SMART INDIA HACKATHON 2025

TITLE PAGE

- **Problem Statement ID – SIH25101**
- **Problem Statement Title- Remote classroom for rural colleges**
- **Theme- Smart Education**
- **PS Category- Software**
- **Team ID-**
- **Team Name - BotGods**

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GyanDhara

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Proposed Solution:

- Develop a comprehensive digital platform **with three user logins: student, parent and teacher**, focusing on improving rural education through technology.
- The project utilizes a smart whiteboard integrated with **advanced compression techniques** to deliver high-quality educational content efficiently, enriched with integrated **AI doubt assistant.**

Data Analytics and Resource Management:

- **Performance Analytics**: Integration of a comprehensive **data tracking system** linking past academic records with current performance, identifies trends, and helps **customise learning strategies.**
- **Infrastructure Optimisation**: Digital inventory for resource allocation, minimising wastage and promoting **resource sharing across schools.**
- **AI for Planning**: Data-driven infrastructure planning and resource management, **improving efficiency.**

How it Addresses the Problem:

- **Student Portal**: Provides access to tailored **personalised educational content**, interactive lessons, and **doubt-solving sections**, along with student community enhancing learning in **low-resource environments with low internet.**
- **Teacher Portal**: Offers **professional development** resources and collaborative tools, improving teaching quality in rural areas. Include mandatory teacher training.
- **Parent Portal**: Connects parents and students with a unique code, offering guidance on supporting children's education and skill development at home.
- The project employs a **three-level compression system** using the **Pako library,** optimizing data size at multiple stages to ensure efficient transmission and seamless access to educational content in **low-bandwidth areas.**

Innovation and Uniqueness:

- **AI-driven personalised learning experiences** tailored to individual needs.
- AI-integrated attendance system for students.
- Solving doubt by AI ChatBot.
- **Local language support** for whole website (captions in local rural language)
- Offline first approach with small, downloadable lecture files ensures learning continuity.
- **Anonymous Feedback/Complaint system** for students.
- Implemented **Geolocation Teacher Attendence System** for teacher **accountability**

