

PROJECT WORKFLOW

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SEAT NO	:	185
PROJECT ID	:	25
PROJECT TITLE	:	Student Database Management

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1. INTRODUCTION

The purpose of this document is to outline the requirements, proposed solution and plan for the development of the Students Database Management System. The document will explain to you in detail how our system works, how it solves the problem and how it increases productivity. It serves as a guide for the project developer and stakeholders throughout the development lifecycle.

2. PROJECT OVERVIEW

2.1 Problem:

One of the primary challenges with the current student database system is the difficulty in retrieving student data due to its fragmented nature and lack of user-friendly interfaces. Also the current system makes it time-consuming and tedious to manage student records. So to increase productivity and efficiency a new management system is required.

2.2 Solution:

The proposed solution entails developing a user-friendly web application using the LAMP stack (Linux, Apache, MySQL, PHP) with HTML, CSS, and JavaScript for the frontend. This solution will provide a centralized platform for managing student records efficiently and securely. Intuitive search and filter functionalities will enable users to quickly locate specific

student information, improving overall accessibility and usability. Our system will automate repetitive tasks and provide tools to streamline administrative workflows. Features such as email integration, analytics dashboards etc will empower administrators to work more efficiently, freeing up time for other essential tasks.

2.3 Objectives:

1. Improve efficiency in managing student records:

By streamlining administrative processes and enhancing data accessibility, the DBMS aims to significantly improve operational efficiency.

2. Ensure accuracy and security of student data:

Robust security protocols and data validation mechanisms will safeguard the integrity of student information, ensuring compliance with data protection regulations.

3. Enhance accessibility to student information:

Intuitive search and filter functionalities will enable users to effortlessly retrieve relevant student data, fostering a more user-centric experience.

4. Increase productivity in administrative tasks:

Automation features and integrations with third-party tools will reduce manual intervention, thereby boosting overall productivity and resource optimization.

3. SCOPE AND DELIVERABLES

The project includes the following scope and deliverables:

1. User-friendly interface for managing student records.
2. Search and filter functionality for easy retrieval of student information.
3. Excel upload feature for bulk addition of student records.
4. Integration with email for communication with students.
5. Log based system to keep track of all the activities.

4. REQUIREMENTS GATHERING

Requirements were gathered through stakeholder interviews and analysis of existing processes. Key functional and non-functional requirements include:

4.1 Functional Requirements:

1. Displaying student records,
2. Search and filter functionality,
3. Analytics of students details,
4. Excel upload feature and
5. Email integration.

