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- **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

ShieldX

Suraksha Setu : Bridging Knowledge , Bringing Safety

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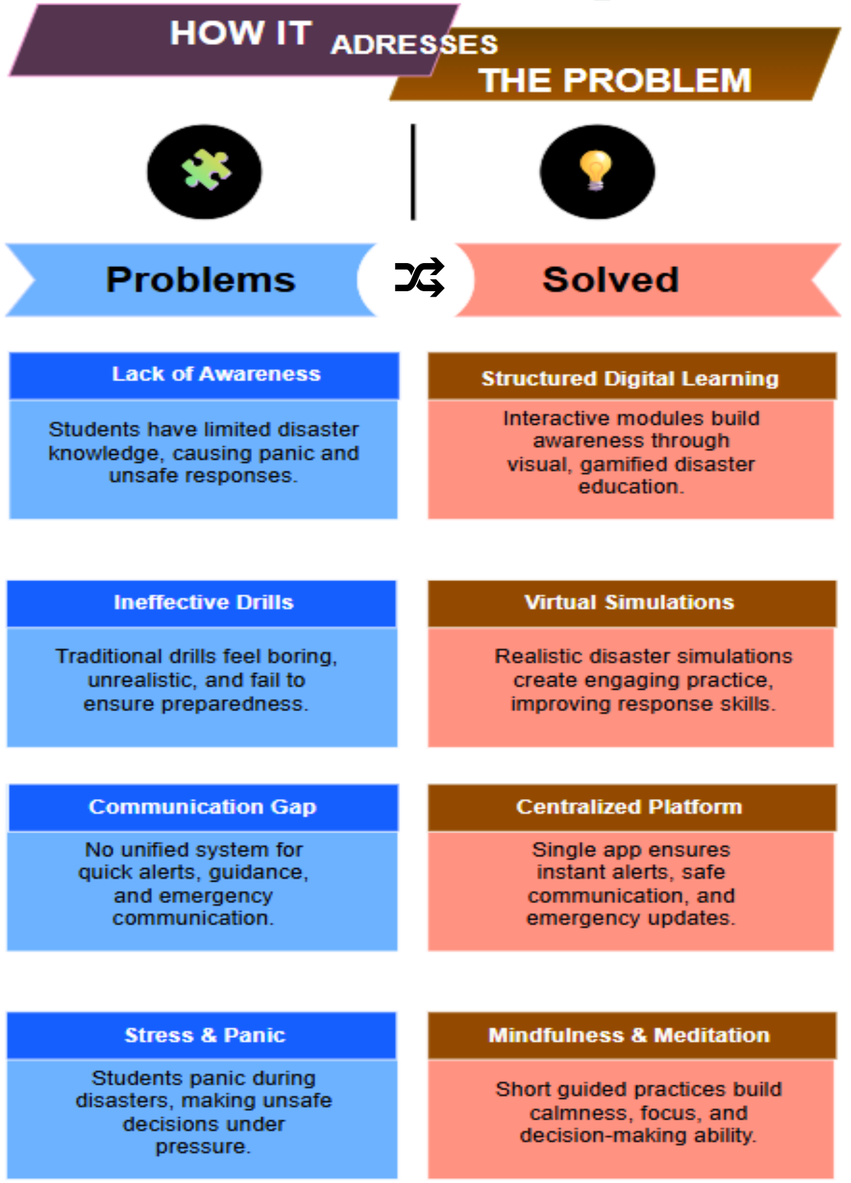
❖ Proposed Solution :

- **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 :



