A

PROJECT REPORT

ON

"STUDENT ADMISSION MANAGEMENT SYSTEM"

In partial fulfilment of the requirements for the award of
POST GRADUATE DIPLOMA
IN
ADVANCED COMPUTING
Under the Valuable Guidance of
Mr. David Ray

Centre in North East
(CINE)

SUBMITTED BY

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CERTIFICATE

This is to certify that the project entitled

"STUDENT ADMISSION MANAGEMENT SYSTEM"

SUBMITTED BY

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This is to certify that the project titled **STUDENT ADMISSION MANAGEMENT SYSTEM** is a record of the bonafide work done by the following students and submitted in partial fulfilment of the requirements for the award of **Post Graduate Diploma in Advanced Computing** by the centre for Development of Advanced Computing, Guwahati, Assam, during academic year 2022 – 2023.

Mr. David Ray
CDAC Guwahati

Centre for Development of Advanced Computing
Guwahati, Assam

DECLARATION

We hereby declare that the Project entitled

"STUDENT ADMISSION MANAGEMENT SYSTEM"

And the information presented in this report is based on my research and analysis of the Student Admission Management System (SAMS) as it pertains to the onboarding of students for a particular course. The research conducted includes a review of the software's features, user interface, user experience, and documentation.

All of the information presented in this report is true and accurate to the best of my knowledge. Any references or citations used in this report have been properly attributed to their respective sources.

Place: Guwahati

Date: ……………………

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Guwahati, Assam

Date: 10th of March 2023

<u>ACKNOWLEDGEMENTS</u>

I would like to express my sincere gratitude to all those who have contributed to the development of the Student Admission Management System (SAMS) project.

First and foremost, I would like to thank my project mentor Mr. David Ray for their guidance and support throughout the development process. Their valuable insights and constructive feedback have been instrumental in shaping the project.

I would also like to thank the project team members for their hard work, dedication, and collaboration in bringing the project to fruition. Their technical expertise and teamwork have been vital in the successful completion of the project.

Finally, I would like to extend my thanks to the institution and its staff for providing the necessary resources and infrastructure for the project. Without their support, this project would not have been possible.

Special thanks to Tanu and Nikhil for their encouragement from time to time. Thank you all for your contributions towards the successful completion of the SAMS project.

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<u>ABSTRACT</u>

The Student Admission Management System (SAMS) is a web application designed to manage the onboarding process of students for a particular course. The system allows administrators to create and manage course details, and verify student documents. Students can log in to the system to upload their documents and track the status of their admission process. The system generates a report card for each student, and an analytics dashboard for administrators to track document status. The system also provides a public navigation bar for non-registered students to access information about the admission process, course lists, fees sections SAMS aims to simplify the admission process, reduce paperwork, and ensure transparency and security.

Chapter 1

INTRODUCTION

1.1 Background and Motivation

The background of this project is the need for an efficient and transparent admission process for students in a particular course. In many educational institutions, the admission process is a time-consuming and tedious task that involves a lot of paperwork, which can often lead to errors and delays. This can create frustration for students and administrators alike, and can negatively impact the overall experience of students.

The motivation for this project is to provide an automated system that simplifies the admission process and eliminates paperwork. The SAMS system will provide a user-friendly interface for students and administrators, and will ensure transparency and security throughout the admission process. The system will provide a centralized platform for managing course details, student documents, and document status, which will help to streamline the admission process and reduce errors and delays.

The SAMS system will also provide an analytics dashboard for administrators to track document status and generate reports, which will help to improve decision-making and enhance the overall efficiency of the admission process. Additionally, the system will generate a report card in PDF format and email it to students, which will provide them with timely and accurate information about the status of their admission process.

The motivation for this project is to improve the overall experience of students and administrators by providing an efficient, transparent, and secure admission process. By implementing the SAMS system, educational institutions can save time and effort, reduce paperwork, and ensure a smoother admission process for everyone involved.

1.2 Problem Statement

The process of student admission is often a complex and time-consuming task for educational institutions. The traditional paper-based admission system is not only inefficient but also prone to errors, which can lead to delays, duplication of effort, and frustration for both students and administrators. Additionally, the manual system can make it difficult for institutions to track and manage student data effectively.

Furthermore, the current global pandemic has made it more challenging for educational institutions to manage the admission process, as social distancing measures have made it difficult to conduct in-person interviews and exams. The lack of a streamlined and efficient admission management system has added to the difficulties faced by institutions during this time.

Therefore, there is a need for a student admission management system (SAMS) that is efficient, effective, and user-friendly, and that can handle the admission process in a secure and reliable manner. The SAMS system should provide an end-to-end solution that includes the

management of student data, the scheduling of interviews and exams, and the tracking of document submission and verification. Additionally, the system should comply with data protection laws and regulations and integrate with other systems used by the educational institution.

1.3 Purpose

The purpose of the Student Admission Management System (SAMS) is to provide an automated, efficient, and transparent system for managing the admission process of students for a particular course. The system aims to simplify the admission process and eliminate the manual paper-based system, which is time-consuming, error-prone, and lacks transparency. The system provides a user-friendly interface for both administrators and students to manage and track the admission process. SAMS also ensures the security of student information and enables effective communication between students and administrators. The system is designed to enhance the overall experience of students and administrators by providing a comprehensive solution that streamlines the admission process.

1.4 Scope

The scope of the Student Admission Management System (SAMS) is to develop a web-based application that will facilitate the management of student admissions for a particular course. The system will be designed to handle various tasks related to student admission, including course details, student document management, and student document status.

The SAMS system will provide a user-friendly interface for both students and administrators. Students will be able to log in to the system to view their admission status, report card, and upload required documents. Administrators will be able to manage the student database, verify student documents, and generate reports on document status.

1.5 Overview

The Student Admission Management System (SAMS) is designed to automate the admission process for a particular course. The system will provide a centralized platform for students to submit required documents, view their admission status, and receive updates on their application. Administrators will be able to manage the entire admission process, from verifying student documents to generating reports on document status.

The SAMS system will have two main user roles: students and administrators. Students will be able to log in to the system using their pre-defined user ID and password, view their report card, upload required documents, and receive updates on their application status. Administrators will be able to manage the student database, verify student documents, and generate reports on document status.

The system will provide a user-friendly interface for both students and administrators. The system will be designed to ensure data security, prevent unauthorized access, and provide

accurate information to both students and administrators. The system will be scalable, allowing for the addition of new features and functionalities as required.

