PROPOSAL FOR P.SOC 2020(MENTEE)

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Location: Chandigarh, India

Proposal Title: WomenSafe

Motivation for Proposal:

 The project is based on a real world problem and would have a practical application. Also the idea behind the project is quite interesting. Women safety is of the major concerns in India and is something we all worried about. So working on a project with such a great cause is an honor.

I have previously worked on many android apps using Java. I have worked on two android app development internships. In the first internship I worked extensively on google maps and in the second I worked on making complex UI screens. So I think I will be able to complete this project.

Goals:

1) Live location sharing: The location will be shared at all times with people that have been allowed.
2) Nearby Police Stations: Location of nearby police stations will be available on the map with phone number.
3) SOS alert: On the press of a button the location and other details will be shared with family members and nearby police station.
4) Police Siren: The police siren can be used to scare away the offender.
5) Self Defense Training: A section of the app will be dedicated specially to tips and techniques for women safety and self defense.
6) Live Chat: It will allow the user to chat with others using the app. The other people may be volunteers, police or other women.

Implementation Details:

1) Live location: This feature will use google maps and Fused Location Provider API to provide the current location using the following code snippet-
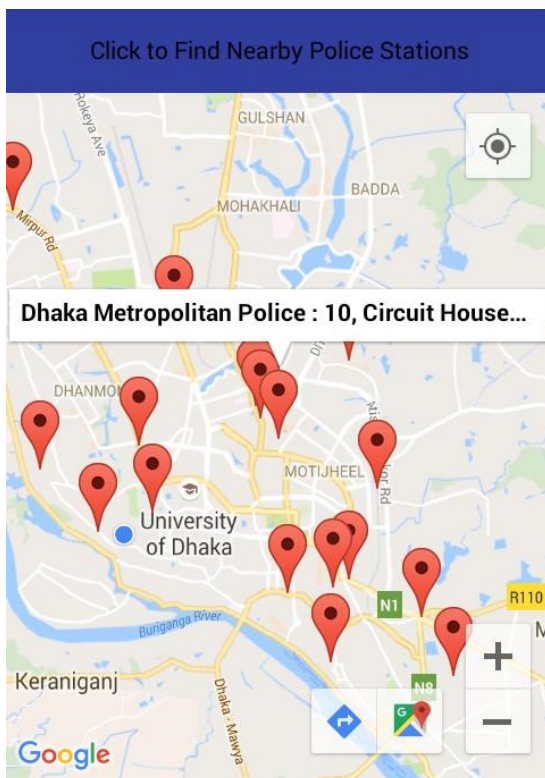   *fusedLocationClient = LocationServices.getFusedLocationProviderClient(this);*

The coordinates will be uploaded to firebase and then can be read and shown on the maps of family members. This feature will be similar to Whatsapp live location feature but the difference will be that location will be shared at all times.

Detailed Tutorail can be found at- https://www.androidhive.info/2012/07/android-gps-location-manager-tutorial/

2) Nearby Police Station: All the data for the nearby police stations will be provided by google Maps along with address and phone number. This data will be collected using google maps api. A request can be send to this URL –https://maps.googleapis.com/maps/api/place/findplacefromtext/output
   The result will be returned in JSON format and it will be parsed and the coordinates will be shown on map.

3) SOS: This button will send current details of the user like location to the selected contacts and police station on a single button click. The message will be sent using SMS so that it works even without internet connection. This will use SMS intent with code something like-

Uri uri = Uri.parse("smsto:" + smsNumber);

