GE19612

Professional Readiness for Innovation, Employability & Entrepreneurship

GIS-DEEP SEA FISHING APP

ADHI BALAJI V(210701015)

KISHORE S(210701501)

PROBLEM STATEMENET

How might we develop a suitable technology to track deep-sea fishermen or their locations, ensuring effective monitoring and enhancing safety measures in maritime activities.

INNOVATION CONTEXT

Develop a GIS app for detecting fishermens location in deep sea fishing.

PROPOSED SYSTEM

The proposed system enhances fishermen's safety by integrating real-time GPS tracking, geofencing, weather forecasting, and alert mechanisms. GPS devices on boats continuously send location data to a central server, enabling precise tracking and historical route analysis. The Geofencing Module creates virtual boundaries to monitor vessel movements and trigger alerts for boundary breaches or entry into hazardous areas. The Weather Forecasting Module provides real-time updates and predictive analytics on weather conditions, issuing timely warnings about adverse weather. Alerts are sent via SMS, email, or an intuitive user interface, offering detailed guidance and recommended actions. This comprehensive system ensures that fishermen are well-informed and able to navigate safely, reducing risks and enhancing operational efficiency.

EXISTING SYSTEM

The existing system for tracking fishermen primarily relies on basic GPS devices and manual communication methods, such as radio and mobile phones, for location updates and safety alerts. These systems often lack real-time monitoring and do not provide automated alerts for boundary breaches or adverse weather conditions. Fishermen must manually check weather forecasts and make navigation decisions without integrated, up-to-date information. Overall, the current approach is fragmented and reactive, offering limited situational awareness and timely response capabilities, thereby increasing the risk of accidents and inefficiencies at sea.

INNOVATIVE

- 1. Integrated Real-Time Monitoring and Alerts: The innovative system combines GPS tracking, dynamic geofencing, and real-time weather forecasting to provide continuous and precise monitoring of fishing vessels. Automated alerts for boundary breaches, hazardous area entries, and adverse weather conditions are delivered through SMS, email, and an intuitive user interface, ensuring timely and actionable information for fishermen.