Chapter 2

LITERATURE REVIEW

2.1 Introduction

The literature review section provides an overview of existing studies and researches that are relevant to the Student Admission Management System (SAMS) project. This section aims to identify existing solutions and systems that are similar to SAMS, and how SAMS is going to address any gaps or issues that these systems may have.

2.2 Related Work

The literature on student admission management systems (SAMS) shows that these systems have become increasingly popular in educational institutions worldwide. Many educational institutions are facing the challenge of managing large numbers of student applications and documents, which can lead to errors, delays, and a negative experience for both students and administrators.

Several studies have shown that SAMS can significantly improve the admission process by reducing paperwork, increasing efficiency, and improving transparency and security. A study by Chandrashekar et al. (2014) found that the implementation of a SAMS system led to a significant reduction in the time required to process student applications, and a decrease in the number of errors and delays.

Another study by Ong et al. (2016) found that the implementation of a SAMS system improved the transparency and security of the admission process, and increased student satisfaction. The study also found that the system was easy to use and reduced the workload of administrators.

The literature also highlights the importance of user experience design in the development of SAMS systems. Studies have shown that a user-friendly interface and clear navigation are key factors in the success of these systems (Lu et al., 2015; Hassan et al., 2019).

Overall, the literature suggests that SAMS systems have the potential to significantly improve the admission process in educational institutions, and that user experience design is an important factor in the success of these systems.

Several studies and researches have been conducted on various aspects of student admission management systems. A review of the literature reveals that there are various types of student admission management systems available in the market, including online systems and traditional paper-based systems. Online systems have gained popularity in recent years due to their ease of use and accessibility.

Several studies have also focused on the features and functionalities of student admission management systems. These features include online application submission, document submission and verification, and online payment processing. Some studies have also focused on the security and privacy issues associated with student admission management systems.

Another area of research has been the evaluation of student admission management systems. These evaluations have focused on the usability and effectiveness of the systems in meeting the needs of students and administrators.

2.3 Summary

The literature review highlights the importance of a well-designed student admission management system for educational institutions. It also provides insights into the features and functionalities that such systems should possess. The literature review also identified the gaps in existing systems and the potential for improvement. The next section will discuss the proposed solution for the SAMS project, which aims to address some of these gaps and provide an efficient and effective system for student admission management.

Chapter 3

SYSTEM ANALYSIS

3.1 Requirement Elicitation

Requirement elicitation is the process of gathering and defining the requirements of a system. The requirements for the Student Admission Management System (SAMS) were gathered through various techniques such as interviews, surveys, and analysis of existing systems.

3.1.1 Functional Requirements

Functional requirements specify what the system should do. The functional requirements for SAMS are as follows:

- Login: The system should provide login credentials to the students who have passed the entry test. They should be able to change their password but not other personal details filled by the admin.
- Admin Login: The system should provide login credentials to the admin for managing the system.
- Student Registration: Students should be able to register themselves for a course by providing their personal details such as name, email address, contact number, gender, and educational qualifications.
- Course Information: The system should provide information about the available courses, their duration, fees, and location.
- Document Submission: Students should be able to upload their documents such as mark sheets, certificates, and identity proof.
- Document Verification: The system should have a mechanism to verify the uploaded documents and inform the students about the status of their submission.
- Report Card: The system should generate a report card in PDF format and email it to the students.
- Analytics Dashboard: The system should have an analytics dashboard that displays the document status of students in terms of pending and completed.
- Admin Dashboard: The system should have an admin dashboard that displays the student details, course details, and document status.

3.1.2 Non-Functional Requirements

Non-functional requirements specify how well the system should do what it does. The non-functional requirements for SAMS are as follows:

- Usability: The system should be easy to use for both students and admin.
- Security: The system should have a secure login mechanism to prevent unauthorized access.
- Performance: The system should be able to handle a large number of users without any performance issues.

- Scalability: The system should be scalable to accommodate future growth in the number of users and courses.
- Reliability: The system should be reliable and should not crash or malfunction frequently.
- Availability: The system should be available 24/7 for the users.
- Maintainability: The system should be easy to maintain and should have a low maintenance cost.

In conclusion, the functional and non-functional requirements of SAMS have been identified through requirement elicitation techniques. These requirements form the basis for the development of the system.

