SecureWalk

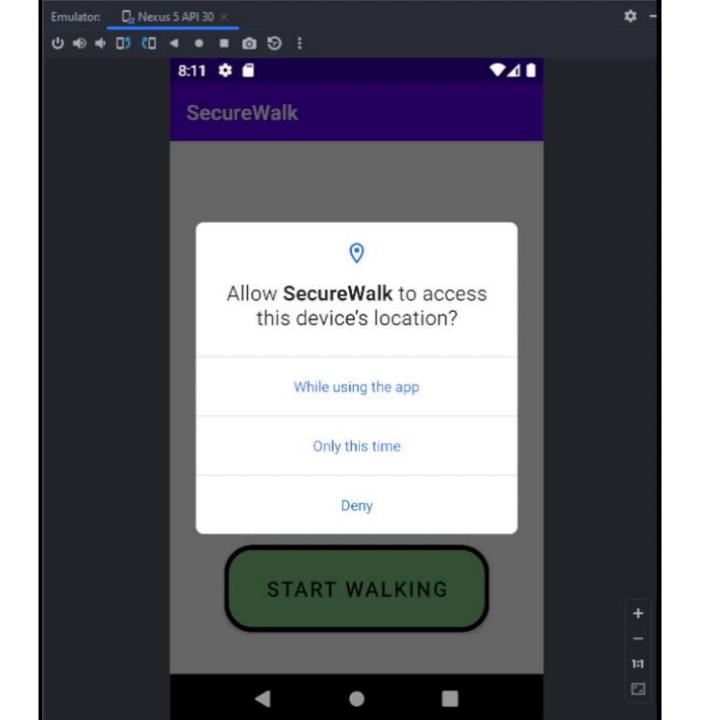
Jack Sime 1801476



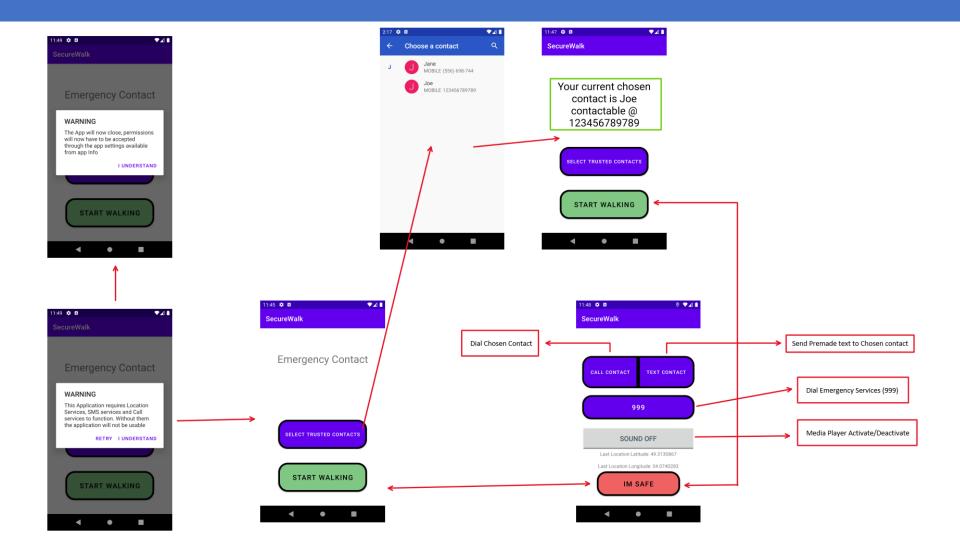
Demonstration

A short demo of the app will now be displayed and narrated.





Application Flow Diagram





Key Features – Media Player

```
//Controls the Media Player
siren = findViewById(R.id.audio Button);
siren.setOnCheckedChangeListener(new
CompoundButton.OnCheckedChangeListener() {
 public void on Checked Changed (Compound Button button View, boolean
isChecked) {
    if (isChecked) {
      // The toggle is enabled
      mediaPlayer = MediaPlayer.create(getApplicationContext(),
R.raw.siren civil); //Create the Media Player
      mediaPlayer.seekTo(10); // Seek to 10 seconds into the audio clip
      mediaPlayer.start(); // Start playing sound
    } else {
      // The toggle is disabled
      mediaPlayer.stop(); //Stop playing after toggle
      mediaPlayer.release(); // Release the mediaPlayer to save resources
```

