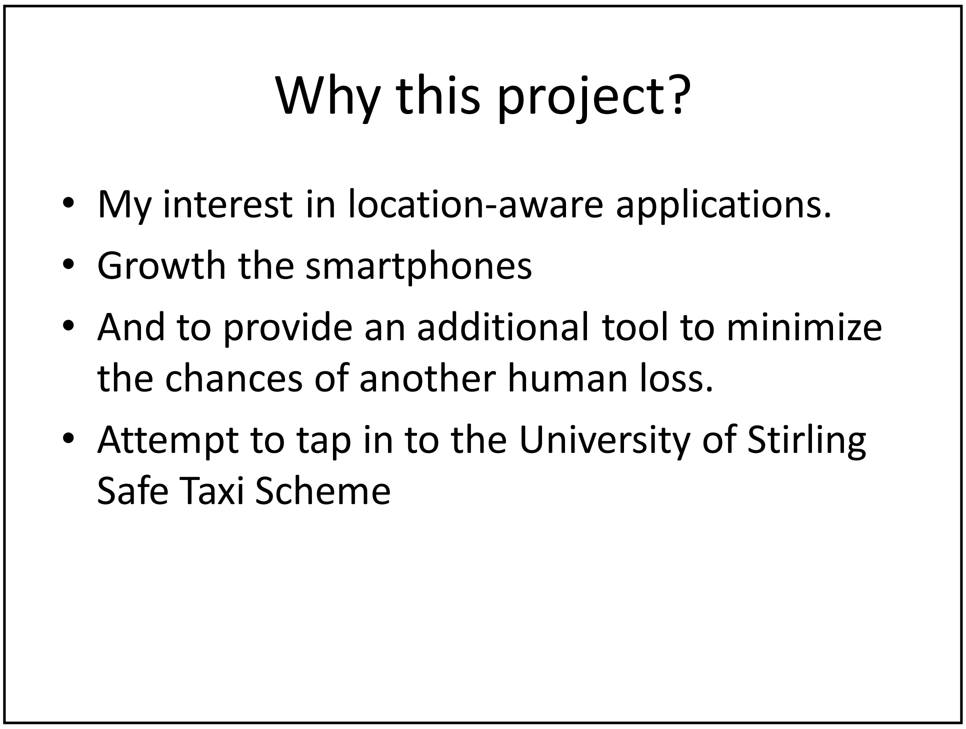
MSc Information Technology

Here I am !

- An Android Application

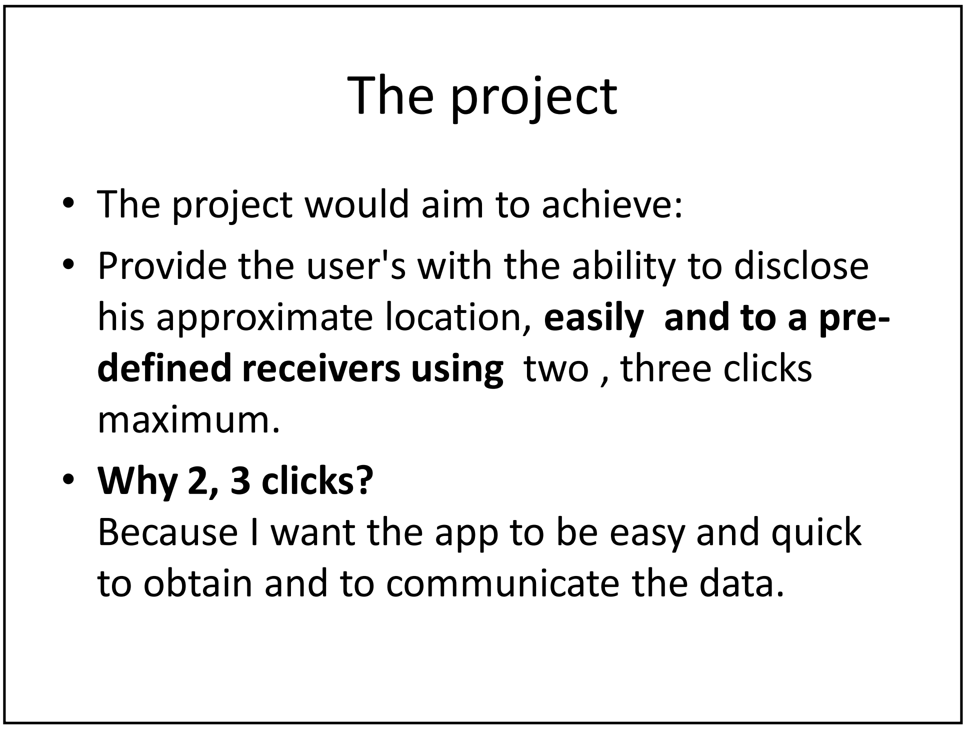
Why this project?

-
  - My interest in the **David O'Halloran missing case .**
    https://findingdavid.crowdmap.com/
- The idea was to use information (sightings, clues) and place them in a map.