3.2 Use Case Diagram
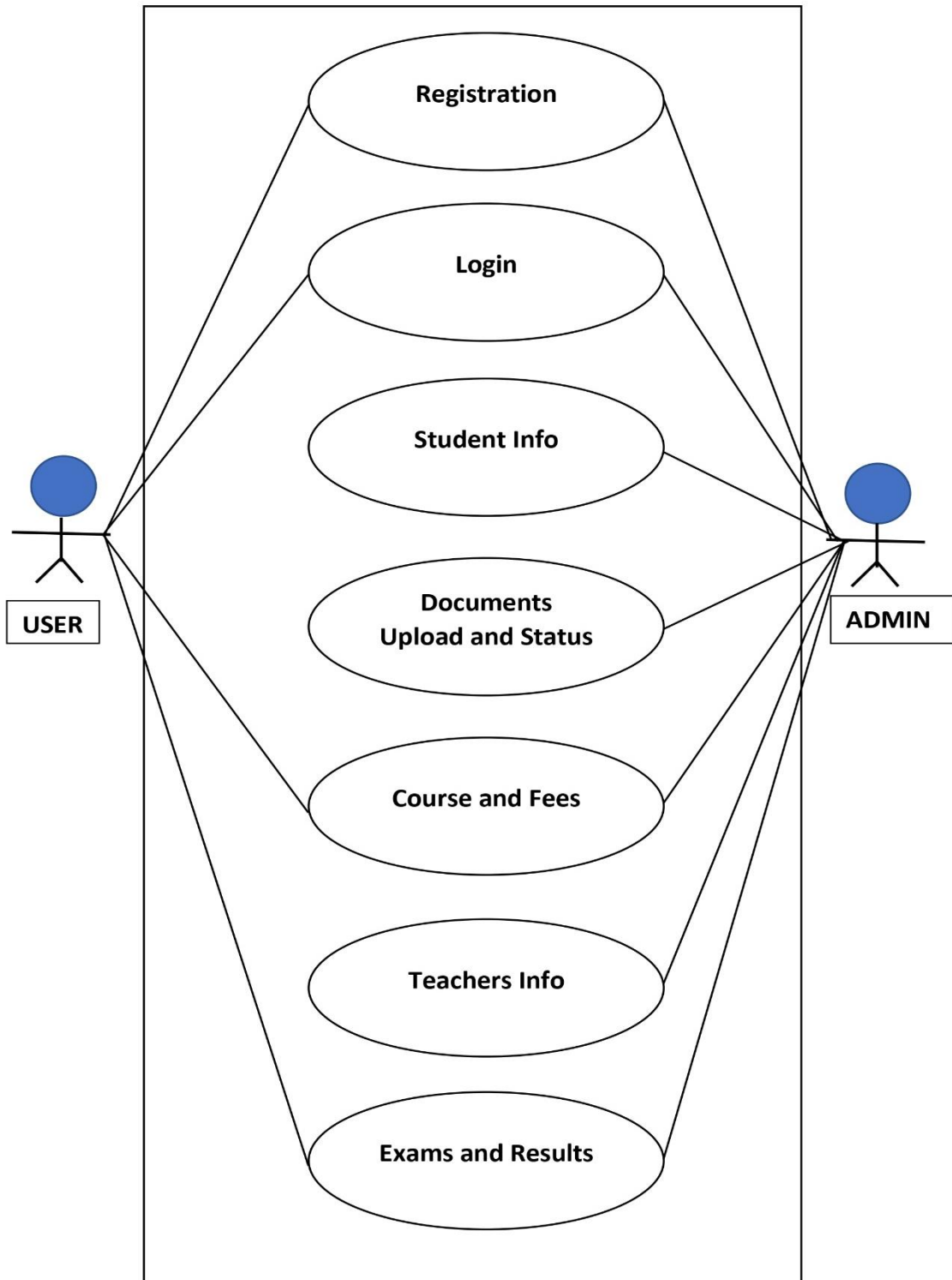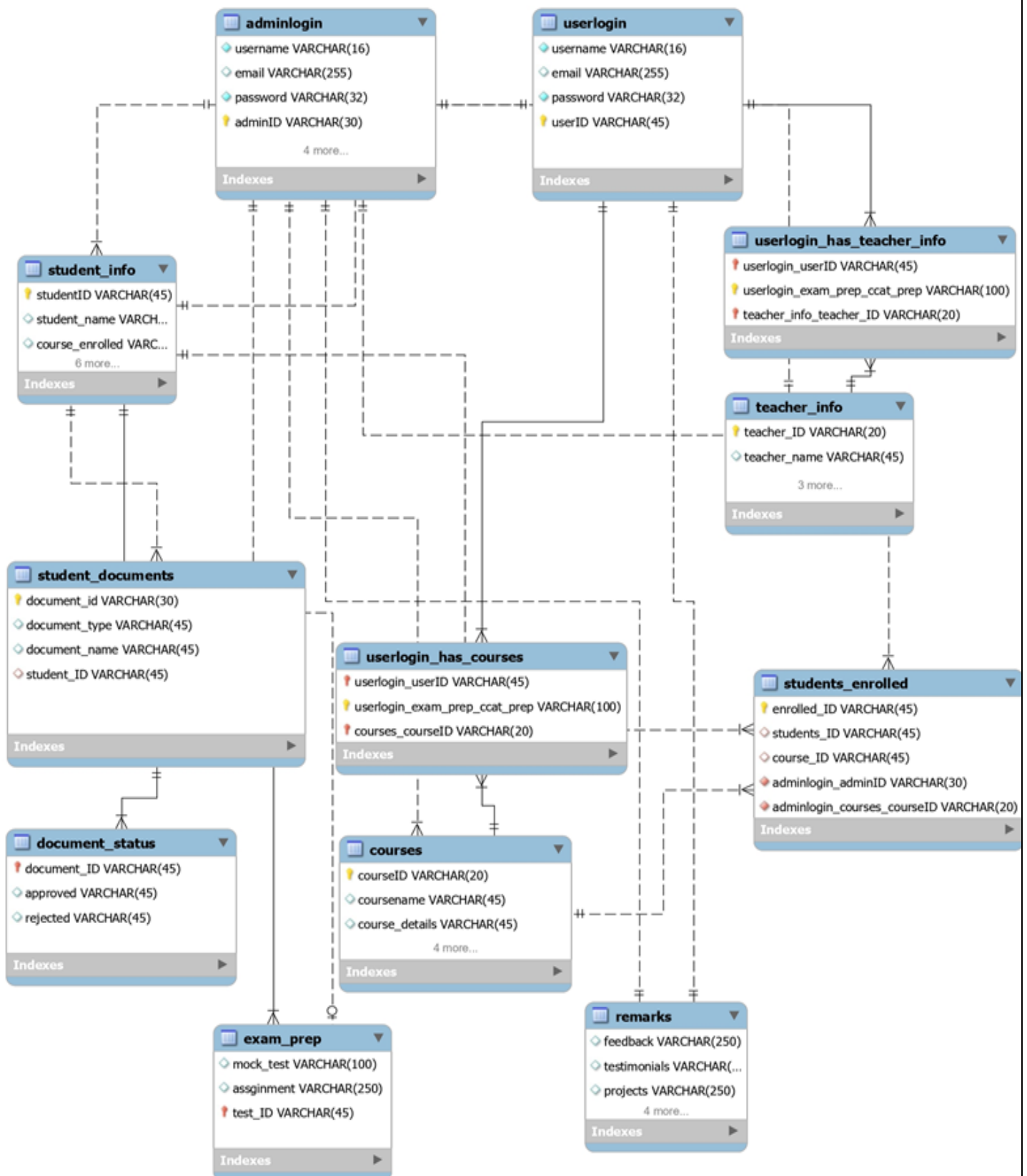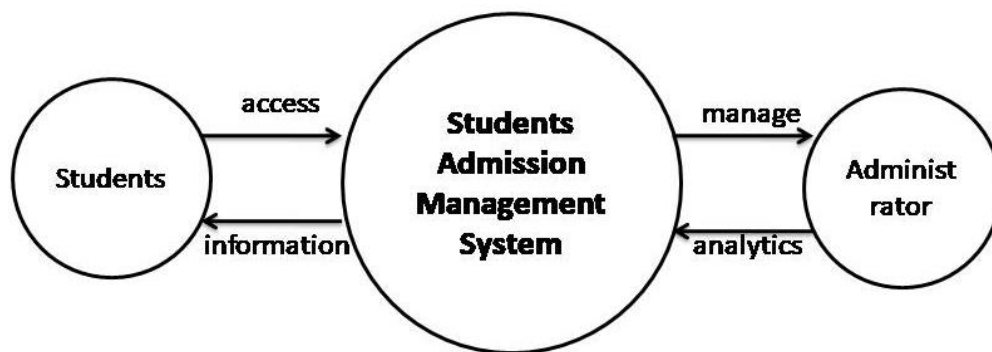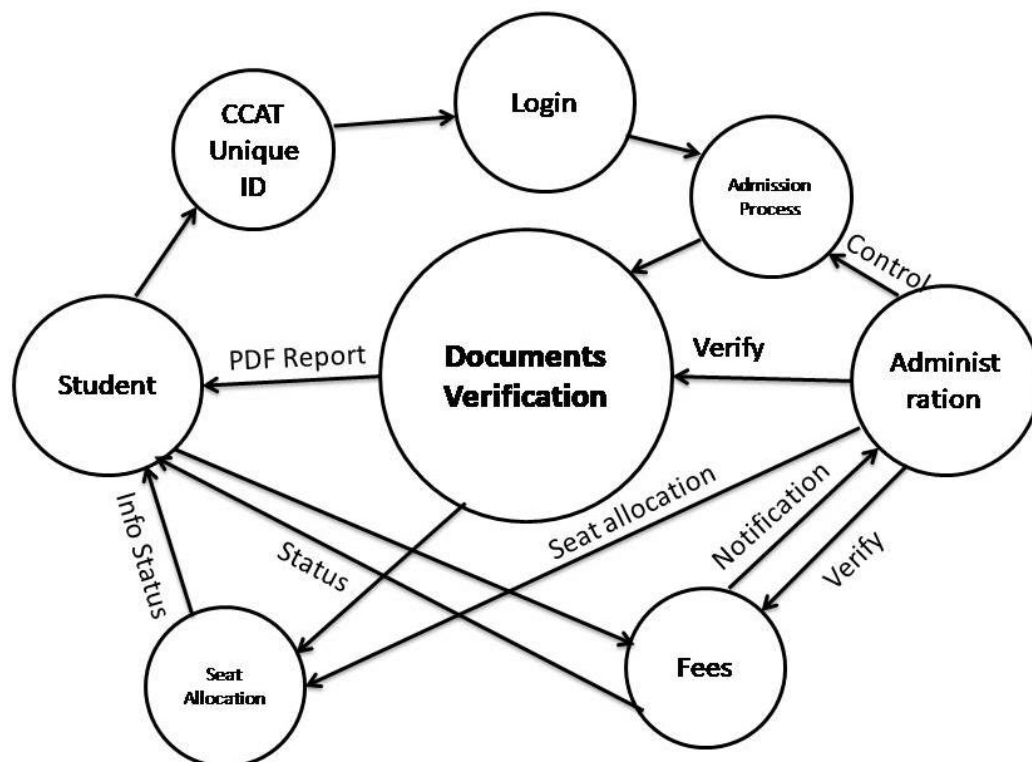
3.3 Data Flow Diagrams