4.2 Non-functional Requirements:

1. Security,
2. Performance and
3. Usability.

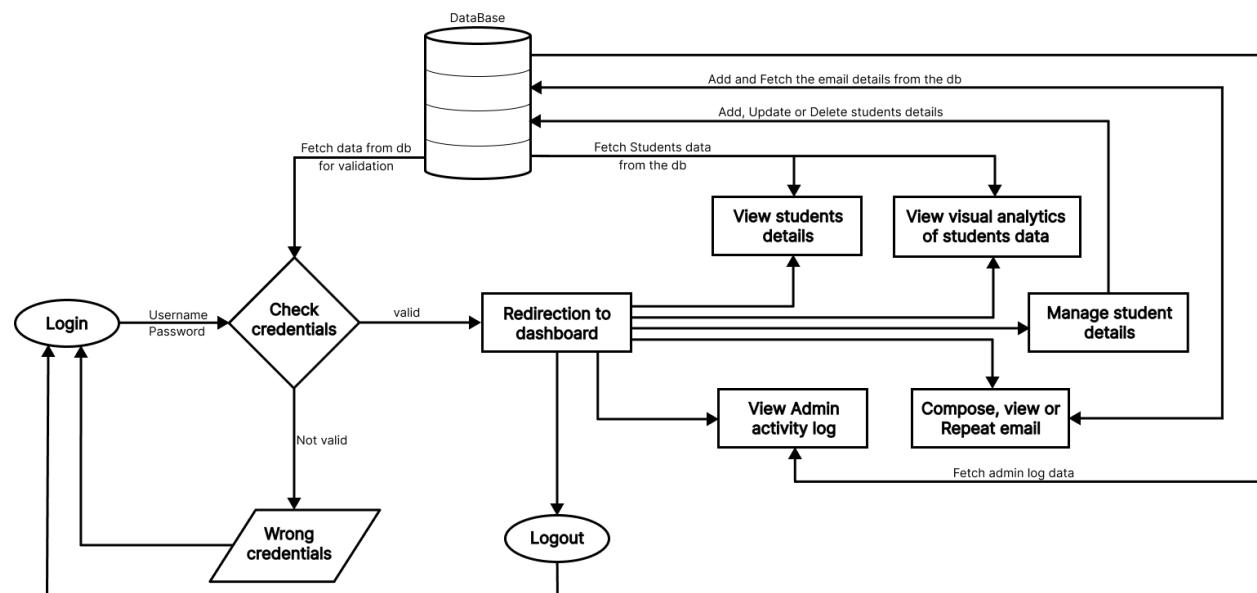
5. SYSTEM ARCHITECTURE

The system will be built using the LAMP stack:

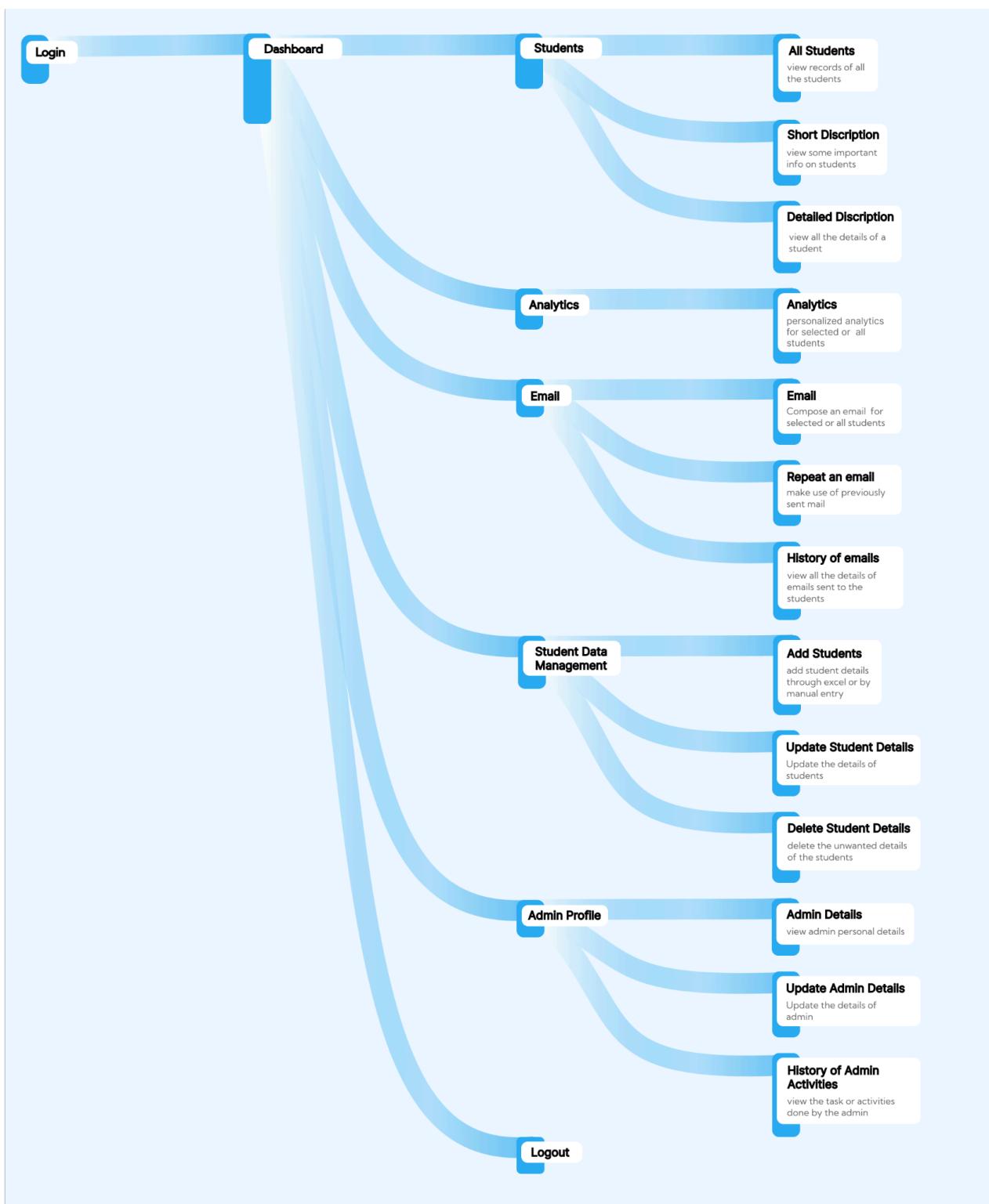
1. Linux (Operating System)
2. Apache (Web Server)
3. MySQL (Database)
4. PHP (Backend Framework)
5. HTML, CSS and JS (Frontend)

