



Elder-SOS

Elderly Safety Monitoring System

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PRODUCT DESCRIPTION

The Elder-SOS system is an IoT-based safety solution designed to monitor elderly individuals living independently. The system integrates motion detection, fall detection using sensors, and an emergency button to identify critical situations in real time. When an incident such as a fall or emergency occurs, alerts are instantly sent to caregivers or family members through a Telegram. All data is stored and synchronized using Firebase, allowing continuous monitoring and history tracking by using mobile apps. This project aims to enhance elderly safety, enable faster emergency response, and provide peace of mind for caregivers through smart and reliable monitoring.



PROBLEM & CAUSES

- 01 Elderly individuals who live independently are vulnerable to accidents such as falls and potential intrusions, which may go unnoticed without immediate assistance.
- 02 Elderly individuals may face difficulties in seeking immediate help during critical situations, especially when they are unable to reach a phone or call for assistance.
- 03 The absence of motion monitoring makes it difficult to track daily activities, causing unusual inactivity or emergencies to go unnoticed.

OBJECTIVE

- 01 To develop a system that can detect falls among elderly individuals using a fall detection sensor, enabling early identification of dangerous situations.
- 02 To design an emergency alert mechanism using an emergency button, allowing elderly users to quickly request help during critical situations.
- 03 To implement real-time movement monitoring using motion sensors, enabling caregivers or family members to continuously track the activity and condition of elderly individuals.