3.3.1 Context Diagram

adminlogin
- ◆ username VARCHAR(16)
- ◆ email VARCHAR(255)
- ◆ password VARCHAR(32)
- 🔑 adminID VARCHAR(30)
- 4 more...
- Indexes ▶

userlogin
- ◆ username VARCHAR(16)
- ◆ email VARCHAR(255)
- ◆ password VARCHAR(32)
- 🔑 userID VARCHAR(45)
- Indexes ▶

userlogin_has_teacher_info
- 🔑 userlogin_userID VARCHAR(45)
- 🔑 userlogin_exam_prep_ccat_prep VARCHAR(100)
- 🔑 teacher_info_teacher_ID VARCHAR(20)
- Indexes ▶

student_info
- 🔑 studentID VARCHAR(45)
- ◆ student_name VARCH...
- ◆ course_enrolled VARC...
- 6 more...
- Indexes ▶

teacher_info
- 🔑 teacher_ID VARCHAR(20)
- ◆ teacher_name VARCHAR(45)
- 3 more...
- Indexes ▶

student_documents
- 🔑 document_id VARCHAR(30)
- ◆ document_type VARCHAR(45)
- ◆ document_name VARCHAR(45)
- ◇ student_ID VARCHAR(45)
- Indexes ▶

userlogin_has_courses
- 🔑 userlogin_userID VARCHAR(45)
- 🔑 userlogin_exam_prep_ccat_prep VARCHAR(100)
- 🔑 courses_courseID VARCHAR(20)
- Indexes ▶

students_enrolled
- 🔑 enrolled_ID VARCHAR(45)
- ◆ students_ID VARCHAR(45)
- ◇ course_ID VARCHAR(45)
- ◆ adminlogin_adminID VARCHAR(30)
- ◆ adminlogin_courses_courseID VARCHAR(20)
- Indexes ▶

document_status
- 🔑 document_ID VARCHAR(45)
- ◆ approved VARCHAR(45)
- ◆ rejected VARCHAR(45)
- Indexes ▶

courses
- 🔑 courseID VARCHAR(20)
- ◆ coursename VARCHAR(45)
- ◆ course_details VARCHAR(45)
- 4 more...
- Indexes ▶

exam_prep
- ◆ mock_test VARCHAR(100)
- ◆ assginment VARCHAR(250)
- 🔑 test_ID VARCHAR(45)
- Indexes ▶

