A Project Report on

STUDENT INFORMATION MANAGEMENT SYSTEM
(AM Institute Of Technology)

Submitted for

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Coarse Name

CSE3009 – NoSQL Databases

by

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June 2021

ABSTRACT

A simple interface for updating and viewing the student information is provided by the student information management system. It allows educational institutions or colleges to conveniently keep track of their students' records. In both universities and schools, the production and management of reliable, up-to-date information about a student's academic future is crucial.The student information system manages all aspects of a student's life, including attendance, grades, transportation, and fees. This project is essential because it provides a safe method of importing and creating student records into existing applications. It is structured in a user-friendly manner so that management can produce a wide range of reports for student data using clear menus and options.

Furthermore, to improve or bring out the efficient and successful administration of academic information systems such as student grades, academic calendars, syllabuses, and course registration, among other things. It would also aid in the faster processing of information and input, as well as focusing the attention of institutions of higher learning on the benefits gained by the use of modern communication systems.The aim of this project is also to include a rudimentary introduction to databases and their integration with the http server. Before we get into the details and theories, let's take a look at some of the more general aspects of this research.

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CHAPTER 1

INTRODUCTION

The main goal of this project is to provide a simple admin interface for educational organisations to use in order to analyse student behaviour. This aids in the decision-making process and increases data precision. The project's stated goal is achieved by providing various menus and filters that make it simple for the user to produce required reports. The additional information.An additional function that will be integrated is the ability to produce a comprehensive student study. The device would have two key users: one is the system administrator, and the other is the faculty.

1.1   Objectives

The following are the objectives of this project:

- Providing the searching facilities based on various factors such as Logins,Transport, Grades and Fees
- Integrate data sources and process them through a single function that supports one-time entry of student data.
- It deals with monitoring and managing the information.
- Ensures data integrity, privacy, and security of the information.
- It reduces paperwork and workload, resulting in increased productivity.
- To develop the system and procedure for the college to ensure that end-users are provided with equisetic tools and data that are cost effective and easily accessible.

1.2   Background and Literature Survey

There was a time in the primitive and barbarian days before computers, the amount of information shepherded by a group of people could be collected in the wisdom and the stories of its older members. In this world story tellers, magicians and grandparents were considered a great and honoured storehouse for all that was known.It gets to a stage when the data are too much to be managed in the minds of the elders. And so in order to store all the new information, humanity invented the technology of writing and data began to be stored in voluminous data repositories called books. As we know, eventually books capsulated with great speed and soon whole communities of books migrated to the first real "database" libraries. Unlike previous versions of data warehouses (i.e People and books) that might be considered the australopithecus of the database lineage, libraries crossed over into the modern day species, though they were incredibly primitive of course over into libraries introduced."Standards" by which data could be stored and retrieved. Afterall, without a standard for accessing data, libraries will be like closet, endless and engulfing swans of chaos, books and the data within books, had to be quickly accessible by anyone , if they were to be useful. The usefulness of a library or any base of data is proportional to its data storage and retrieval efficiency. This one corollary would drive the evolution of database over the next 2000 years to its current state

1.3   Organization of the Report

The remaining chapters of the project report are described as follows:

- Chapter 2 contains the proposed system, methodology and software details.
- Chapter 3 gives the analysis of the Data.
- Chapter 4 discusses the results obtained after the project was implemented.
- Chapter 5 concludes the report.
- Chapter 6 consists of codes.
- Chapter 7 gives references.

CHAPTER 2

2.   Working Methodology

The project is completely based on software with two sections, front-end and back-end. The front-end consists of an HTML(HyperText Markup Language) file and a CSS(Cascading Style Sheets).The Backend consists of PHP(Hypertext Preprocessor) connected to the MongoDB database with the student information.Using the HTML we have prepared webpages where the data can be retrieved.Along with the PHP we used MongoDB commands to connect to the database and display the selected category of the information.