The prototype design for the admin's view and the functional workflow will serve as an outline for the development.

FUNCTIONAL PROTOTYPE



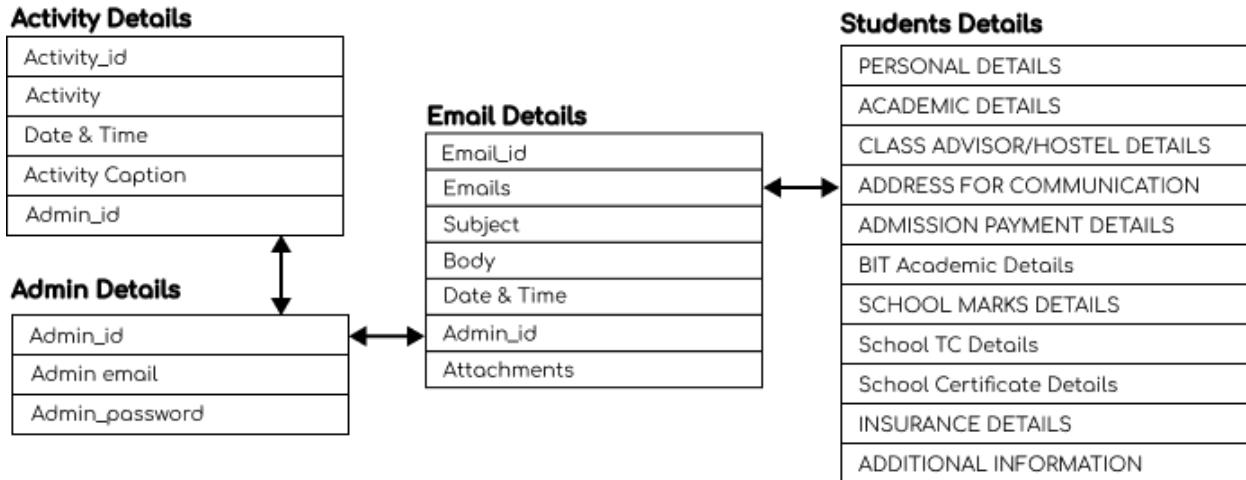
ADMIN'S VIEW



COMPLETE DATA

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DATABASE DIAGRAM



6. MILESTONES

The project timeline spans with the following milestones:

- Milestone 1: Planning and Requirement Gathering
- Milestone 2: Design and UI/UX Prototyping
- Milestone 3: Database Design and Implementation
- Milestone 4: Backend Development
- Milestone 5: Integration and Testing
- Milestone 6: Deployment