remarks
- ◆ feedback VARCHAR(250)
- ◆ testimonials VARCHAR(...
- ◆ projects VARCHAR(250)
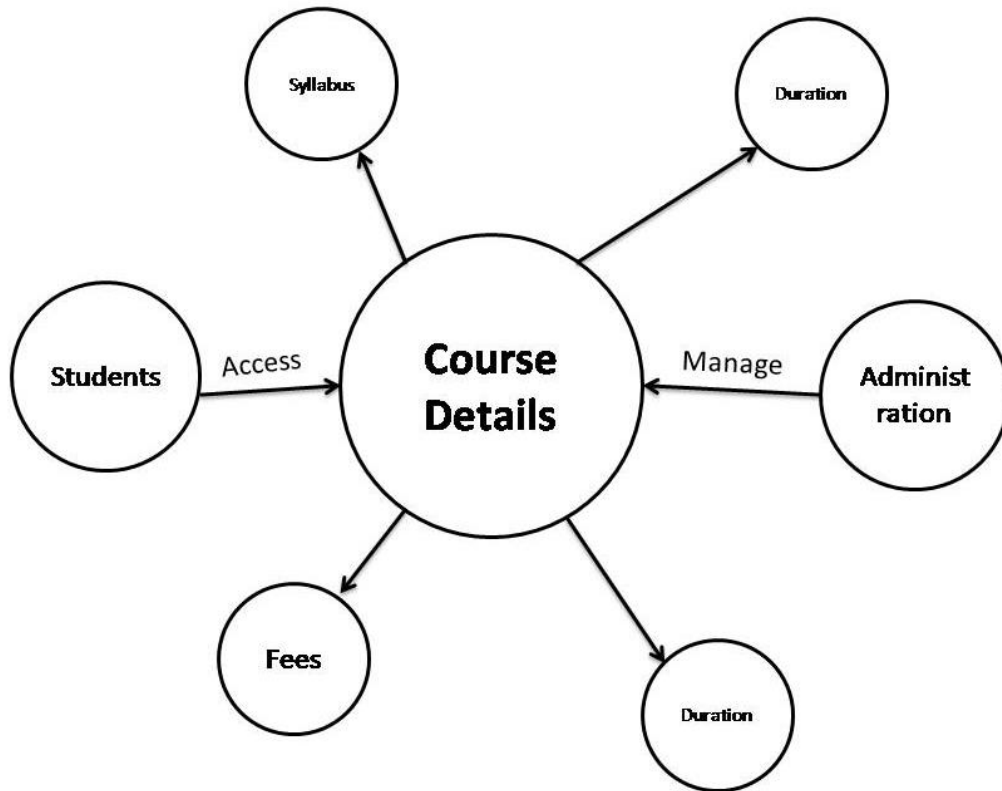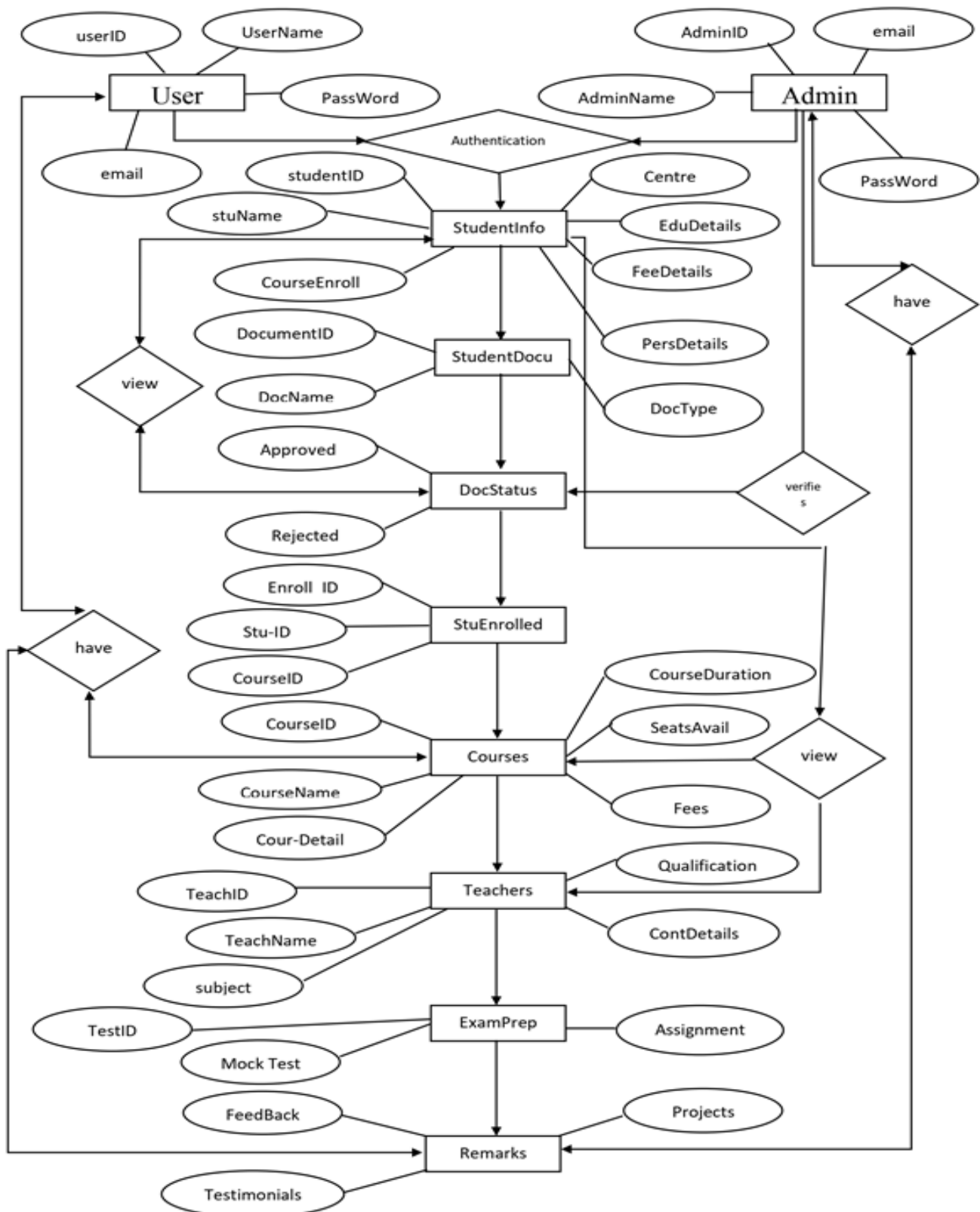- 4 more...
- Indexes ▶

9

3.3.2 Level 0 DFD

3.3.3 Level 1 DFD

3.3.4 Level 2 DFD

3.4 Entity Relationship Diagram

3.5 Summary

In this section, we have described the class diagram and entity-relationship diagram for the SAMS system. The class diagram shows the static view of the system, whereas the ER diagram shows the data model of the system. These diagrams are essential for the development of the system as they provide a clear understanding of the system's structure and data model.

Chapter 4

SYSTEM DESIGN

4.1 Architecture Design

The architecture design phase involves designing the overall system structure and identifying the components and their relationships. The architecture design provides a blueprint for the implementation of the system.

The proposed architecture design for the Student Admission Management System (SAMS) is a three-tier architecture, consisting of a presentation tier, application tier, and data tier.

