Software Requirement Specification

Placement Management System

Document ID: ASP-CMS-SRS-02.doc

Author: Kalaiarasan P

Version: 0.1

Date: March 28,2024

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1. Introduction

The Placement Management System (PMS) is a comprehensive tool that organizations and educational institutions can use to improve and expedite the process of matching qualified job seekers with potential employers. Using cutting-edge technology and extensive features, PMS streamlines the entire hiring process, from posting jobs and keeping track of applicants to setting up interviews and handling offers. Because of its intuitive interface, matching talent with appropriate opportunities is made as efficient and effective as possible for both recruiters and candidates. In addition to centralizing and automating administrative work, PMS provides insightful analytics to assess recruitment tactics and enhance results over time. Because of its scalability and configurable modules, PMS is an essential tool for today's talent acquisition, strengthening the bonds between companies and academic institutions.

1.1 Objective

- To keep informed about the recruitment process and its details.
- To make sure that the admin is able to sort out the eligible candidates.
- Provide convenience for the admin to manage and monitor the entire recruitment process
- To have a centralized control over the records of the students.
- To reduce unnecessary paper work in maintaining student and company information.

1.2 Purpose of the Project

This Software Requirements Specification (SRS) document outlines the requirements for the Placement Management System. The system aims to automate and streamline the process of managing placements for students within educational institutions or training centers. By providing a centralized platform, the system will facilitate efficient communication and coordination between students, employers, and placement coordinators.

1.3 Scope of the project

The Placement Management System will encompass functionalities such as student registration, job posting, application management, placement scheduling, and reporting. It will serve as a comprehensive solution to manage all aspects of the placement process. The system's scope extends to administrators responsible for

system management and configuration, students seeking placement opportunities, employers offering placements, and coordinators facilitating placement activities.

2. Overall Description

This project is to facilitate students in college, company to register and communicate with Placement Office. The users can easily access the data and it can be retrieved easily in on time.

The main page has options for the students and admin to log-in if registered, if not they can get themselves registered.

Students can view the companies available for recruitment and communicate with the admin if required.

The admin is responsible for updating the companies list, updating selected students database and deleting the student profile.

2.1 Product Perspective

In various colleges, training and placement officers have to manage the student's profiles and the documents of students for their training and placement manually and also placement officers have to collect the information of various companies who want to recruit students and notify students time to time about the placements.

Placement Officer also have to arrange profiles of students according to various streams and notify them according to company requirements. If any modifications or updates are required in the profile of the students or the company, it has to be searched and done manually.

Hence the Placement Management System would maintain a huge database for the complete details of the students as well as the Companies in the Placement process which would help to save time and effort.

2.2 Product Functions

The Placement Management System is to be developed as an attempt to take a record of companies and students by restricting a large database that would be used for each.

The System would provide the facility of viewing both the personal and academic information of the students and also the company. The System would also be able to search for eligible students and company with respect to their specifications and requirements. The eligible students would receive an email including the details of the Company, placement procedure and other details.

2.3 User Classes and Characteristics

The major User classes in the System would be:

1. Student

- New Student needs to sign up or register giving complete details
- They can submit resume and update profile information.
- They can register for a particular Company.

2. Administrator

- The admin has the supreme power of the application
- Admin provides approval to the Student and the Corporate registration
- Admin is responsible for maintaining and updating the whole system.
- Admin has the responsibility to notify the Company for any application from a student.
- Admin has to notify the students regarding any changes in the procedure or selection.
- Admin has responsible for posting jobs and updating the students and companies details.

3. Database

- It needs to updated regarding any new additions i.e. of Company and students
- It has to be updated regarding any notifications from the Company.
- Once the selection procedure is complete, the redundant data of the Company as well as the students is to be deleted.

3. Specific Requirement

3.1 Functional Requirement

Functional requirements include user management functionalities such as registration and profile management, job management functionalities such as posting and application tracking, placement coordination functionalities such as scheduling and communication, as well as reporting and analytics functionalities for administrators to monitor placement activities effectively.

- **User Authentication and Authorization:** The system should provide secure login functionality for different user roles such as administrators, and students. Each role should have specific permissions and access levels.