7. RISK MANAGEMENT

7.1 Security Risks:

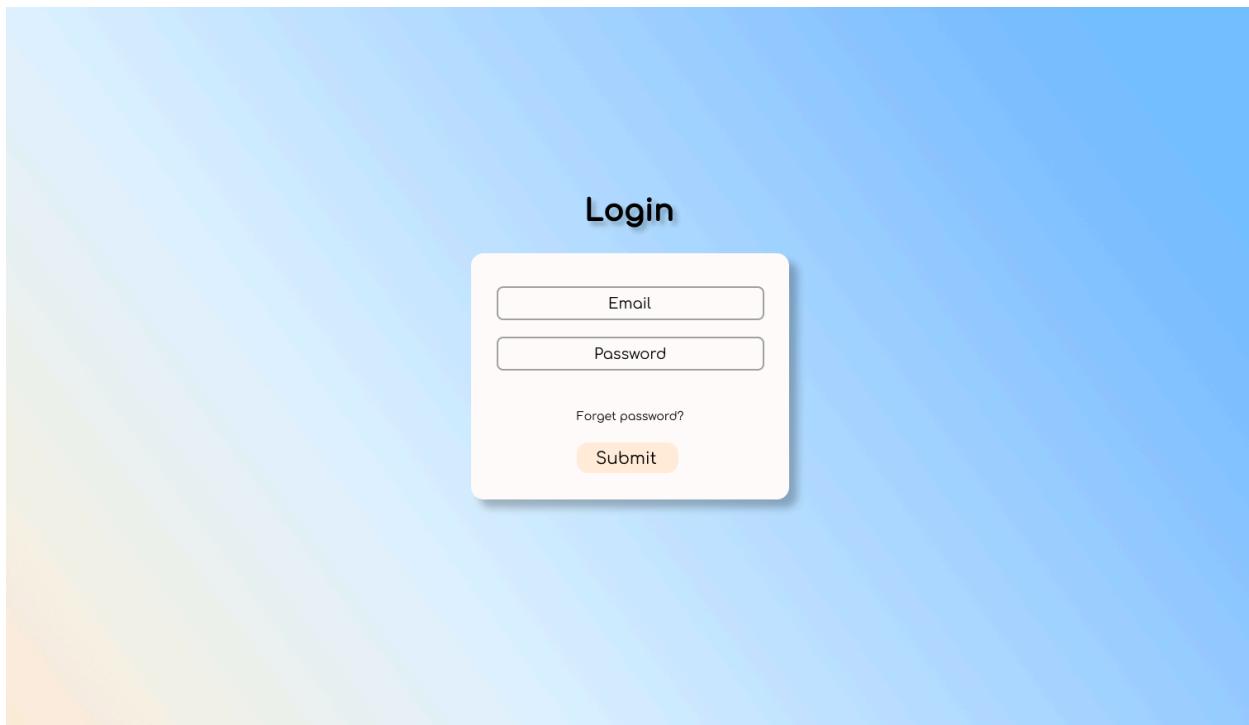
1. Maintaining the security of sensitive content, including student records and personal information, presents a significant risk. Potential threats include unauthorized access, data breaches, and malicious attacks targeting the web application.
2. Risks associated with security vulnerabilities in the application code, third-party libraries, and infrastructure components must be carefully managed to prevent data loss or exposure of sensitive information.