- 2. Proactive Safety Measures: Leveraging advanced predictive analytics and seamless technology integration, the system offers accurate weather updates and guidance, enabling fishermen to make informed decisions and avoid potential dangers. This proactive approach significantly enhances maritime safety, reduces the risk of accidents, and improves operational efficiency.
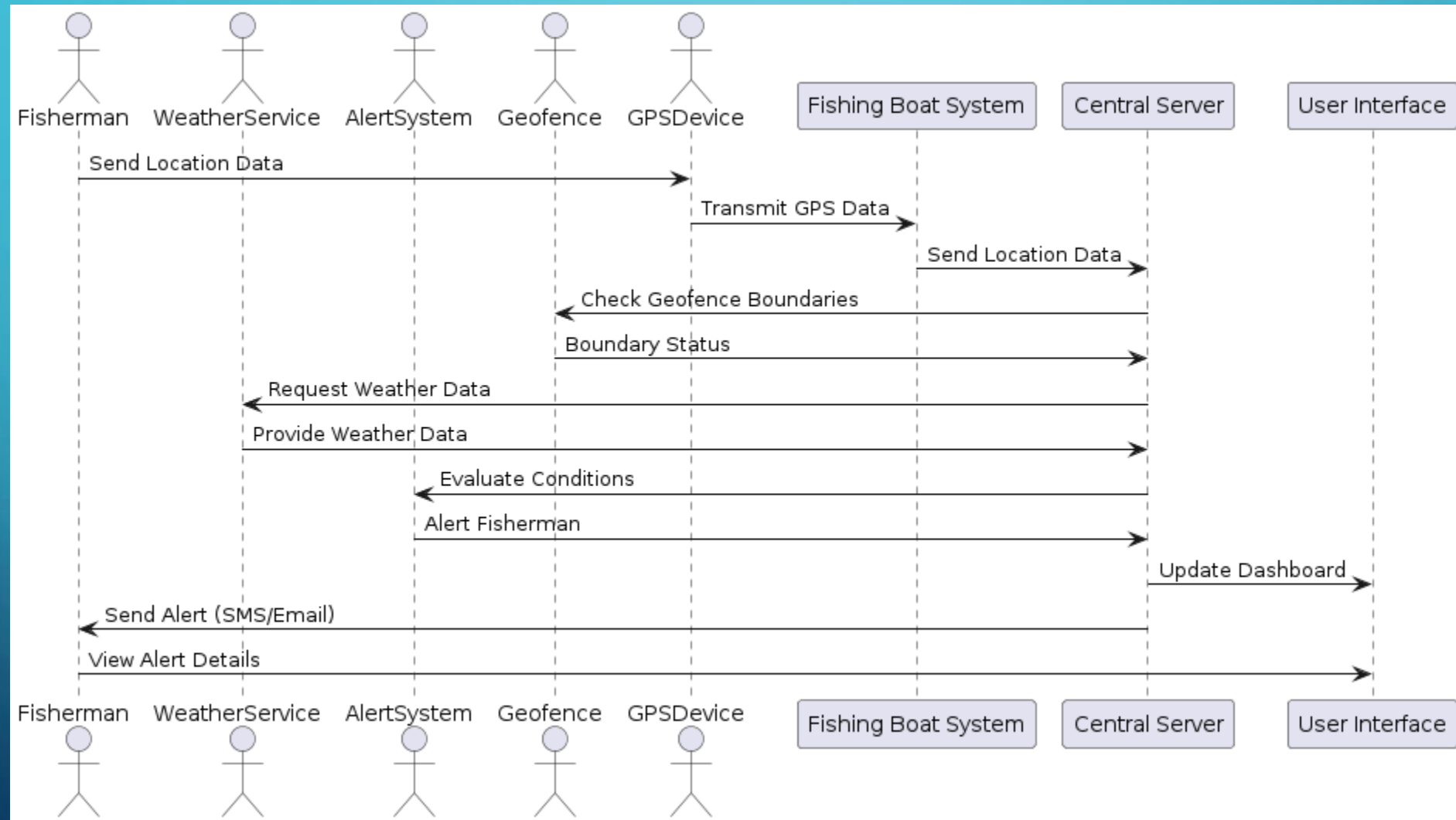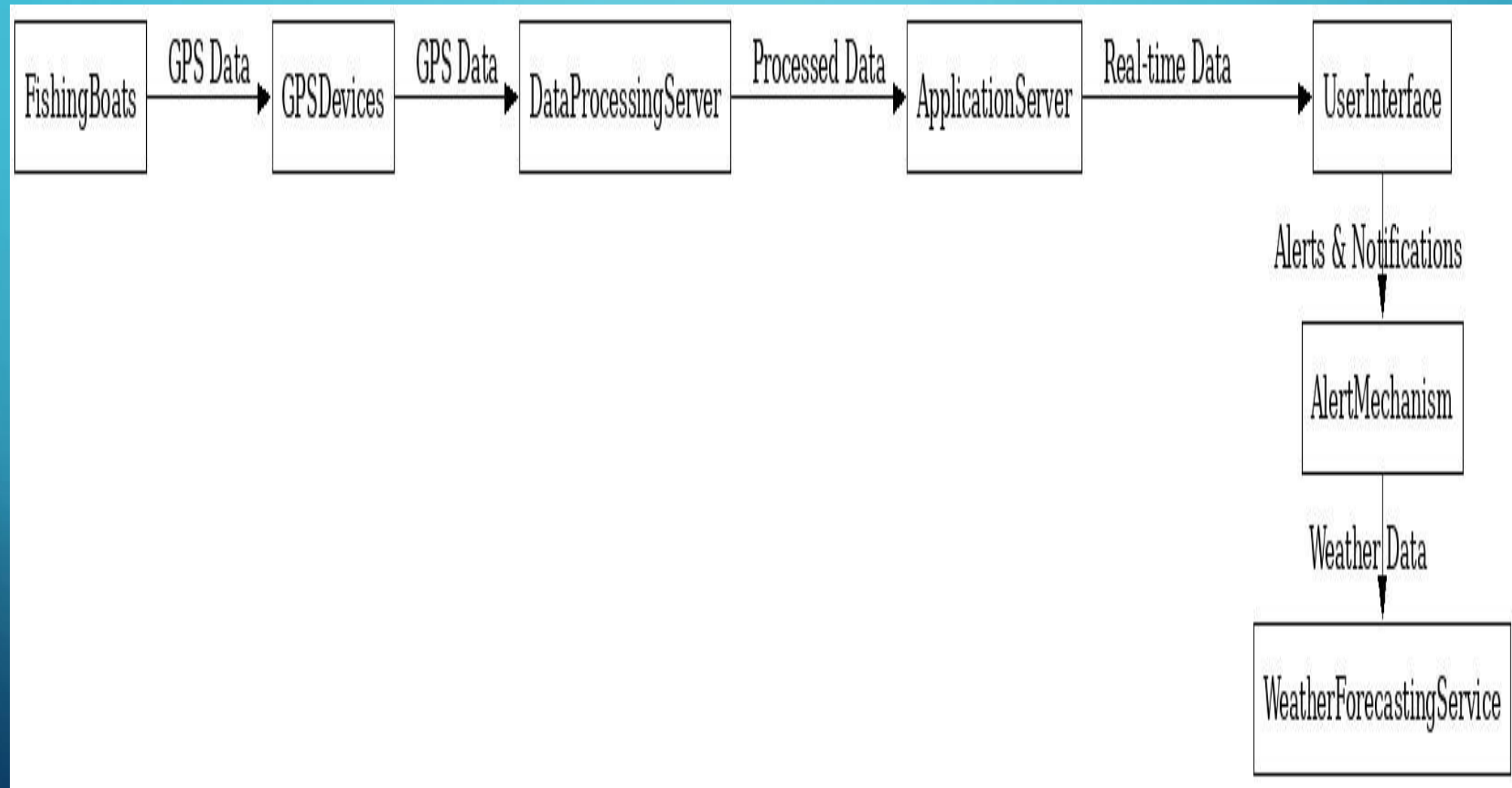
TECH STACK AND TOOLS

- Frontend:
  - Flutter
  - Dart

SEQUENCE DIAGRAM

ARCHITECTURE DIAGRAM