Intent intent = new Intent(Intent.ACTION_SENDTO, uri);
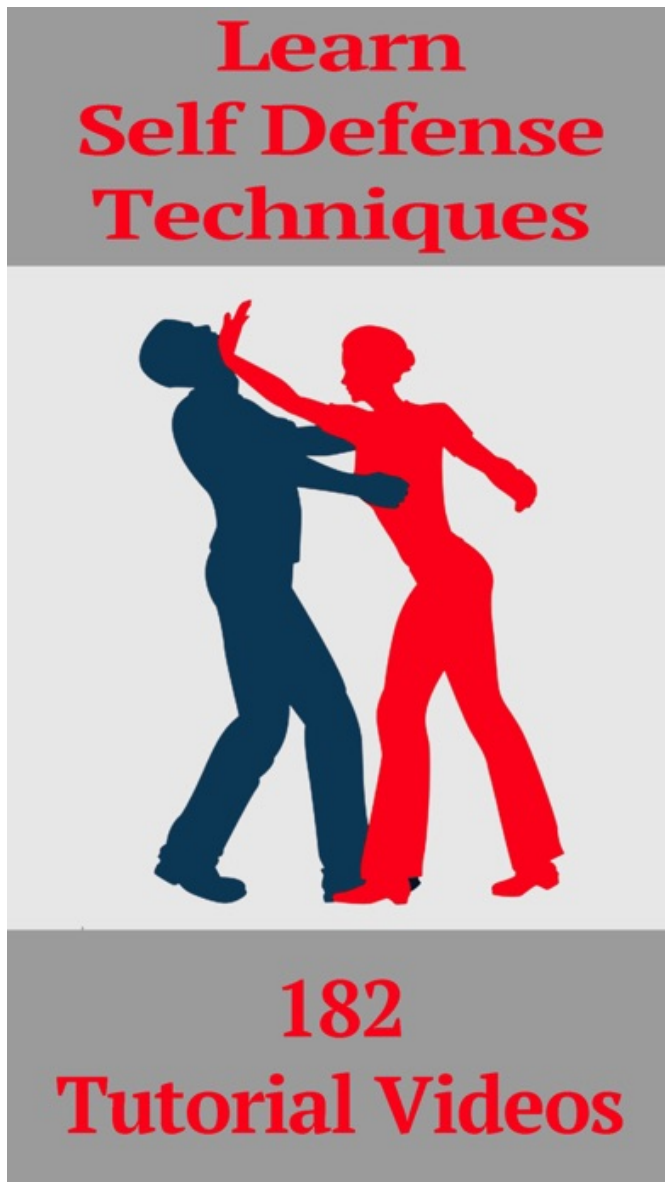
intent.putExtra("sms_body", smsText);

4) Police Siren: Clicking on button or a physical button will play an audio file which will be a police Siren. The sound of police approaching can scare offenders away. This code snippet will be used-

MediaPlayer mediaPlayer = MediaPlayer.create(context, R.raw.<FILE.mp3>);

mediaPlayer.start();

5) Self Defence Training: There will be tutorials and techniques that will be displayed in the app for women safety. These tutorials will be in the form of videos. The videos will be fetched from a database and will be played using in app video player. Code Snippet to play the video-

