WORKFLOW

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Project Name	Student Database Management System

1. INTRODUCTION

This document outlines the requirements for a student information portal for an educational institution. This portal will provide a centralized platform to manage and access student data for various stakeholders like administration and faculty.

1.1 PROBLEM STATEMENT

- **Inefficiency:** Manually searching for student data across different sources is time-consuming and laborious.
- **Limited Accessibility:** Faculty and administrators may not have easy access to all the student data they need for their roles.
- **Data Security Risks:** Storing student data in multiple locations increases the risk of unauthorized access or breaches.
- **Lack of Reporting and Analytics:** The current system makes it difficult to generate comprehensive reports on student demographics, enrollment trends, or hostel occupancy.

1.2 TECHNICAL REQUIREMENTS

COMPONENT	TECH STACK
Frontend	Angular
Backend	Spring boot java
Database	MySQL

2.PRODUCT FUNCTIONS

The core functionalities of the SIS include:

- **Admin Login:** Allows authorized admins to securely access the system using a username and password.
- **Student Management:**
    - Add New Student: Admins can create new student records by entering relevant details.
    - Search Student: Admins can search for existing student records based on various criteria, including student ID, name, department, year, or community.
    - Edit Student Details: Admins can modify existing student information within their access permissions.
- **Report Generation:** Admins can generate reports on student demographics, enrollment data (by department, year, hostel status, etc.), or other customizable criteria.

3. SPECIFIC REQUIREMENTS

3.1 FUNCTIONAL REQUIREMENTS

3.1.1 ADMIN LOGIN

- The system shall provide a login screen for admins to enter their username and password.

- Usernames and passwords should be stored securely using one-way hashing techniques.
- The system shall implement multi-factor authentication (optional).
- Login attempts should be limited to prevent brute-force attacks (optional).
- The system shall display an error message for invalid login credentials.
- Upon successful login, the system shall redirect the admin to the main dashboard.

3.1.2 STUDENT MANAGEMENT

3.1.2.1 ADD NEW STUDENT

- The system shall provide a form for admins to enter new student details.
- Required details include:
    - Student Name
    - Department (with selection from a pre-defined list or option to add new departments)
    - Gender (selection from options like Male, Female, Other)
    - Year (selection from available academic years)
    - Status (Active/Inactive)
    - Hostel Accommodation (Yes/No)
    - Community
    - Quota (selection from pre-defined categories)
    - Seat Category (selection from pre-defined categories)
- The system shall validate entered data for completeness and format (e.g., valid year range).
- Upon successful validation, the system shall create a new student record in the database.
- The system shall provide clear error messages for any invalid data entries, allowing admins to correct them.

3.1.2.2 SEARCH STUDENT

- The system shall provide a search interface for admins to find existing student records.
- Admins can search using various criteria, including:

    - Student ID (exact match)
    - Name (partial match)
    - Department (selection from a list)
    - Year (selection from a list)
    - Community (text search)
- The system shall

4.DETAILED WORKFLOW FOR STUDENT INFORMATION PORTAL (FACULTY/ADMIN)

This workflow outlines the process for faculty and administrators to utilize the student information portal.

4.1. LOGIN

- Faculty and Admin users access the portal through a secure login screen.
- User enters their unique username and password.
- System authenticates credentials and grants access based on user role.

4.2. USER INTERFACE

- The user interface caters to faculty/admin needs, displaying relevant functionalities.
- A main menu or dashboard provides options for managing student information.

4.3. STUDENT INFORMATION MANAGEMENT

- **Search:** Users can search for students using various criteria:
    - Department
    - Year
    - Status (active, inactive, etc.)
    - Hostel/Day Scholar
    - Community (if applicable)
    - Quota/Seat Category
    - Keyword search by name or ID

- **View Student Details:** Upon selecting a student, a detailed profile page displays:
    - Demographic information (name, date of birth, gender, etc.)
    - Department affiliation
    - Academic year
    - Student status
    - Hostel/Day Scholar status
    - Community information (if applicable)
    - Admission quota and seat category