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TECHNICAL APPROACH

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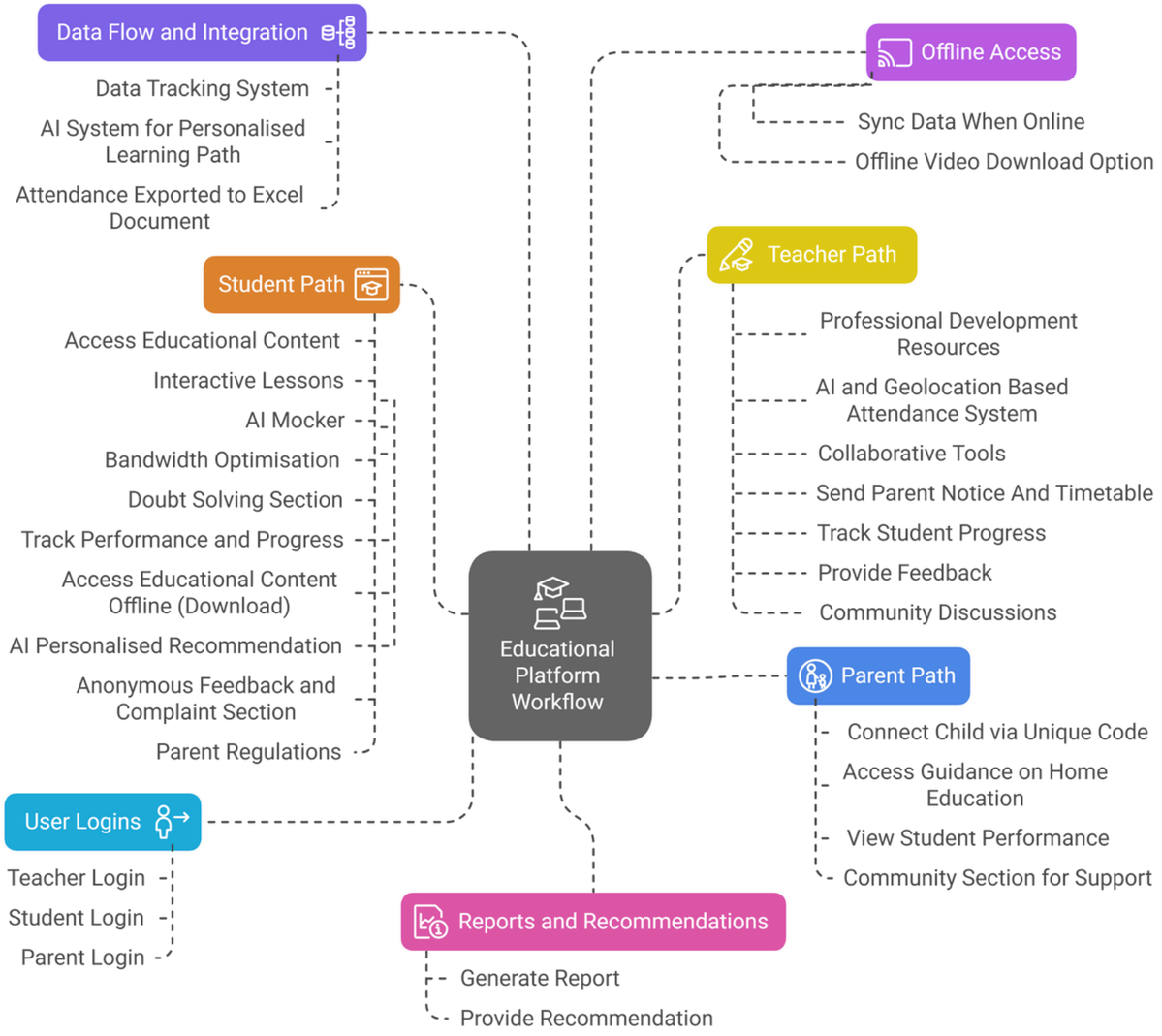
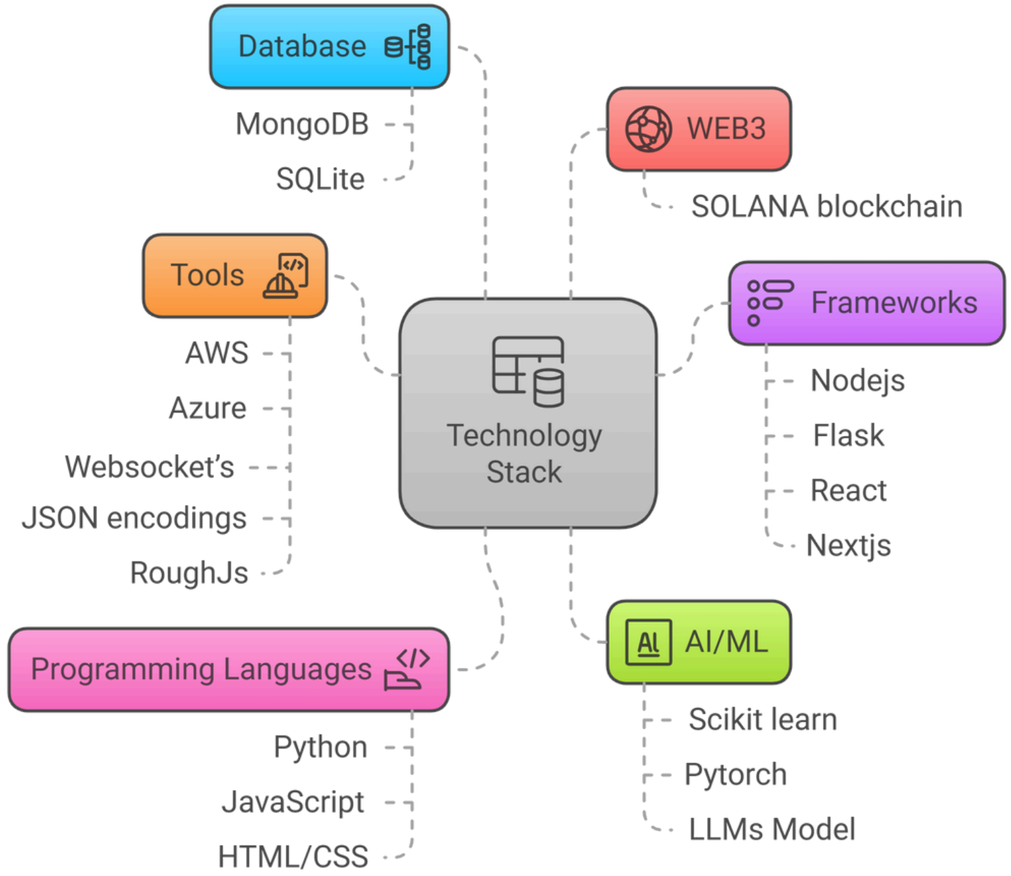