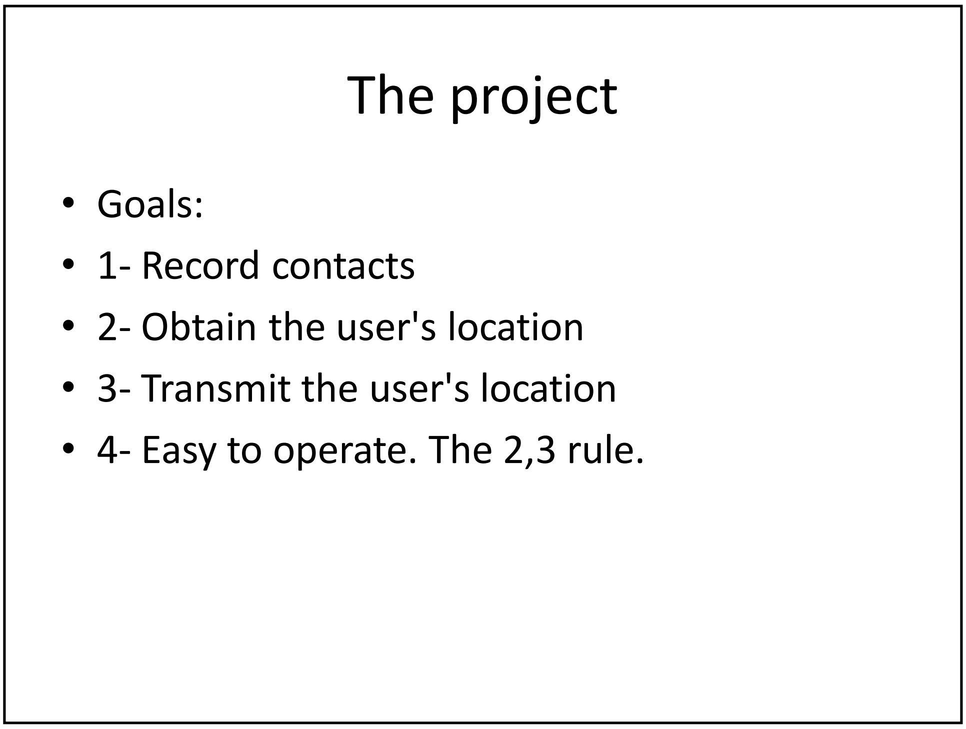
Why this project?

- My interest in location-aware applications.
- Growth the smartphones
- And to provide an additional tool to minimize the chances of another human loss.
- Attempt to tap in to the University of Stirling Safe Taxi Scheme



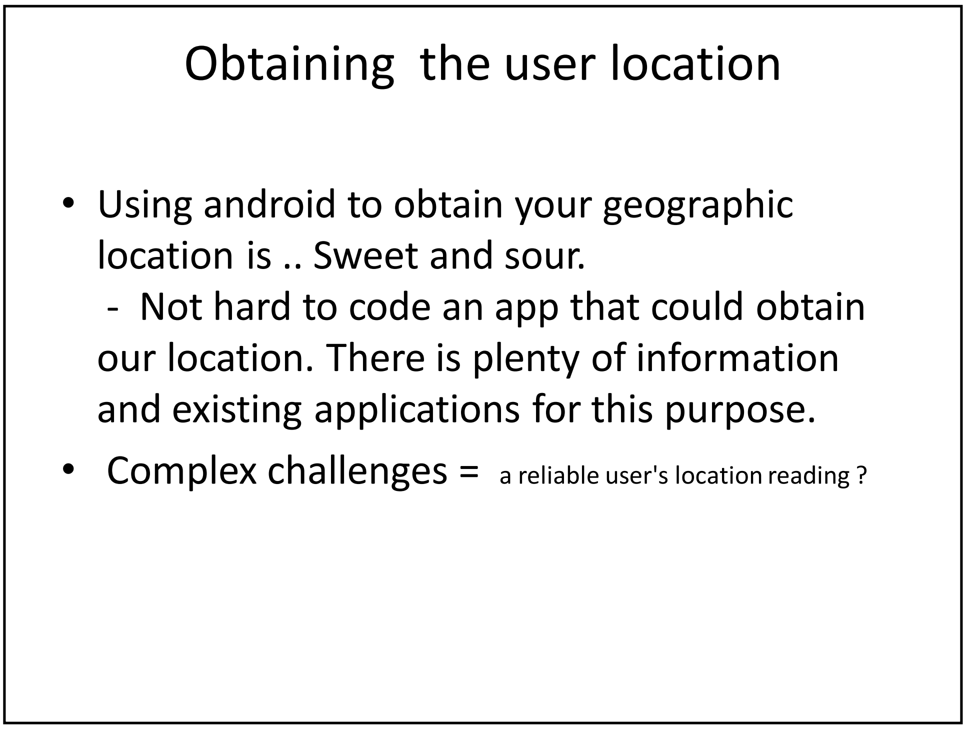
The project

- The project would aim to achieve:
- Provide the user's with the ability to disclose his approximate location, **easily and to a pre-defined receivers using** two , three clicks maximum.
- **Why 2, 3 clicks?**
  Because I want the app to be easy and quick to obtain and to communicate the data.



