SMART INDIA HACKATHON 2025

SURAKSHA SHATHI

- **Problem Statement ID – SIH25258**
- **Problem Statement Title- Real-Time Monitoring System for Disaster Management Trainings(MHA)**
- **Theme- Disaster Management**
- **PS Category- Software**
- **Team ID- 117668**
- **Team Name (Registered on portal)- Suraksha Shathi**

Team Suraksha Shathi

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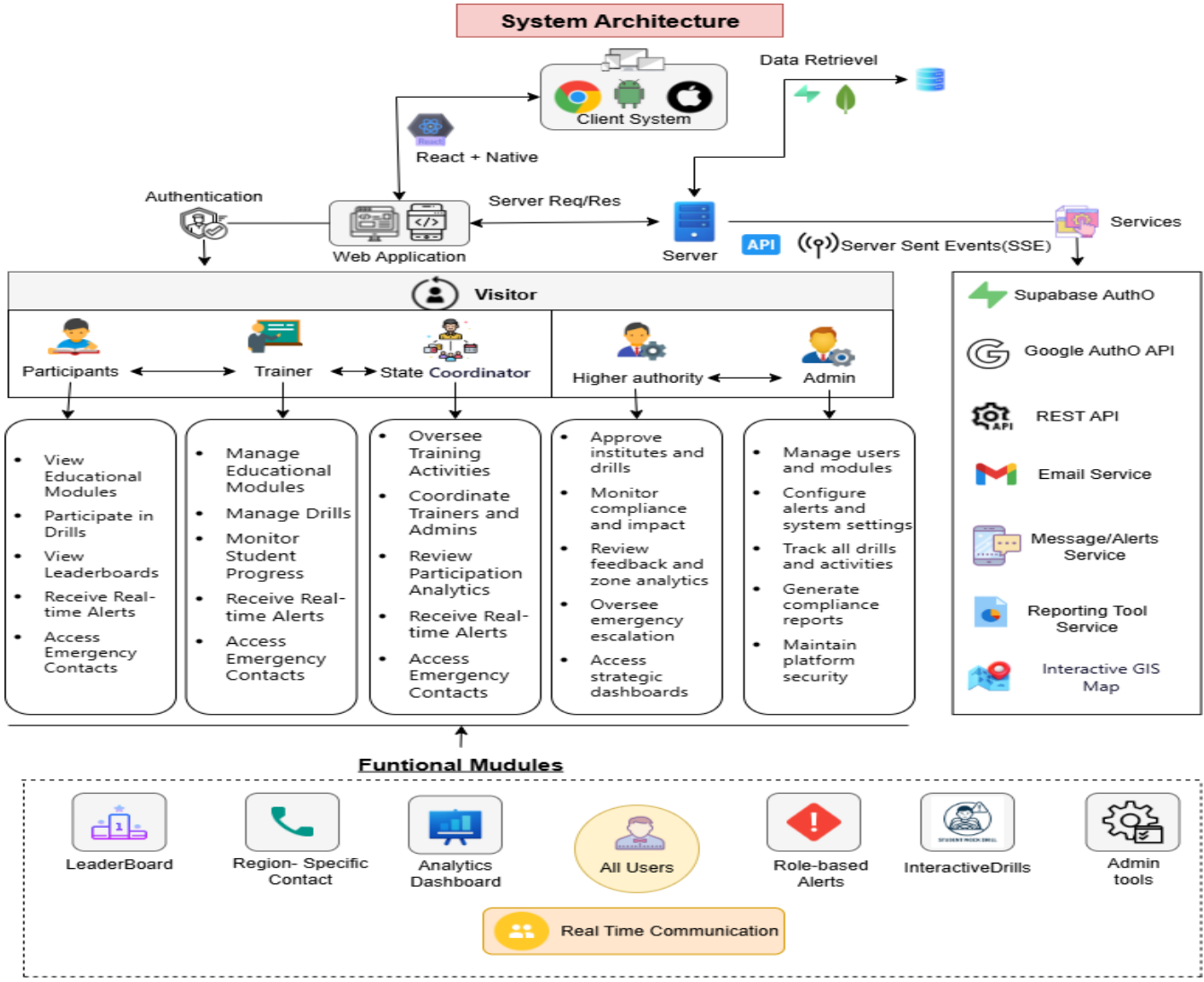
❖Proposed Solution

- **Accessible** on **web and mobile** for all user roles.
- Role-based features for **participants, trainers, state coordinators, Higher authority, admins**.
- **Real-time alerts, instant drill participation,** and **leaderboard tracking**.
- Secure login with **Supabase authentication**.
- Centralized modules: **contacts, analytics, emergency info, reporting.**
- **Instant data updates** and **cloud storage** for **reliable emergency response**

Note:- Our platform supports critical **CBT programs** and integrates with key institutions like **NDMA, SDMAs, LBSNAA, ATIs,** and **NGOs** to enhance disaster response training.