PHP

PHP is a general-purpose scripting language that is especially suited to server- side web development where PHP generally runs on a web server. PHP code is embedded into the HTML source document. Any PHP code in a requested file is executed by the PHP runtime, usually to create dynamic web page content.It can also be used for command-line scripting and client-side GUI applications.

MongoDB

MongoDB is a source-available cross-platform document-oriented database program. Classified as a NoSQL database program, MongoDB uses JSON-like documents with optional schemas.

HTML

HTML is the standard markup language for documents designed to be displayed in a web browser. HTML describes the structure of a web page semantically and originally included cues for the appearance of the document.

XAMPP

XAMPP is a small and light Apache distribution containing the most common web development technologies in a single package. Its contents, small size, and portability make it the ideal tool for students developing and testing applications in PHP and different Databases. XAMPP is available as a free download in two specific packages: full and lite.

2.1   Hardware and Software Requirements

One of the most difficult tasks is that, the selection of the software, once system requirement is known for determining whether a software package fits the requirements. After initial selection further security is needed to determine the desirability of software compared with other candidates. This section first summarizes the application requirement question and then suggests more detailed comparisons.

- **Hardware Requirement:**
  1. 32/64-bit processor
  2. I3 or greater Intel processor chip
  3. 1.7 or more GHz processor

- **Software Requirement:**
  Front-end: Html, CSS
  Back-end: PHP
  Database: MongoDB
  Tools used: Visual Studio Code, Xampp
  Browser supported: Google Chrome

CHAPTER 3

DATABASE ANALYSIS

3.1   Datasets and attributes

Our dataset has the data of 100 students.Attributes namely Registration Number, Name, Branch, Subjects, CGPA, Clubs and Chapters, Transport, Hostel and Fees.
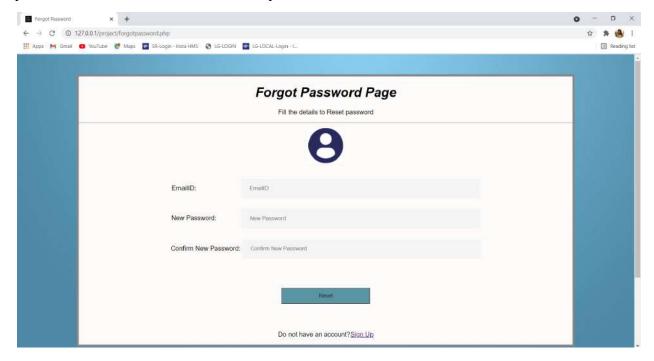
- The attribute registration number is made up of all of the students' registration numbers.
- The attributes Name include the names of all the students
- The attribute Branch includes the branch in which they joined.
- The attendance percentage of each particular subject of all students is stored in Attribute Subjects.
- The GPA of each semester for all students is stored in the attribute CGPA.
- Attribute Clubs and Chapters contains information about which students belong to which club.
- Student's travel data, whether through college or personal transportation, is stored in the attribute Transport.
- The data on the students who belong to which hostel and day scholars is stored in the attribute Hostel.
- The students with Attribute Fees are those who have paid or owe any fees.
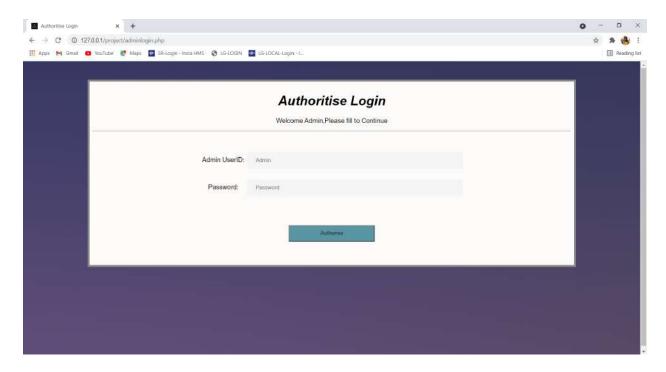
CHAPTER 4

