Software Requirements Specification (SRS) for Web-Based Student Grading System

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1. Introduction

1.1 Purpose

This SRS document outlines the functional and non-functional requirements for developing a web-based student grading system for the university. The system will automate and streamline the grading process for faculty and administrative staff while integrating with the existing student information system (SIS).

1.2 Scope

The system will allow faculty members to input, adjust, and generate reports on student grades. The project covers the design, implementation, and testing of the system, including training for end-users. The system does not replace the SIS but complements it by adding grade management functionalities.

1.3 Definitions, Acronyms, and Abbreviations

- **SIS**: Student Information System
- **UI**: User Interface
- **SRS**: Software Requirements Specification
- **UAT**: User Acceptance Testing

1.4 Overview

This document includes descriptions of the system's functionalities, boundaries, and performance requirements, along with security and user interface expectations. The deliverables will include the web-based grading system, user training, and ongoing support.

2. System Overview

2.1 Product Perspective

This grading system is a standalone web-based platform that integrates with the current SIS. It complements existing functionality by adding robust grading management, reporting, and secure data access.

2.2 Product Functions

- **Grade Entry**: Faculty can input grades manually or via bulk uploads.
- **Grade Adjustment**: Faculty can adjust grades and submit final versions.
- **Report Generation**: Generate customizable reports based on students, courses, departments, or date ranges.
- **Secure Login**: Password-protected access for authorized users only.
- **Training and Support**: Provide user manuals and a helpdesk system for post-deployment support.

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3. Functional Requirements

3.1 Secure Login (SRS-001)

- **Title**: Secure Login
- **Description**: Faculty and administrative staff must log in using their university credentials to access the system.
- **Inputs**: Username, password
- **Outputs**: Authentication, session management
- **Dependencies**: University authentication system
- **Priority**: High

3.2 Grade Input (SRS-002)

- **Title**: Grade Entry
- **Description**: Faculty can input grades for individual students or upload bulk entries via CSV files.
- **Inputs**: Student ID, course ID, grade, bulk upload file
- **Outputs**: Grade entry confirmation
- **Dependencies**: Student information available via SIS
- **Priority**: High

3.3 Grade Adjustment (SRS-003)

- **Title**: Grade Adjustment
- **Description**: Faculty can modify existing grades and save adjusted grades.
- **Inputs**: Student ID, course ID, updated grade
- **Outputs**: Updated grade confirmation
- **Priority**: Medium

3.4 Report Generation (SRS-004)

- **Title**: Customizable Reports
- **Description**: Faculty can generate reports on student performance for individual students or entire classes, and filter results based on date range, courses, or departments.
- **Inputs**: Student ID, course ID, date range
- **Outputs**: PDF/CSV report
- **Priority**: High

3.5 Data Security (SRS-005)

- **Title**: Data Security
- **Description**: The system must ensure that all student data and grades are securely managed and accessible only by authorized users.
- **Priority**: High

3.6 System Integration (SRS-006)

- **Title**: Integration with SIS
- **Description**: The system integrates seamlessly with the existing SIS to retrieve and update student and course information.
- **Dependencies**: SIS data availability
- **Priority**: High

3.7 User Training and Support (SRS-007)

- **Title**: User Training and Support
- **Description**: Provide user manuals and training sessions for faculty and administrative staff. Establish a support system for post-deployment assistance.
- **Priority**: Medium

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4. Non-Functional Requirements

4.1 Performance Requirements (SRS-008)

- **Title**: System Performance
- **Description**: The system should handle up to 1,000 concurrent users with response times under 2 seconds for grade input and report generation.
- **Priority**: High

4.2 Security Requirements (SRS-009)

- **Title**: Data Encryption
- **Description**: All data transmissions must be encrypted using HTTPS. Data must be stored securely with role-based access controls.
- **Priority**: High

4.3 Usability Requirements (SRS-010)

- **Title**: User Interface Usability
- **Description**: The system must have a user-friendly interface that is easy to navigate. It should support intuitive grade input and report generation workflows.
- **Priority**: High

4.4 Availability (SRS-011)

- **Title**: System Availability
- **Description**: The system should have an uptime of 99.9%, excluding scheduled maintenance.
- **Priority**: High

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5. Assumptions and Dependencies

- The system will integrate with the existing SIS, which will provide all necessary student and course data.
- The existing university IT infrastructure is sufficient for system deployment.
- Historical grading data will not be imported automatically; manual entry will be outside the project scope.
- No hardware upgrades are required.

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6. Acceptance Criteria

- The system should allow authorized users to input, adjust, and view grades securely.
- The system must generate customizable reports for individual students and classes.
- The system must pass all testing phases, including unit, integration, and user acceptance testing (UAT).
- The system should integrate smoothly with the SIS without performance degradation.

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7. Glossary

- **SIS**: Student Information System
- **HTTPS**: Hypertext Transfer Protocol Secure
- **CSV**: Comma Separated Values
- **UAT**: User Acceptance Testing