SOUND OFF

Last Location Latitude, 49.3130867

Last Location Longitude: 34.0740283



Key Features – Last Location

```
// Setup Last location handler to run every 15 seconds
handler = new Handler();
locationLoop = new Runnable() {
   @Override
   public void run() {
     lastLocation();
     handler.postDelayed(this, 15000);
handler.post(locationLoop);
handlerflag = true; //Set the value to true as the handler is running
public void lastLocation() {
  locationProvider = LocationServices.getFusedLocationProviderClient(this);
if (ActivityCompat.checkSelfPermission(this, Manifest.permission.ACCESS_FINE_LOCATION) != PackageManager.PERMISSION_GRANTED && ActivityCompat.checkSelfPermission(this, Manifest.permission.ACCESS_COARSE_LOCATION) != PackageManager.PERMISSION_GRANTED)
   locationProvider.getLastLocation().addOnSuccessListener(this, new
OnSuccessListener<Location>() {
     @Override
     public void onSuccess(Location location) {
        if (location != null) {
           //Update Textview with relevant data
           Lat.setText("Last Location Latitude: " + location.getLatitude());
           Lon.setText("Last Location Longitude: " + location.getLongitude());
```

Last Location Latitude: 49.3130867

Last Location Longitude: 34.0740283

IM SAFE



Critical Evaluation — Features



Location

Allows location to be tracked

Locations utilised to be sent by Text and stored using Firebase



SMS & Phone

Allows for texts and calls to be activated within the app

Utilises location to insert into the sent message



Contacts

Allows for a designated contact to be selected from the device

Utilised when either sending SMS or calling the emergency contact



Critical Evaluation – Features cont.



Media

Allows for an Alarm to be played to gain attention during an incident

Plays a stored .raw file included within the app. No interaction with other features



Firebase

Allows for off device backup of location data
Utilises location data and timestamp to backup
location tracking points



Critical Evaluation – Useability

Simple and easy to use UI

UI elements used within the app synergise well with their given function

Minimum navigation required to access features

Orientation changes supported where suitable

Selected contact on main screen persists once selected



Hardware Performance



App optimised to run for extended periods of time



Firebase storage allows for updates to be cached without internet access



Location updates are only available while in the active walking activity



Location update timing set up to provide accurate data whilst extending battery life



Future Development



ADDITION OF LIVE MAP TRACKING



SELECTION OF MULTIPLE EMERGENCY CONTACTS



FINER TUNING OF LOCATION UPDATE REQUESTS TO IMPROVE BATTERY USAGE



IMPLEMENT ACCESS TO STORED LOCATION DATA



Security

- App permissions are requested on start-up
- Progression is blocked unless the required permissions are accepted
- Sensitive data is nonaccessible from the app
- Location history stored remotely





Conclusion

Thank you for listening to my presentation on my mobile application.





References

- Activity (no date) Android Developers. Available at: https://developer.android.com/reference/android/app/Activity (Accessed: 14 May 2022).
- 'Android Button Design, Custom Button, Round Button, Color' (2018) JournalDev, 31 March. Available at: https://www.journaldev.com/19850/android-button-design-custom-round-color (Accessed: 13 May 2022).
- 'Contact Picker in Android' (2022) GeeksforGeeks, 25 February. Available at: https://www.geeksforgeeks.org/contact-picker-in-android/ (Accessed: 27 April 2022).
- Cristian (2010) 'Answer to "I want my android application to be only run in portrait mode?"', Stack Overflow. Available at: https://stackoverflow.com/a/3723830 (Accessed: 4 May 2022).
- Dialogs (no date) Android Developers. Available at: https://developer.android.com/guide/topics/ui/dialogs (Accessed: 14 May 2022).
- Handler (no date) Android Developers. Available at: https://developer.android.com/reference/android/os/Handler (Accessed: 14 May 2022).
- Haney, L. (2019) This Super-Powerful Self-Defense Tool Is Already in Your Pocket, Runner's World. Available at: https://www.runnersworld.com/women/a29195892/self-defense-tools/ (Accessed: 12 May 2022).
- IconKitchen (no date). Available at: https://icon.kitchen (Accessed: 13 May 2022).
- Material Design (no date) Material Design. Available at: https://material.io/design/color/the-color-system.html#color-theme-creation (Accessed: 14 May 2022).
- Novakowski, M. (2009) 'Answer to "Unix epoch time to Java Date object"', Stack Overflow. Available at: https://stackoverflow.com/a/535017 (Accessed: 4 May 2022).
- Permissions updates in Android 11 (no date) Android Developers. Available at: https://developer.android.com/about/versions/11/privacy/permissions (Accessed: 14 May 2022).
- Repeating Periodic Tasks | CodePath Android Cliffnotes (no date a). Available at: https://guides.codepath.com/android/Repeating-Periodic-Tasks (Accessed: 28 April 2022).
- Repeating Periodic Tasks | CodePath Android Cliffnotes (no date b). Available at: https://guides.codepath.com/android/Repeating-Periodic-Tasks (Accessed: 14 May 2022).
- 'When to Include an Exit Button in Android Apps (Hint: Never)' (no date). Available at: http://blog.radioactiveyak.com/2010/05/when-to-include-exit-button-in-android.html (Accessed: 14 May 2022).