4.4. REPORTING AND ANALYTICS (ADMIN ONLY)

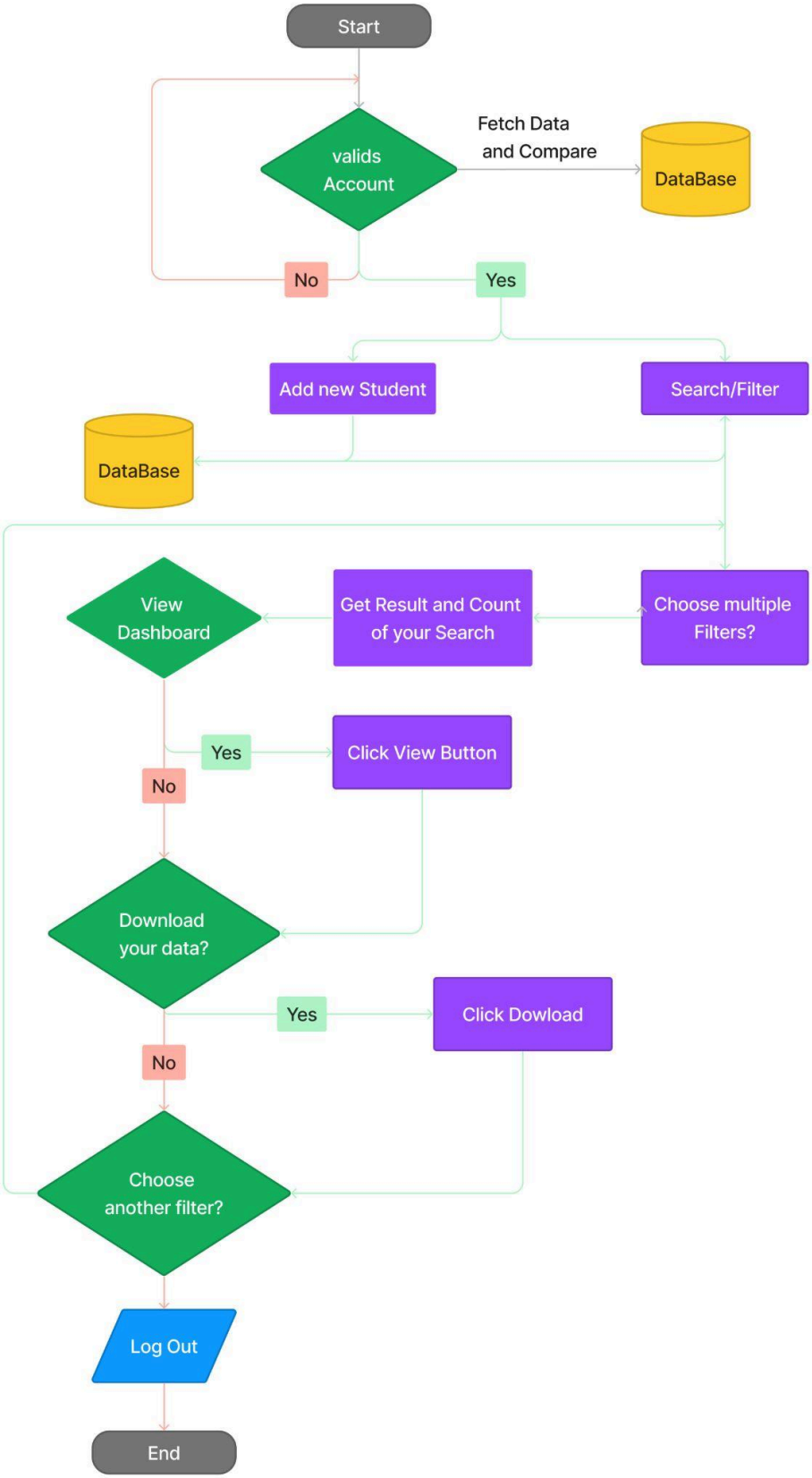
- Authorized administrators can generate reports on student data for informed decision-making.
- Reports can be filtered by various criteria (department, year, status, etc.) and displayed in:
    - **Enrollment Reports:** Track student enrollment trends by department, program, or year.
    - **Hostel Occupancy Reports:** Monitor hostel capacity and resident demographics.
    - **Student Demographics Reports:** Analyze student population based on gender, community, etc. (if applicable)
    - **Customizable Reports:** Generate reports based on specific user needs with downloadable options (PDF, CSV).

4.5. DATA EXPORT (ADMIN ONLY)

- Authorized personnel can export specific student data sets for further analysis or integration with other systems (requires proper data security protocols).

