SISTec SAMADHAN
CODE CREATE & INNOVATE

A 2-days National Level Hackathon On

AI In Education

SkillSwap Economy for GATE Prep

Doom Scrollers

Team Lead: Arbaaz Arif

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Jai Narain College of Technology, Bhopal

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Area **Overview**

Many GATE aspirants, especially from Tier-3 colleges, face limited peer support, unequal access to resources, and lack of accountability in preparation.

Proposed Solution	A **SkillSwap Economy** where students exchange knowledge, notes, and doubt-solving sessions using **Skill Tokens**. This creates a self-sustaining **peer-learning ecosystem**.
Peer-to-Peer Support	**Exchange skills** & resources.
Gamified Tokens	**Earn** for helping, **spend** for getting help.
Accessible Resources	Notes, **Mock Tests**, Quizzes.
Motivated Learning	**Badges**, Leaderboards, and Streak Rewards.
Impact	• Democratizes GATE preparation. • Builds **Accountability** and **Collaboration**. • **Reduces** dependency on costly Coaching centers.

Key **Features** and **Functionalities**

There are many features and functions which helps students gain tokens through teaching others and contributing to the community

Skill Token Economy	**Earn** by helping, **spend** for learning.
Study Rooms	Subject-wise spaces for **doubts** & **resources**.
Micro Tutoring	**Quick** peer-to-peer doubt-solving sessions**.**
Gamification	Leaderboards, **Badges** and Streak Rewards.
Resource Pool & Verification	• Token-gated access to verified notes, Mock Tests, and Flashcards. • Students uploading **High-Quality Resources** get bonus tokens. • Community upvotes for credibility.
AI Assist	Auto-quizzes, Summaries and **Weak-area Analysis.**

Potential **Challenges**

01

User Engagement

Keeping students consistently active beyond the initial excitement.

02

Token Misuse

Preventing gaming of the token system or unfair exchanges.

03

Trust & Moderation

Building credibility and preventing spam or low-quality contributions.

Potential **Opportunities**

01

Equal Access

Democratizing GATE preparation by enabling peer-driven learning at no/low cost.

02

Scalability to Other Exams

The same model can be extended to UPSC, CAT, GRE, etc.

03

Institutional Adoption

Colleges can use the platform as an internal peer-learning tool.

Preliminary Solutions

01

Skill Tokens

A credit-based system where students earn tokens by helping and spend them to seek guidance.

02

Study Rooms

Subject-specific spaces for doubt solving, resource sharing, and group discussions.

03

Micro Tutoring

Quick peer-to-peer mentoring sessions for instant doubt clarification.

04

Gamification

Leaderboards, badges, and streak rewards to keep aspirants motivated.

05

Resource Pool

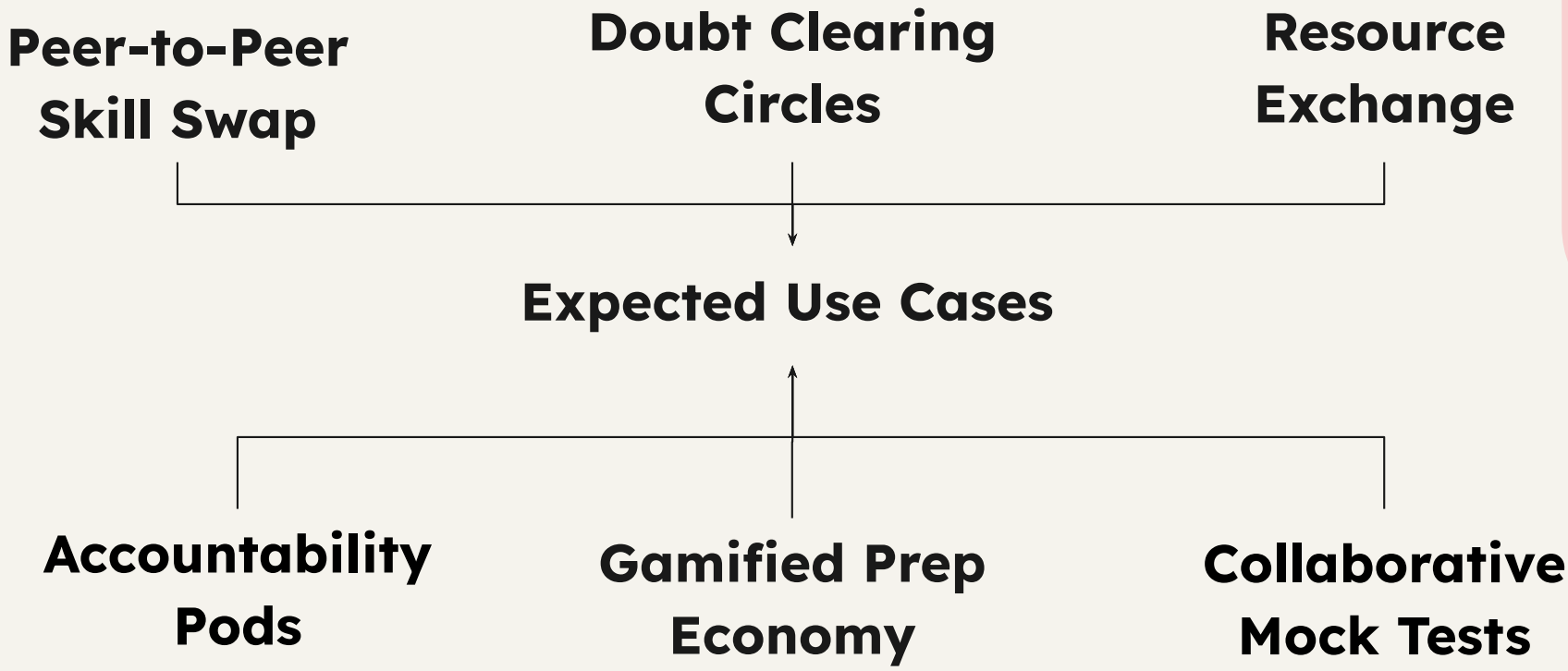
Verified notes, mock tests, and flashcards accessible via tokens.