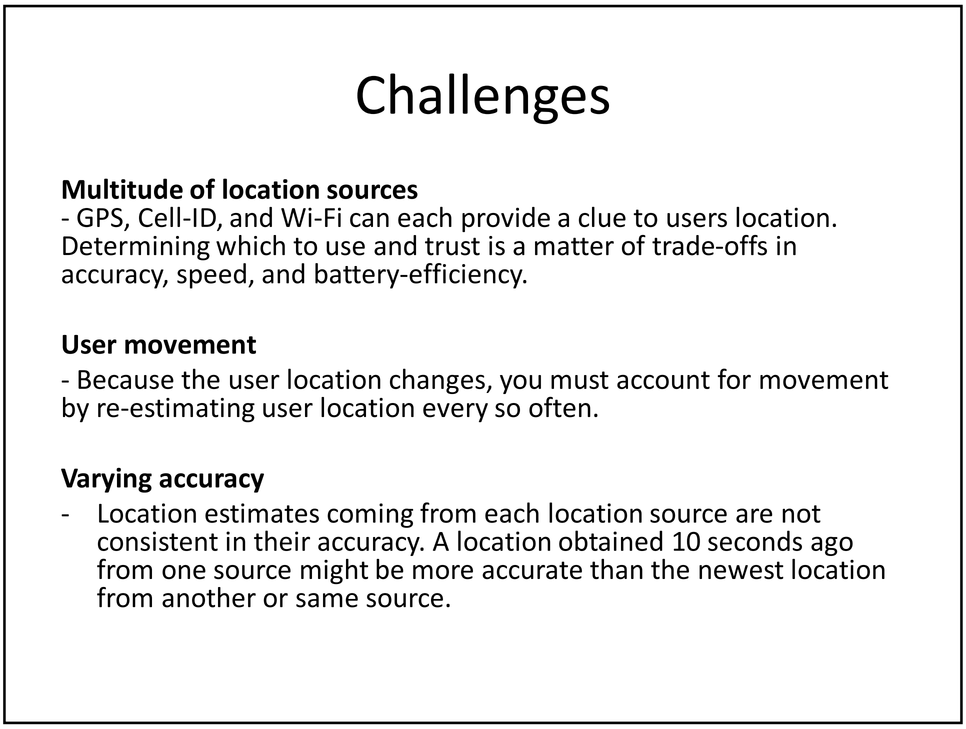
The project

- Goals:
- 1- Record contacts
- 2- Obtain the user's location
- 3- Transmit the user's location
- 4- Easy to operate. The 2,3 rule.



Obtaining the user location

- Using android to obtain your geographic location is .. Sweet and sour.
  - Not hard to code an app that could obtain our location. There is plenty of information and existing applications for this purpose.
- Complex challenges = a reliable user's location reading ?



Challenges

Multitude of location sources
- GPS, Cell-ID, and Wi-Fi can each provide a clue to users location. Determining which to use and trust is a matter of trade-offs in accuracy, speed, and battery-efficiency.

