# Software Requirements Specification

For

STUDENTS DETAILS VISUALISATION

Version 1.0

Prepared by

Group No. : 3


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Course : Software Engineering Lab

Date : 15-02-2025

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## 1. Introduction

### 1.1 Purpose

This document outlines the functional and non-functional requirements for the Student Details Reporting and Visualization system. The system aims to provide a user-friendly interface for managing, analyzing, and visualizing student placement and event participation data. The system will allow users to generate dynamic reports and visualizations based on various filters such as department, year, company, and event type.

### 1.2 Scope

The system will be used by students, faculty, and system administrators to manage and analyze student placement and event participation data. It will provide tools for generating reports and visualizations, ensuring that users can easily access and interpret the data.

### 1.3 Definitions, Acronyms, and Abbreviations

SRS: Software Requirements Specification

UI: User Interface

NFRs: Non-Functional Requirements

FRs: Functional Requirements

### 1.4 References

Functional and Non-Functional Requirements - With Examples

Link: https://medium.com/@growsolutions/functional-and-non-functional-requirements-the-ultimate-checklist-with-examples-cde16aba33d7

PDD Document, USER_INTERFACE.pdf

### 2.1 Use Case Diagram Description

Below is a use case diagram that represents the interactions between the users and the system:

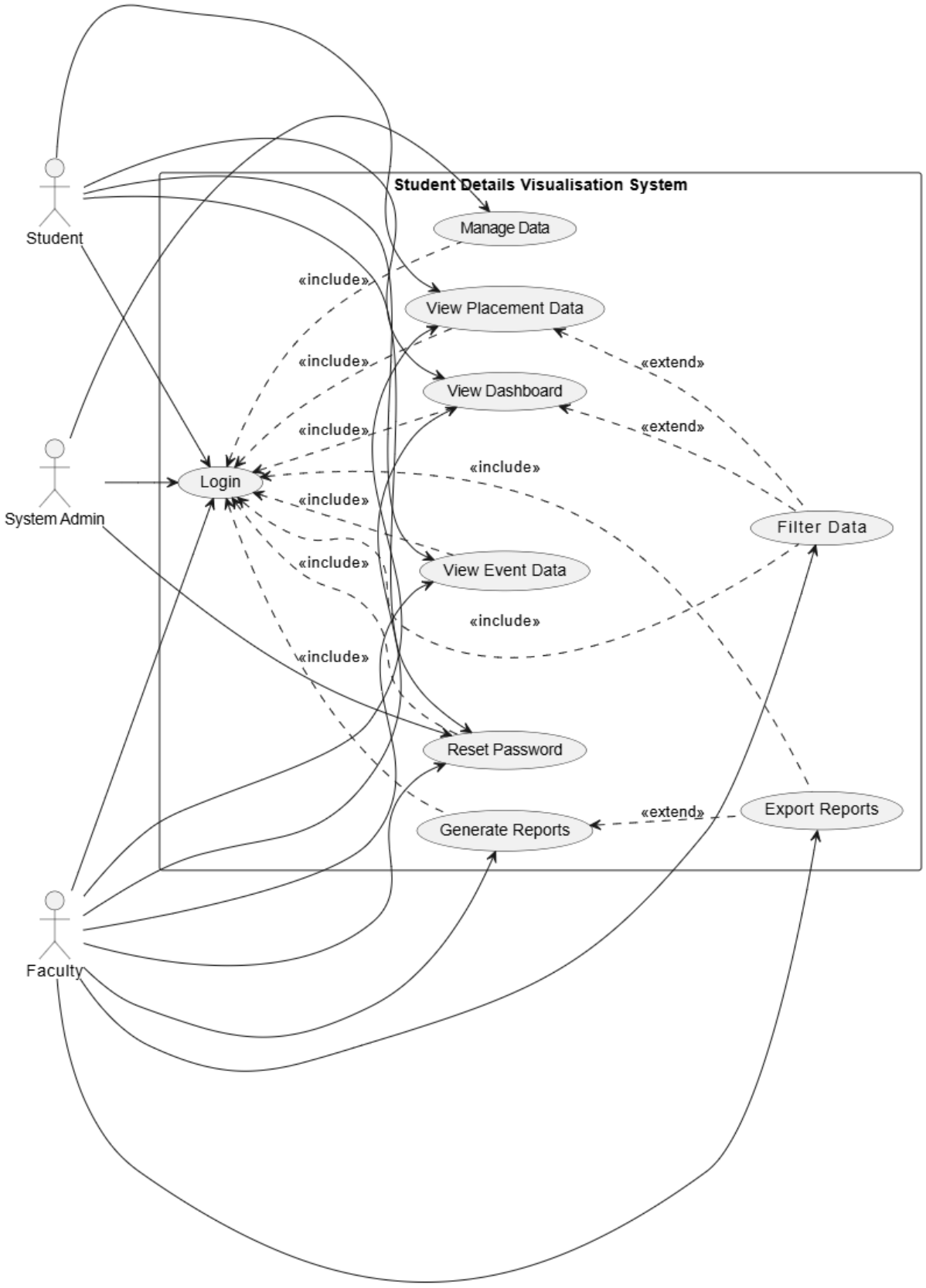
### 2.2 Actors and Use Cases

Actors:

User: The primary actor who interacts with the system to generate reports and view visualizations.

Use Cases:

Generate Reports: The user can generate reports based on filters such as department, year, company, and event type.




View Visualizations: The user can view visualizations such as bar charts, pie charts, heat maps, and more based on the selected filters.

## 3. Functional Requirements

### 3.1 User Authentication

FR-1: The system shall allow users to log in using their email and password.

FR-2: The system shall provide a "Forgot Password" feature to reset the password.

FR-3: The system shall allow new users to register an account.

### 3.2 Dashboard

FR-4: The system shall display a dashboard with key metrics such as total placements, average package, and total event participation.

FR-5: The system shall allow users to filter data by department, year, company, and event type.

FR-6: The system shall display visualizations such as bar charts, pie charts, and heat maps based on the selected filters.

