

Software Requirements Specification

Amar Ahmad Khan Academy (AAK Academy)

ANSI/IEEE Std 830-1984

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1 Introduction

1.1 Purpose

This Software Requirements Specification (SRS) document provides a complete and detailed description of the functional and non-functional requirements of Amar Ahmad Khan Academy (AAK Academy). The purpose of this document is to serve as a reference for developers, designers, project managers, and stakeholders to understand system behavior and constraints.

1.2 Scope

AAK Academy is a web-based Learning Management System (LMS) that enables students to enroll in courses, access learning materials, attend live online classes, submit assignments, attempt quizzes, and make online payments. Faculty members can manage course content, assessments, and student performance, while administrators oversee system configuration, reporting, and user management.

1.3 System Benefits

- Centralized online learning platform
- Improved accessibility to educational resources
- Efficient academic management
- Secure and transparent fee handling

1.4 Definitions, Acronyms, and Abbreviations

- SRS – Software Requirements Specification
- AAK Academy – Amar Ahmad Khan Academy
- Admin – System Administrator
- JWT – JSON Web Token
- NFR – Non-Functional Requirement
- LMS – Learning Management System

1.5 References

- ANSI/IEEE Std 830-1984, IEEE Guide for Software Requirements Specifications

2 Overall Description

2.1 Product Perspective

AAK Academy is a standalone web-based application. It interacts with external services such as a payment gateway and a video conferencing platform. The system follows a client-server architecture and uses a centralized database hosted on cloud infrastructure.

2.2 Product Functions

- User registration, authentication, and authorization
- Course creation and content distribution
- Assignment and quiz management
- Online live class scheduling and participation
- Online payment processing
- Performance monitoring and reporting

2.3 User Classes and Characteristics

- Students: Basic computer and internet usage skills
- Faculty: Familiarity with teaching tools and assessments
- Administrators: Technical and system management expertise

2.4 Operating Environment

- Web browsers (Chrome, Firefox, Edge)
- Operating Systems: Windows, macOS, Linux, Android, iOS
- Cloud-based hosting environment

2.5 Constraints

- Continuous internet connectivity required
- Dependency on third-party APIs
- Compliance with data protection laws

2.6 Assumptions and Dependencies

- Users have valid internet access
- External services remain available
- Institutional policies remain unchanged

3 Functional Requirements

3.1 Authentication and Authorization

- FR-001: Users shall be able to register using email and password
- FR-002: The system shall authenticate users using JWT
- FR-003: The system shall enforce role-based access control
- FR-004: Users shall be able to reset passwords

3.2 Student Functions

- FR-005: Students shall access enrolled course materials
- FR-006: Students shall submit assignments online
- FR-007: Students shall attempt quizzes
- FR-008: Students shall view grades and performance reports
- FR-009: Students shall make online fee payments

3.3 Faculty Functions

- FR-010: Faculty shall upload learning materials
- FR-011: Faculty shall create and evaluate assignments and quizzes
- FR-012: Faculty shall schedule and manage live classes

3.4 Administrator Functions

- FR-013: Administrators shall manage users
- FR-014: Administrators shall configure courses and fees
- FR-015: Administrators shall generate system and academic reports

4 Non-Functional Requirements

4.1 Performance Requirements

- NFR-001: The system shall support at least 1000 concurrent users
- NFR-002: Page load time shall not exceed 3 seconds

4.2 Security Requirements

- NFR-003: All communication shall use HTTPS
- NFR-004: Sensitive data shall be encrypted
- NFR-005: Authentication tokens shall be securely managed

4.3 Reliability Requirements

- NFR-006: System uptime shall be at least 99.5%
- NFR-007: Automated daily backups shall be performed

4.4 Usability Requirements

- NFR-008: The interface shall be user-friendly
- NFR-009: Minimal training shall be required for users

4.5 Maintainability Requirements

- NFR-010: Modular system design
- NFR-011: Proper documentation of code and APIs

5 External Interface Requirements

5.1 Hardware Interfaces

- Desktop computers
- Tablets and smartphones

5.2 Software Interfaces

- Payment Gateway API
- Zoom API
- MongoDB Database
- Node.js Backend
- React.js Frontend