06

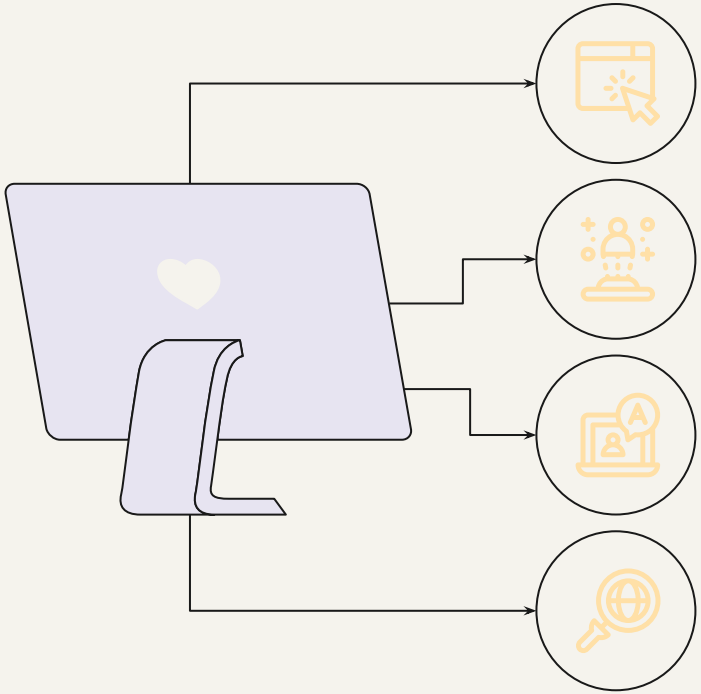
AI Assist

AI-powered quizzes, summaries, and weak-topic analysis for personalized prep.

Expected Use Cases



Targeted Users



Tier-2 & Tier-3 College Students

Limited access to coaching and peer groups.

Working Professionals

Need flexible peer-based preparation support.

Rural/Remote Aspirants

Face lack of guidance and quality study resources.

Self-learners

Prefer accountability partners and structured exchanges.

Data Requirements

User Profile Data	Name, email, academic background, subject strengths & weaknesses.
Skill Preferences	Topics user can teach vs. topics they need help with.
Interaction Logs	Study sessions, peer exchanges, Q&A activities.

Privacy Considerations

Minimal Data Collection	Only essential info should be gathered (avoid sensitive PII).
Data Anonymization	Hide personal identifiers when sharing stats or analytics.
Consent-Based Sharing	Users must control what info is visible to peers.

Technologies and Methodology

01

Frontend

React.js, Next.js, Tailwind CSS, Material UI.

02

Backend

Node.js + Express, Python, REST APIs.

03

Database

MySQL, MongoDB and GCS.

04

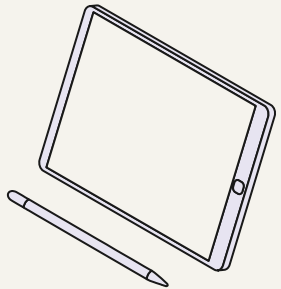
AI/ML Layer

Python, Hugging Face Transformer, LLM.

05

Deployment

GitHub Actions, AWS, GCP, Azure.



Implementation

01 Requirement Analysis
Identify aspirants' needs, peer support gaps, and resource-sharing challenges.

02 System Design
Plan architecture (frontend, backend, database, AI modules) with user flow diagrams.

03 Development
Build frontend (React.js), backend (Node.js/Express), and integrate MongoDB.

04 AI Integration
Implement recommendation system, matchmaking engine, and progress analytics.

05 Tests & Deployment
Testing and Deployment of the Application

06 Maintenance
Track system performance, fix bugs, and update features based on user feedback.

Evaluating Performance

User Engagement

Measure daily active users, session duration, and participation in peer study groups.

Learning Outcomes

Track improvement in mock test scores, accuracy, and problem-solving speed.

Recommendation Accuracy

Evaluate relevance of peer-matching and resource suggestions (precision/recall).

Retention Rate

Monitor how many users continue using the platform over weeks/months.

System Performance

Check response time, uptime, and scalability under peak loads.

User Satisfaction

Collect feedback via surveys and Net Promoter Score (NPS).

Thank You!

Prepared By:

Jiyotirmaan Singh

Arbaaz Arif

Piyush Billore

Keep Scrolling!