- **Profile Management:** Users should be able to create and manage their profiles within the system. This may include personal details, educational qualifications, work experience, skills, and preferences.

- **Job Posting and Management:** Admin should be able to post job vacancies with details such as job description, requirements, location, and application deadlines. The system should allow administrators to review and approve job postings before they are made visible to students.

- **Job Search and Application:** Students should be able to search for job opportunities based on various criteria such as location, industry, job type, etc. They should be able to apply to jobs through the system, submitting their resumes and cover letters.

- **Resume/CV Management:** The system should allow students to create, upload, and manage their resumes or CVs. It should support various formats and provide tools for formatting and customization.

- **Placement Tracking:** The system should track the progress of placements, including the status of job applications, interview outcomes, and placement offers.

- **Data Management and Reporting:** The system should securely store all relevant data, including user profiles, job postings, application histories, and placement records.

3.2 Non-Functional Requirement

Non-functional requirements encompass aspects such as security, performance, scalability, reliability, usability, and accessibility. The system should implement robust security measures to protect user data, demonstrate responsive performance under varying user loads, scale seamlessly to accommodate growth, maintain high availability and reliability, ensure ease of use for users with minimal training, and adhere to accessibility standards for users with disabilities.

Performance:

The system should load the login page within a second and the system should be capable of handling simultaneous login requests from multiple users without significant performance degradation.

Security:

The system should enforce strong password policies, including minimum length, and complexity requirements. Admin login should require authentication to prevent unauthorized access to sensitive administrative functions.

Reliability:

Automated backup and disaster recovery processes should be in place to ensure data integrity and minimize downtime in case of system failures. Error handling mechanisms should be implemented to gracefully handle unexpected errors and prevent data loss or corruption.

Scalability:

The system should be able to accommodate an increasing number of concurrent login attempts as the user base grows without experiencing significant performance degradation.

4. System interfaces

The system interfaces facilitate seamless interaction between users and administrators within the Placement Management System (PMS). Users access personalized dashboards to explore placement opportunities, submit applications, and track placement statuses. Meanwhile, administrators utilize administrative interfaces to review applications, manage student and employer details, and monitor placement progress. These interfaces are designed to ensure smooth navigation and efficient workflow management within the system, enhancing the overall placement experience.

5. Low Level Design

The low-level design for the Placement Management System (PMS) encompasses detailed specifications and implementation considerations for its various components. The backend implementation involves defining modular structures for user management, job processing, and database interactions, integrating middleware functions for request processing, authentication, and error handling. Concurrently,