5.3 Communication Interfaces

- HTTPS protocol
- JSON-based data exchange

6 Appendices

6.1 Appendix A: Context Diagram

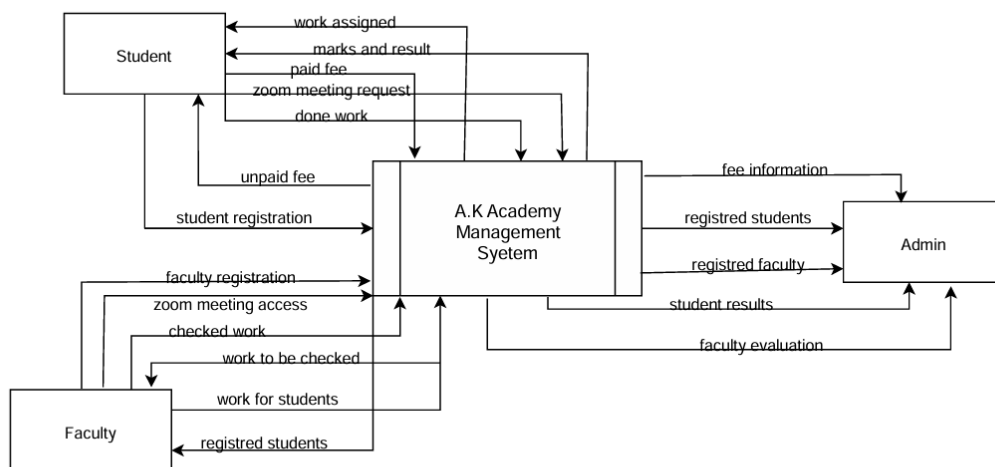
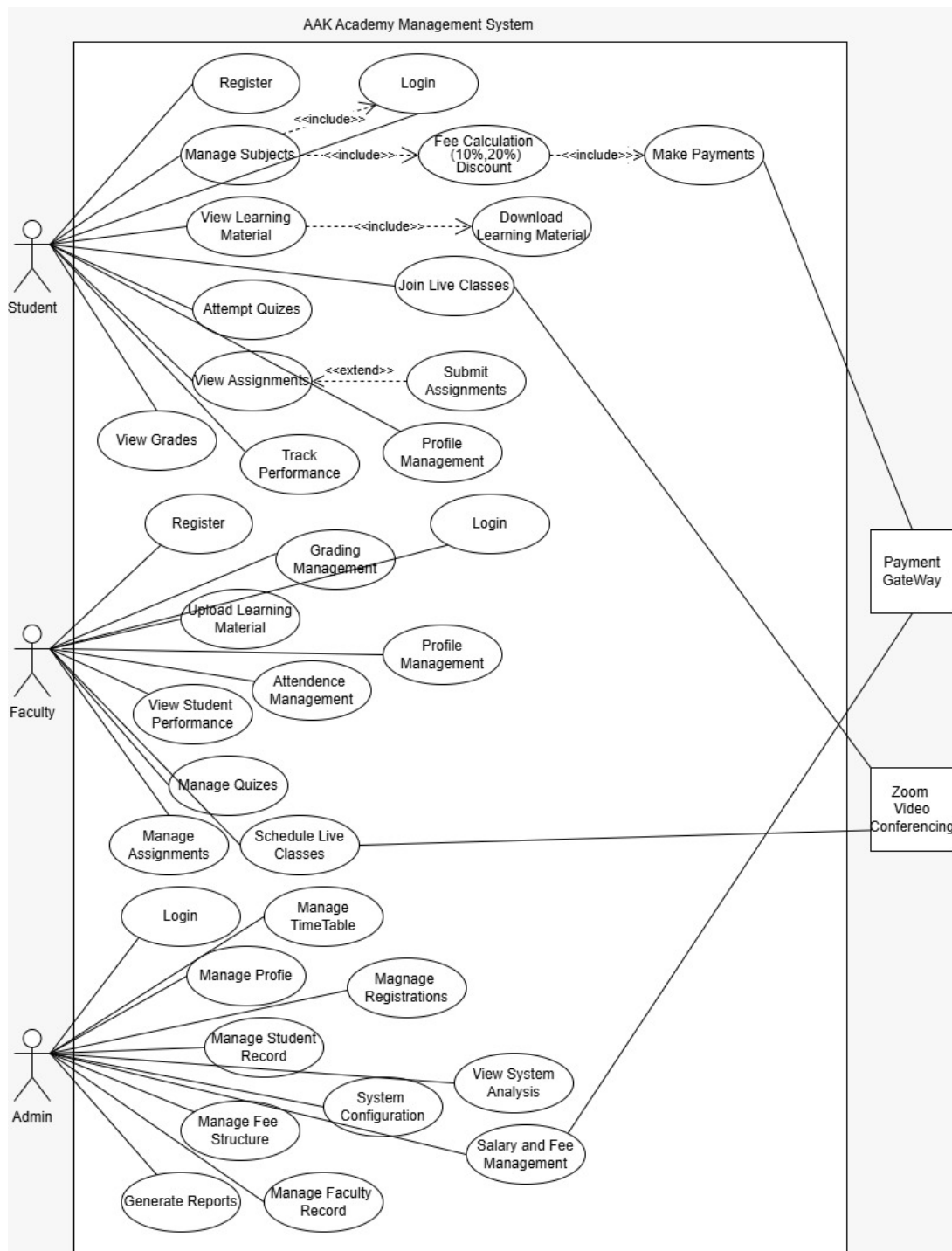


Fig: AAK Academy Management System

6.2 Appendix B: Use Case Diagram



6.3 Appendix C: Technology Stack

Component	Technology	Purpose
Frontend	React.js	User Interface
Backend	Node.js	Server Logic
Database	MongoDB	Data Storage
Payment	Stripe API	Online Payments
Video	Zoom API	Live Classes

6.4 Appendix D: Glossary

- Student – Enrolled learner
- Faculty – Instructor
- Admin – System manager