Automatic Travel Emergency Detector

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Overview:

Our application is a service based app that sends help to the user based on the situation. It can detect accidents using the internal sensors(Accelerometer, Sound Sensor and GPS) of the driver's smartphone, and send an emergency notification with the location to the nearest hospital, allowing them to take necessary action. This allows nearby hospitals to send help as soon as possible, helping in the prevention of accidents and helping when a car breaks down in the middle of a highway.

Motivation:

Approximately **1.35 million** people die in road crashes each year

on average **3,700 people** lose their lives every day on the roads.

An additional **20-50 million** suffer non-fatal injuries, often resulting in long-term disabilities.

About **40% accidents** occur on National Highways in India.

This app provides timely assistance which is not available today which could help save time, life and money.

Significance:

Emergency response time and first aid provision is extremely vital when it involves incidents involving vehicle accidents. Analysis shows that if we decrease just 1-minute in accident response time that can increase chances of saving an individual's life up to six percent.

The purpose of this application is to design and implement such an automated system that uses smartphone to detect vehicle accidents and report it to the nearest available responders to help counter these emerging problems and reduce casualties as much as possible.

This will help scale back response time and therefore reduce fatalities.

Scope and Feasibility:

Audience :

Since the application can be installed on any smartphone, a wide variety of users can exploit the features of the application. More specifically, the application will come in handy for the long distance travellers on highways when there are not many people around to help them in case of an emergency.

Requirement :

One of the major requirements for the application is that the smartphone should have internet connection at all times when travelling, since the application will be running in the background

Financial Gain :

The revenue of this idea would be the hospitals the app has tied up with, causing a win-win situation as the hospitals would be provided many customers via this intelligent solution.

Features:

* **Automatic accident detection and notification** - detects accidents using the internal sensors(Accelerometer, Sound Sensor and GPS) of your smartphone, and sends an emergency notification with you location to the nearest hospital.

* **Emergency automobile services** - GPS information could be used to detect if the vehicle needs any immediate repair services by triggering an alert.

* **Manual or Automatic on** -
Automatic mode: automatically turns on the breakdown/accident detection monitoring, allowing the app to run in the background. Recommended for people that frequently travel in a vehicle.
Manual mode: User must manually turn the monitoring system in the app. Recommended for people who rarely travel in a moving vehicle.

* **Panic button** - For any other emergency , sends notification with your location to the chosen service..

* **Detecting false positive** - Countdown timer alert to prevent false positive: In case the system detects an accident, the system will generate a countdown alert dialog with sound and vibration for 15 sec. in case of false alert (accident didn't occur) the user will be able to cancel sending emergency alert to emergency responder under 15 secs

Future Scope

1. The app has not been tested with real accidents, so acquiring a dataset and testing it would be helpful.
2. Integrating with real time Maps API.
3. Gmaps notification for other users in case of an accident.
4. Implementation of a client in the hospital ide specifically to service requests of this kind.
5. Transforming our monolithic application by creating microservices to be scalable.
6. This app can be extended to provide other services such as towing in similar situations.
7. Implementing multiple emergency services such as instant blood donation, etc.