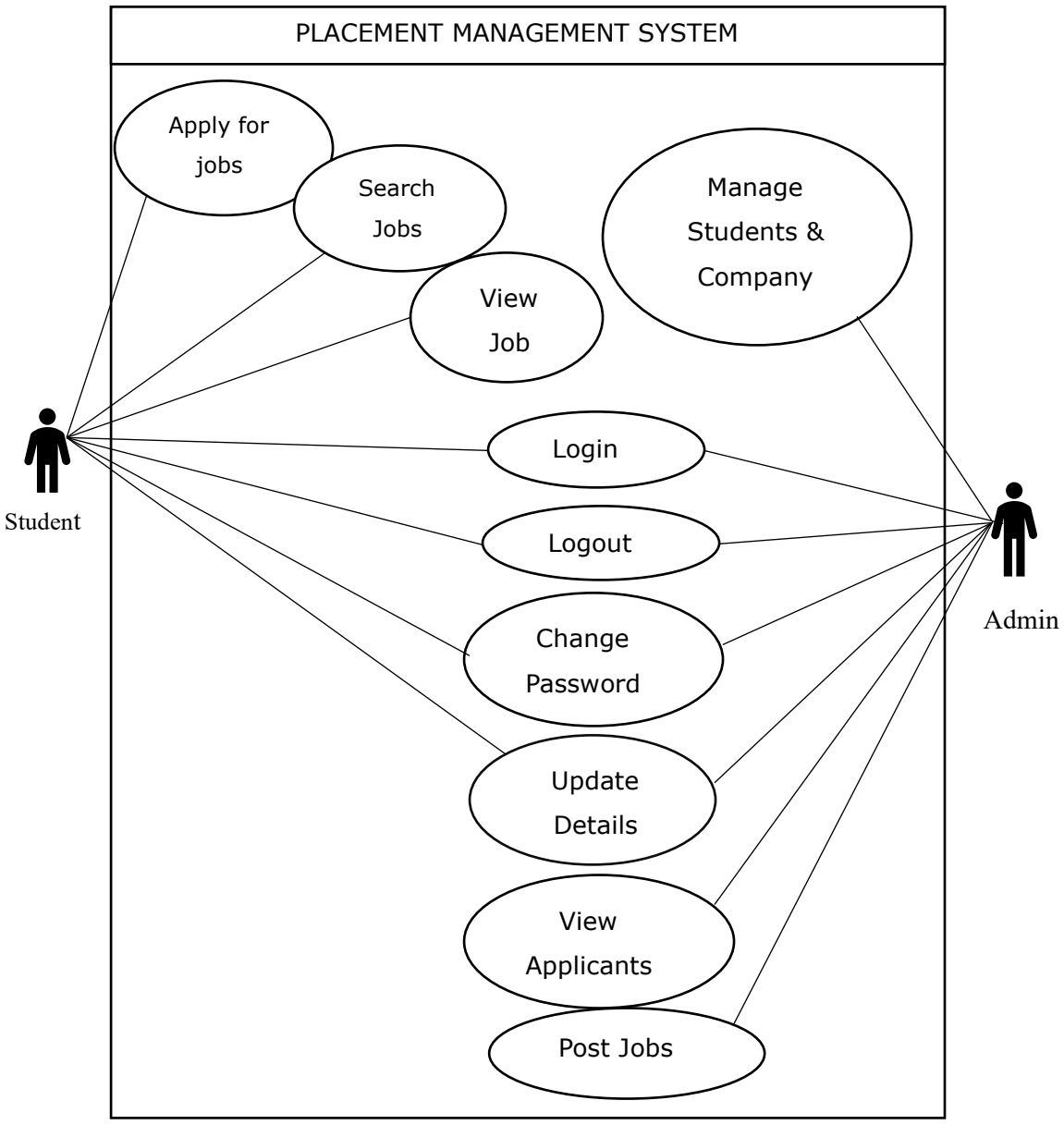
frontend development focuses on UI component design, implementing logic for user interaction and data presentation based on established design specifications. Database schema design entails creating normalized structures to represent entities such as users, job listings, and placement records, optimizing data storage and retrieval efficiency.

6. High Level Design

The high-level design for the Placement Management System (PMS) entails a modular architecture leveraging HTML, CSS, JavaScript, and TypeScript for the frontend development, facilitating an intuitive and responsive user interface. The frontend components will be structured using HTML for markup, CSS for styling, and JavaScript/TypeScript for interactive functionalities, ensuring seamless user interaction and accessibility across devices. Meanwhile, the backend will be developed using Node.js, providing a scalable and efficient runtime environment. Node.js will handle server-side logic, routing, and API development, facilitating communication between the frontend and the MySQL database. MySQL will serve as the database management system, storing and managing data related to users, job postings, applications, interviews, and feedback. The high-level design will emphasize modularity, security, and performance, enabling effective management of placement operations while ensuring robustness and scalability.

