Women Safety Alert System

Introduction

Women's safety is not just a technological issue – it is a human one. Every women deserves to walk freely without fear. This project aims to create a system that responds instantly in emergencies, combining technology with empathy.

Problem statement

In many emergency situations, women are unable to call for help due to fear, shock, or physical constraints. This leads to delays in reaching them. A simple, quick and reliable alert system is needed to bridge this gap.

Functional requirements

- User registration and login.
- SOS button to trigger emergency alert.
- Automatic location tracking using GPS.
- Send alert to emergency contacts.
- Optional voice recording and image capture during danger.

Non- Functional requirements

- User friendly interface.

- Minimal battery and data usage.

System Architecture

The system consists of a mobile application, GPS module, backend server, and a cloud database. The user triggers an alert , which is processed by the server and forwarded to the selected contacts. AI modules analyze risk patterns and help in identifying real time threats.

Design Diagrams

Use case diagram

Use Case Diagram

(User → App → Alert System)

Workflow

Workflow Diagram

(SOS → Server → Contacts)

Sequence

Sequence Diagram

(User → App → Server → Contacts)

Design Decisions and rationale

A mobile application was chosen as the primary platform because smartphones are widely accessible. Cloud storage ensures scalability and fast data retrieval. GPS based tracking provides accurate location updates.

Implementation Details

The system was implemented using Android studio for the mobile app, Firebase/ SQL for database, and Python/Node.js for backend Processing. APIs were used to manage alerts, location tracking, and messaging.

Learning and Key Takeaways

This project helped in understanding real world safety issue faced by women and how technology can assist. It provided exposure to mobile development, Api integration, and AI based analysis.

Future Enhancements

Integration with Police hotline numbers.

Wearable smart band for alert triggering.

AI based threat prediction

Voice activated SOS command.