Design and Development of an Accident Detection and Alerting System

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INTRODUCTION

Now-a-days, due to increased traffic and human recklessness, there has been a huge rise in road accidents. And many- a-times, these accidents either remain unnoticed or get addressed late if it occurs in some isolated place. This project revolves around the concern of providing a solution to above issue.

OBJECTIVES

1. To identify the accident and its severity and to make the nearby authorities aware of the case.
2. To alert the localities nearest to the site of accident so that the accident gets noticed as soon as possible.
3. Detection of accident and improvisation of the same for in such a way that alerts are sent only when the accident is occurred.

MATERIALS AND METHOD

Approach:

Implementation started by learning basics of gathering data from android device based sensors. Then study of several factors which result in accident took place. It was found that gravitational value and linear acceleration undergoes abrupt change as accident occurs. Alerting mechanism was built in such a way that false positives can be handled. To find nearest emergency services KNN algorithm was used.
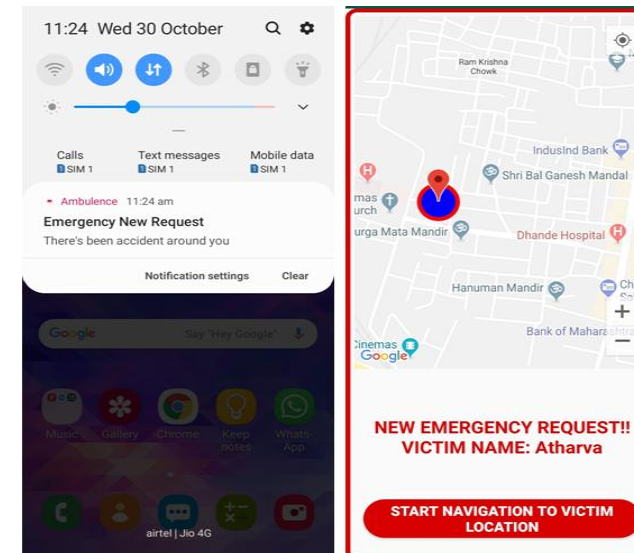
Technologies used :
1. Java Development Kit 1.8
2. Android Studio 3.2
3. Android SDK API 29
4. Firebase Web Services
5. Firebase cloud messaging
6. Accelerometer
7. GPS Sensors
8. Retrofit and Geofire

RESULTS

With real time location tracking for both victim and responder the system will drastically increase the survival rate of an accident victim by providing emergency aid in time. This results into reduced delay in provision of emergency services.

CONCLUSION

This application can result in reduction of accidental deaths and increase in improved emergency services.

ACKNOWLEDGEMENTS