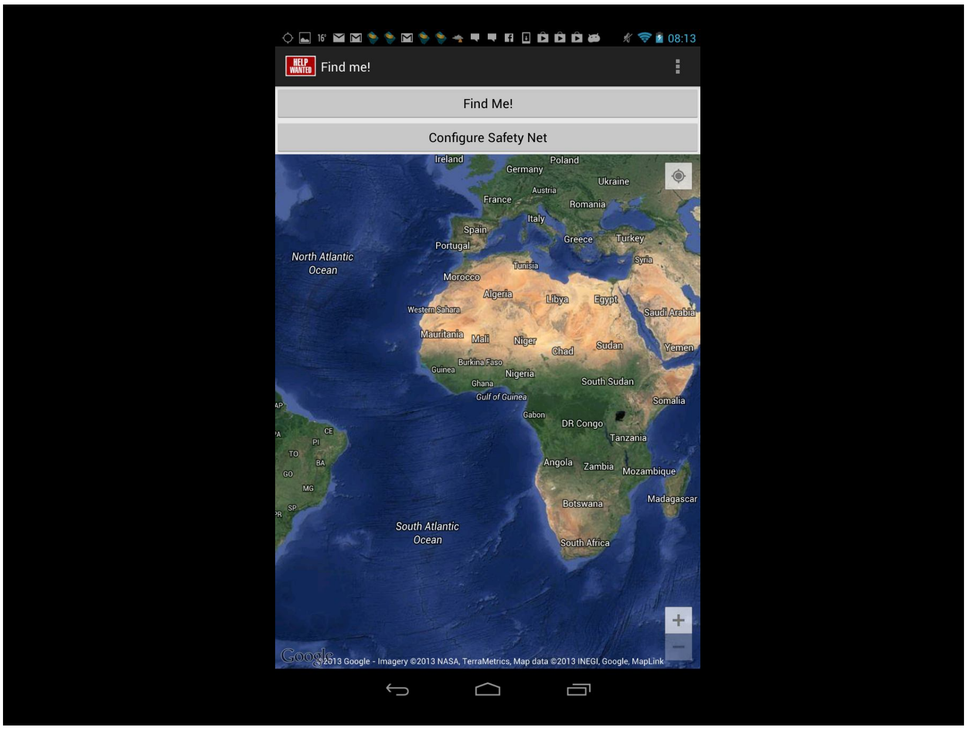
User movement

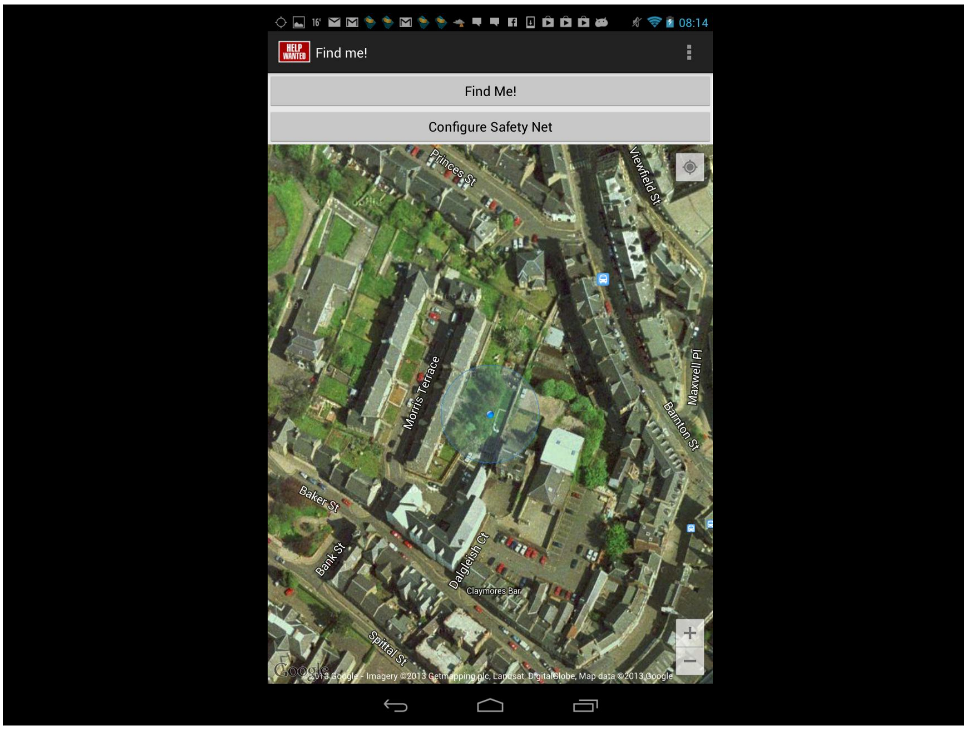
- Because the user location changes, you must account for movement by re-estimating user location every so often.

Varying accuracy

- Location estimates coming from each location source are not consistent in their accuracy. A location obtained 10 seconds ago from one source might be more accurate than the newest location from another or same source.

Find me!


08:13
Find me!
Find Me!
Configure Safety Net
Ireland
Germany
Poland
Ukraine
France
Austria
Romania
Italy
Spain
Portugal
Greece
Turkey
North Atlantic Ocean
Tunisia
Syria
Morocco
Algeria
Libya
Egypt
Western Sahara
Saudi Arabia
Mauritania
Mali
Niger
Chad
Sudan
Yemen
Burkina Faso
Guinea
Nigeria
South Sudan
Ghana
Gulf of Guinea
Somalia
Gabon
DR Congo
Tanzania
Angola
Zambia
Mozambique
Botswana
Madagascar
South Atlantic Ocean
South Africa
Google
©2013 Google - Imagery ©2013 NASA, TerraMetrics, Map data ©2013 INEGI, Google, MapLink


08:14
Find me!
Find Me!
Configure Safety Net
Princes St
Viewfield St
Maxwell Pl
Barnton St
Morris Terrace
Baker St
Bank St
Dalgleish Ct
Claymores Bar
Spittal St
Google
©2013 Google - Imagery ©2013 Getmapping plc, Landsat, DigitalGlobe, Map data ©2013 Google

The receivers

- Sending your location to whom?
- My first thought was to leave that option open. But that was going to conflict with the 2-3 click rule.
- What was the solution?

TO PRELOAD OR NOT TO PRELOAD!

- A contact list = database that could hold a predefined set of contacts, what would load with the application.