7. UML Diagrams

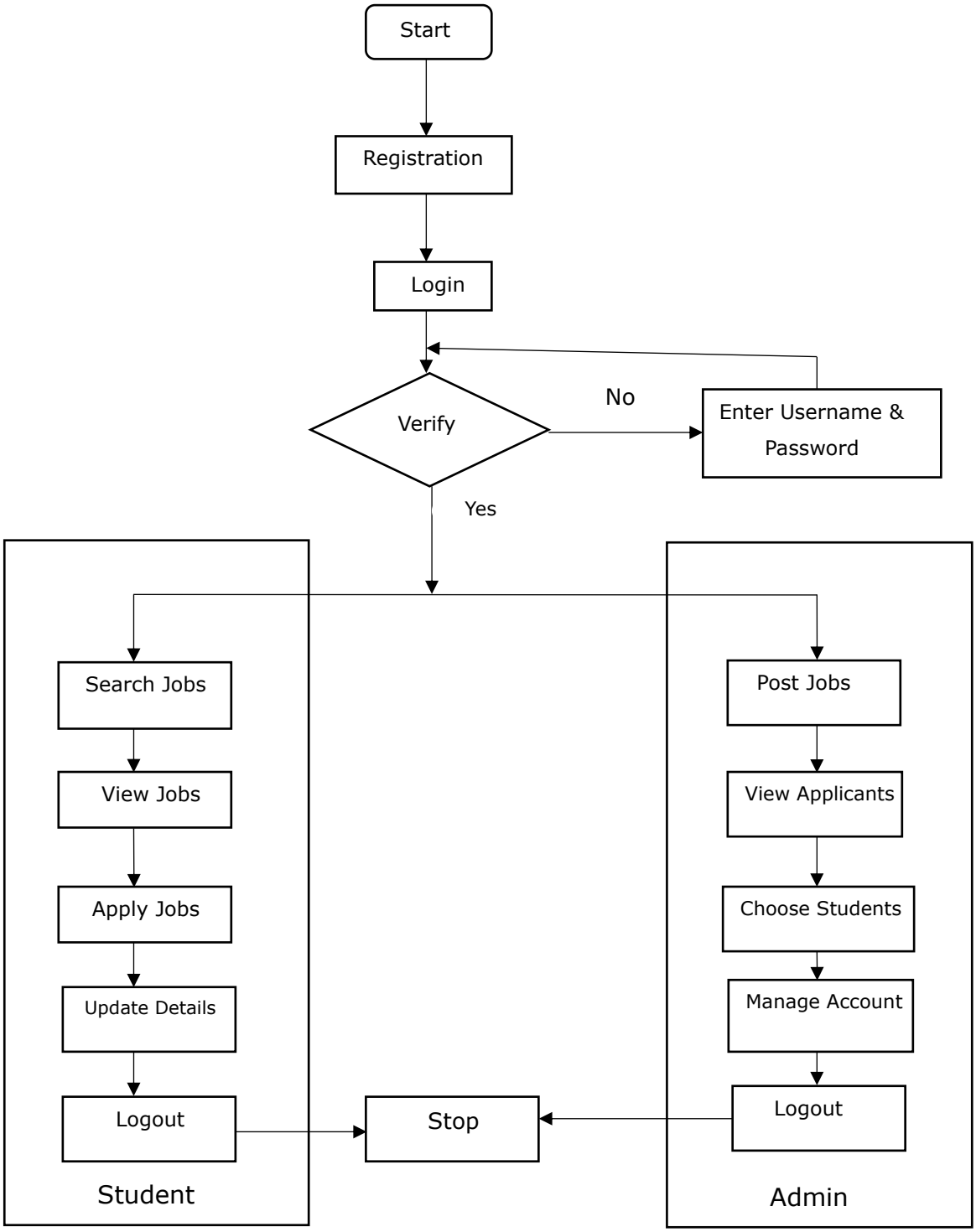
7.1 Use Case Diagram



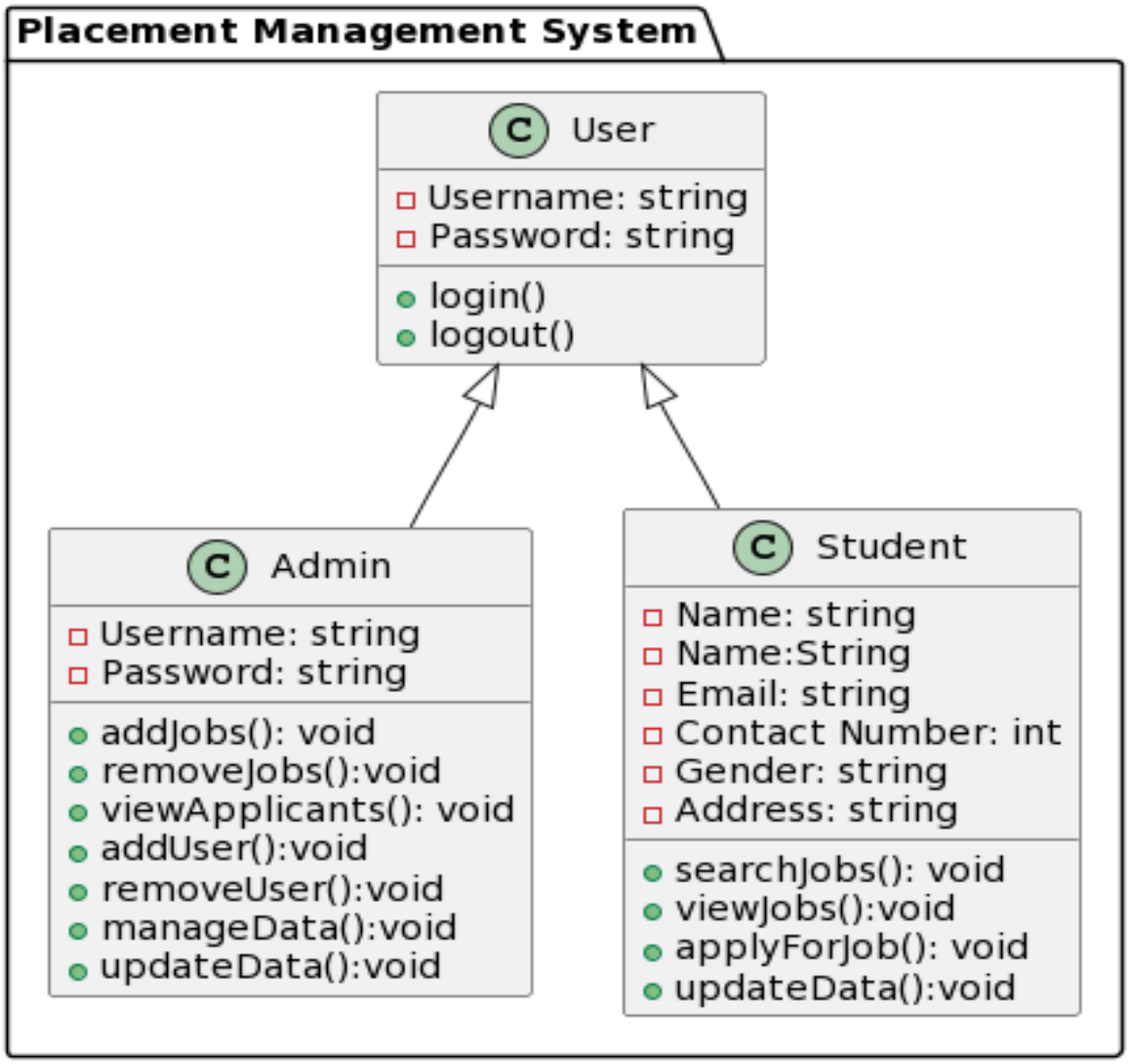
7.2 Flow Diagram

The Placement Management System (PMS) has three types of logins: one for students, one for companies (employers), and one for administrators. After signing up, users log in using their own username and password. Then, they go to their own special page in the system. Students can look for placement opportunities and apply for them. Companies can post job openings and check applications from students.