Tech Stack



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FEASIBILITY AND VIABILITY

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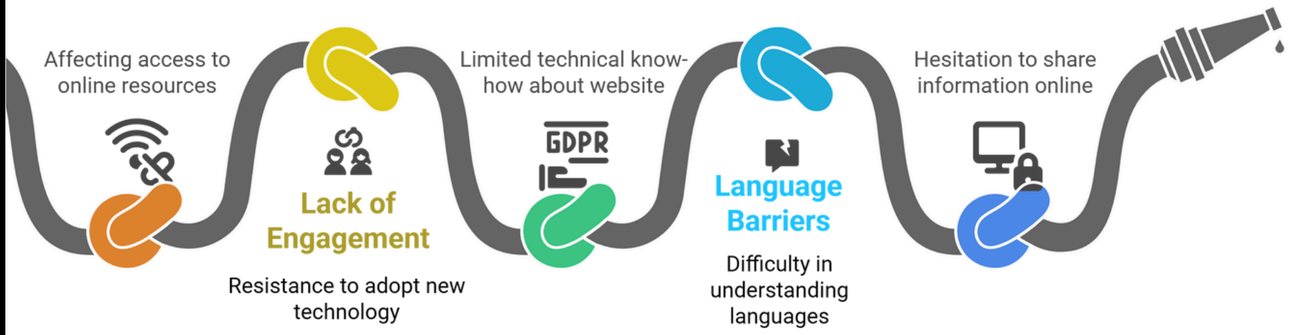
Challenges Faced



Feasability of project

Economic Feasibility

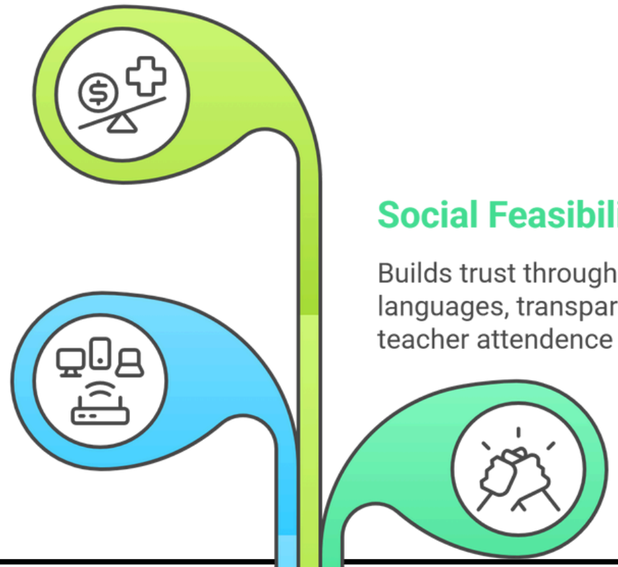
Cost-effective, scalable solution with no infrastructure investment.

