SMART INDIA HACKATHON 2024

Coastal Tourism Safety Advisor

- **Problem Statement ID – SIH1656**

- **Problem Statement Title-** Development of a mobile application to provide recreational suitability information of beach locations across India.

- **Theme - Travel & Tourism**

- **PS Category- Software**

- **Team ID - 134**

- **Team Name: AquaTeq**

Coastal Tourism Safety Advisor

- **"B.R.E.E.Z.E"** is an innovative mobile app that enhances users experience for coastal tourism by providing real-time assessments of beach conditions across India.
- By integrating data from **INCOIS, IMD** and other meteorological sources, it evaluates factors like wave height, ocean currents etc., to determine beach suitability. It Delivers color-coded safety indicators and personalized alerts, helping tourists make informed decisions and avoid hazards.
- **Key features**: Geolocation-based safety tracking, instant alerts for high-risk areas, and an SOS emergency button that transmits location to rescue teams or Local government.
- With its user-friendly design, **"B.R.E.E.Z.E"** is a vital tool for tourists and authorities, ensuring safer beach experiences in the growing coastal tourism sector.

TECHNICAL APPROACH

Frontend
- **React Native** for **cross-platform** mobile development **(iOS and Android)**

Backend
- Cloud services (Azure & GCP)
- Real-time data processing
- API integration

APIs
- **INCOIS, MAUSAM** - Oceanographic data and weather data
- Google - Maps API
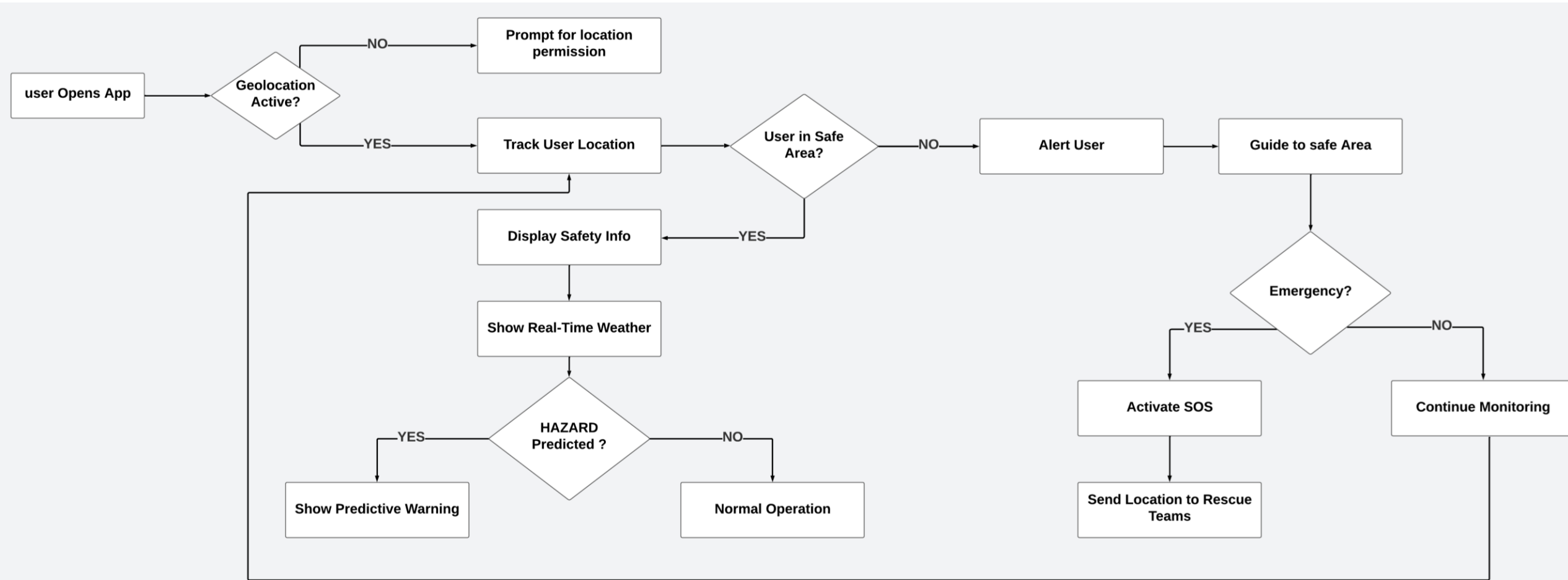
Methodology
- **AGILE** methodology: **Scrum**