4.6. LOGOUT

- Users log out of the portal to maintain data security. The system automatically times out after a period of inactivity.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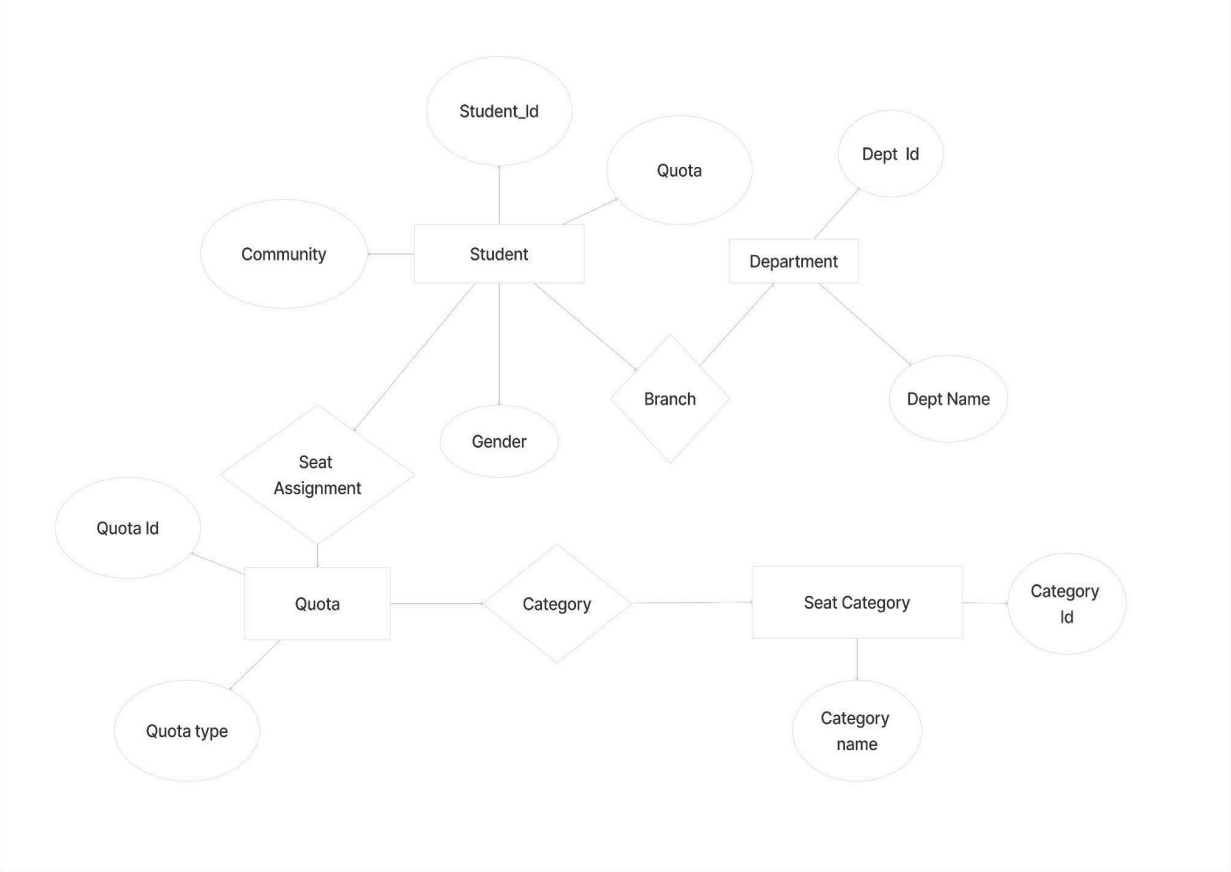

5.ADDITIONAL CONSIDERATIONS

- The system should provide clear instructions and user guides for faculty and administrators.
- Role-based access control ensures only authorized users access sensitive information.
- An audit log tracks all data access and modifications for accountability.
- The system should offer secure communication channels for faculty/admin to contact students if needed (may integrate with internal email systems).

This workflow provides a detailed framework for faculty and administration to efficiently manage and access student information within the portal.

CONCLUSION

This Software Requirements Specification (SRS) document has outlined the functional and non-functional requirements for the Student Information System (SIS). The system is designed to be a web-based application accessible by authorized administrators of an educational institution. It will provide functionalities for managing student data, including adding new students, searching for existing records, editing student information, and generating reports.

The document emphasizes the importance of:

- Secure user authentication and data privacy.
- User-friendly interface for efficient data management.
- System availability and minimal downtime for maintenance.

This SRS serves as a foundation for the development of the SIS. It provides a clear understanding of the system's functionalities and expectations, paving the way for successful implementation and deployment.

FUTURE CONSIDERATIONS

- Integration with existing student data sources (if applicable).
- Implementation of role-based access control for admins with varying permission levels.
- Development of a user interface for student self-service functionalities (optional, if the system expands beyond admin access).
- Incorporation of additional reporting features and data analysis tools.

This document serves as a starting point, and the specific requirements can be further refined and elaborated upon based on ongoing discussions and project needs.