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TECHNICAL APPROACH

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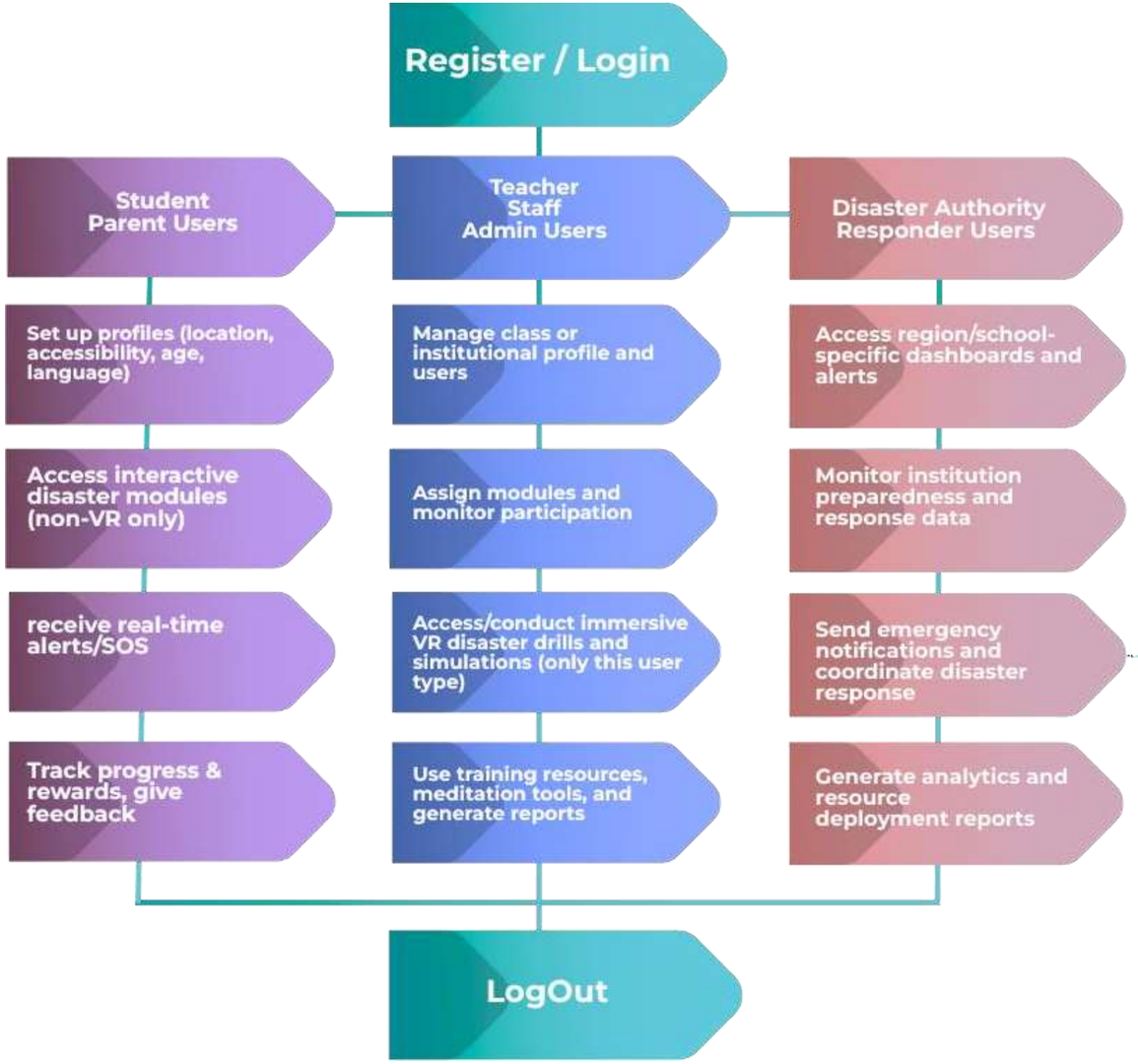
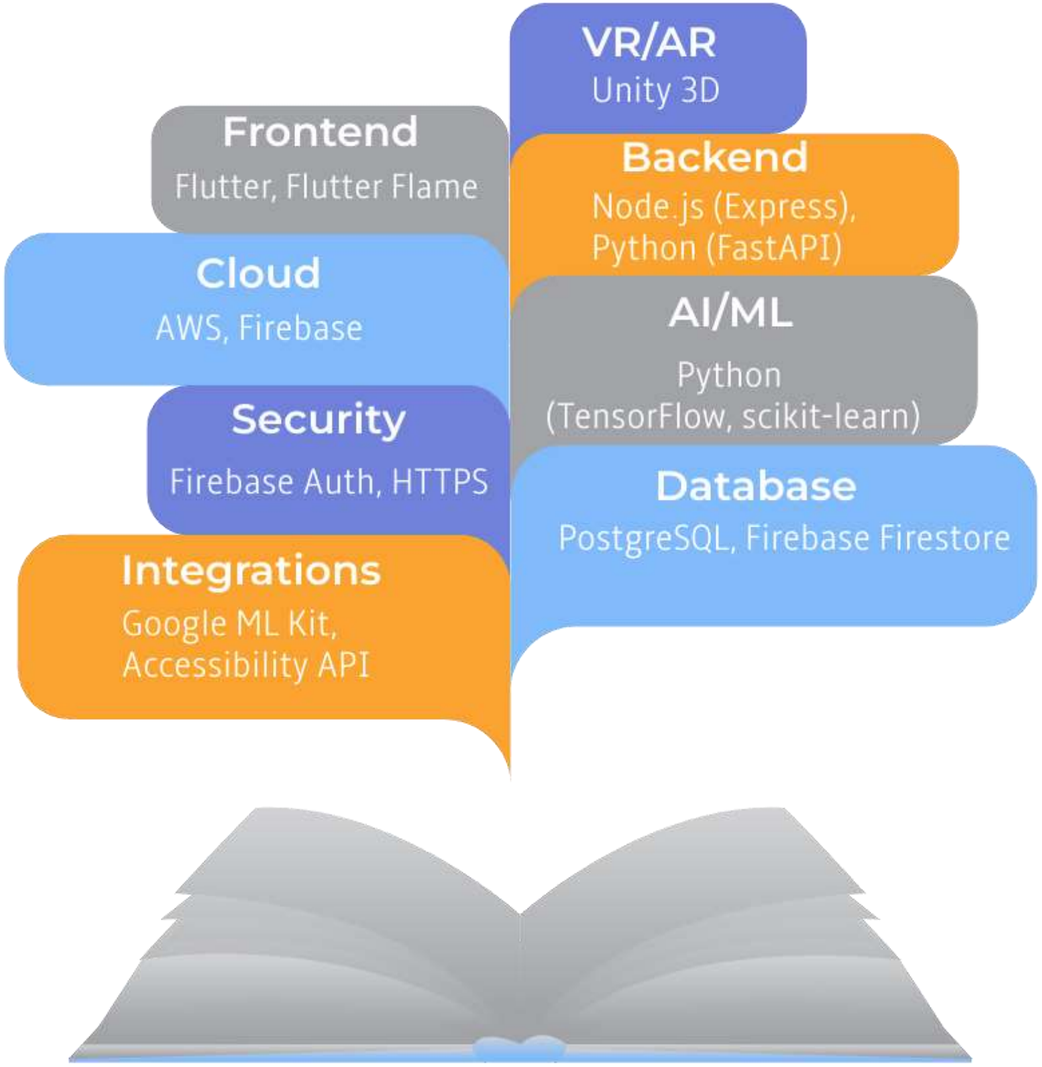
USER FLOW