### 3.3 Placement Data

FR-7: The system shall display placement data in a tabular format with columns such as student name, department, company, position, status, and package.

FR-8: The system shall allow users to export placement reports in various formats (e.g. PDF).

FR-9: The system shall display department-wise statistics, company-wise distribution, and package distribution.

### 3.4 Event Data

FR-10: The system shall display event participation data in a tabular format.

FR-11: The system shall provide heat maps and monthly participation trends for event types (technical, cultural, sports).

FR-12: The system shall allow users to generate event reports based on selected filters.

### 3.5 Interactive Features

FR-13: The system shall provide interactive tooltips that display detailed statistics when hovering over visualizations.

FR-14: The system shall allow users to customize color schemes for different visualization types.

## 4. Non-Functional Requirements

### 4.1 Performance

NFR-1: The system shall handle large datasets efficiently, with a response time of less than 2 seconds for most queries.

NFR-2: The system shall support up to 100 concurrent users without performance degradation.

### 4.2 Usability

NFR-3: The user interface shall be intuitive and user-friendly, with clear navigation and visual elements.

### 4.3 Scalability

NFR-4: The system shall be scalable to accommodate future growth in data volume and user base.

NFR-5: The system shall support the addition of new departments, companies, and event types without requiring significant changes to the architecture.

### 4.4 Security

NFR-6: The system shall encrypt user passwords and sensitive data using industry-standard encryption algorithms.

NFR-7: The system shall implement role-based access control to restrict access to sensitive data.

### 4.5 Reliability

NFR-8: The system shall have an uptime of 99.9%, ensuring minimal downtime.

NFR-9: The system shall provide data backup and recovery mechanisms to prevent data loss.

### 4.6 Maintainability

NFR-10: The system shall be modular, allowing for easy updates and maintenance.

NFR-11: The system shall provide comprehensive logging and error handling to facilitate debugging and troubleshooting.

## 5. Conclusion

This SRS document outlines the functional and non-functional requirements for the Student Details Reporting and Visualization system. The system aims to provide a robust, user-friendly platform for managing and analyzing student placement and event participation data. The requirements align with the provided UI design and ensure that the system is scalable, secure, and efficient.