



# Samadhan 2.0



**Team Rudra**

Leader: Divyanshu Dubey

College: Oriental Group of Institutes

Submission Date: September 5, 2025

# Area Overview & Importance

## The Challenge



Competitive exams like JEE involve vast syllabus and are high-stress. current study platforms often lack personalized learning and crucial emotional support.

## Our Vision



Our vision is to create an [AI-powered Study Buddy](#) that provides truly personalized and stress-free preparation, transforming the exam journey.

# Challenges & Opportunities

## Challenges

- Lack of personalization
- Limited multilingual support
- Student distractions
- No emotional assistance
- Weak collaboration

## Opportunities

- AI-driven personalized roadmaps
- Focus & study modes
- Real-time analytics
- Emotional AI mentor
- Collaborative study rooms



# Preliminary Solution Concept

Our [AI-powered Study Buddy platform](#) offers a comprehensive approach to competitive exam preparation.



## Multilingual Support

Hindi + English text & voice.



## Multimedia Input

PDF, notes, video processing.



## Study Rooms

Chats with AI mentor.



## Multi-Device

MCP-ready access.



## Performance Tracking

Progress & phone usage.



## AI Buddy

Mentoring, motivation, stress support.



## Custom Roadmaps

Curated resources & timetables.

# Key Features & Functionalities



## Multilingual Support

Text + voice.



## Multimedia Inputs

Text, Audio, Video, PDF to quizzes & notes.



## Group Collaboration

Study rooms + AI mentor.



## Real-time Tracking

Progress & analytics.



## Focus Mode

AI-guarded study sessions.



## AI Buddy Mentor

Q&A + motivation.



## Smart Timetable

Roadmap generator.



## Emotional Wellness

Stress detection, motivational nudges.



# Target Users & Use Cases



## Students

Personalized plans, AI mentor, focus mode.



## Teachers

Monitor groups, share content, analytics.



## Institutions

AI-powered multilingual learning platform.

# Data Requirements & Privacy

## Data Required

- User profile (exam type, strengths/weaknesses)
- Study logs (time spent, phone usage, performance)
- Uploaded content (PDF, video, notes)
- User interactions (queries, voice, chat)

## Privacy & Security

- Data encryption (at rest & in transit)
- No unauthorized third-party sharing
- Anonymous
- analytics for platform improvement
- Compliance with GDPR & Indian Data Protection norms

# AI Technologies & Methods



## NLP

Hindi+ English chat & Q&A.



## Machine Learning

Personalized roadmaps & adaptive quizzes.



## Speech Synthesis

Realistic multilingual voices (Eleven Labs).



## Computer Vision + OCR

Convert notes/PDFs to questions.



## Predictive Analytics

Performance forecasting & readiness scoring.



## Tech Stack

- **Frontend:** React Native (Expo) for Android, iOS, Web
- **Backend:** Node.js + Express
- **Database:** MongoDB / PostgreSQL
- **AI APIs:** Gemini, OpenAI, Hugging Face, Whisper, Eleven Labs
- **Hosting:** AWS / GCP (scalable cloud + serverless functions)

## Hackathon Timeline (48 Hours)

- **Day 1:** UI design, backend setup, voice + text API integration.
- **Day 2:** Progress tracking, focus mode, AI roadmap, final polish + demo video.

# Evaluation Metrics & Impact

## Anticipated Impact

### Enhanced Focus

Better concentration & reduced distractions.

### Student Wellbeing

Higher satisfaction with AI mentor & emotional support.

### Improved Collaboration

Better peer-to-peer interaction.

### Wider Adoption

Scalable for institutions.

## Key Performance Indicators (KPIs)



<2s

### Response Time

Average AI response.



>85%

### AI Accuracy

Correct answers.



100%

### Engagement

Daily active users, study room activity.



100%

### Student Wellbeing

Stress reduction & motivation feedback.

# Thank You!