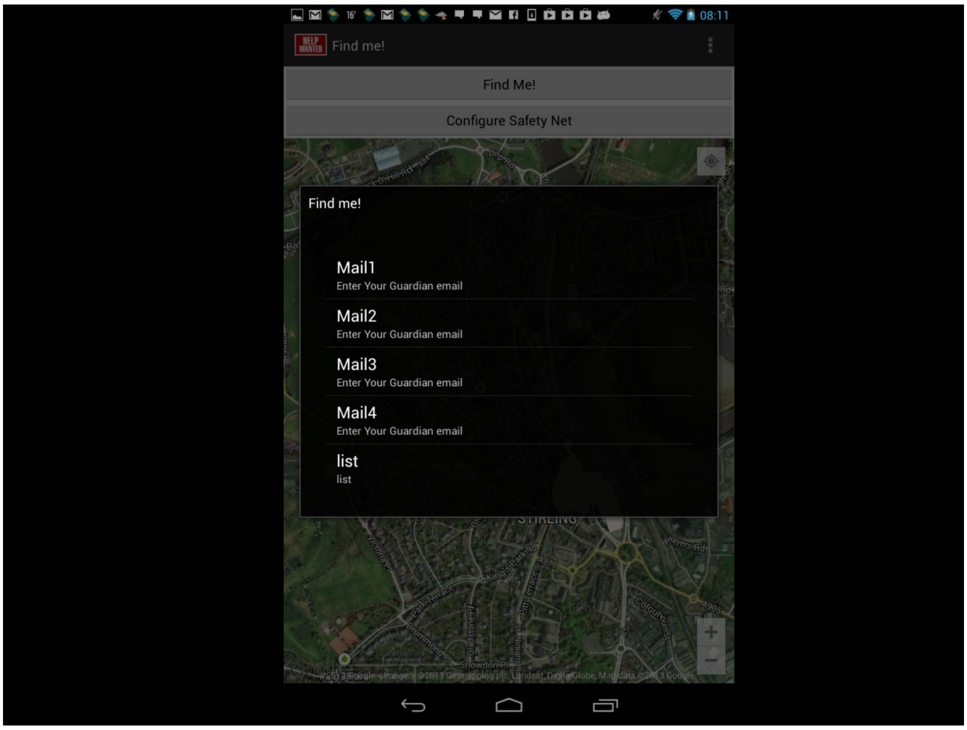
- Such as loading preferences,
- Or Allowing the user to customize circles of contacts that could be preloaded and fine tuned depending on the circumstance
  - for example using a radio button.

Challenges

- Storing information and retrieving information
- Using this data to link to the other components (Email , Phone numbers).

- Using Preferences?

Using the PreferenceActivity class to store user’s preferences and using them when the application starts. Google has created a preferences framework for us. The provided mechanism allows us to show, save and manipulate user’s preferences very easily.



Find me!

Mail1
Enter Your Guardian email

Mail2
Enter Your Guardian email

Mail3
Enter Your Guardian email

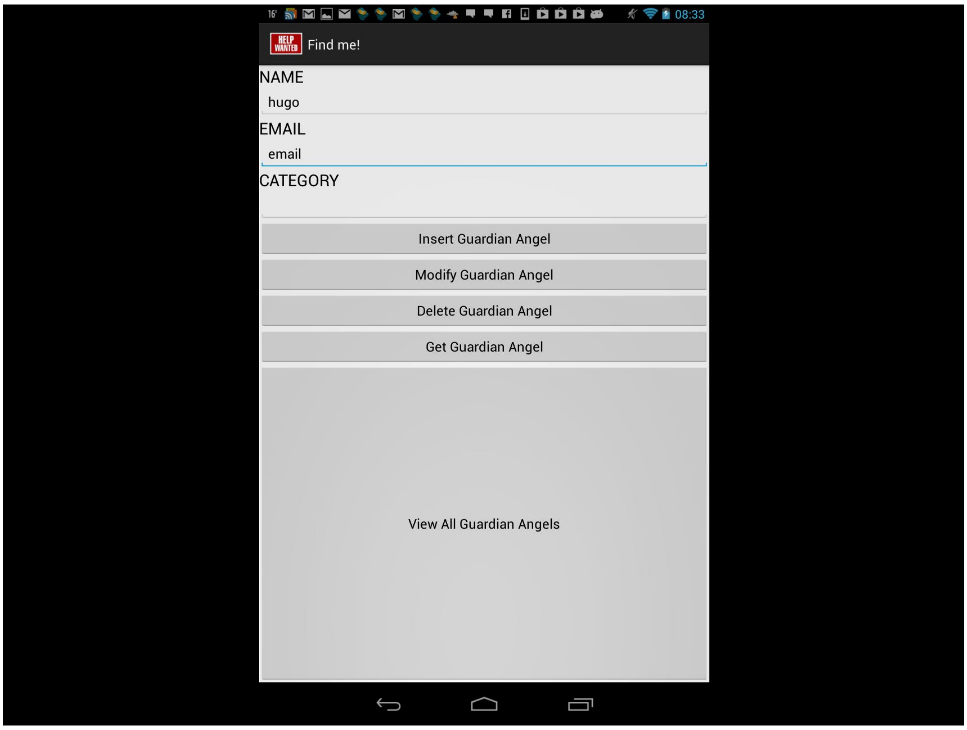
Mail4
Enter Your Guardian email

list
list

Or Using SQLite?

