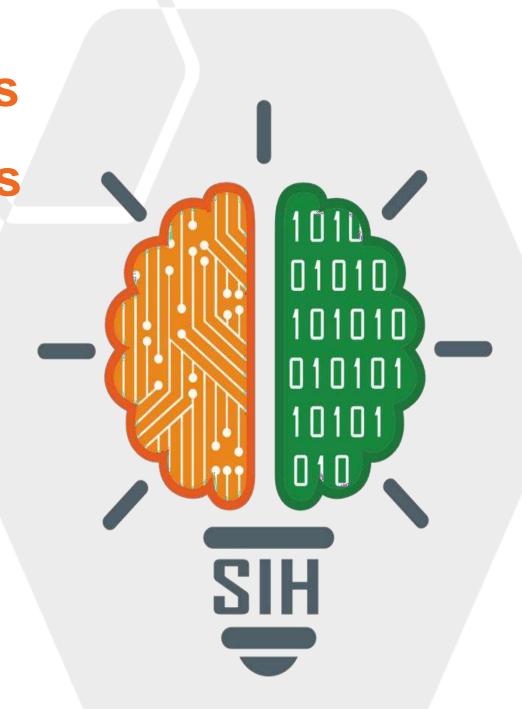
SMART INDIA HACKATHON 2025



- Problem Statement ID- 25008
- Problem Statement Disaster Preparedness and Response Education System for Schools
 - and Colleges
- Theme- Disaster Management
- PS Category- Software
- Team ID-
- Team Name- ShieldX





Suraksha Setu: Bridging Knowledge, Bringing Safety



❖ Proposed Solution :

- Suraksha Setu is a centralized digital platform that integrates disaster education, drills and real-time communication for schools and colleges to improve preparedness and safety coordination.
- Designed for **easy adoption** through **user-friendly interfaces**, **multilingual support**, and **training resources** to ensure wide usability across diverse educational institutions.
- Provides data driven monitoring and reporting tools for administrators to track drill participations, preparedness levels, and continuous improvement based on feedback and real time insights.

Uniqueness:



Immersive VR Drills

Hands-on, 3D simulations for safe and realistic disaster practice.



Inclusive for All

Designed to support visually, hearing, and physically challenged students.



Stress Relief Meditation

Guided meditation modules to help students manage anxiety during emergencies



Gamification & Al

Badges, leaderboards, and Al-driven personalized guidance to motivate learning.



Instant SOS Alerts

Real-time notifications to parents, schools, and nearby helpers for quick response.

HOW IT ADRESSES THE PROBLEM





Problems

33

Solved

Lack of Awareness

Students have limited disaster knowledge, causing panic and unsafe responses.

Structured Digital Learning

Interactive modules build awareness through visual, gamified disaster education.

Ineffective Drills

Traditional drills feel boring, unrealistic, and fail to ensure preparedness.

Virtual Simulations

Realistic disaster simulations create engaging practice, improving response skills.

Communication Gap

No unified system for quick alerts, guidance, and emergency communication.

Centralized Platform

Single app ensures instant alerts, safe communication, and emergency updates.

Stress & Panic

Students panic during disasters, making unsafe decisions under pressure.

Mindfulness & Meditation

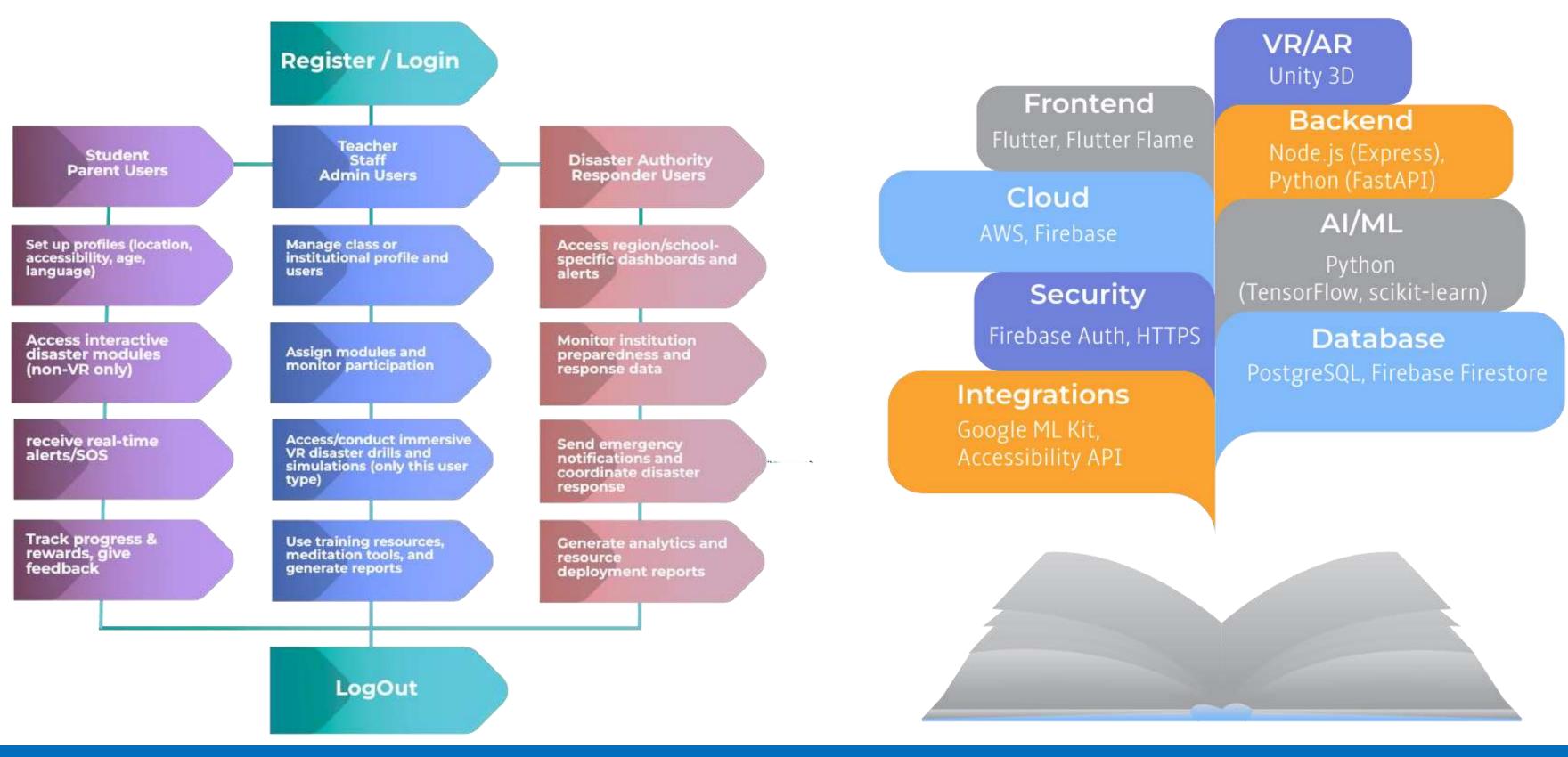
Short guided practices build calmness, focus, and decision-making ability.



