DEVELOP AN ANDROID APPLICATION FOR SENIOR CITIZEN PENSIONERS TO GENERATE DIGITAL LIFE CERTIFICATE (JEEVAN PRAMANA) USING FACE RECOGNITION TECHNIQUES

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Keywords*:*

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Introduction

Falls in the elderly have been found as the second largest reason for the loss of human life and body injury. If an elderly person falls, the consequences can be disabling, severe organ damage or even life endangering. It is not beneficial that using the fast expansion of smartphones, how to use progressive detection and analysis tools to observe everyday behaviour and identify falls in the aged has become very important.

Android phone is used to create and develop new applications and also to modify existing applications for smartphones with Android based operating system. Android market is a tool or used to distribute developed applications

to Android users. There is a wealth of documentation and online resources that make it easy to develop, share, and update apps on the Android operating system.

Objective

(a) To build an Android based application for
(b) The application monitors the phone’s built-in sensors.
(c) To detect falls and generates pre-configured alerts on fall detection.
(d) The application involves tracking the person and alerting the caretaker.

Methodology

For fall detection, the app monitors the accelerometer and magnetic sensors in the background to detect changes similar to the acceleration and orientation fall patterns that occur at close range. Since we need to check for changes in acceleration and orientation, we will use the Sensor Manager class to access the sensors. Whenever a sensor value changes, an object of the Sensor Event class is passed to the method's sensor event listener. It holds information like event timestamp, sensor type, sensor data and accuracy.
For determining the orientation of the mobile device, the values from both accelerometer and the magnetic field sensor are used. When falling, a person's posture changes from standing to lying down very sharply. This results in a change of tone. The fall generates a peak down in the acceleration model and then a peak up in the acceleration model. Generally, when it drops, the acceleration drops below 6 m / s, then increases to 12 m / s and then stabilizes around 10 m / s. In our app we are using these sensors to determine the occurrence of a fall.

Results and Conclusion

(a) The following features have been implemented in our application:

(b) The user is tracked and application can also run-in background.

(c) Using sensors of mobile fall is detected.

(d) After fall is detected, alert signal is sent to caretaker.

(e) The care taker gets the navigation map to reach user.

(f) A buffer time is given in case of false detection of fall.

Conclusion

This app is used to detect potential falls in older people as well as track down the person and alert the caretaker if something goes wrong. One of the main features of our android app is that it sends a warning message to the caretaker with all the necessary information. Warning messages provide important information such as geographic location and routes. If a false alarm occurs, the person has the power to stop the alert message

Scope for Future Work

A user registration and authentication system can be implemented. As of now our app supports only android devices. In future we can develop a version for the iOS devices as well. Accuracy can be enhanced by testing our app in more and more devices.