**Edunabha Project Overview**

**Executive Summary**

Edunabha is a modern, multi-role digital platform created to address the unique challenges of delivering effective learning solutions to rural school students in Nabha. The ecosystem is designed for resilience against connectivity issues, featuring a unified app experience for students, teachers, and parents. Edunabha integrates voice-enabled navigation, AI-powered support, and an offline-first architecture to ensure every learner can access and engage with educational content regardless of internet reliability.

**Technology Stack**

Frontend:

* React: Powers a fast, adaptable, and interactive UI that manages complex state and dynamic views.
* Material-UI (MUI): Facilitates a consistent, professional user interface, with cards, buttons, tabs, and responsive layout.
* Framer Motion: Delivers smooth transitions and subtle animations for a polished experience.
* Progressive Web App (PWA): Enables home screen installation and core offline functionality.

Backend:

* Firebase Authentication: Secures all logins and tracks user sessions persistently.
* Firestore Database: Stores subjects, lessons, quizzes, progress metrics, and roles in real-time, with flexible queries.
* Firebase Storage: Hosts teacher-generated video lessons and other media.
* Firebase Hosting: Deploys and delivers the application globally with reliable speed.

APIs & Voice Technology:

* Google Gemini API: Powers conversational AI for instant, context-rich answers.
* Web Speech API: Facilitates voice command recognition for hands-free navigation across all dashboards.

**Application Workflow**

Student Dashboard:

* Personalized subject lists, lesson selection, completion badges, and multimedia learning (text, video, quiz tabs).
* Real-time progress updates and gamified achievements.

Teacher Dashboard:

* Aggregate classroom analytics, performance statistics, and a streamlined classroom management interface.

Parent Dashboard:

* Intuitive academic progress charts and direct transparency into each child’s subject mastery.

**Key Benefits**

* Inclusive Access: Voice commands and assistants make navigation and learning accessible to all students.
* Offline Reliability: PWA strategies ensure learning continues even with unstable internet.
* Centralized Collaboration: Brings together all stakeholders—students, teachers, and parents—in one seamless ecosystem.
* Engagement: Gamification (such as badges), animated UI elements, and real-time feedback encourage participation.

**Competitive Advantage**

* True Offline-First Design: Delivers lessons and quizzes without constant connectivity, critical for rural regions.
* Localization Superiority: Empowers teachers to customize and upload multilingual content, creating authentic local learning.
* Next-Level Intelligence: Combines a responsive voice assistant with advanced AI for deeper, guided learning.
* Holistic Stakeholder Dashboards: Every user gets tailored features, data, and transparency for holistic education management.

**Voice Command List (MVP Scope)**

General:  
Logout / Sign out, Back, Stop reading / Stop

Dashboard:  
Open [course name], Take me to courses, Show me the courses

Lesson List:  
Open lesson [number], Show lesson [number], Show lessons, Open textbook

Lesson Detail:  
Play video, Open quiz, Start quiz, Read the lesson, Explain, Clarify, What is

Quiz:  
Next question

Further voice commands will be added and refined as the assistant is trained.

**Conclusion and Apology**

Edunabha represents a strong foundation for innovative, inclusive rural education. The current application is a working MVP designed to showcase the platform’s essential functions and gather feedback for meaningful improvements. Course names were placeholder values; apologies for any confusion—course names will be promptly corrected for greater accuracy and clarity.

This version is just a prototype. Future plans include refined UI/UX designs with softer color palettes, rounded corners, more responsive layouts, and beautiful components. New features are in the pipeline—expanded voice commands, enhanced offline capabilities, richer lesson media, and smoother transitions—as the platform evolves towards a truly exceptional educational experience.

Thank you for your patience and support as Edunabha grows into a beautiful, high-impact learning platform for all.