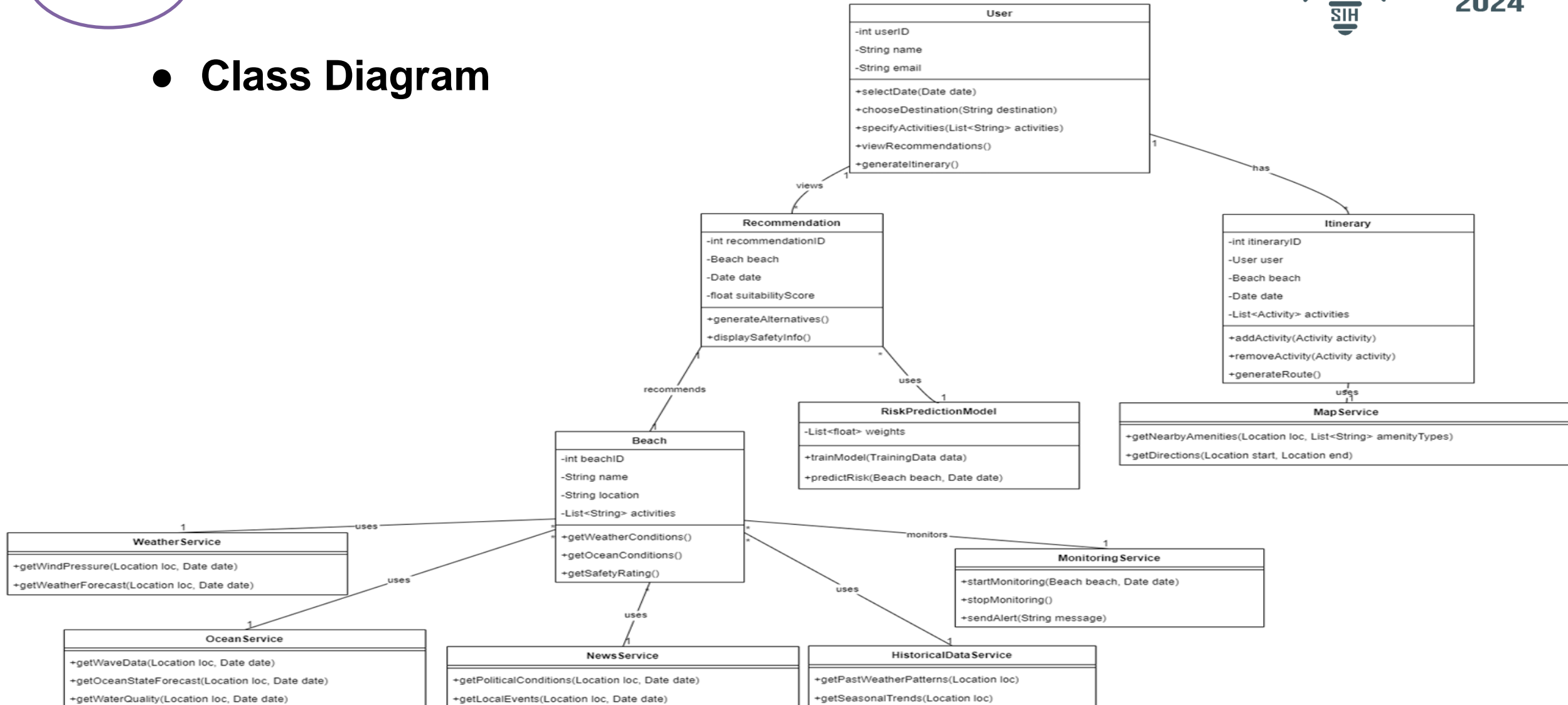## Programming Languages/Tool
- Python
- Javascript
- Flutter
- Figma

Features
- Seamless UI
- Real-time geospatial mapping
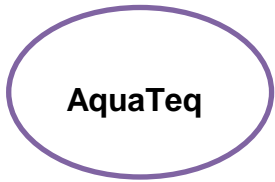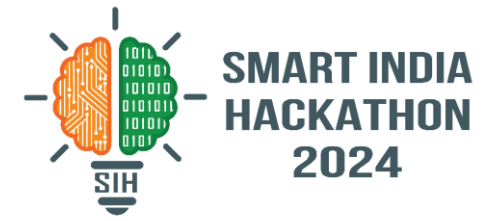- Reliable alert systems (including SOS)

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- **Flow Diagram**

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- **Class Diagram**

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Feasibility:

1. **Data Availability - Using API for real time monitoring: INCOIS** - accurate oceanographic data & **OpenWeather API** - provides trusted real-time weather data like wind speed etc.,

2. **UI Consistency:** Using **React Native** for cross-platform development ensures efficient development for both iOS and Android.

3. **Cloud Processing (Azure/GCP):** Scalable & **Geolocation Services** via Google Maps API

Challenges

❏ Real time data accuracy & Managing large datasets

❏ Internet issues in remote areas

Solutions

● Using API's like INCOIS, IMD minimize accuracy risk and using cloud has high scalability.

● SOS (For emergency) through No internet can negate connectivity issues in all areas

Viability:

1. **Market Need**   2. **Sustainability(Long-term)**   3. **User adoption**

IMPACT AND BENEFITS

- The "**B.R.E.E.Z.E**" app is sure to have a significant impact on coastal tourists(Locals & Non locals) and authorities by enhancing safety and planning.

Socially
- Real-time safety info
- Reduces risk of accidents
- Empowers tourists

Economically
- Promotes safer experiences
- Increases visitor numbers
- Boosts local economies

Environmentally
- Guides tourists to safer areas
- Reduce human impact on ecosystems
- Contributes to sustainable tourism

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US NEWS

Fifth tourist in four days dies in waters off same Florida beach town
New York Post

Call for action as cases of drowning at beaches surge
Times of India

NEW DELHI: An estimated 38,000 people die every year from drowning in India; most in the age group of 5 to 14 years are at higher risk, according to government data.
Indian Express

Goa beach drowning: Mumbai couple on stroll drowns, bodies preserved at morgue; one woman rescued
Financial Express

"While walking on the beach, three people were swept away by the high waves," the SP said.

Survey
- Many such cases occur due to either lack of safety precautions or unexpected tides.
- Drowning is the third leading cause of unintentional injury death worldwide, accounting for 9% of all injury-related deaths.
- There are over 300 000 annual drowning deaths worldwide.

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- **INCOIS Official Website:** https://incois.gov.in/
- **Beach API's:** https://api.howsthebeach.org/api/v1/docs and oceanic alerts from some REST API's/
- **Meteorological Data Sources:** For weather-related data, references include the India Meteorological Department (IMD) - https://mausam.imd.gov.in/

Transforming coastlines into lifelines: B.R.E.E.Z.E - where technology meets beach safety for a safer, smarter India."