Android applications can create and manipulate their own private SQLite relational databases.

- **What is SQLite?**
- SQLite is a lightweight relational database engine. SQLite is fast and has a small footprint, making it perfect for Android devices. Instead of the heavyweight server-based databases like Oracle and Microsoft SQL Server, each SQLite database is stored within a single file on disk. Android applications can choose to store private application data in a SQLite database.
- SQLite = QLite is basically a stripped-down SQL database engine for embedded devices.



Find me!

NAME

hugo

EMAIL

email

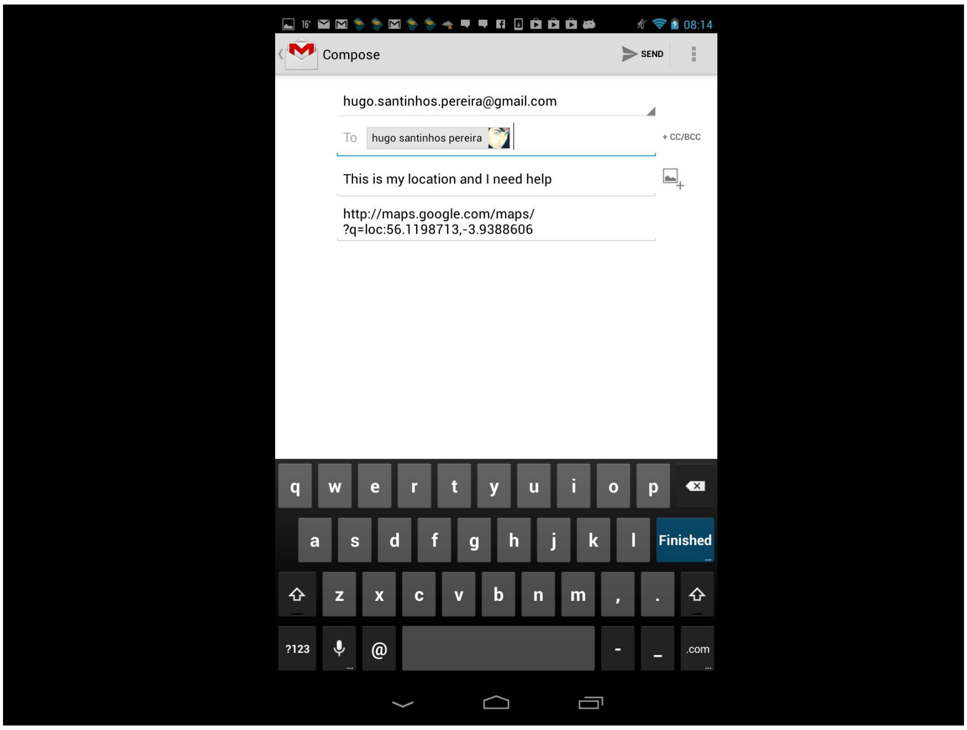
CATEGORY

3 Methods

- User types in the contacts > saves contacts > when application starts, the contacts are going to be loaded. [PreferenceActivity method]
- User uses a radio button to invoke a group of contacts that tell the application where to send the information [SQLlite method]
- The goal : using SQLlite + PreferenceActivity !

The message

- **What will our message contain?**
- Hyperlink that allows the receiver to visualize the location via Google maps.
- The coordinates are formatted to permit the receiver to click and see the location.
- The content of the message is customized. Besides the coordinates, it can include the address by reverse geocoding and additional information.
- **How to transmit the message?**
- Email
- Text message



hugo.santinhos.pereira@gmail.com

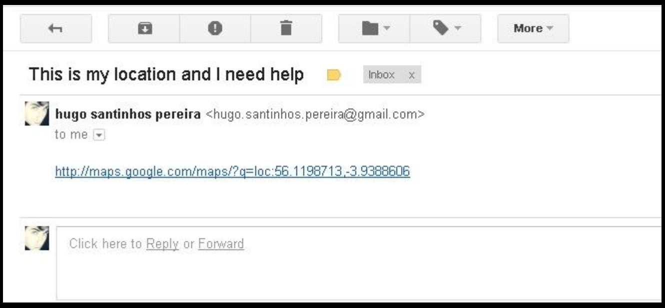
To hugo santinhos pereira

This is my location and I need help

http://maps.google.com/maps/?q=loc:56.1198713,-3.9388606

USING EMAIL

- Using the application loaded into the android (Gmail.com)
- With the application asking permission to use gmail.com to send the message.
- Or bypassing and sending the email directly without using any installed application.
- Using the email application challenges the 2-3 clicks rule, but it is the simpler option.
- I am currently working in bypassing the email application.

