



**Baderia Global Institute of Engineering and  
Management, Jabalpur, Madhya Pradesh 482002**



# **BrahmaX 1.0**

The Creation of Tomorrow

**BrahmaX 1.0**

[www.codecrax.com](http://www.codecrax.com)

# Profile Overview

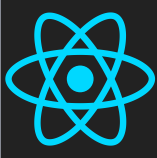





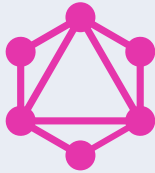


- **Theme** – Ed-Tech
- **Problem Statement Title**- Real Time Collaboration in Virtual Learning Lab
- **Team ID** -
- **Team Name** - Reformers



# IDEA TITLE

- Provides a synchronized programming codespace with real-time IDE collaboration, instant mentorship guides, and rapid AI-powered code suggestions with task requests & debugging
- **Real-Time Collaboration & Workflow:** Share one Codespace link for simultaneous file/folder editing, in-app chat/video, task assignment & debugging, with granular access control for final code approval
- **Expert Mentorship & AI-Driven Quality:** Tap into an industry-expert guide and AI bot for top-tier code suggestions, plus seamless Git/GitHub support to push production-ready code
- **Unique / Key Features:**
  - Video / Chat Conferencing
  - Access Control Distribution
  - Task Management
  - Git / Github Support
  - AI-Agent

# Technical Approach

Component	Technology
Frontend	  tailwindcss
Backend	 
AI Assistance	 OpenAI
API	 
Database & Auth	 mongoDB  Firebase



# FEASIBILITY AND VIABILITY

## Feasibility

- Real-time sync via WebSockets + CRDT/OT
- AI code hints through a lightweight API call
- Cloud-hosted backend for on-demand scaling

## Challenges & Risks

- Potential lag under heavy load
- AI suggestions may misfire
- Matching students with mentors asynchronously

## Mitigation Strategies

- Auto Scale Servers and use edge caching
- Continuous AI retaining with user feedback
- Simple Mentor portal with Slot booking and alerts

# IMPACT AND BENEFITS

## IMPACT

- **Students:** Instant peer-to-peer coding & AI guidance
- **Educators:** Live visibility into progress & reduced grading load
- **Mentors:** Flexible, asynchronous code reviews

## BENEFITS

- **Social:** Builds global, inclusive learning communities
- **Economic:** Cuts lab costs & accelerates job readiness
- **Environmental:** Eliminates commute & shared cloud resources

## LONG-TERM VALUE

- **Scalability:** Cloud-native, multi-tenant architecture
- **Future Potential:** AR/VR labs & corporate upskilling integration



# REFERENCES

## Reference Models :-

- **Visual Studio Live Share** <https://visualstudio.microsoft.com/services/live-share/>
- **Replit Teams for Education.** <https://replit.com/teams-edu>
- **Codeshare.io** <https://codeshare.io>



## AI & Mentorship Integration :-

- **OpenAI Codex / GitHub Copilot** <https://openai.com/blog/openai-codex>
- **Stack Overflow for Teams & MentorCruise** <https://mentorcruise.com/>