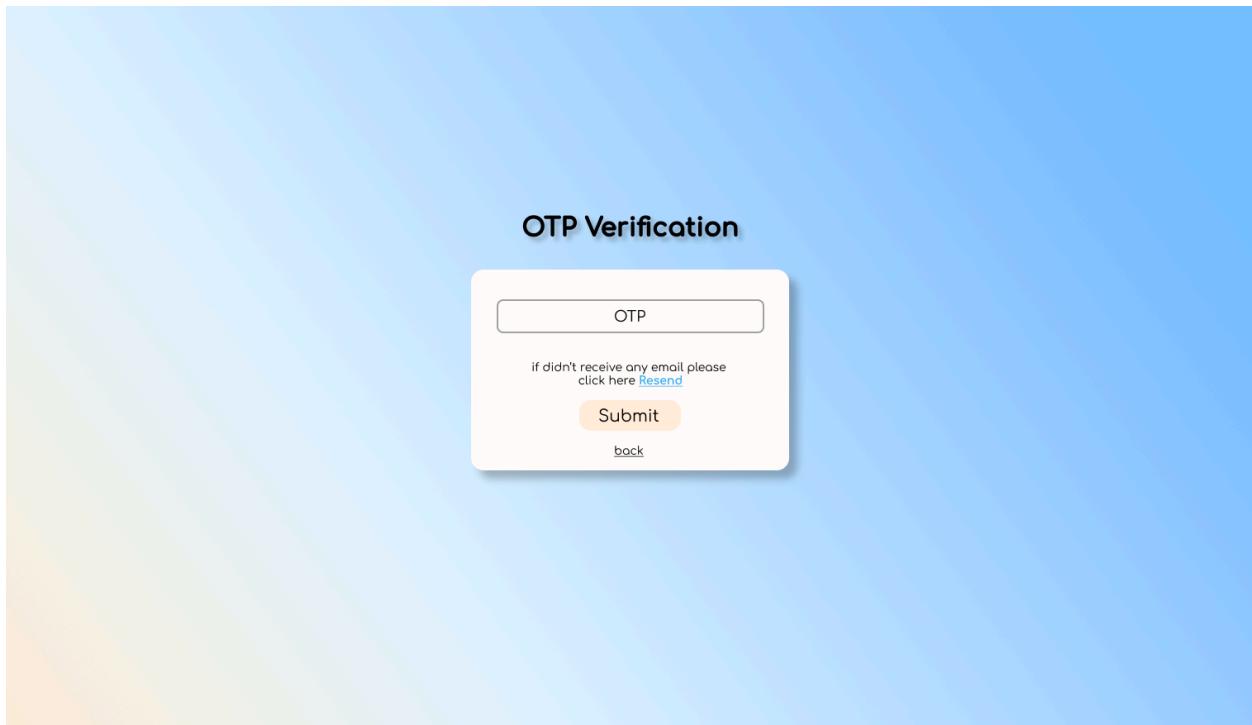
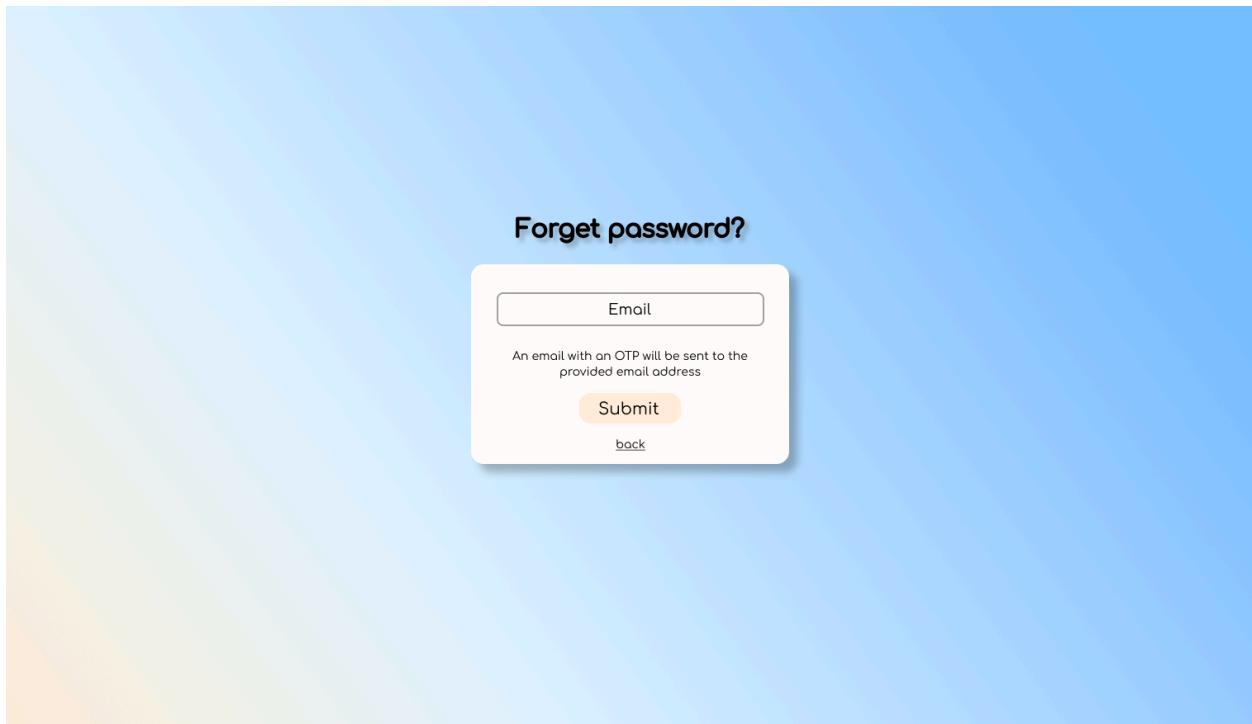
7.2 Performance Risks:

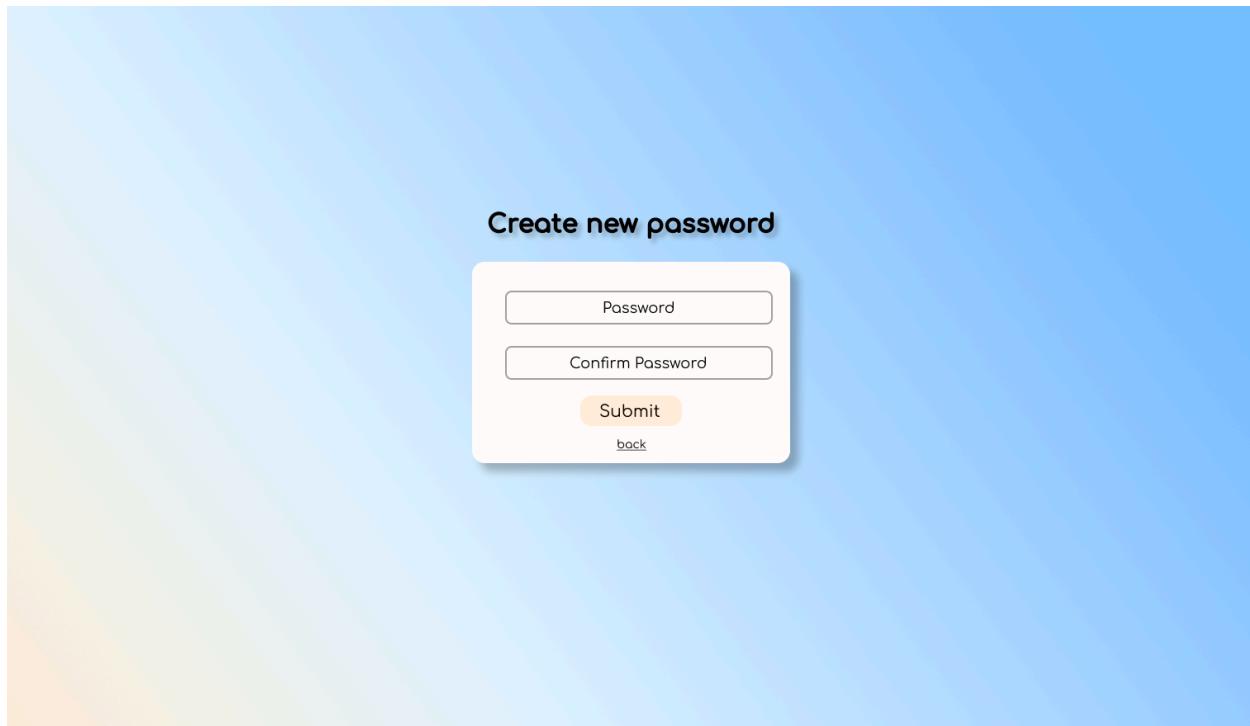
1. The large volume of data stored in the database poses a risk to website performance, potentially resulting in slow page load times, decreased responsiveness, and degraded user experience.
2. Risks related to inefficient database queries, resource-intensive operations, and scalability limitations must be addressed to ensure optimal performance and responsiveness of the web application, particularly during peak usage periods.

To effectively mitigate these risks, it's essential to implement robust security measures, such as access controls, encryption, and intrusion detection systems, to safeguard sensitive data. Additionally, performance optimization strategies, including database indexing, caching, and query optimization, should be employed to enhance website speed and responsiveness while efficiently managing large datasets. Regular security assessments, performance monitoring, and proactive risk management practices are crucial for maintaining the integrity, security, and performance of the web application over time.

