Aeyesafe

Senior safety is where our heart is!

Software Engineer Intern

Presenter: Chloe Ngo Faculty Advisor: Kelvin Sung Sponsor: Kevin Kwan Lead: Huy Trinh

INTRODUCTION

About The Company

Non-Intrusive Senior Monitoring:
Utilizes Advanced AI Sensors For Around-The-Clock Monitoring Of Seniors Without The Need For Wearable Technology.

AI-Driven Insights:
Offers Caregivers Real-Time, Reliable Insights Into Seniors' Well-Being Through Artificial Intelligence-Based Analysis.

Enhanced Caregiver Support:
Aeyesafe's Technology Significantly Reduces Response Times In Emergencies, Increasing Recovery Chances For Seniors.

PROBLEMS

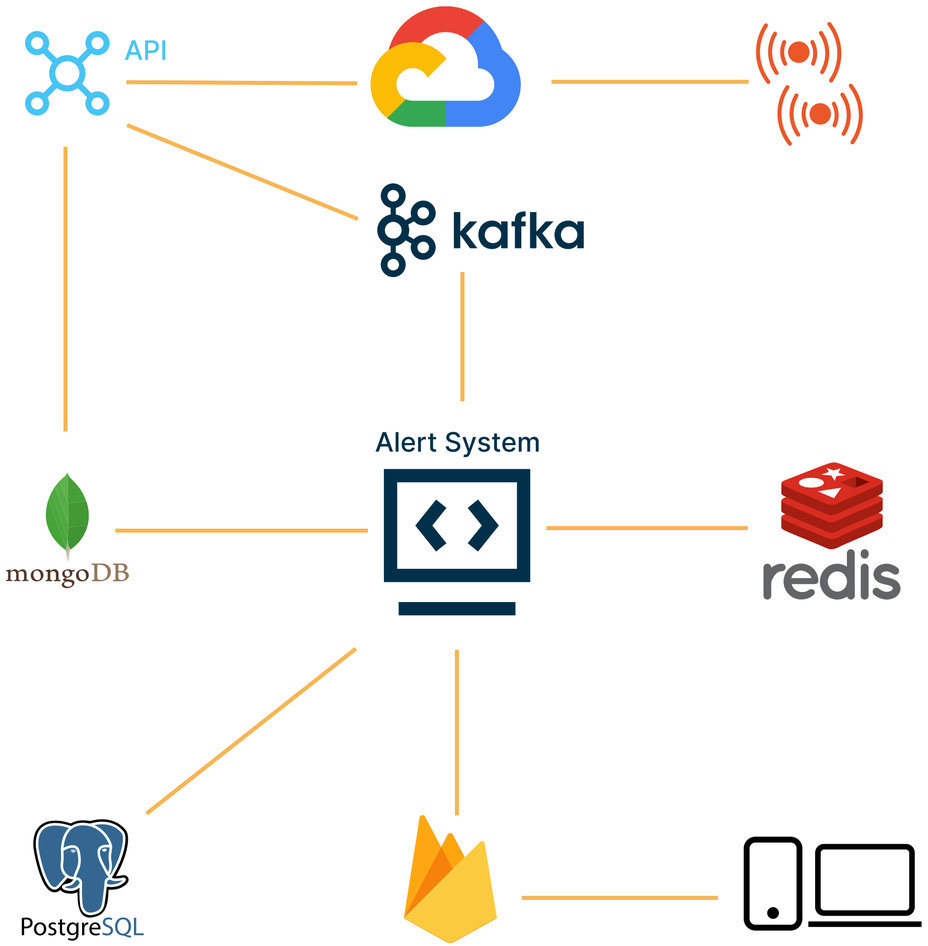
Data Integration:
Merging Simulated Data From Various Sources In A Startup Context With No Established Live Data.

Complex Logic Creation:
Developing Sophisticated Alert Logics, Like Off-Bed Detection And Sleep Schedule Adherence.

Scalability And Real-Time Processing:
Implementing Solutions For Real-Time Data Handling And Future Scalability.

Concurrency Management:
Incorporating Multi-Threading For Efficient Data Processing.

SYSTEM DESIGN & IMPLEMENTATION



SOLUTION & METHODOLOGY

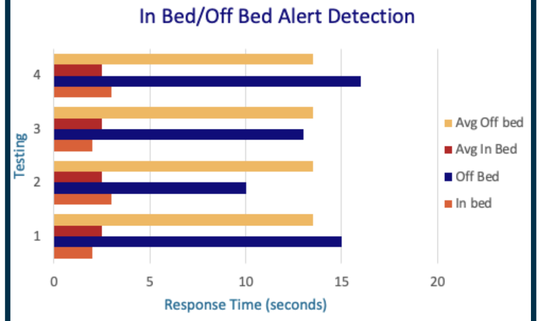
Real-Time Data Processing:
- Setting Up A Kafka-Based Streaming Framework For Processing Real-Time Data.
- Ensuring Minimal Delay In Data Transmission And Alert Generation.

Database Management:
- Storing Data In Appropriate Databases (Redis For Real-Time Data, MongoDB For Thresholds And Historical Data).
- Ensuring Efficient Data Retrieval For Alert Logic.

Development Of Alert Logic:
- Implementing Algorithms To Detect Anomalies In Seniors' Activities And Vital Signs.
- Developing Logic For Various Alerts (E.G., Off Bed, Not Returning To Bed, Abnormal Vitals).

System Design:
- Architecting A System That Seamlessly Integrates Various AI Sensors.
- Designing The Alert Logic To Process Sensor Data In Real-Time.
- Ensuring Data Privacy And Security Protocols Are In Place.

RESULT



Average In Bed: 2.333 Seconds
Average Off Bed: 12.3 Seconds

CONCLUSION

Data Collection: Gather Live Data From Sleep Sensors.

Data Transmission: Send Raw Sensor Data To The Alert System.

Data Aggregation: Compile Live Data, Device Thresholds, And Location IDs From Multiple Sources.

Sleep Logic Development: Analyze Sensor Data To Formulate Sleep-Related Logic.

System Integration: Seamlessly Integrate Sleep Logic With The Alert System For Efficient Alert Generation.