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TECHNICAL APPROACH

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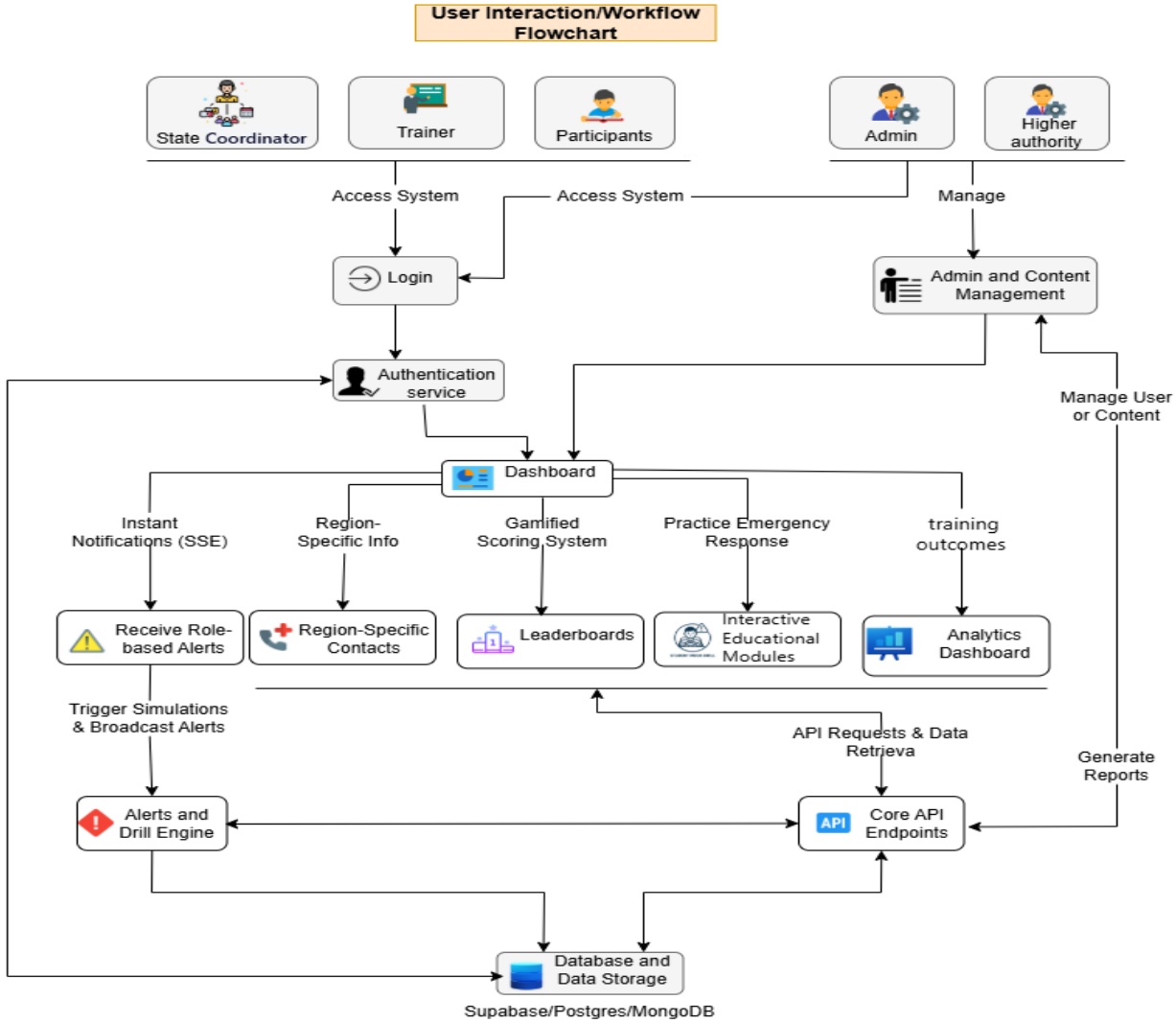
❖ Technology Stack

- **Frontend**:- **Next.js 14, React, TypeScript** for fast, interactive UI.
- **Backend**:- **Node.js, Express.js, REST APIs** for server logic and fast data flow.
- **Database**:- **Supabase/Postgres, SQL Lite, MongoDB** for secure, scalable data management.
- **Authentication**:- **Google OAuth and Supabase** for safe, role-based login.
- **Real-time Alerts**:- **Server Sent Events (SSE)** for instant notifications.
- **Testing**:- **Jest and React Testing Library** for quick bug detection and code quality.



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FEASIBILITY AND VIABILITY

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01 Analysis of Feasibility:

- Uses **web/mobile** tech for **fast, low-cost training monitoring**.
- Modular **cloud design** enables scalable **real-time data and alerts**.

02 Potential Challenges:

- **Connectivity** and **device access** might **limit field deployment**.
- **Data security, privacy**, and **multi-region** scale **remain hurdles**.

03 Strategies to Overcome:

- **Lightweight tech, offline support** for **remote use, automated coordination**.
- **Secure Google OAuth, role-based dashboards**, and **gamified drills** boost engagement.