Technical Feasibility

Optimized for low-bandwidth, resource-constrained environments. Work on existing network

Social Feasibility

Builds trust through local languages, transparency in teacher attendence system



Overcoming Educational Challenges

Low Bandwidth Optimization

Ensures consistent access in rural areas with unstable internet.

AI Mock Interview Simulator

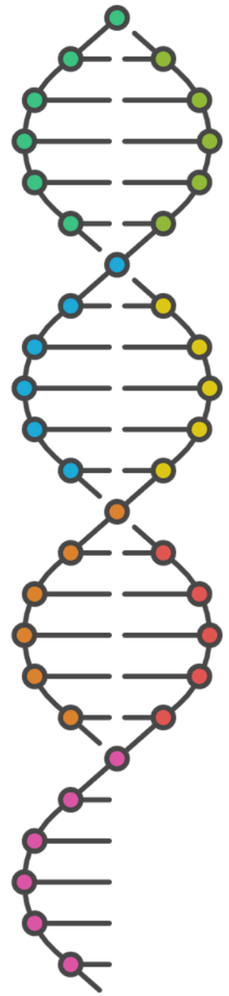
Builds confidence and prepares students for opportunities.

Multilingual Support

Increases accessibility with local language interfaces.

Secure Systems

Protects user data with encryption and Web3 technologies.



Community Trust Building

Fosters engagement through transparency and feedback.

Guided Chatbot Support

Enhances user experience with instant assistance.

Geolocation Attendance

Ensures authenticity and accountability in attendance.

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IMPACT AND BENEFITS

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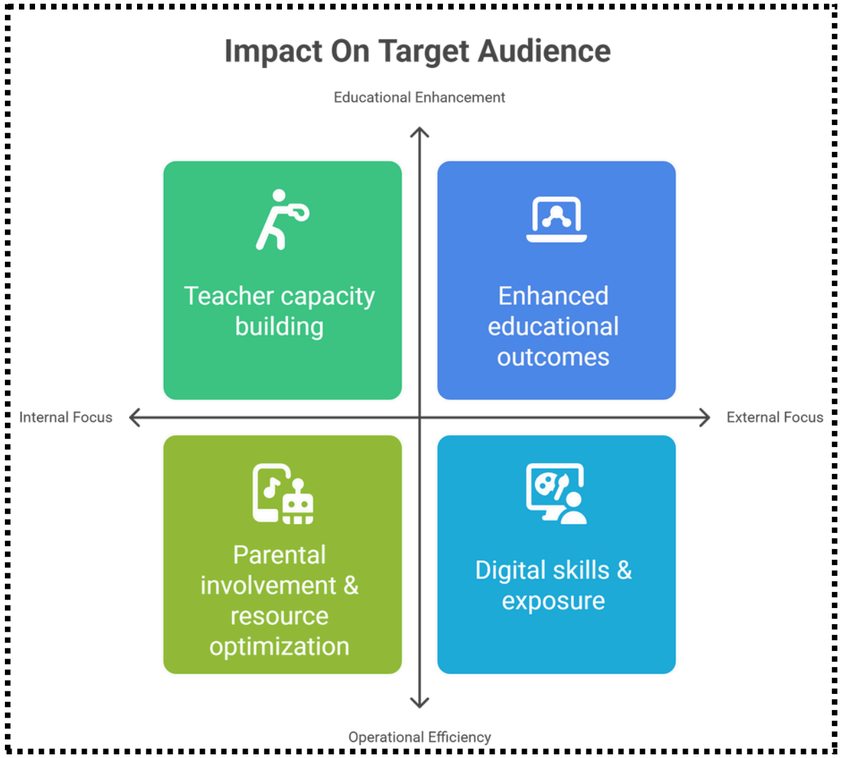
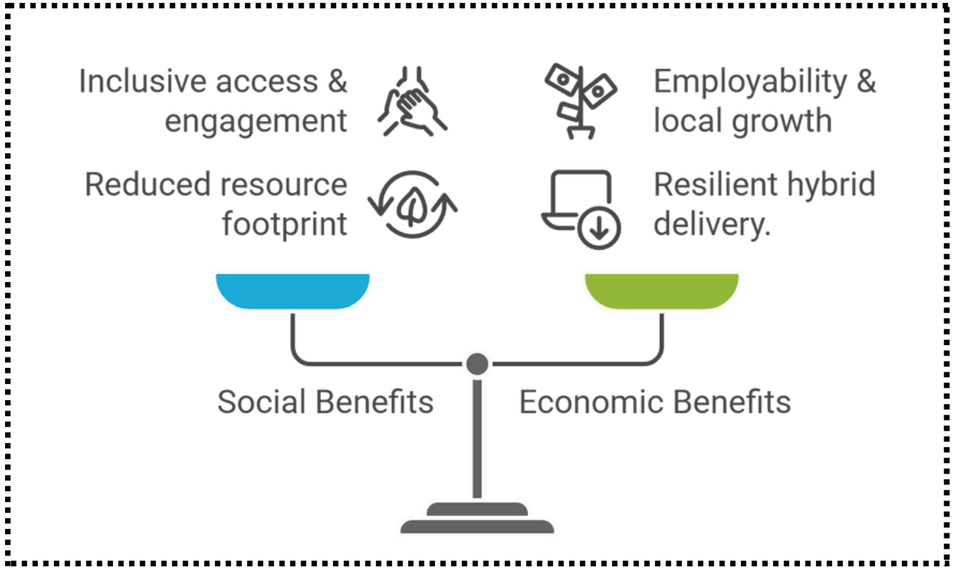
Potential Impact on the Target Audience