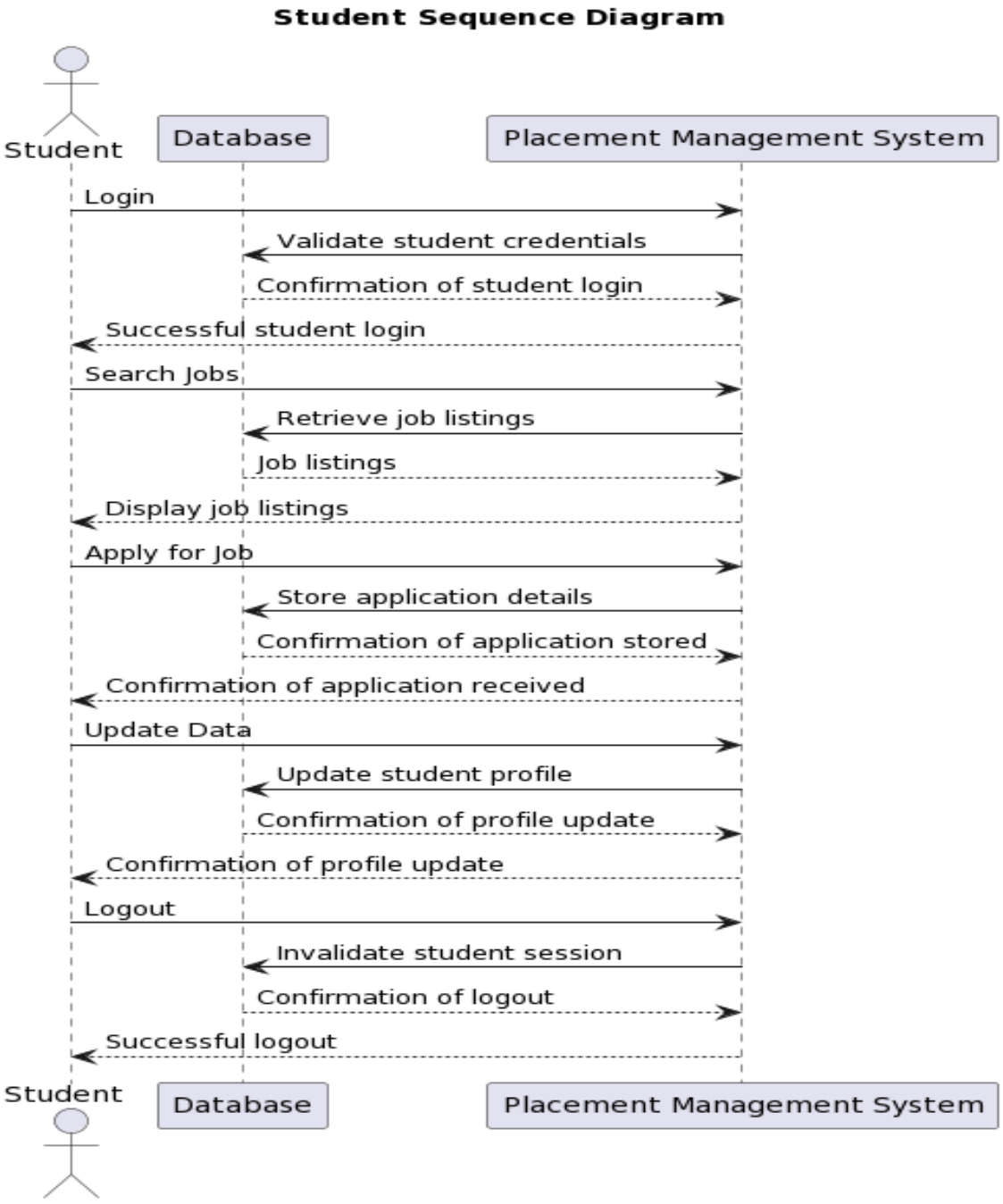
Administrators manage everything in the system and make sure everything runs smoothly. They can also see reports about placements. Overall, the system helps everyone involved work together easily and effectively.



