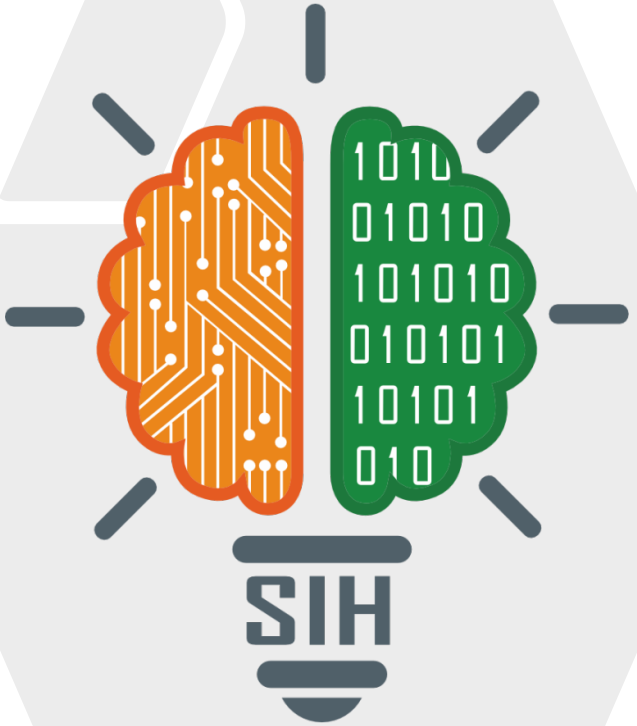
SMART INDIA HACKATHON 2025

TITLE PAGE

- **Problem Statement ID –** 25002
- **Problem Statement Title-** Smart Tourist Safety Monitoring & Incident Response System using Al, Geo-Fencing, and Blockchain-based Digital ID
- **Theme-** Travel & Tourism
- **PS Category- Software**
- **Team ID-**
- **Team Name-** Tech Crusaders



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"A Smart AI-Based Tourist Safety & Travel Assistance System with Real-Time Disaster Prediction and Cultural Recommendations"

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➢ Explanation

- Tourism safety is a major challenge in India, especially in high-risk zones such as hilly areas, forests, and flood-prone regions.
- Tourists currently lack real-time updates on **weather, natural disasters, and road safety**, making travel risky.
- Our solution leverages **AI, Google Maps, and IMD APIs** to analyze routes, predict weather conditions, and recommend the safest travel paths.
- The system also provides **personalized trip planning** with nearby hotels, food cafes, and cultural spots based on the user's location and news data.
- In case of emergencies, tourists can share their details with safety agencies (CRPF, NDRF, Police) via app, chat, call, or even SMS (offline mode).

➢ Innovation & Uniqueness

- **Smart Route Classification**: Routes are marked as Score based system :
  - **Green** (Safe – Clear weather for 12 hours),
  - **Yellow** (Minor Adverse weather expected),
  - **Orange** (Travel alert – possible risks),
  - **Red** (Disaster-prone – avoid travel).
- **AI-Powered Disaster Prediction**: System predicts using satellite + IMD weather data.
- **Offline Safety Mode**: If internet/battery is low, system automatically sends SMS with location to the server, which finds the **nearest safe place and rescue agency**.
- **24/7 Safety Companion**: Tourists get continuous support through **AI chatbot assistance**.
- **Tourism Boost**: Home screen shows nearby cultural places and experiences, increasing **user engagement and acquisition**.

