

**Proposal for Developing a
Mobile Application for the Digital Transformation of
Entrance Examinations – Version 2.3**

Submitted by:

The Commissioner for Entrance Examinations (CEE), Government of Kerala

Submitted to:

Kerala Startup Mission (KSUM)

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1. Background and Rationale

The Office of the Commissioner for Entrance Examinations (CEE), Government of Kerala, conducts high-stakes professional entrance examinations and centralized allotment processes (CAP) for admissions to various professional courses in Kerala. While the existing web-based platform has proven successful, the increasing adoption of mobile devices among students necessitates a dedicated, mobile-first solution for improved accessibility, transparency, and real-time engagement.

This proposal seeks collaboration with the Kerala Startup Mission (KSUM) to engage a qualified startup or technology partner to design, develop, and deploy a secure, scalable, and user-friendly cross-platform mobile application for both Android and iOS. The initiative aligns with the Digital Kerala vision and the Startup Mission's objective of promoting startup-led innovation in government digital transformation.

2. Project Overview and Objectives

The project aims to develop a unified mobile platform for candidates to complete all processes related to examinations and allotments — including registration, document upload, fee payment, and real-time status tracking. The app will ensure synchronized data exchange with the existing CEE systems via secure Open APIs.

Key stakeholders include:

- Candidates/Applicants for CEE examinations and allotments.
- CEE administrative and technical staff.
- Selected startup/technical service provider (TSP).
- Kerala Startup Mission (oversight and facilitation).
- Kerala State IT Mission (technical coordination, audit compliance, and KSDC hosting oversight)

Objectives:

Objective	Metric	Target
Improve Accessibility	Increase in app-based registrations and submissions.	80% of registrations via mobile app in first year.
Enhance Communication	Push & WhatsApp alerts for real-time updates.	95% users receive alerts within 5 minutes.
Streamline Application Process	Reduced submission errors and improved UX.	25% fewer help desk calls/tickets.
Provide Real-Time Status	Instant reflection of application milestones.	100% real-time data sync.

3. Detailed Scope of Work and Functional Requirements

The proposed mobile application will replicate and enhance all student-facing functionalities of the existing CEE web portal. It will provide a seamless, consistent experience across Android and iOS devices and integrate directly with CEE's backend systems.

Core Application Features

- User Registration & Authentication (OTP/Password-based).
- Multi-stage Application Submission with document upload and preview.
- Secure Payment Gateway Integration for application and allotment fee remittance.
- Push Notifications and optional WhatsApp-based alerts for critical communications.
- Profile Corrections (Uploading further documents as and when required)
- Option Entry and Allotment Status Tracking with instant updates.
- Offline access to Prospectus, Admit Card, and Help Desk details.
- Integration with existing examination systems for synchronization of candidate data, payment, and allotment records.

Technical and Security Requirements

- Cross-platform development using Flutter or Kotlin Multiplatform Mobile (KMM) for simultaneous Android and iOS deployment.
- Backend REST APIs developed using PHP (Laravel/CodeIgniter 4) integrated with MySQL.
- Integration with CEE's existing systems through secure, standards-based Open APIs (OpenAPI 3.0 compliant).
- Hosting within the Kerala State Data Centre (KSDC) or government cloud infrastructure to ensure compliance with data residency and security norms.
- Mandatory CERT-IN empanelled security audit and 'Safe to Host' certification.
- Adherence to Government of India's Mobile Seva and Kerala IT policy (FOSS preference).
- Support for English (Malayalam Optional) user interfaces.
- Audit logging, performance analytics, and monitoring dashboards for administrators.

4. Implementation Model and Technology Stack

The project shall follow an agile, phased model enabling simultaneous Android and iOS development. Each phase shall deliver measurable outcomes with iterative testing and validation to ensure scalability and user satisfaction.

The implementation will be coordinated jointly by CEE, KSUM, and KSITM.

- CEE will act as the project owner and functional authority.
- KSUM will facilitate startup engagement, technical evaluation, and innovation support.
- KSITM will oversee technical compliance, audit processes, and ensure smooth hosting within the Kerala State Data Centre (KSDC).

Technology Stack (Proposed)

Component	Technology	Rationale
Frontend (Mobile App)	Flutter or Kotlin Multiplatform Mobile (KMM)	Simultaneous Android & iOS development with shared codebase.
Backend (APIs)	PHP (Laravel/CodeIgniter 4) with MySQL	Robust, maintainable, and compatible with existing systems.
Hosting	Kerala State Data Centre (KSDC) / Any other Government Cloud	Ensures data security, compliance, and scalability.
Communication	Push Notifications + WhatsApp Business API	Guarantees real-time, verified delivery of critical alerts.
API Integration	OpenAPI 3.0-compliant REST APIs	Facilitates data exchange with other government systems, if needed.

Implementation Phases & Timeline

Phase Description	Duration
Planning & Design	2 Weeks
Core Development (MVP)	6 Weeks
API Integration, Allotment & Communication Module	3 Weeks
Testing, Audit & Deployment	3 Weeks
Total Estimated Rollout	14 Weeks (Approx. 4 Months)

5. Resource and Financial Plan

Resource Requirements:

- Technical Partner: Startup identified through KSUM-facilitated RFP process.
- CEE Team: Project Manager, System Manager (Sreerej R), DBA, and Content Manager.
- Kerala State IT Mission (KSITM): To provide technical coordination, security audit facilitation, and hosting integration support through KSDC.
- Infrastructure: Hosting within KSDC/Government Cloud for staging and production.

Funding Strategy:

- Core development costs funded by CEE from service fee allocations.
- KSUM support via innovation grant, mentoring, or incubation assistance if possible.
- Exploration of CSR funding through public sector partners (e.g., SBI).

Warranty & AMC

- The selected startup/agency shall provide a **12-month comprehensive warranty** from the date of final acceptance.
- After the warranty, the CEE may enter into a 2 or 3 year Annual Maintenance Contract (AMC) which shall ensure continuous performance, version updates, and technical support.
- The AMC shall include proactive security patching, API monitoring, and feature optimization as per evolving CEE requirements.

6. Expected Benefits

- Simultaneous Android and iOS availability ensures inclusivity for all candidates.
- Multi-channel communication through push and WhatsApp alerts guarantees timely updates.
- Hosting within KSDC ensures data sovereignty and compliance with IT policies.
- Warranty and AMC ensure sustainability and reliability of the platform.
- Improved transparency and reduced administrative overhead for CEE.

7. Conclusion

Through this initiative, the Office of the Commissioner for Entrance Examinations (CEE) aims to establish a secure, scalable, and startup-driven mobile platform that will transform the entrance examinations and allotment processes undertaken by the CEE.

The project will be executed in coordination with the Kerala Startup Mission (KSUM) and the Kerala State IT Mission (KSITM). While KSUM will facilitate the engagement of qualified startups and provide innovation support, KSITM will coordinate technical validation, security audit facilitation, and hosting within the Kerala State Data Centre (KSDC) to ensure full compliance with state IT governance policies.

The CEE looks forward to working closely with both KSUM and KSITM to realize this initiative as a model of effective collaboration between government departments and the startup ecosystem, strengthening Kerala's digital public infrastructure and improving service delivery for students across the state.