- **Enhanced educational outcomes** — Access to tailored content and learning analytics improves performance for rural students.
- **Digital skills & exposure** — Students gain familiarity with modern tools and technologies, preparing them for **future opportunities.**
- **Teacher capacity building** — **Teacher professional development** and data-driven insights elevate teaching quality.
- **Parental involvement & resource optimization** — Better **parent–teacher links** foster a supportive home environment; centralized educational resources for **Rajasthan make delivery efficient and economical.**



Benefits of the Solution:

- **Social**: Bridges the **urban–rural gap** by widening access to quality learning and strengthening **parent–teacher engagement**, improving community support for students.
- **Economic**: **Enhances** students' employability and **skill readiness**, driving better job prospects and sustained local economic growth.
- **Environmental**: Reduces paper consumption and related waste by delivering digital resources and recordings instead of printed materials.
- **Technological**: Hybrid delivery (live sessions + offline downloads) ensures uninterrupted learning in **low-connectivity areas** and supports long-term adoption.



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RESEARCH AND REFERENCES

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Condition of Rural Education in India:

- **ASER Report 2022**
  Highlights low literacy and numeracy skills in rural India.
  https://www.pratham.org/programs/education/aser/

Technology in Rural Education:

- **UNESCO Report on ICT**
  Explores ICT's role in improving education in rural areas with mobile learning solutions.
  https://unesdoc.unesco.org/ark:/48223/pf0000373479

- **World Economic Forum: Digital Learning**
  Shows how digital initiatives are transforming education in rural areas in India.
  https://www.weforum.org/stories/2021/01/think-education-isa-matter- for-governments-alone-think-again/

Pilot Projects and Case Studies:

- **EkStep Foundation** - Open learning platforms for rural schools with interactive content and teacher training. https://ekstep.org/

Benefits of Educational Technology:

- **Brookings Report** - Highlights how e-learning enhances education in low-resource settings.
  https://www.brookings.edu/articles/realizing-the-promisehow-can-education-technology-improve-learning-for-all/

- **J-PAL Study** - Evidence of low-cost digital tools improving literacy and numeracy in rural India.
  https://www.povertyactionlab.org/sites/default/files/2019.11.07-JPAL-Mindspark-BWEducation.pdf