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TECHNICAL APPROACH

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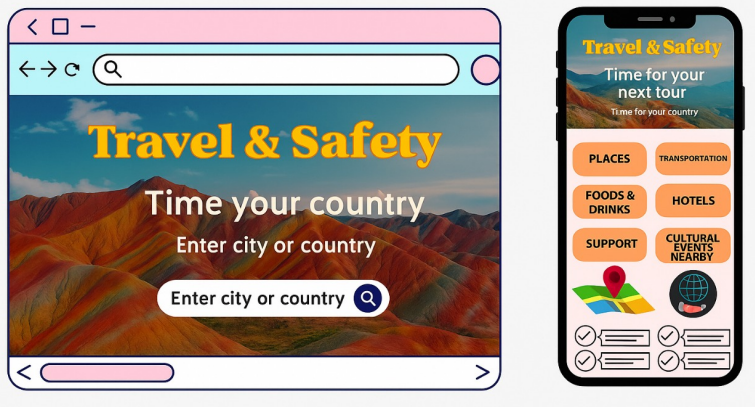
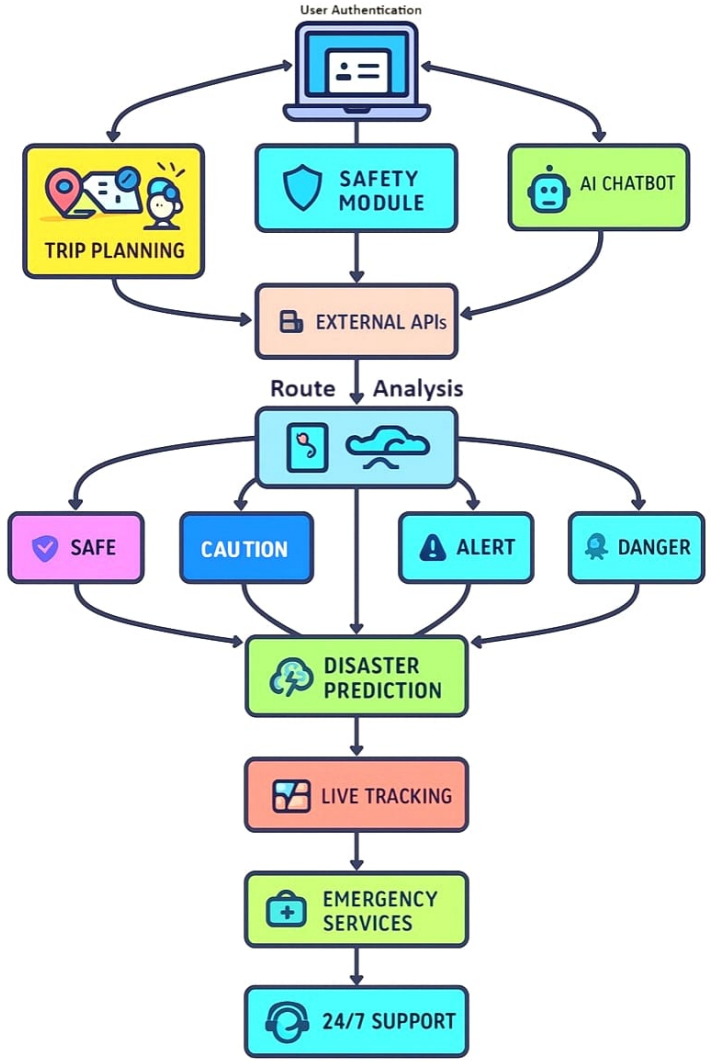
Tech Stack

- **Frontend**: React Native, React.js, Tailwind CSS, Google Maps API
- **Backend**: Node.js, Express.js, MongoDB / PostgreSQL
- **AI & Data**: Python (TensorFlow / PyTorch), IMD & Govt APIs, News API
- **Cloud & Infra**: AWS / Google Cloud, Firebase, Docker
- **Communication & APIs**: Twilio / MSG91 (SMS), OpenWeatherMap, AirVisual / AQICN, Mapbox / Leaflet.js





