Project Proposal Document

for

CompetiQuest

Version 1.0

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Date : 26th August 2025

Introduction

Adequate exam preparation requires structured practice, instant feedback, and precise progress tracking in today's competitive academic and professional landscape. Traditional methods—static question banks, paper mock tests, and inconsistent performance insights—often fail to give learners actionable, topic-wise guidance. **CompetiQuest** is a modern full-stack web application designed to close that gap by offering a fast, interactive, and data-driven environment for mastering competitive exam questions.

CompetiQuest provides topic-wise quizzes, immediate scoring and feedback, and a user dashboard to track performance over time. The platform is responsive (desktop & mobile), secure, and extendable: administrators can manage question banks, educators can review analytics, and learners can practice in focused topic flows. Built using the MERN stack with Next.js for the frontend, CompetiQuest emphasizes usability, scalability, and maintainability.

Application type

- **Primary:** Web application (responsive) — preferred for client side (learners).
- **Admin interface:** Web admin portal (desktop-friendly) for secure question management and analytics.
- **Optional/future:** Progressive enhancements for hybrid/mobile (Next.js + PWA or native wrapper).

Problem Statement

Many learners struggle to identify weak topics because traditional practice lacks structured, topic-wise analysis and immediate feedback. Coaching resources are expensive and often not personalized. Educators and admins need a secure way to manage quality question banks and view usage analytics. CompetiQuest addresses these problems by delivering targeted quizzes, instant scoring, and a dashboard that highlights strengths and weaknesses, enabling focused revision and continuous improvement.

Target Users and Use Cases

Primary users

- **Students / Aspirants:** practice topic-wise quizzes, track progress, review explanations.
- **Self-learners / Working professionals:** quick practice sessions on the move.

Secondary users

- **Administrators:** manage questions, topics, add / remove/ update questions and quizzes .
- **Course instructors / Teachers (future enhancements):** create guided tests and assignments for cohorts.

Typical Use Cases

- The student signs up and logs in, selects the category for which he/she wants to solve questions and goes to the desired subject questions and gets the answers along with an explanation of the answer.
- Eg. Students go to "Aptitude -> Time and Work " to solve questions and get answers and explanations.

Scope and High level features

In-scope

- User authentication (signup, login) using JWT.
- Topic categorization (e.g., Aptitude, Verbal, Programming).
- Interactive quiz UI (MCQs, quizzes).
- Instant scoring & per-question feedback/explanations.
- User dashboard: progress bar, solving calendar, streak feature.
- Admin panel: CRUD for questions & topics, simple user management.
- Responsive design (desktop + mobile).
- MongoDB persistence with versioned question documents.

Out of scope

- Premium payments, subscriptions, social features (friends/leaderboards) — can be added later.
- Advanced analytics (ML-based recommendations) — roadmap item.

Technology Stack

Frontend: Next.js (React), Tailwind CSS, client-side routing, responsive UI.

Backend: Node.js, Express.js REST API (or Next.js API routes).

Database: MongoDB.

Authentication: JSON Web Tokens (JWT).

Dev & tooling: Git/GitHub, ESLint, Prettier, Postman for API testing.

Deployment (target): Vercel, MongoDB Atlas.

Sprint Managing : Jira or Taiga

Roles and responsibilities

Aarushi Goel - Frontend Developer, Team Lead, UI/UX

Annirudh Pratap - Backend Developer, Team Lead, Product Owner

Mohsin Pathan - Business Analyst, Team Lead, Technical Writer, Scrum Master

Gaurav Rathod - Frontend Developer, UI/UX

Mann Shrimali - Backend Developer, Solution Architect

Kalyani Dave - Backend Developer, Solution Architect

Devangi Pansuriya - Business Analyst, Scrum Master, Quality Assurance

Kavya Dhariwal - Frontend Developer, Product Owner

Nishit Nagar - Quality Assurance, Technical Writer

Github Repo Link : https://github.com/AAruhsi/CompetiQuest

Project Milestones and Timeline

Milestone	Description	Start Date	Due Date
Project Proposal Document	3–4 page PDF: title, motivation, scope, tech stack, roles, timeline.	20-Aug-2025	26-Aug-2025
Requirements Specification (BRD)	Functional & non-functional requirements, user stories, wireframes (initial).	28-Aug-2025	07-Sep-2025
System Design Document	Architecture diagram, DB schema, component/class diagrams, API contracts.	08-Sep-2025	14-Sep-2025
Project Plan / Gantt	Task timeline, assignments, tools screenshots.	08-Sep-2025	14-Sep-2025
Weekly Progress Reports	Weekly 1-page PDFs summarizing tasks, roadblocks, next steps (15-Sep → 25-Nov).	15-Sep-2025	25-Nov-2025
Mid-Semester Demo	Partial working demo + slides + code walkthrough.	01-Oct-2025	14-Oct-2025
Test Plan & Test Cases	Unit/integration tests, test data, UI test steps, bug log.	15-Oct-2025	04-Nov-2025
Final Application (complete)	Full feature set, integrated frontend + backend + DB.	05-Nov-2025	15-Nov-2025
Deployment & Hosting	Live URL, deployment notes, optional CI/CD.	05-Nov-2025	15-Nov-2025
Final Project Report	15–25 page PDF: summary, screenshots, testing, deployment notes.	16-Nov-2025	18-Nov-2025
Final Presentation & Demo	Slide deck (10–15 slides), poster, live demo.	16-Nov-2025	18-Nov-2025
Peer Review & Contribution Report	Individual peer reviews & self-assessments.	18-Nov-2025	19-Nov-2025