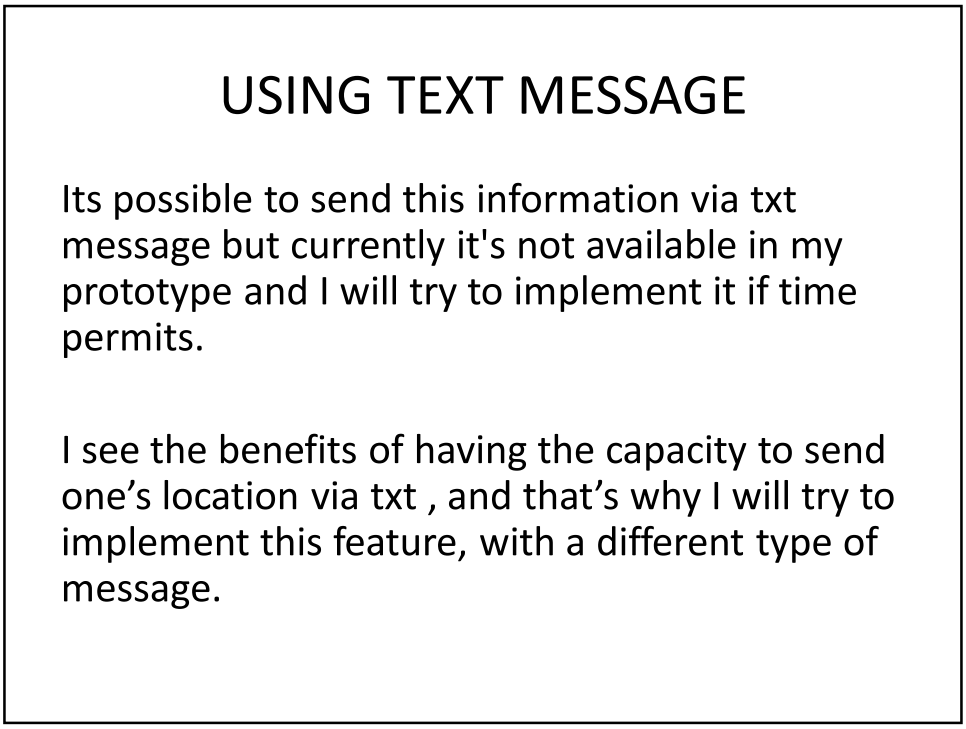


This is my location and I need help

hugo santinhos pereira <hugo.santinhos.pereira@gmail.com>
to me

http://maps.google.com/maps/?q=loc:56.1198713,-3.9388606

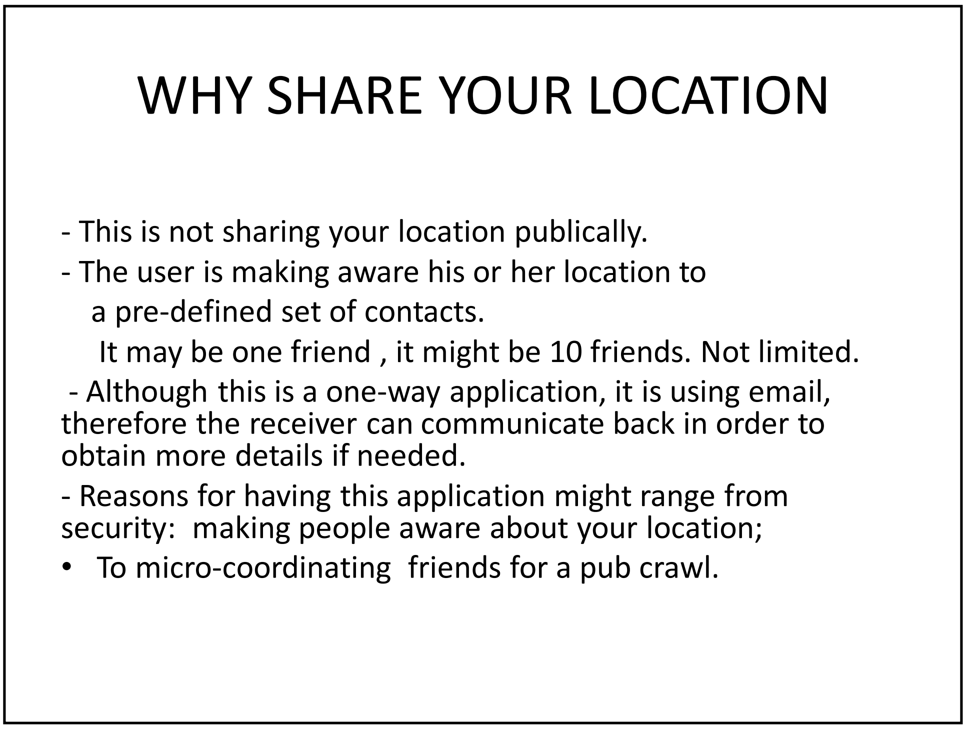
Click here to Reply or Forward



USING TEXT MESSAGE

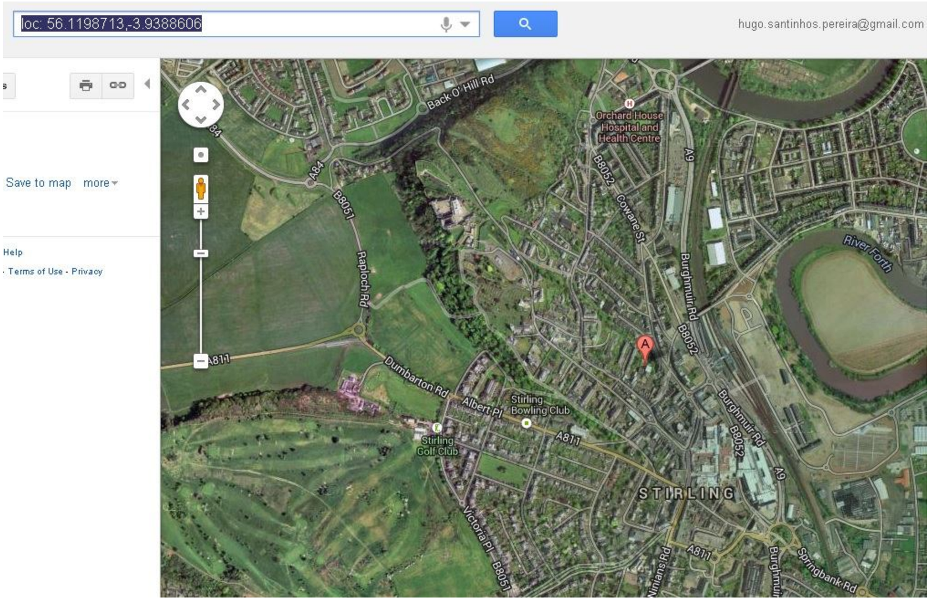
Its possible to send this information via txt message but currently it's not available in my prototype and I will try to implement it if time permits.

I see the benefits of having the capacity to send one's location via txt , and that's why I will try to implement this feature, with a different type of message.



WHY SHARE YOUR LOCATION

- This is not sharing your location publically.
- The user is making aware his or her location to
  a pre-defined set of contacts.
  It may be one friend , it might be 10 friends. Not limited.