RESULTS AND DISCUSSIONS

Login Page : If valid credentials that are in the database are given, it takes us to the home page otherwise it stays on the same page.
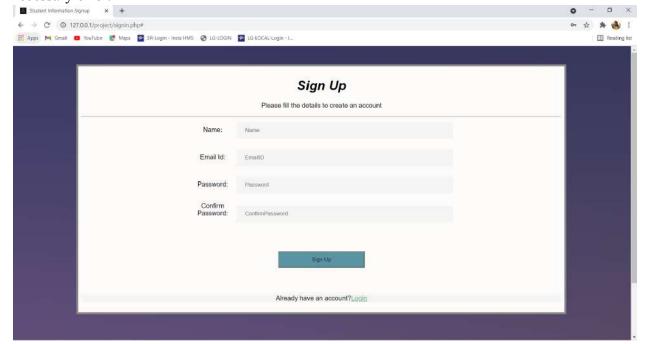

Forgot Password Page : If password is forgotten by the user he can update his existing

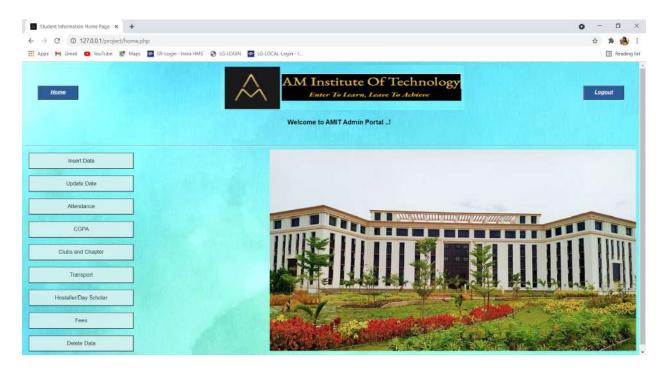password with the new one with the help of the EmailID.

Authoritise Login : As it is from the Admin side,it must be safe and secure.So to add a new user he/she must have the admin credentials.
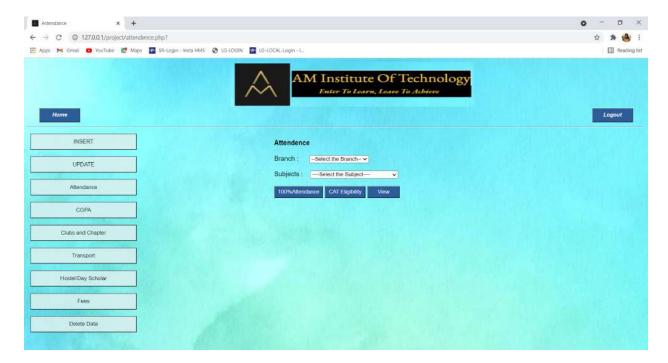

SignUp Page: If a new user is to be added,he/she can give the details specified and if both password and confirm password are equal, it successfully adds the user or else prints the necessary error.
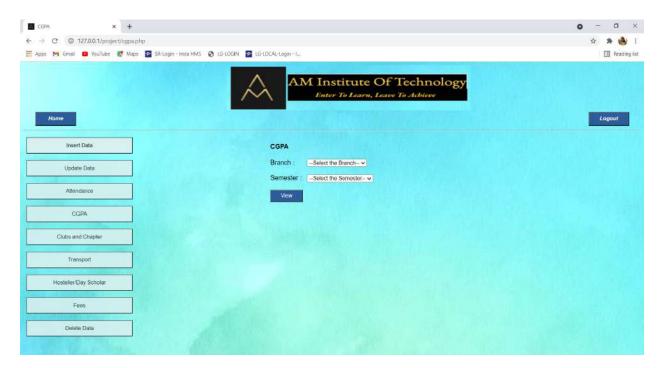
Home page: It displays all the features available to retrieve from the database management.
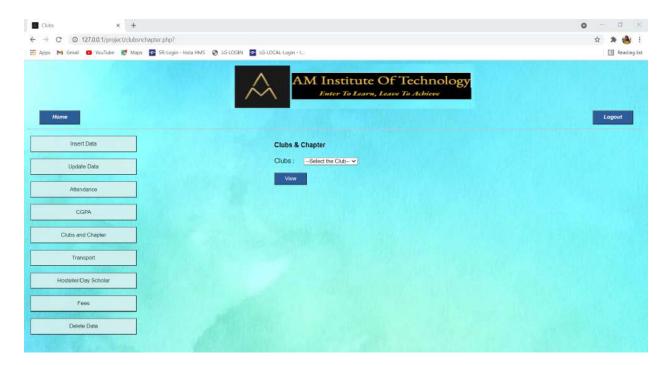