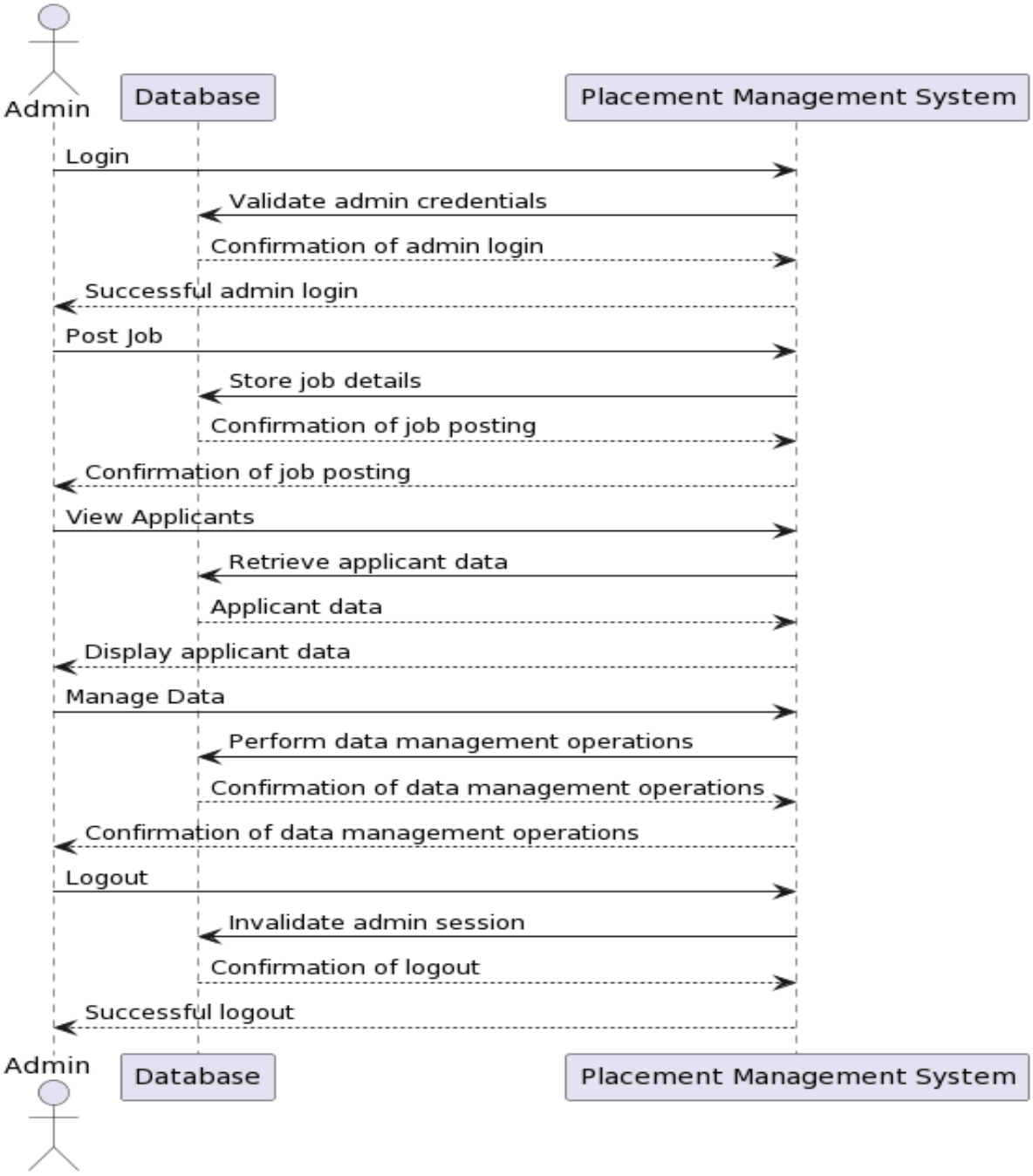
7.3 Class Diagram



7.4 Sequence Diagram



Admin Sequence Diagram



7. Test Cases

Test Case	Test Purpose	Test condition	Expected outcomes
User Registration	To verify that users can successfully register for the placement management system.	Valid user details (e.g., username, password, email).	The user registration process completes without errors, and the user's account is created successfully.
Admin Login	To ensure that an admin can log in to the system successfully.	Valid admin username and password.	The admin is authenticated, and access to admin-specific functionalities (e.g., posting jobs, viewing applicants) is granted.
Student Login	To verify that student users can log in to the system.	Valid student credentials are provided.	Upon successful login with valid credentials, the student should be redirected to the student dashboard.
Empty Fields in Registration	To ensure that the system does not allow registration with empty fields.	One or more required fields in the registration form are left empty.	The system should prompt the user to fill in all required fields before proceeding with the registration process.
Invalid Login	To validate the system's response to invalid login attempts.	Incorrect username or password is provided.	The system should display an error message indicating that the login credentials are incorrect.

8. Conclusion

In conclusion, the placement management system plays a vital role in the process of connecting students with job opportunities and facilitating administrative tasks related to placement activities. Through its user-friendly interface and robust functionalities, the system offers a centralized platform for students to explore job openings, apply for positions, and track their application status. Additionally, administrators benefit from features such as job posting management and applicant tracking enabling them to efficiently manage the placement process. Overall, the placement management system enhances efficiency and ultimately contributing to the success of students in securing placements and fulfilling organizational hiring needs.