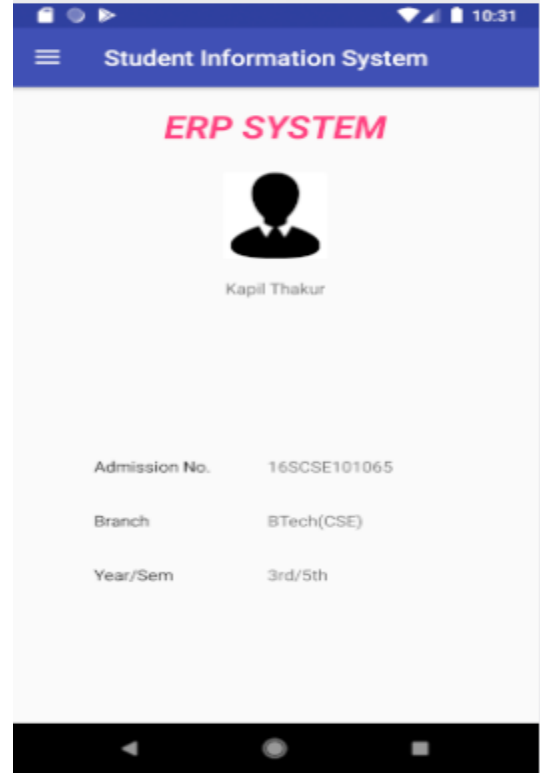


Fig.6 Dashboard Activity of SIAS

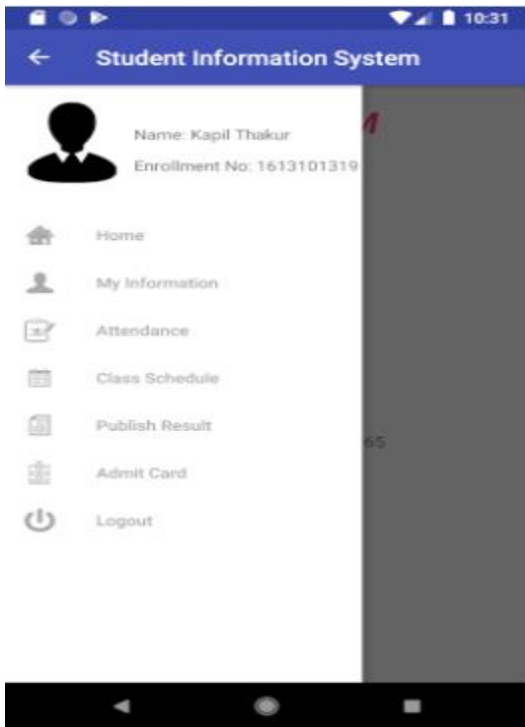


Fig.7 Navigation Activity of SIAS

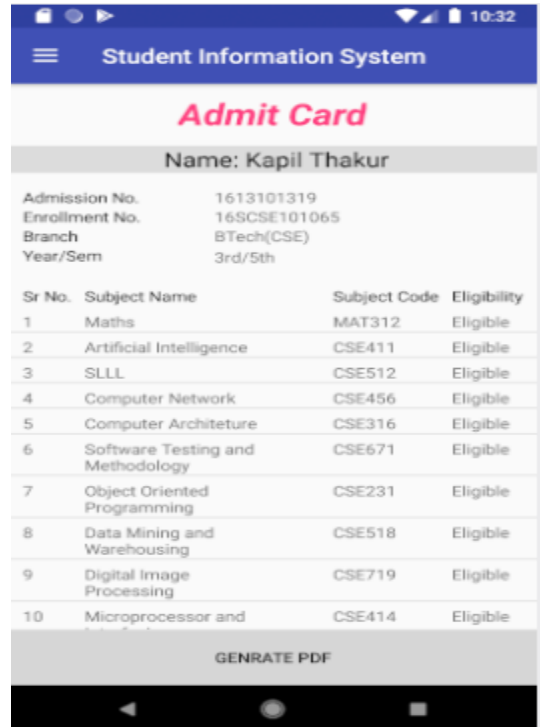


Fig.8 Hall Ticket Activity of SIAS

7. CONCLUSIONS AND FUTURE WORKS

6.1 Following conclusion were drawn:

It is presumed that automation of existing understudy data framework, for example, the conveyance of enrolment systems and keeping the records of scholar data, for example, the keeping of confirmation necessities all through the enlistment procedure, individual data, understudy subjects enrolled and class timetables, and knowing the general execution of student can expand the utilization of the total scope of preferences of information and correspondences innovation. The presentation of the created application is unrivalled, a ton of affordable and successful than the current understudy overseeing framework. About the standard attributes that we need to assess in every one of the presents and the created application, it's moreover presumed that the created understudy the board framework is path higher than the present framework.

Our task improves the upgradability of the present framework and makes it advantageous for the school staff to look after records. Student Information & Authentication System is amazingly useful in an instructive organization or in schools and colleges. There's no manual work in this planned framework. The executives will be done from wherever. This venture especially limits human exertion essential. This application is taken care of by the school staff thusly there's no data hole and information will get made sure about. Since it is an android based application so anybody can utilize the framework anyplace anytime

and it's exceptionally easy to get the obligatory data without the inertness. It is useful for researchers to ask their reports on class plan and internal assessments.

6.2 Following future prospective will be drawn:

There is progress work being developed to expand programming highlights, for example, the area usefulness through the remote system in and around the campus territory, and in-progress activities like the "Remote Trondheim" are working to build its quality, much more, demonstrating usefulness, for example, what we've encountered with as a freely acquired help, as a campus region direct. Guardians moreover get profited a great deal since colleges will send the popup notice to the separate by means of the SMS or email will be sent to ask the recent developments to occur in the colleges. Since this application is dealt with by the school staff at whatever point they need any adjustments in programming, they can make it while not making the immediate venture, and along these lines the framework is highly made sure about once it's taken care of by the own college staff.

8. REFERENCES

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