Attendance : It is used to get the information by clicking on the necessary button.100%Attendance button prints who have 100 attendance in a subject,CAT Eligibility button prints the students above 75 attendance & View button displays all the student's attendance data.
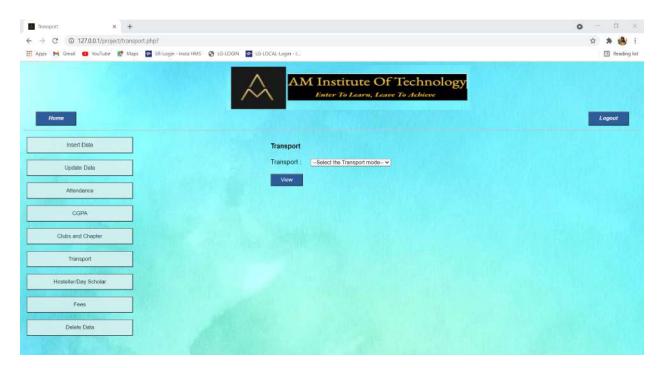
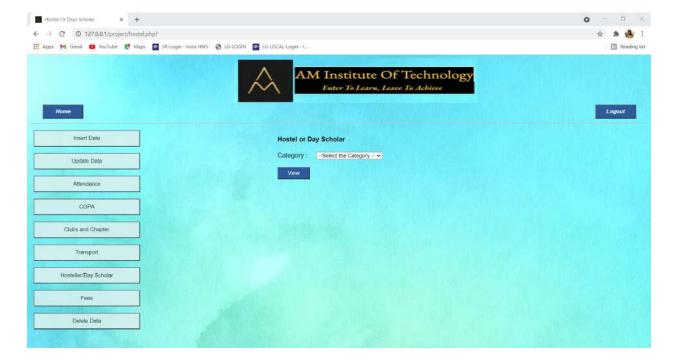**CGPA :** We get the semester wise grades of the students of a specific branch.

Clubs and Chapters : We get the information of students enrolled in a specific club.
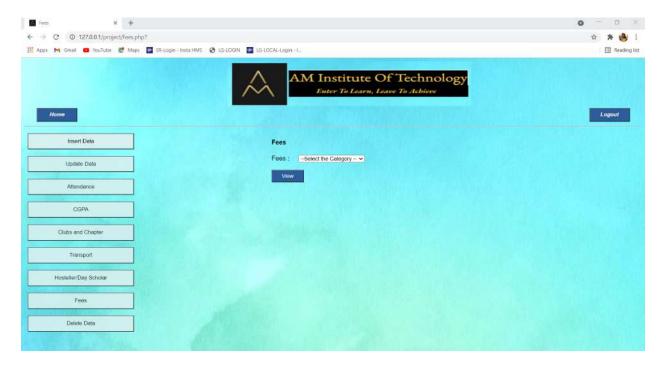
Transport : We get the information of students of specific transport type.
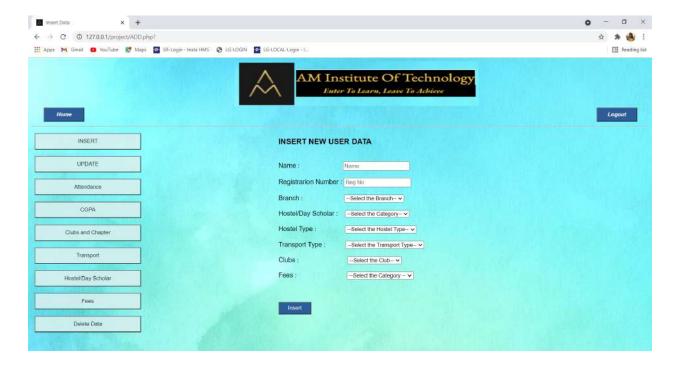

