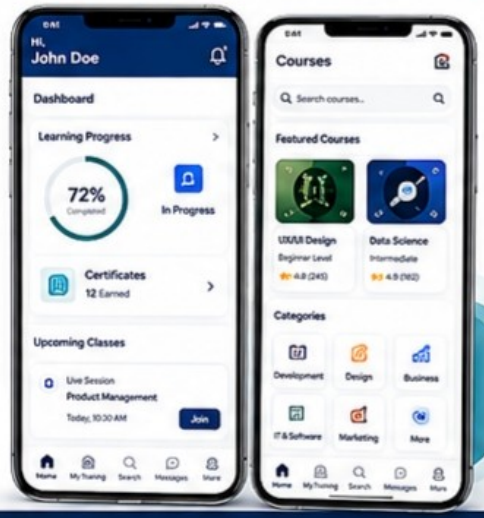
ZEROVAEGA TECHNOLOGIES

Learning Management System
Mobile Application

Bringing enterprise learning to every learner, anytime, anywhere.



15 Functional Modules

2 User Roles (Learner & Admin)

100% REST-Synced with LMS

Auto SCORM Retry on Reconnect

01 EXECUTIVE SUMMARY

Zerovaega Technologies delivered a cross-platform LMS mobile application that brings enterprise learning — training, instructor-led classes, self-paced courses, learning paths, certifications, and collaboration — into a single, secure, mobile-first experience. Built on Flutter and integrated with the LMS via REST APIs, the application extends learning access beyond the desktop, giving learners real-time visibility into progress, deadlines, and credentials from anywhere.

02 BUSINESS CHALLENGE

- Learning access was largely desktop- or browser-dependent, limiting flexibility.
- Training, classes, documents, and records were scattered across disconnected portal sections.
- Learners lacked clear visibility into pending, in-progress, and overdue learning.
- Course discovery, self-enrollment, and instructor communication were slow and fragmented.
- Organizations needed a scalable channel to support mandatory and continuous learning.

03 OBJECTIVES

BUSINESS
- ✔ Elevate learner engagement mobile-first
- ✔ Anytime, anywhere access to training
- ✔ Centralize records & compliance visibility

TECHNICAL
- ✔ Scalable cross-platform build on Flutter
- ✔ Secure REST/JWT integration with the LMS
- ✔ Offline-safe SCORM sync with auto-retry

LEARNER
- ✔ On-demand access to courses & resources
- ✔ Real-time progress & enrollment visibility
- ✔ Direct line to instructors and peers

04 PROPOSED SOLUTION

A dedicated learner-facing mobile application providing secure, authenticated access to the full LMS ecosystem — personalized dashboards, course discovery, self-enrollment, instructor-led and self-paced learning, learning paths, transcripts, certifications, collaboration, and support. Administrative functions remain with the LMS backend and admin portal, keeping the mobile app focused and lightweight for the learner.

Mobile-First Experience | Secure & Compliant | Real-Time Visibility | Scalable for Enterprise Growth

05 SOLUTION ARCHITECTURE

Learner app connects securely to LMS services for real-time learning, sync and communication.

Learner (Mobile App)
- Flutter App UI
- GetX State Management
- Offline Cache (SCORM Sync)

→ **API Layer** (API)
- REST APIs
- JWT Authentication
- Secure Data Exchange

→ **LMS Backend Services**
- Courses, Users, Enrollments
- SCORM Engine
- Notifications
- Reporting

→ **Database**
MySQL

→ **Admin Portal**
- User & Course Management
- Reports & Analytics
- Support & Moderation

Technology stack: Flutter & Dart • GetX (state, navigation, DI) • Dio/HTTP REST client • JWT bearer-token auth • Shared Preferences • SCORM/AICC engine • WebView • Connectivity Plus • PDF & print support • Git

06 KEY CAPABILITIES

Access & Dashboard
Multi-domain login, token-based auth, and personalized dashboard with achievement, status, and recommendations.

My Training
One hub for class, course, mentored-session, learning-path, club enrollments, bookmarks & documents.

Course Discovery
Search, filters, catalog browsing, recommendations, coupon validation & self-enrollment.

Learning Activities
Video, SCORM, AICC, assessments, virtual labs & offline-safe progress sync with auto-retry.

Classes & Mentoring
Schedules, virtual classroom launch, instructor bios, session recordings, feedback & mentored sessions.

Paths & Memberships
Structured learning-path and track progression alongside club-based membership content.

Transcripts & Certs
Consolidated transcript categories, certification records & print-ready credentials.

Collaboration
Instructor & peer chat, discussion boards, announcements & read/unread notifications.

Calendar & Support
Personal learning calendar, event visibility, contact support, in-app browser & app-store feedback.

07 BUSINESS IMPACT

Area	Traditional Web-Only Learning	Mobile LMS Experience
Learning access	Mainly desktop / browser dependent	Native Android & iOS access, anytime, anywhere
Training visibility	Scattered across portal sections	Centralized via Dashboard & My Training
Course discovery	Basic browser catalog	Mobile search, filters, and smart recommendations
Enrollment	Manual, multi-step process	Self-enrollment where permitted, in a few taps
Compliance tracking	Manual learner review	Automated past-due and progress visibility
Learning records	Portal-based transcript access	Mobile transcript & certification access

08 RESULTS & ROADMAP

KEY OUTCOMES
- ✔ Unified mobile access to the full organizational learning ecosystem
- ✔ Improved visibility into progress, deadlines, and compliance status
- ✔ Faster course discovery and self-enrollment
- ✔ Reliable SCORM sync with automatic offline retry
- ✔ Consolidated transcripts, certifications, and communication

FUTURE ENHANCEMENTS
- Multilingual localization for global learner bases
- Integrated payment gateway for paid learning content
- Shopping cart for multi-course purchasing
- Coupon and promotional discount validation
- Unified, streamlined checkout experience

09 CONCLUSION

The LMS Mobile Application transforms enterprise learning into a centralized, mobile-first experience across Android and iOS. By combining Flutter, GetX, secure REST/JWT integration, and resilient SCORM synchronization, Zerovaega Technologies delivered a scalable platform that strengthens learner accessibility, sharpens compliance visibility, and lays a mobile foundation for continuous workforce development.



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