- Although this is a one-way application, it is using email, therefore the receiver can communicate back in order to obtain more details if needed.
- Reasons for having this application might range from security: making people aware about your location;
- To micro-coordinating friends for a pub crawl.



loc: 56.1198713,-3.9388606

hugo.santinhos.pereira@gmail.com

Save to map more

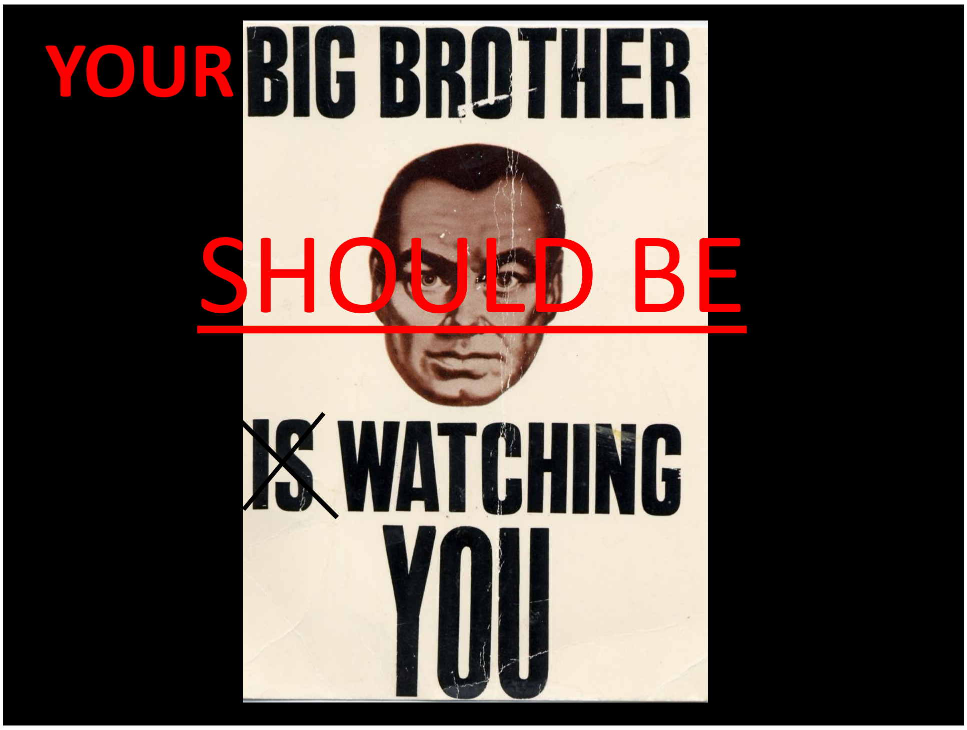
Help

· Terms of Use · Privacy

University of Stirling Safe Taxi Scheme

- The scheme has been designed to support students in emergency circumstances, by helping them get home safely if they run out of money.

- By having a number of taxi related contacts loaded into the application, one can easily transmit to the taxi driver , one’s location even if one is drunk and contact , if a call back is necessary.



YOUR

SHOULD BE