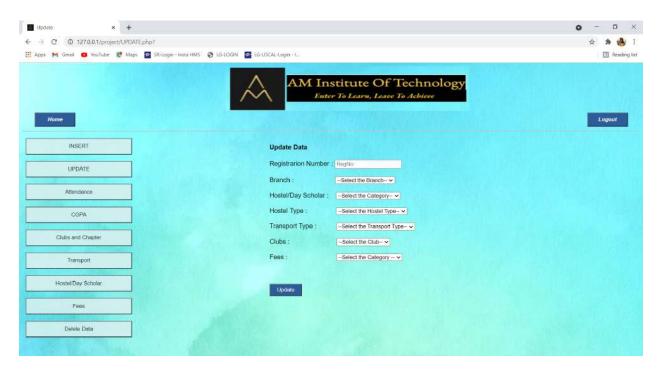**Hosteller/DayScholar :** We get the information of students who are Hostellers and DayScholars.

Fees: We get the information of students who paid the fee or have a due in fee.
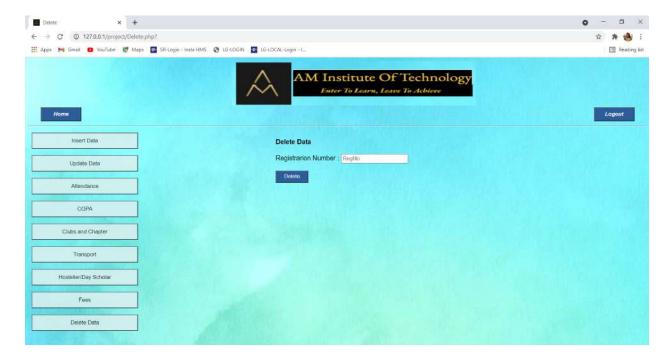

Insert Data : Used to insert a new student's data into the database.

Update Data: Used to update the student's data existing in the database.

Delete Data : Used to delete a student's data.

CHAPTER 5

CONCLUSION AND FUTURE WORK

Conclusion:

Student management system is developed for a college/university. Student Information Management System can be used by education institutes to maintain the records of students easily. Achieving this objective is difficult using a manual system as the information is scattered, can be redundant and collecting relevant information may be very time consuming. All these problems are solved using this project.The system uses HTML and CSS for frontend and PHP as backend.

The system is strong enough to withstand regressive daily operations under conditions where the database is maintained and cleared over a certain time of span. The implementation of the system in the college/university will considerably reduce data entry, time and also provide readily analysed reports.Student information management system lead to a better organization structure since the information management of the students is well structured and also lead to better as well as efficient utilization of resources.

Future work:

We suggest the following future extensions to our work:
- To improve this project as the Students interface and make an easy portal to get their information for themselves.
- Add more features like online payments, individual student profiles etc
- After the analysis the management can monitor the student so easily with the above functionality and inform their parent/guardian through email communication.
- Can enhance the system with more effective representation of reports using graphs.
- Enabling the importing of data from different modules and then retrieving the required data.

CHAPTER 6

APPENDIX (ONLY NOSQL CODE)

We have performed all the CRUD(Create,Read,Update & Delete)operations in MongoDB.The MongoDB commands we used in our project are :

insertOne() : ADD.php & signin.php
find() : loginpage.php, attendence.php, cgpa.php, clubsnchapter.php, fees.php, transport.php & hostel.php
updateOne() : forgotpassword.php & UPDATE.php
deleteOne() : Delete.php

Hereby ,I am attaching link to access the files of our project :

https://drive.google.com/drive/folders/17vYSQBY6sBGcOyXWPO5L2t8pdTZXwe7F?usp=sharing

CHAPTER 7

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