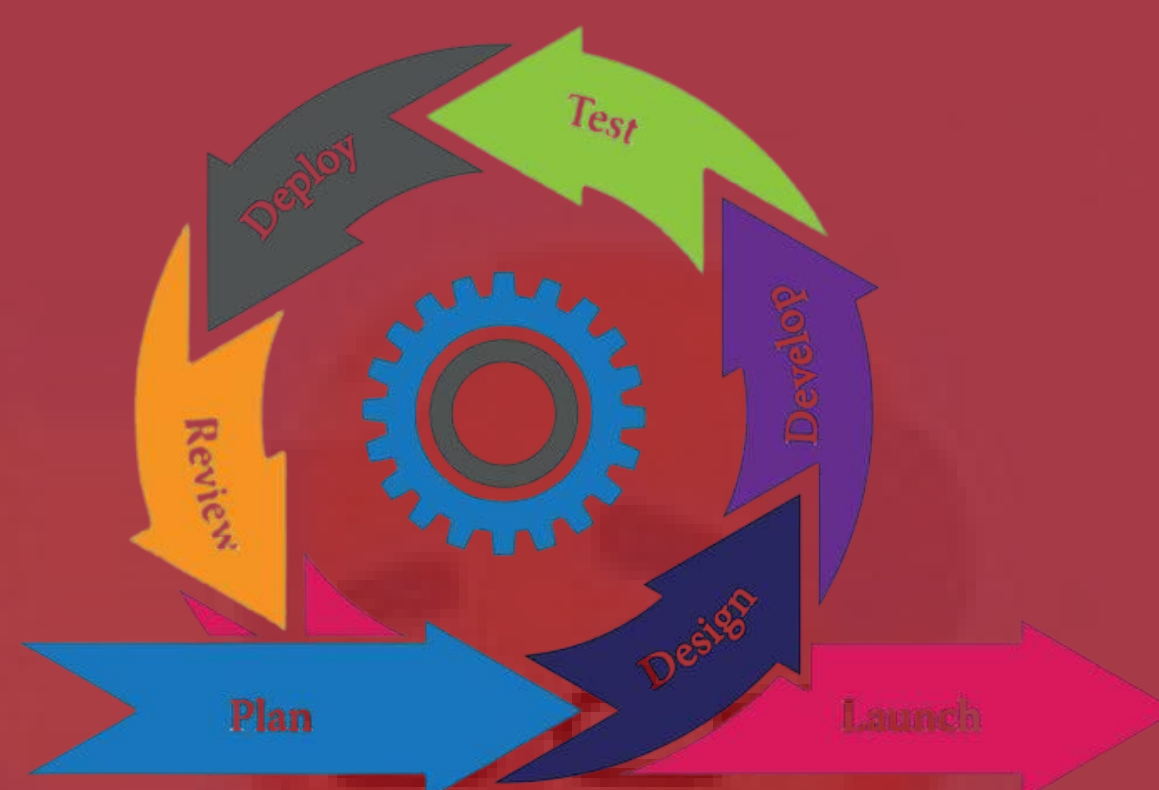
SIGNIFICANT & BENEFITS



- 1 **Real-Time Safety Monitoring**
The system provides continuous real-time monitoring of elderly activities using motion sensors and fall detection, ensuring immediate awareness of any unusual events.
- 2 **Faster Emergency Response**
The integration of an emergency button allows users to instantly send alerts, enabling caregivers to respond quickly and reduce risks during critical situations.
- 3 **Effective Early Warning System**
The system sends automatic alerts through Telegram, allowing early detection of falls and inactivity for prompt action and better care management.

METHODOLOGY

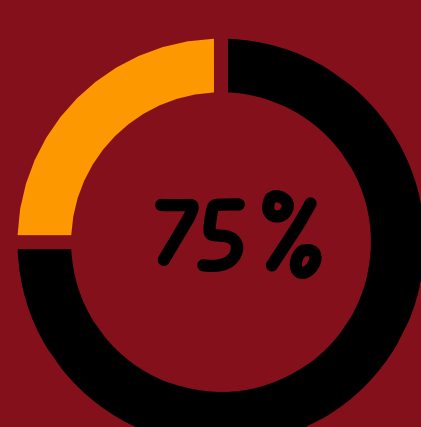
Agile methodology is used in the ELDER-SOS project to support flexible and user-focused development. The system is built in phases (sprints), with continuous testing to detect issues early and improve performance. This approach allows the team to adapt features based on feedback, ensuring the system effectively meets the safety needs of elderly users.



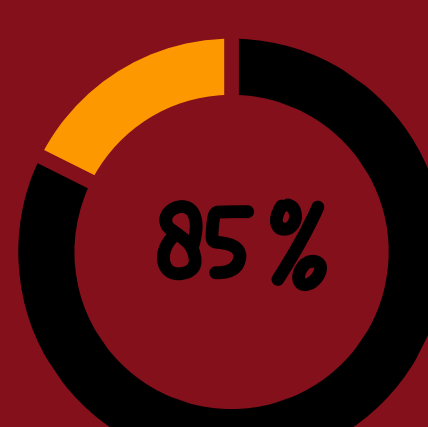
CONCLUSION

The ELDER-SOS project is designed to improve the safety and well-being of elderly individuals living independently by using IoT sensors, real-time monitoring, and emergency alert systems. It can detect abnormal situations like falls and automatically notify caregivers or family members for quick response. Developed using Agile methodology, the system allows continuous improvement based on feedback, ensuring reliability and user needs are met. Overall, it helps elderly individuals live independently with better safety and peace of mind.

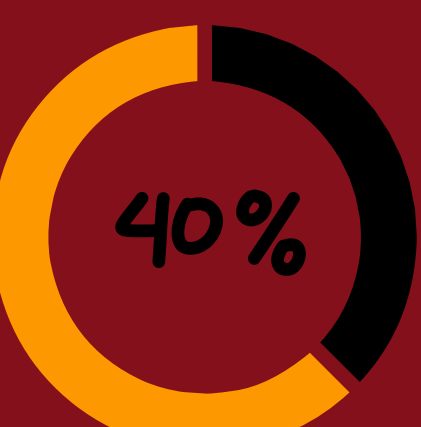
SURVEY



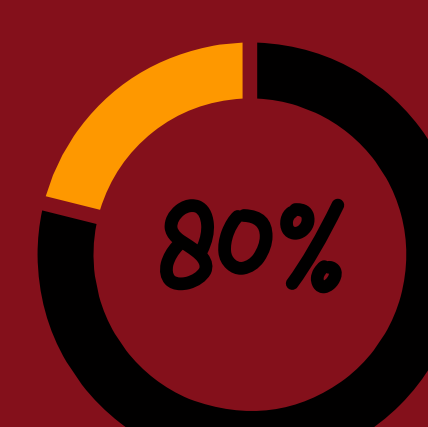
75% of respondents believe that fall detection system is important



85% of respondents reported that elderly risk of falling



40% of respondents reported that they still using phone call for monitoring method



80% of respondents believe that their need instant emergency notifications