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FEASIBILITY AND VIABILITY

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Technical Feasibility ⚙

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

Economic Feasibility 💰

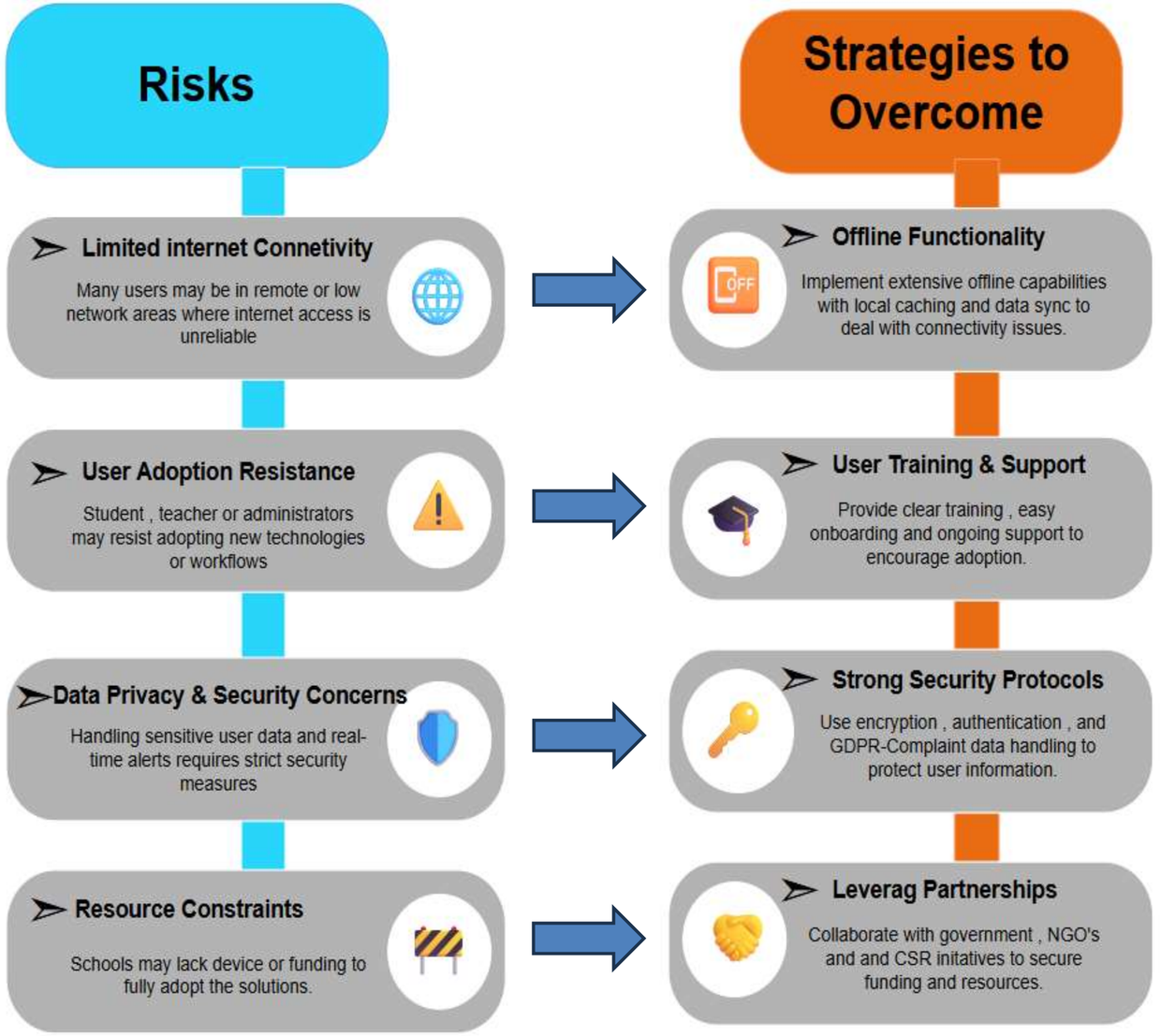
Cost-effective approach with minimal infrastructure requirements and affordable resource allocation.

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.



Economic Viability 💵

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

Social Viability

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

Growth & Sustainability

Scalable model adaptable for multiple regions with continuous improvements possible.

Engagement Sustainability

Gamification, interactive modules, and meditation practices maintain long-term student interest.

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BENEFITS AND IMPACTS

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BENEFITS

01 Health Benefits

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

02 Educational Benefits

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

03 Economic Benefits

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

04 Community Benefits

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

POTENTIAL IMPACTS

01 Increased Disaster Awareness:
Empowers schools and families with practical knowledge and readiness skills.

02 Improved Emergency Response:
Enables faster communication and coordination during disaster events.

03 Community Resilience Building:
Strengthens collaboration between schools, parents, and authorities.

04 Accessible Training & Information:
Provides multi-language, offline-ready VR and educational modules.

05 Sustainable Safety Culture
Promotes ongoing practice and adoption of disaster preparedness behaviors.

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RESEARCH AND REFERENCES

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❖ DETAILS OF RESEARCH PAPERS & LINKS :

1) **“Use of virtual reality exercises in disaster preparedness training: A scoping review.”** Alshowair *et al.*, 2024 – *SAGE Open Medicine*.
LINK : https://doi.org/10.1177/20503121241241936

2) **“Immersive virtual reality for improving flood evacuation behaviour and self-efficacy.”** Aksa *et al.*, 2025 – *Jàmbá: Journal of Disaster Risk Studies.*
LINK *:* https://jamba.org.za/index.php/jamba/article/view/1655

3) **“Application of Gamification Teaching in Disaster Education: Scoping Review.”** Bai *et al.*, 2024 – *JMIR Serious Games*.
LINK : https://doi.org/10.2196/64939

4) **““A systematic review of school-based disaster risk reduction strategies in India.”** Goswami & Ahmad, 2025 – *Evaluation and Program Planning.*
LINK : https://doi.org/10.1016/j.evalprogplan.2025.102646

5) **““Disaster Preparedness and Awareness among University Students: A Structural Equation Analysis.”** Patel *et al.*, 2023 – *Int. J. Environ. Res. Public Health*.
LINK : https://doi.org/10.3390/ijerph20054447

6) **“Which training method is more effective in earthquake training: Digital game, drill, or traditional training?”** Çoban & Göktaş, 2022 – *Smart Learning Environments*.
LINK : https://doi.org/10.1186/s40561-022-00202-0