TECHNICAL APPROACH



USER FLOW



ShieldX

FEASIBILITY AND VIABILITY





Technical Feasibility ۞□

Uses existing digital tools and mobile apps, ensuring smooth implementation everywhere.



Cost-effective approach with minimal infrastructure requirements and affordable resource allocation.

Operational Feasibility 📲

Easy to manage by teachers, students, and institutions with little training.

Social Feasibility 😯

Enhances community preparedness, awareness, and cooperation for disaster safety and response.

Risks

> Limited internet Connetivity

Many users may be in remote or low network areas where internet access is unreliable

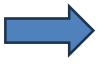
> User Adoption Resistance

Student, teacher or administrators

may resist adopting new technologies

or workflows





➤ Offline Functionality

Strategies to

Overcome

Implement extensive offline capabilities with local caching and data sync to deal with connectivity issues.



User Training & Support

Provide clear training , easy onboarding and ongoing support to encourage adoption.



▶ Data Privacy & Security Concerns

Handling sensitive user data and realtime alerts requires strict security measures





Strong Security Protocols

Use encryption, authentication, and GDPR-Complaint data handling to protect user information.



> Resource Constraints

Schools may lack device or funding to fully adopt the solutions.





➤ Leverag Partnerships

Collaborate with government , NGO's and and CSR initatives to secure funding and resources.

Economic Viability

Low recurring expenses, sustainable with government support and institutional adoption.



Promotes inclusiveness, safety culture, and collective resilience within society.

Growth & Sustainability Z

Scalable model adaptable for multiple regions with continuous improvements possible.

Engagement Sustainability

Gamification, interactive modules, and meditation practices maintain longterm student interest.







ShieldX

BENEFITS AND IMPACTS





Health Benefits

- Improves mental well-being
- Reduces injury risks
- Supports stress management

02)

Educational Benefits

- Enhances knowledge retention
- Promotes practical skills
- Encourages interactive learning



Economic Benefits

- Lowers disaster recovery costs
- Boosts local employment
- Increases resource efficiency



Community Benefits

- Strengthens social bonds
- Fosters collective action
- Builds trust and cooperation

POTENTIAL IMPACTS



Increased Disaster Awareness:

Empowers schools and families with practical knowledge and readiness skills.





Improved Emergency Response:

Enables faster communication and coordination during disaster events.





Community Resilience Building:

Strengthens collaboration between schools, parents, and authorities.





Accessible Training & Information:

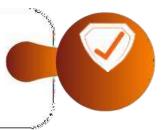
Provides multi-language, offline-ready VR and educational modules.





Sustainable Safety Culture

Promotes ongoing practice and adoption of disaster preparedness behaviors.





RESEARCH AND REFERENCES



* DETAILS OF RESEARCH PAPERS & LINKS:

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- 4) ""A systematic review of school-based disaster risk reduction strategies in India." Goswami & Ahmad, 2025 Evaluation and Program Planning.

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5) ""Disaster Preparedness and Awareness among University Students: A Structural Equation Analysis." Patel et al., 2023 – Int. J. Environ. Res. Public Health.

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- 6) "Which training method is more effective in earthquake training: Digital game, drill, or traditional training?" Çoban & Göktaş, 2022
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