MediaPlayer mediaPlayer = new MediaPlayer();
mediaPlayer.setDataSource(PATH_TO_FILE);
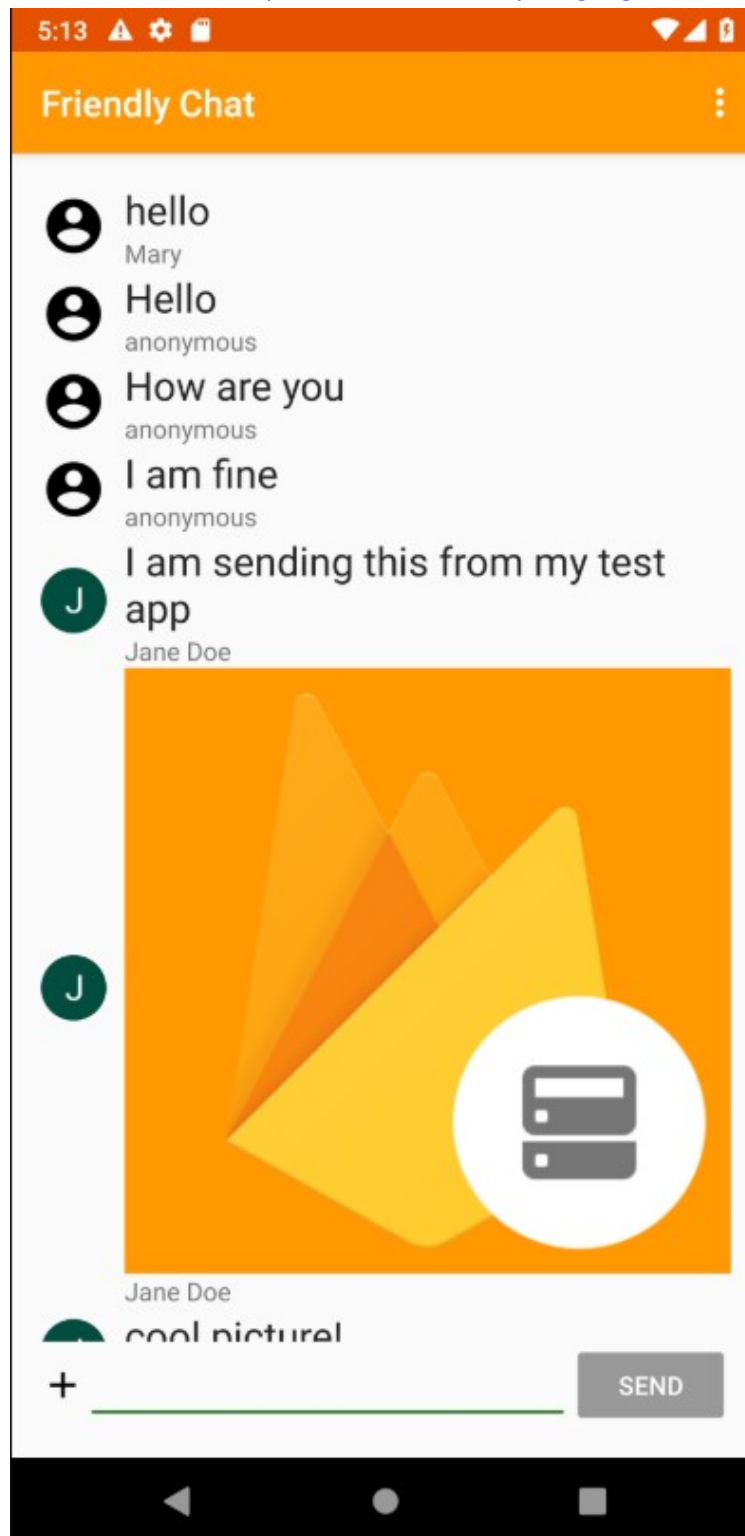*mediaPlayer.prepare();*
mediaPlayer.start();

6) Chat Room: With this feature users can ask other users if an area if safe to go during night. There can be volunteers who can respond to any women who are in need of help by protecting them or verified users can also drop women safely to their home.
This chat app will be implemented using firebase. Message sent by a user will be stored on the firebase and then read by other authorized users. Below is a code snippet to write data to Firebase-

private FirebaseDatabase mDatabase = FirebaseDatabase.getInstance();
private DatabaseReference mDatabaseReference = mDatabase.getReference();
mDatabaseReference = mDatabase.getReference().child("name");
mDatabaseReference.setValue("John Doe");

Detailed tutorial can be found at - https://codelabs.developers.google.com/codelabs/firebase-android/#0

Tentative timeline:

1) Build the screens of the application. (Week 1- 2)

3) Adding functionality to police Siren and SOS button. (Week 3)

4) Adding functionality to get current location and showing location of police stations. (Week 4)

5) Adding functionality to self defense section and video player. (Week 5)

6) Adding functionality to chat room. (Week 6-7)

7) Checking app for bugs and performance issues also making app ready for final release. (Week 8)

About Me:

I am a 2nd year engineering student from UIET. I am an open source enthusiast who loves learning and exploring new things. I am a learning android developer. Most of my projects can be found at https://prathamgoyal.tech/#projects. Code can be found at https://github.com/TheRealTechWiz/AllProjects/tree/master/androidApps.