Software Requirements Specification Report

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1. Introduction

1.1 Purpose

The purpose of this document is to define the **functional** and **non-functional requirements** for developing an **Online Learning Portal**.
The system aims to provide an interactive platform where **students can learn online**, **instructors can teach and manage courses**, and **administrators can oversee operations** effectively.

1.2 Objective

To gather, analyze, and document clear and measurable software requirements that will serve as a foundation for design, development, and testing of the Online Learning Portal.

1.3 Intended Audience

- **Project Managers** – For planning and scope management.
- **Developers / UI Designers** – For implementation and design reference.
- **Testers** – For test case creation and validation.
- **Stakeholders** – For confirmation of business needs and priorities.

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2. Project Overview

The **Online Learning Portal** will serve as a one-stop digital learning environment that enables:

- Students to **browse, enroll, and complete** online courses.
- Instructors to **create, manage, and publish** courses.
- Admins to **monitor, manage, and maintain** the platform.

The portal will include features such as:

- User authentication and profile management
- Course creation, enrollment, and payment integration
- Learning progress tracking
- Discussion forums and rating system
- Dashboard for analytics and system monitoring

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3. Project Scope

In Scope:

- Web-based responsive application accessible from any device.

- Secure authentication and authorization system.
- Multi-role access (Student, Instructor, Admin).
- Integration with payment gateways for course purchases.
- Discussion forums and feedback systems.
- Progress tracking and certification on course completion.

Out of Scope:

- Offline learning or mobile app (for current version).
- AI-based recommendations (planned for future enhancement).
- Integration with external LMS platforms.

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4. Stakeholder Identification

Stakeholder	Role / Responsibility	Key Requirements
Students	End users who enroll in courses	Easy course discovery, progress tracking, certification
Instructors	Content creators and teachers	Course upload, student management, analytics
Administrators	System managers	User control, report generation, platform monitoring
Technical Team	Developers & QA	System stability, scalability, and documentation
Business Team	Investors / Owners	Revenue generation, user growth, reporting

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5. Requirement Elicitation Summary

5.1 Method Used:

- Mock stakeholder interviews
- Online platform research (Coursera, Udemy, Skillshare)
- Requirement workshops and brainstorming sessions

5.2 Key Findings:

Stakeholder Group	Needs / Pain Points Identified
Students	Need intuitive UI, progress tracking, certification, and course filters.
Instructors	Want quick upload tools, dashboards for analytics, and communication with learners.
Admins	Need control over user data, course approval workflows, and system health reports.
Business Team	Wants monetization models and KPI dashboards to track growth and revenue.

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6. Functional Requirements

Below are the **core functionalities** that the Online Learning Portal must provide:

6.1 User Management

- Users can **register** via email, Google, or LinkedIn.
- Users can **log in** and **log out** securely using JWT authentication.
- Password reset, email verification, and profile management.
- Admin can **add, edit, or remove users**.
- Role-based access control: Student, Instructor, Admin.

6.2 Course Management

- Instructors can **create**, **edit**, **publish**, and **delete** courses.
- Courses include: Title, Description, Category, Price, Video Content, Assignments, and Quizzes.
- Students can **search and filter** courses by category, rating, or instructor.
- Admin can **approve or reject** submitted courses.

6.3 Enrollment & Learning

- Students can **enroll** in free or paid courses.
- Students can **view lectures**, **attempt quizzes**, and **submit assignments**.
- Real-time **progress tracking** for each enrolled course.

- Automatic **certificate generation** after course completion.

6.4 Payment System

- Integration with **Stripe / Razorpay** for online payments.
- Support for one-time and subscription models.
- Secure transaction logging and invoice generation.
- Admin can view all transactions and generate reports.

6.5 Communication & Feedback

- Discussion forum or Q&A section under each course.
- Students can **ask questions**, instructors can **reply**.
- Students can **rate** and **review** courses after completion.

6.6 Admin Dashboard

- Admin can monitor all users, courses, and payments.
- System analytics: active users, revenue, top courses, etc.
- Report generation in Excel/PDF formats.
- Ability to manage announcements and site-wide messages.

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7. Non-Functional Requirements

Category	Requirement	Details
Performance	The system should support up to **10,000 concurrent users**.	Optimize backend queries and caching.
Scalability	Must be scalable via **cloud hosting (AWS / Azure)**.	Auto-scaling and load balancing required.
Security	Use **HTTPS**, **JWT tokens**, and **encrypted passwords**.	Follow OWASP security standards.
Usability	Simple, modern, and responsive UI/UX.	Should work seamlessly on mobile, tablet, and desktop.
Reliability	99.9% uptime with real-time monitoring.	Employ system health checks and fallback servers.

Category	Requirement	Details
Maintainability	Modular architecture using **React + Node.js**.	Enable easy updates and maintenance.
Compliance	GDPR and local data privacy compliance.	Consent management and data retention policy.
Localization	Multi-language support (English, Hindi).	Easily extensible for other languages.

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8. Data Entities (Sample Structure Placeholder)

Entity	Sample Fields	Example
User	user_id, name, email, role	101, "Riya Sharma", "riya@gmail.com", "Student"
Course	course_id, title, category, price	501, "Full Stack Web Dev", "Programming", ₹4999
Enrollment	enrollment_id, user_id, course_id, date_enrolled	9001, 101, 501, "2025-10-27"

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9. System Constraints

- The system must be **web-based** using **ReactJS (frontend)** and **Node.js/Express (backend)**.
- Database: **PostgreSQL or MongoDB**.
- Payment Gateway: **Razorpay or Stripe**.
- Must run on **HTTPS**.
- Data should be backed up daily.

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10. Assumptions

- All users have internet access and valid email IDs.
- All videos are hosted on secure cloud storage (e.g., AWS S3).
- Admins have authority to manage course content and user roles.

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11. Future Enhancements

- AI-powered course recommendations.
- Gamification (badges, leaderboards, streaks).
- Live classes and webinar integration.
- LinkedIn certificate sharing.

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12. User Stories

User Role	User Story	Acceptance Criteria
Student	As a student, I want to enroll in a course so I can start learning immediately.	Enrollment button redirects to course dashboard after successful payment.
Instructor	As an instructor, I want to upload video lectures and quizzes so that students can practice effectively.	Uploaded content is viewable by enrolled students only.
Admin	As an admin, I want to track system metrics to ensure the platform's performance.	Dashboard shows active users, revenue, and top-rated courses.

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13. Conclusion

The **Online Learning Portal** requirements gathered in this document define the key expectations and performance goals of the system.
This SRS serves as the foundation for design, development, and testing phases of the project.

It ensures that all stakeholders have a clear and shared understanding of what the final product will deliver.