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FLOW CHART

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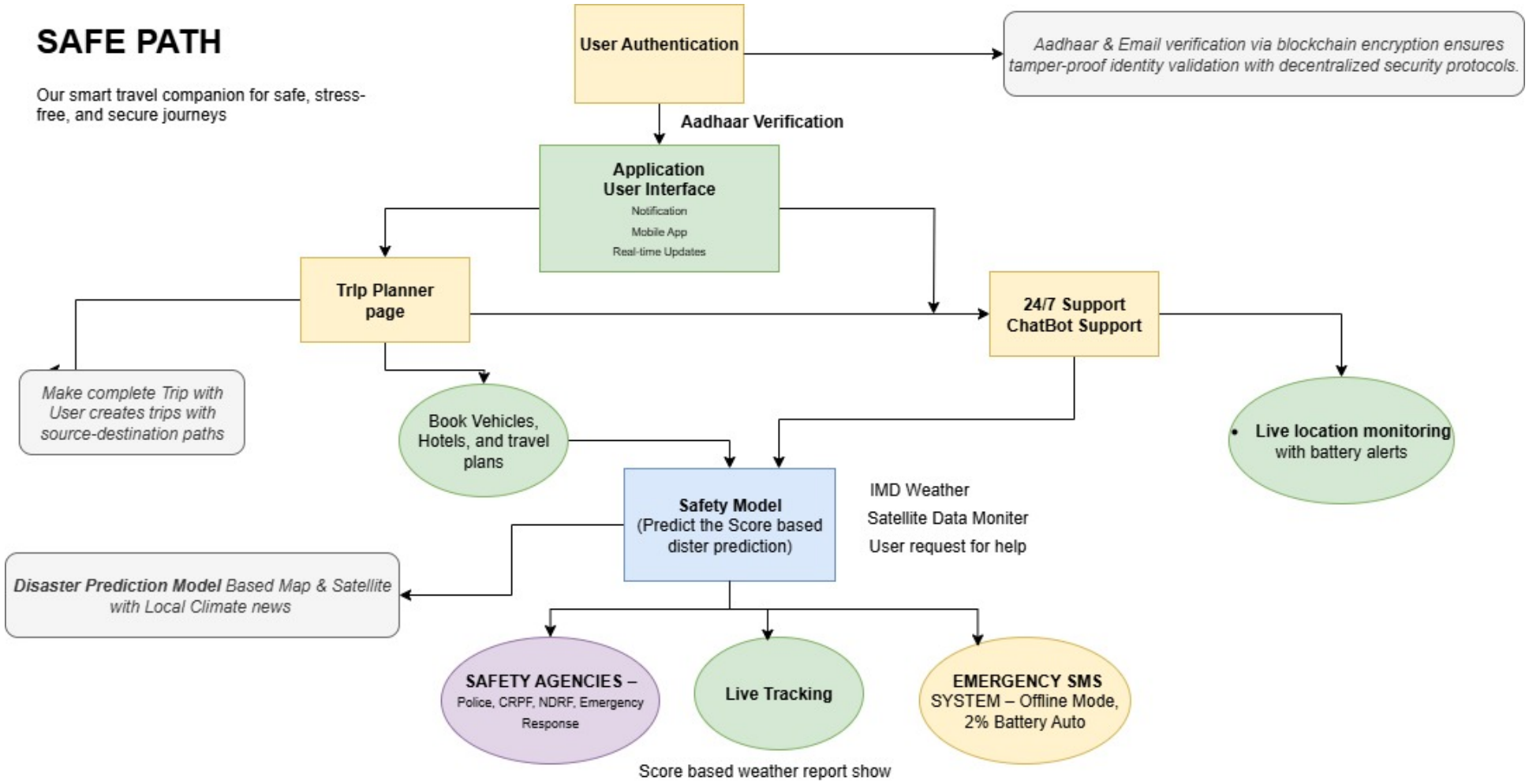

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FEASIBILITY AND VIABILITY

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➢ Feasibility

- **Technical Feasibility**:
  - Uses readily available APIs (Google Maps, IMD Weather).
  - AI/ML models for disaster prediction uses open datasets and satellite data.
  - Offline SMS-based communication is technically feasible using telecom integration.
- **Operational Feasibility**:
  - Easy integration with government agencies (NDMA, CRPF, NDRF) through APIs.
  - Multilingual support ensures adoption in rural and urban areas.

➢ Viability

- **Economic Viability**:
  - Initial prototype requires limited cost (cloud hosting, API usage).
  - Long-term funding possible via **Govt. Tourism Dept.**, disaster management bodies.
  - Revenue models: Premium travel safety services, B2B tie-ups with hotels/travel agencies, and government contracts.
- **Social Viability**:
  - Improves **tourist safety & trust**, directly boosting tourism revenue.
  - Assists government in **faster disaster response** and reducing casualties.

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IMPACT AND BENEFITS

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Potential Impact on the Target Audience

In India, users avoid standalone safety apps, but combining safety with travel makes this app more useful and widely adoptable and have larger target audience.

- Ensures safer travel with alerts on weather or disaster risks 10 minutes before they occur on the upcoming path
- Boosts **user acquisition and engagement** through cultural, local, and nearby recommendations.
- Builds **trust and reliability** by integrating government APIs, satellite data, and AI-based real-time alerts.

Benefits of the Solution

• Reduces risk of accidents/disasters for travelers.
• Connects travelers with local safety agencies (CRPF, NDRF, etc.) and communities.

• Increases revenue for local hotels, cafes, and businesses by showing nearby recommendations.
• Saves resources by optimizing travel routes and avoiding disaster-hit areas.

•Encourages eco-conscious travel by suggesting **safe + green routes**.
•Reduces congestion in disaster-prone or unsafe areas, minimizing resource strain.

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RESEARCH AND REFERENCES

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- **Govt. Data Sources**
  - IMD Weather & Disaster Alerts – imd.gov.in
  - NDMA Guidelines & Safety Reports – ndma.gov.in
  - ISRO Bhuvan Geoportal (Satellite Maps) – bhuvan.nrsc.gov.in
  - Google Maps & Places API – developers.google.com/maps
- **Research Work**
  - *AI-based Disaster Prediction Using Satellite Imagery* – IEEE, 2022
  - *Smart Tourism with AI & IoT* – Springer, 2021
  - *Blockchain for Secure Travel IDs* – Elsevier, 2023
- **Reports & Articles**
  - UNWTO Tourism Safety Report, 2022
  - Ministry of Tourism, India (Smart Tourism, 2023)
  - The Hindu & TOI – News on Landslides/Floods in Himachal & Northeast