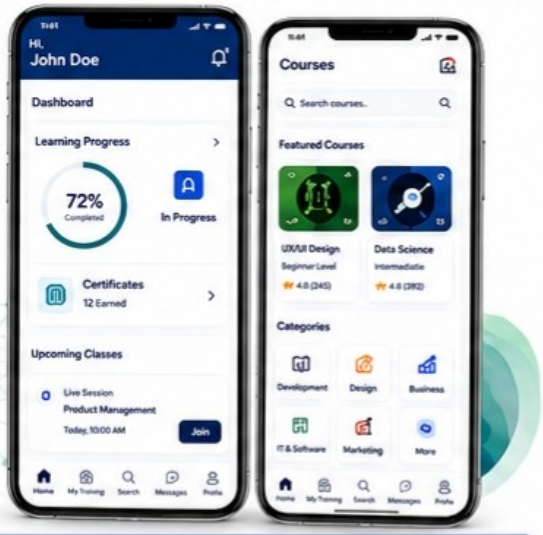
ZEROVAEGA TECHNOLOGIES

# Learning Without Boundaries.
# Empowering Learners Worldwide.

A Global Learning Ecosystem
for a Smarter, Connected Future.




**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, collbboration, 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 anchievement, status, and recommendations.

**My Training**
One hub for class, course, mentor-led sessions, 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 synchonization, Zerovaega Technologies delivered a scalable platform that strengthens learner accessibility, sharpens compliance visibility, and lays a mobile foundation for continuous workforce development.




Global Learning. Limitless Opportunities.

ZEROVAEGA TECHNOLOGIES PVT. LTD.