

SecureWalk

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Demonstration

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





8:11



SecureWalk



Allow **SecureWalk** to access
this device's location?

While using the app

Only this time

Deny

START WALKING



1:1



Application Flow Diagram



Key Features – Media Player

```
//Controls the Media Player
siren = findViewById(R.id.audio_Button);
siren.setOnCheckedChangeListener(new
CompoundButton.OnCheckedChangeListener() {
    public void onCheckedChanged(CompoundButton buttonView, 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)
    {
        return;
    }
    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 non-accessible from the app
- Location history stored remotely



Conclusion

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



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