04 Business Potential:

- **Serves institutes, governments, NGOs** needing **scalable drill monitoring**.
- Revenue via **subscriptions, analytics, sponsorships,** and **premium tools.**

★ Supporting Facts for Feasibility and Viability ★

- **Key government agencies and training bodies such as NDMA, SDMAs, LBSNAA, and NGOs play a crucial role in disaster management.**
- **73% of institutions demand real-time training monitoring—supporting urgent preparedness improvements.**
- **Digital drill platforms boost trainer engagement, improve tracking, and raise emergency response quality.**
- **Most organizations prefer scalable, online monitoring tools for disaster management, making tech adoption fast and effective**.

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IMPACT AND BENEFITS

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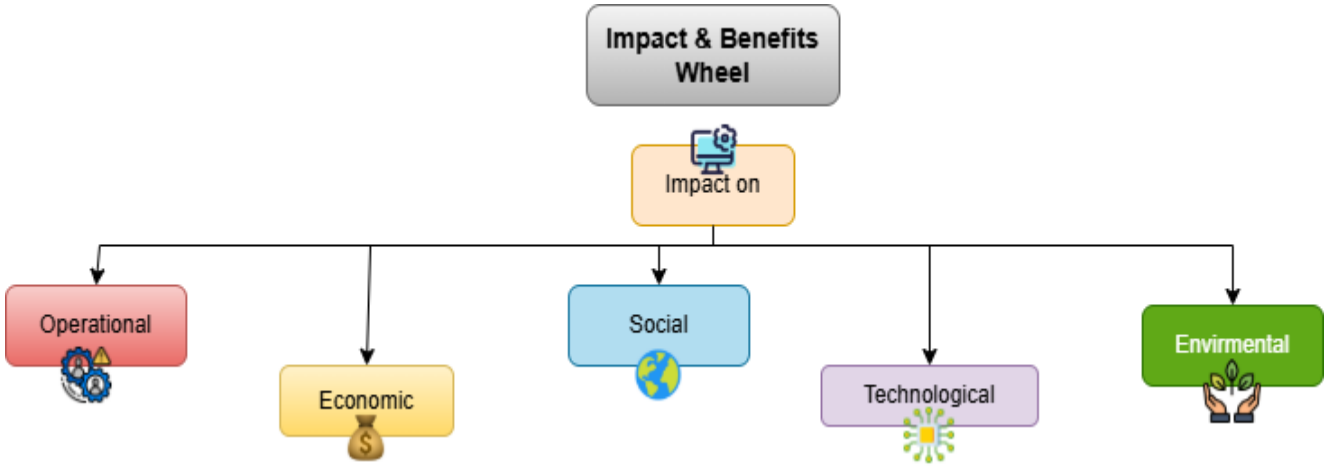

❖ Benefits of the solution:

- **Social:** Drives fast teamwork and coordinated disaster response.
- **Operational:** Real-time monitoring and alerts optimize incident management.
- **Economic:** Digital tools lower costs for reporting and compliance.
- **Technological:** Scalable, automated workflows improve efficiency and reach.
- **Environmental**: Raises risk awareness, supporting safer communities.

❖ Impact of the solution:

- Enables coordinated **disaster management training** across **government bodies (NDMA, SDMAs, LBSNAA, ATIs)** and **NGOs**, increasing **training effectiveness** and **real-time monitoring**.
- Boosts **real-time drill participation** and **emergency readiness**.
- Delivers **instant alerts** and **live tracking for faster**, **safer disaster response**.
- Enables informed**, rapid decision-making** with **live status** and **drill outcomes**.
- Empowers **admins and coordinators** with **actionable analytics** for better planning.
- **Streamlines reporting**, ensures **accountability**, and meets compliance mandates.
- Standardizes **drill quality** and skill retention via regular**, immersive training**.
- Strengthens **real-time collaboration** across **organizations** and **responders**.
- Makes **monitoring scalable**, **cost-effective**, and **accessible nationwide**, even for **remote regions**.

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RESEARCH AND REFERENCES

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❖ Research and References:

Digital Disaster Management Platforms:

- NDMA Disaster Management: https://ndma.gov.in
- NIDM eLearning for Disaster Responders: https://elearning.nidm.gov.in
- IUINDRR Professional Risk Network: https://iuin-drr.nidm.gov.in/Aboutus

Research & Best Practices:

- Fischer-Preler D. et al., 2024, "Digital transformation in disaster management": https://www.sciencedirect.com/science/article/pii/S0963868724000477
- Hanspal M.S. et al., 2024, "Role of technology in monitoring disaster training": https://internationaljournalofdisasterriskmanagement.com/Vol1/article/view/92
- UNDRR Sendai Framework: https://www.undrr.org/media/48528/download

Useful Facts:

- NDMA Guidelines for Institutional Disaster Management: https://ndma.gov.in/GovernanceGuidelines
- Technology in Disaster Training and Monitoring: https://visionias.in/current-affairs/monthly-magazine/2024-09-12/environment/technology-in-disaster-management-risk-reduction-dmrr

❖ For Better Understanding Watch This Video:

[Video Link]

❖ For Hands-On Experience Try the Prototype:

[Prototype Link]