

SaaS LMS Development

Overview

- Build a multi-tenant SaaS LMS where each organization has its own workspace.
- Support subdomains such as academy1.yourlms.com and academy2.yourlms.com.
- Allow custom branding, roles, permissions, and subscription plans per tenant.

User Roles

- Super Admin
- Tenant Admin
- Teacher
- Student
- Guest
- Custom Roles

Must Have Features

- Authentication (Login, Register, Forgot Password)
- Role & Permission Management
- Custom Roles and Permissions
- User Management
- Course Management
- Course Sections and Topics
- Assignments
- Quizzes
- Course Enrollment (Free/Paid)
- Payment Gateway Integration
- Meeting Scheduling
- Calendar
- Notifications
- Course Expiry and Access Control
- Reports and Analytics

Course Structure

- Course
- Section
- Topic
- Videos
- Documents
- Assignments
- Quizzes
- Meetings

SaaS Features

- Multi-Tenancy
- Subdomain Support
- Custom Domains
- Subscription Plans
- Monthly and Annual Billing
- Trial Periods
- Tenant-wise SMTP
- Tenant-wise Payment Gateways
- Tenant-wise Branding
- White Labeling

Meeting Features

- Zoom Integration
- Jitsi Integration
- Daily.co Integration
- Auto Enrollment of Students
- Recurring Meetings
- Recording
- Screen Sharing

Tech Stack

- Frontend: React, Redux Toolkit, Tailwind/Bootstrap
- Backend: Node.js, Express.js
- Database: MySQL (Sequelize)
- Storage: Godaddy Server
- Authentication: JWT, Google Login
- Realtime: Socket.IO
- Video Conferencing: Jitsi, Zoom, Daily.co, Zoho
- Payments: Razorpay, Stripe
- Calendar: Full Calendar
- Deployment: VPS, PM2, Nginx

Recommended Database Strategy

- Main Database: tenants, plans, subscriptions, invoices
- Separate Database per Tenant
- Example: tenant_1_db, tenant_2_db, tenant_3_db

Phases for Development Process

Phase 1: Foundation & Multi-Tenancy

- Multi-Tenant Architecture
- Subdomain Support (tenant.yourlms.com)
- Authentication (Login/Register)
- Forgot/Reset Password
- Super Admin Panel
- Tenant Creation
- Subscription Plans
- Tenant Database Creation
- Tenant Activation/Suspension

Phase 2: RBAC & User Management

- Predefined Roles (Super Admin, Tenant Admin, Teacher, Student, Guest)
- Custom Roles
- Custom Permissions
- User CRUD
- Bulk User Import
- Department Management
- Role-Based Sidebar & Content Control

Phase 3: Course Management

- Create/Edit/Delete Courses
- Course Categories and Tags
- Course Pricing
- Free/Paid Courses
- Course Thumbnail
- Sections and Topics
- Videos, PDFs, Attachments
- Course Publish/Draft
- Course Preview
- Course Expiry and Lifetime Access

Phase 4: Learning Features

- Assignments
- Assignment Submission & Grading
- Quizzes (MCQ, True/False, Descriptive)
- Quiz Timer & Results
- Course Progress Tracking
- Certificates
- Student Notes
- Discussion Forum
- Student Dashboard
- Teacher Dashboard

Phase 5: Meetings & Scheduling

- Calendar
- Schedule Classes
- Zoom Integration
- Jitsi Integration
- Recurring Meetings
- Meeting Recording
- Auto-Enroll Students in Meetings
- Email and Push Notifications

Phase 6: Payments & Billing

- Razorpay Integration
- Stripe Integration
- Coupon System
- GST Support
- Invoices
- Refund Management
- Transaction History

- Subscription Billing
- Monthly/Annual Plans
- Trial Plans

Phase 7: Analytics & Reports

- Revenue Reports
- Enrollment Reports
- Course Analytics
- Student Progress Reports
- Teacher Analytics
- Tenant Analytics
- Usage Tracking
- Audit Logs

Phase 8: Enterprise SaaS Features

- White Labeling
- Custom Domains
- Custom SMTP
- Custom Payment Gateway
- Custom Branding
- API Access
- Webhooks
- Storage Limits
- Multi-Language Support
- Multi-Currency Support

Estimated Timeline

- Phase 1 - 2 Week
- Phase 2 - 2 Week
- Phase 3 - 3 Weeks
- Phase 4 - 3 Weeks
- Phase 5 - 2 Week
- Phase 6 - 2 Week
- Phase 7 - 2 Week
- Phase 8 - 2 Week
- Total Estimated Time: 16-18 Weeks