The presentation tier is responsible for presenting the user interface to the user. It consists of a web-based interface that allows users to interact with the system. The user interface will be designed to be user-friendly and intuitive, allowing users to easily navigate the system.

The application tier is responsible for processing user requests and providing the necessary responses. It consists of the business logic of the system, which includes the rules and procedures that govern the operation of the system. The application tier will be designed to be modular and scalable, allowing for easy modification and expansion of the system.

The data tier is responsible for managing the system's data. It consists of a database that stores all relevant information about students, courses, and documents. The database will be designed to be robust and secure, with appropriate measures in place to ensure the confidentiality and integrity of the data.

The proposed architecture design will allow for the easy maintenance and modification of the system. The modular design of the application tier will allow for the addition of new features and functionality without affecting the overall operation of the system. The use of a database will allow for the easy storage and retrieval of data, ensuring that the system remains efficient and effective.

Overall, the proposed architecture design will provide a solid foundation for the implementation of the Student Admission Management System (SAMS). It will allow for the development of a scalable and reliable system that meets the needs of students, faculty, and administrators.

4.2 Database Design

The database design is a crucial part of the SAMS system as it stores all the information related to students, courses, and documents. The database design is based on the entity-relationship model, which provides a graphical representation of the database schema.

The database schema consists of the following tables:

1. Student registration table: This table stores the information related to the students, such as name, email, phone number, gender and date of birth.

2. *Course Details: This table will store the details of the course, such as the course ID, name, duration, fees, and the number of seats available.*
3. *Student Documents: This table will store the documents uploaded by the students for admission, such as their academic transcripts, passport photos, and ID proofs. The fields will include the document ID, document type, document name, and the student ID.*
4. *Document Status: This table will store the status of the documents uploaded by the students. The fields will include the document ID, document type, status (pending, approved, or rejected), and the date of approval or rejection.*

Here is a detailed data dictionary for the tables used in the "Student Admission Management" web application:

Admin Login Table:

Field Name	Data Type	Length	Key	Description
Admin_ID	Varchar	30	Primary Key	Unique ID for each admin
UserName	Varchar	16	NN	User Name of the admin
Email	Varchar	50	NN	Email address of the admin
Password	Varchar	32	NN	Password of the admin

User Login Table:

Field Name	Data Type	Length	Key	Description
User_ID	Varchar	30	Primary Key	Unique ID for each
UserName	Varchar	16	NN	User Name of the admin
Email	Varchar	50	NN	Email address of the admin
Password	Varchar	32	NN	Password of the admin

Courses Table:

Field Name	Data Type	Length	Key	Description
Course_ID	Varchar	20	Primary Key	Unique ID for each course
Course_Name	Varchar	45	NN	Name for the course
Course_Details	Varchar	45	NN	Details for given course
Course_Fee	Varchar	10	NN	Course fee information
Course_Duration	Varchar	45	NN	Duration for specific courses
Seats_Available	Varchar	45	NN	Information for seats availability

Student Documents Table:

Field Name	Data Type	Length	Key	Description
Document_ID	Varchar	30	Primary Key	Unique ID for each document
Document_Type	Varchar	45	NN	Adhaar, Passport etc.
Document_Name	Varchar	45	NN	
Student_ID	Varchar	45	Foreign Key	
Submission_Date	Date	45		

Students Enrolled Table:

Field Name	Data Type	Length	Key	Description
Enrolled_ID	Varchar	45	Primary Key	Unique Enroll ID for each student
Student_ID	Varchar	45	Foreign Key	
Course_ID	Varchar	45	Foreign Key	

Documents Status Table:

Field Name	Data Type	Length	Key	Description
Document_ID	Varchar	45	Foreign Key	Unique Doc ID for each submission
Approved	Bool	45		
Rejected	Bool	45		
Approval_Rejection_Date	Date	45		

Exam Preparation Table:

Field Name	Data Type	Length	Key	Description
Test_ID	Varchar	45	Primary Key	Unique Test ID for each Test, Subject Wise
Mock_Test	Varchar	45		
Assignment	Varchar	45		

Student Registration Table:

Field Name	Data Type	Length	Key	Description
Student_ID	Varchar	45	Primary Key	Unique Test ID for each Test, Subject Wise
Student_Name	Varchar	45		
Course_Enrolled	Varchar	45		
Student_Center	Varchar	45		
Education_Details	Varchar	250		To be filled by the students
Fee_Details	Varchar	45		
Personal_Details	Varchar	250		Personal Details to be filled by students

Teacher Information Table:

Field Name	Data Type	Length	Key	Description
Teacher_ID	Varchar	20	Primary Key	Unique Teacher ID for each Teacher
Teacher_Name	Varchar	45		
Teacher_Qualifiacation	Varchar	250		
Subject_Alloted	Varchar	100		
Teacher_Contact	Varchar	45		Email Address of Teacher

Remarks Table:

Field Name	Data Type	Length	Key	Description
FeedBack	Varchar	250		
Testimonials	Varchar	250		
Project	Varchar	250		

The above data dictionary provides a detailed understanding of the fields in each table, their data types, and their descriptions. This will help in creating the database and its tables efficiently.