8. DESIGN PROTOTYPE







The dashboard header includes "SDM", a search bar, and a user profile for "Kavin Admin". On the left, there are navigation icons for "Students", "Analytics", "Email", "Manage Data", and "Logout". The main content area shows a table titled "All Students" with columns: S.No, Student Name, Roll number, Department, Email, and Year. The table lists 12 entries for "Kavin S" with various roll numbers and years. To the right of the table is a summary box showing "1825 TOTAL COUNT" and "0 FILTERED COUNT". Below this is a detailed student profile for "KAVIN S" (7376222CB124), listing personal details like department (B-TECH CSBS), mentor (PRABHAVATHI K (MA1334)), and special lab (DATA SCIENCE - BIG DATA ANALYTICS). It also shows contact information and a blood group (B+ve).

S.No	Student Name	Roll number	Department	Email	Year
1	Kavin S	7376222CB124	Computer Science and Business Systems	kavin.cb22@bitsathy.oc.in	2nd
1	Kavin S	7376222CB124	Computer Science and Business Systems	kavin.cb22@bitsathy.oc.in	2nd
1	Kavin S	7376222CB124	Computer Science and Business Systems	kavin.cb22@bitsathy.oc.in	2nd
1	Kavin S	7376222CB124	Computer Science and Business Systems	kavin.cb22@bitsathy.oc.in	2nd
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1	Kavin S	7376222CB124	Computer Science and Business Systems	kavin.cb22@bitsathy.oc.in	2nd
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1	Kavin S	7376222CB124	Computer Science and Business Systems	kavin.cb22@bitsathy.oc.in	2nd

SDM

Students

Analytics

Email

Manage Data

Logout

Kavin Admin

X FILTER

Select the required fields

Search

Department X Gender X Age X

Total Available Fields

Personal Details

- Batch number
- Date of Admission
- Student Name
- Gender
- Date of Birth
- Age
- Community
- Guardian name
- Religion
- Nationality
- Mother Tongue
- Blood Group
- Student ID
- Batch number
- Date of Admission
- Student Name
- Gender
- Date of Birth
- Age

Academic Details

- Guardian name
- Age

1825 TOTAL COUNT

0 FILTERED COUNT

KAVIN S
7376222CB124
SEMESTER IV
CONTINUING

DEPARTMENT: B-TECH CSBS
MENTOR: PRABHAVATHI K (MA1334)
SPECIAL LAB: DATA SCIENCE - BIG DATA ANALYTICS
SPECIAL LAB INCHARGE: VAANATHI S

PERSONAL DETAILS

DATE OF BIRTH: 09/03/2005
AGE: 18
EMAIL ID: kavin.cb22@bitsathy.ac.in
CONTACT NUMBER: 7418522544
BLOOD GROUP: B+ve

[View More >>](#)

SDM

Students

Analytics

Email

Manage Data

Logout

Kavin Admin

back

PERSONAL DETAILS

Batch	:	2022	Enrollment No	:	2022UCB1009
Date of Admission	:	27/09/2022	Register No	:	7376222CB124
Student Name	:	Mr. KAVIN S	DTE Reg. No.	:	
Gender	:	MALE	Application No	:	1586
Date of Birth	:	09/03/2005	Admission No	:	33669
Age	:	18	Father Name	:	SUBRAMANIAM S P
Community	:	BC	Mother Name	:	VIJAYALAKSHMI S
Guardian Name	:		Parent Occupation	:	
Religion	:	HINDU	Occupation	:	BUSINESS
Nationality	:	INDIAN	Place of Work	:	
Mother Tongue	:	TAMIL	Designation	:	
Blood Group	:	B+VE	Parent Income(₹)	:	120000.00
Student ID	:	33542			
Aadhar No	:	301569034690			

ACADEMIC DETAILS

Branch Code	:	2CB	Year	:	II
Degree Level	:	UG	Semester	:	IV
Course Code	:	B.TECH.	Year of Admission	:	2022
Course Name	:	BACHELOR OF TECHNOLOGY	Year of Completion	:	2026
Branch Name	:	COMPUTER SCIENCE AND BUSINESS SYSTEMS	Section	:	A
Department	:	COMPUTER SCIENCE AND BUSINESS SYSTEMS	Student Category	:	REGULAR
Branch Type	:	REGULAR	Seat Category	:	GOVERNMENT
Regulation	:	2021	Quota	:	OC ACADEMIC
University	:	ANNA UNIVERSITY, CHENNAI	Student Status	:	CONTINUING