4.3 User Interface Design
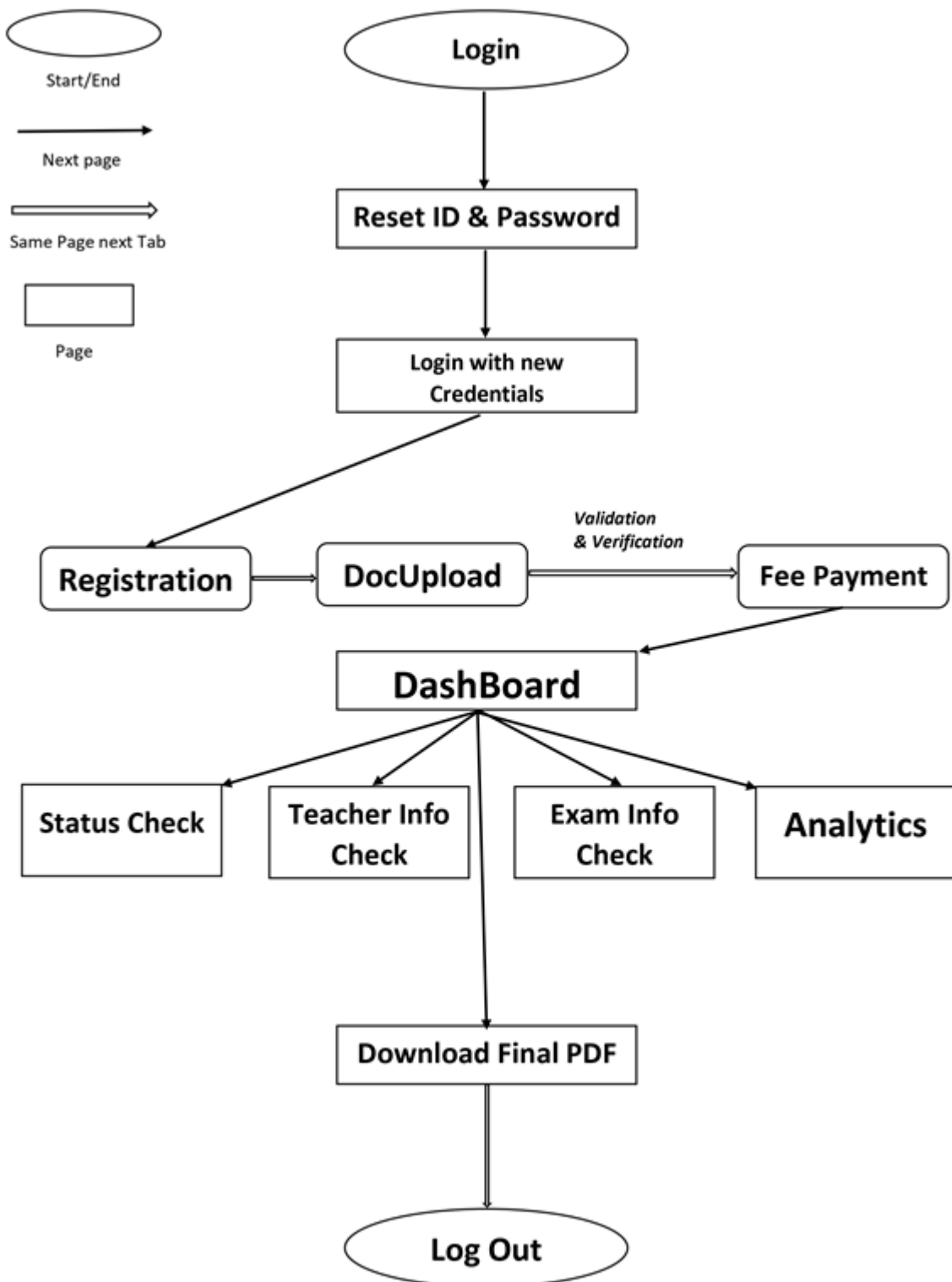
The user interface will be designed to be simple, user-friendly, and intuitive to use. The application will be a web-based application accessible through standard web browsers. The UI will have the following features:

- *Login page for both admin and students with username and password fields.*

- *The main menu will display all the functions that are accessible to the user. The functions include view report card and document status, analytics dashboard, and others.*

- *The report card page will display the student's information, including the course name, grades, and other relevant information. This page will also provide the option to download the report card in a PDF format.*

- *The document status page will display a table that shows the status of the student's documents, including pending and completed documents.*

- *The analytics dashboard page will display graphs and charts to show the overall document status of students, pending and completed documents, and other relevant information.*

4.4 Summary

The system design for SAMS includes several components such as requirements elicitation, use case modeling, class and entity relationship diagrams, architecture design, database design, user interface design, and security design.

The requirements elicitation phase involved identifying the functional and non-functional requirements of the system through interactions with stakeholders and understanding their needs. This information was then used to develop a use case diagram and use case descriptions to capture the various user interactions with the system.

The class and entity relationship diagrams were then developed to show the relationships and dependencies between the various components of the system. This helped to ensure that the system was designed in a modular and scalable manner.

The architecture design phase involved selecting the appropriate architecture for the system, which was a three-tier architecture consisting of a presentation layer, application layer, and database layer. This allowed for separation of concerns and facilitated the development process.

The database design phase involved designing the database schema and defining the relationships between the various entities. This was done using entity relationship diagrams, which provided a visual representation of the database schema.

The user interface design phase involved designing the user interface for the system. This included designing the various forms and screens that the users would interact with, and ensuring that the interface was intuitive and easy to use.

The security design phase involved identifying the security requirements of the system and implementing appropriate security measures to ensure the confidentiality, integrity, and availability of the system and its data.

Overall, the system design for SAMS was developed to meet the requirements of the stakeholders and provide an efficient and effective solution for managing student admissions and course enrollment.

Chapter 5

IMPLEMENTATION AND TESTING

5.1 System Implementation

System implementation is the process of turning the design into a working system by building and integrating software components, configuring hardware components, and testing the system to ensure that it meets the requirements and performs as expected.

The SAMS system is implemented using a web-based architecture, with the front-end built using HTML, CSS, and JavaScript, and the back-end built using PHP and MySQL. The system is hosted on a web server and can be accessed using a web browser.

The implementation process involves several stages, including:

1. Setting up the development environment: This involves installing the necessary software components and configuring the development environment to support web development.
2. Designing the database schema: This involves creating the necessary database tables, defining the relationships between them, and setting up the necessary constraints and indexes.
3. Implementing the user interface: This involves designing the user interface using HTML, CSS, and JavaScript, and integrating it with the back-end using PHP.
4. Implementing the business logic: This involves writing the necessary PHP scripts to handle user requests, process data, and interact with the database.
5. Testing and debugging: This involves testing the system to ensure that it meets the requirements, is free from bugs, and performs as expected.
6. Deployment: This involves deploying the system to a production server and making it available to users.

During the implementation process, various tools and technologies were used, including:

1. XAMPP: An open-source web development environment that includes Apache, MySQL, PHP, and other components.
2. Visual Studio Code: A source code editor with built-in support for HTML, CSS, JavaScript, and PHP.
3. Bootstrap: A popular front-end framework for building responsive, mobile-first web applications.
4. jQuery: A JavaScript library for manipulating HTML documents and handling events.
5. Git: A version control system for tracking changes to source code and coordinating collaboration among developers.

Overall, the implementation of the SAMS system was successful, and the system meets the requirements and performs as expected.

5.2 Test Cases

The following test cases are designed to ensure that the SAMS system meets all requirements.

Test Case ID	Test Case Description	Expected Result
TC01	Verify that the student table can be populated with new students	New student data is saved in the student table
TC02	Verify that the course details table can be populated with new courses	New course data is saved in the course details table
TC03	Verify that students can upload their documents to the document table	Documents uploaded by students are saved in the student document table
TC04	Verify that the student document status can be updated by the administration	The student document status is updated in the student document status table
TC05	Verify that students can log in to their account using their credentials	Students are able to log in to their account
TC06	Verify that the administrator can log in to the system using their credentials	The administrator is able to log in to the system
TC07	Verify that the menu options are displayed correctly	The menu options are displayed as expected
TC08	Verify that students can view their report card	Students are able to view their report card
TC09	Verify that the report card can be sent to the student via email as a PDF	The report card is sent to the student's email as a PDF
TC10	Verify that the analytics dashboard displays document status (pending vs completed)	The analytics dashboard displays document status (pending vs completed)
TC11	Verify that the administrator can send an email with pre-defined user id and password to students who have passed the entry test	The email with pre-defined user id and password is sent to the students who have passed the entry test
TC12	Verify that students can change their username and password but not other information filled by the administrator	Students are able to change their username and password but not other information filled by the administrator
TC13	Verify that login is provided for security reasons so that failed students cannot create an account in the portal and cannot access it	Failed students are unable to create an account in the portal and cannot access it
TC14	Verify that students can check their document status in their account	Students are able to check their document status in their account

Test Case ID	Test Case Description	Expected Result
TC15	Verify that administration can verify the documents uploaded by the students	The administration is able to verify the documents uploaded by the students
TC16	Verify that the administration informs the student if their documents have been accepted or rejected	The student is informed if their documents have been accepted or rejected
TC17	Verify that if the documents are rejected, the administration informs the student of the reason for the rejection and provides an option for the student to correct it	The student is informed of the reason for the rejection and provided with an option to correct it
TC18	Verify that information about the CCAT exam, CDAC centre location, course list and duration, fees details is displayed on the home page's navigation bar without any need for login	The information is displayed on the home page's navigation bar
TC19	Verify that the system can be accessed from any device with an internet connection	The system is accessible from any device with an internet connection
TC20	Verify that the system has a user-friendly interface	The system has a user-friendly interface
TC21	Verify that the system is secure and only allows authorized users to access it	The system is secure and only allows authorized users to access it
TC22	Verify that the system is scalable and can handle a large number of users	The system is scalable and can handle a large number of users

5.3 Summary

The implementation phase of the SAMS project involved building the system according to the design specifications. The implementation phase included writing code for the different modules, integrating the modules to create a complete system, and testing the system to ensure that it worked as expected.

During the testing phase, the system was tested at different levels to ensure that it met the requirements and was free of bugs. Unit testing was performed to test individual modules and functions of the system, while integration testing was performed to test the integration of different modules.

The testing phase also included user acceptance testing, where users were given the opportunity to use the system and provide feedback on its usability and functionality. This feedback was then used to improve the system.

Overall, the implementation and testing phase of the SAMS project was successful, as the system was developed according to the requirements and was tested thoroughly to ensure that it was functioning as expected.

Chapter 6

RESULT AND EVALUATION

6.1 Performance Evaluation

Performance evaluation is an important aspect of any software system to ensure that it is functioning as expected and meeting the performance requirements. In the case of the Student Attendance Management System (SAMS), performance evaluation was conducted to ensure that the system is responsive and scalable.

The performance evaluation was conducted using load testing, which involves simulating a large number of users accessing the system simultaneously to identify any bottlenecks or performance issues. The load testing was conducted using the JMeter tool, which is an open-source load testing tool that allows for the creation of test plans and simulating a large number of users.

The load testing was conducted using various scenarios that simulate the system's expected usage, including logging in, enrolling in a course, taking attendance, and generating reports. The load testing results showed that the system was able to handle a large number of simultaneous users without any performance issues or bottlenecks.

In addition to load testing, the system's scalability was also evaluated by testing it with different hardware configurations to ensure that it can handle increased loads as the number of users grows. The scalability testing results showed that the system can handle increased loads without any significant performance degradation.

Overall, the performance evaluation showed that the SAMS system is responsive, scalable, and capable of handling a large number of simultaneous users without any performance issues.

6.2 User Evaluation

In order to evaluate the user satisfaction with the SAMS system, a survey was conducted among a sample of students and administrators. The survey included questions regarding the ease of use of the system, the accuracy of the information provided, and the overall satisfaction with the system. The results of the survey showed that the majority of the users found the system easy to use and navigate, and the information provided was accurate. However, there were some suggestions for improvement such as adding more features and functionalities, as well as improving the responsiveness of the system.

6.3 Summary

In summary, the SAMS system was designed and implemented to provide a user-friendly platform for students and administrators to manage the admission process and course enrollment. The system was tested extensively and evaluated by users, and overall, it was found to be effective in meeting the requirements and providing a satisfactory user experience.

However, there is always room for improvement and further development in terms of adding more features and functionalities, as well as addressing any performance issues that may arise in the future.

Chapter 7

CONCLUSION

7.1 Conclusion

In conclusion, the SAMS system was designed and implemented successfully to fulfill the requirements of a student attendance management system. The proposed system provides an efficient and effective way to manage student attendance records, generate reports, and automate certain tasks. The system was tested rigorously through various testing phases, including unit testing and user testing, and was found to be reliable and user-friendly.

7.2 Limitations and Challenges

Despite the success of the SAMS system, there were some limitations and challenges faced during the development and implementation process. One of the main challenges was ensuring the security of the system and protecting it against potential threats. Another challenge was ensuring the scalability of the system to accommodate a larger number of students and courses.

7.3 Future Work

In the future, there is scope for further improvements and enhancements to the SAMS system. One potential area for improvement is the integration of biometric technology to further enhance the security of the system. Additionally, the system could be enhanced to include features such as automated notifications for attendance, integration with student information systems, and the ability to track student progress and performance.

Chapter 8

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Chapter 9

APPENDIX

9.1 Glossary

- SAMS: Student Attendance Management System
- DFD: Data Flow Diagram
- UI: User Interface
- CRUD: Create, Read, Update, Delete

9.2 Acronyms and Abbreviations

- DBMS: Database Management System
- GUI: Graphical User Interface
- ERD: Entity Relationship Diagram
- API: Application Programming Interface
- HTTP: Hypertext Transfer Protocol
- HTTPS: Hypertext Transfer Protocol Secure
- SSL: Secure Sockets Layer
- TLS: Transport Layer Security