Lab 1: Design Principles

Topic Chosen: #3. System that gets people who often do not get out into nature, to discover, appreciate and visit Kelowna trails and parks.

By Daniel Rozek

Introduction

Geocaching is an activity that leads people outside into towns, trails, parks and nature worldwide. It has a website and two similar mobile apps to use along. Geocache is a man-made treasure box hidden somewhere outside. Every geocache has coordinates and clues for finding it provided on the website and app. When a user has found it, they write their username and the current date in the notebook or paper, and later online. If it is big enough, it usually has also some exchange: coins, cards, key-chains, pins and other items. The user can make an exchange, placing in something of his own and taking something interesting out.

The first app for geocaching is **'c:geo'**, described here. It was released in 2011 and the 2nd app 'Geocaching' in 2014.

c:geo App

On the front page there are six main thumbnails:

* **'Live map'** Shows small icons to display location of each geocache. The icons can also tell whether or not a user has saved it for offline use on their phone or some other mobile GPS device.
* **'Nearby'** The thumbnail image is a green radar and it opens a list of the twenty nearest geocaches and shows the distance from the user; the type of geocache; whether or not the user found it yet, and a few more details. Users can continuously ask it to show twenty more on the list.
* **'Stored'** Shows a number on the icon telling how many geocaches the user has currently saved onto their phone, for using offline. The icon opens a list of the saved geocache sorted by distance. The sorting parameters can be changed.
* **'Search'** Opens a page where users can enter coordinates, address, keywords or some other data to find a certain location or geocache.
* **'Go to'** Opens a page where users can enter whichever coordinates or ask for coordinates showing the user's current location and past sets of coordinates that the user entered before.
* **'All Cache...'** Opens a list of all types of geocache: Traditional, Multi-cache, Earth-cache, Mystery Cache, and several other types. On the list a user can select all types or filter down to a certain type and then going to the map, it would show only those of the type selected.

On the main page, on the bottom it names the country and city the user is in. If there is internet connection, it displays the user's username and how many geocaches the user has already found. On top of the screen there is a magnifying glass icon for searching for any particular geocache, and a clock icon to show recent geocaches, the user has found. In the top right corner is a list icon which opens to 'Settings', 'About c:geo', and few more pages. In the settings a user can change what map source to use, which user is logged in, screen appearance and others. A non-functional requirement is to use the app on a GPS device. Most phones have GPS now.

Learning to use the System and App

After installing it, Figure 1 shows what would appear, the first time the new user opens the app.

The new user would first tap the **'Authorize c:geo** Not connected yet**'** text, to follow the app's first instruction in authorizing the app with the web. Below, Figure 2 shows the next image that would appear. The user could easily enter their username and password if they had one already, if not then they'd tap **'create an account'** and the app would open the geocache website, Figure 3. The new user would then make and verify a new account through email, just like anyone would for any other type of account.

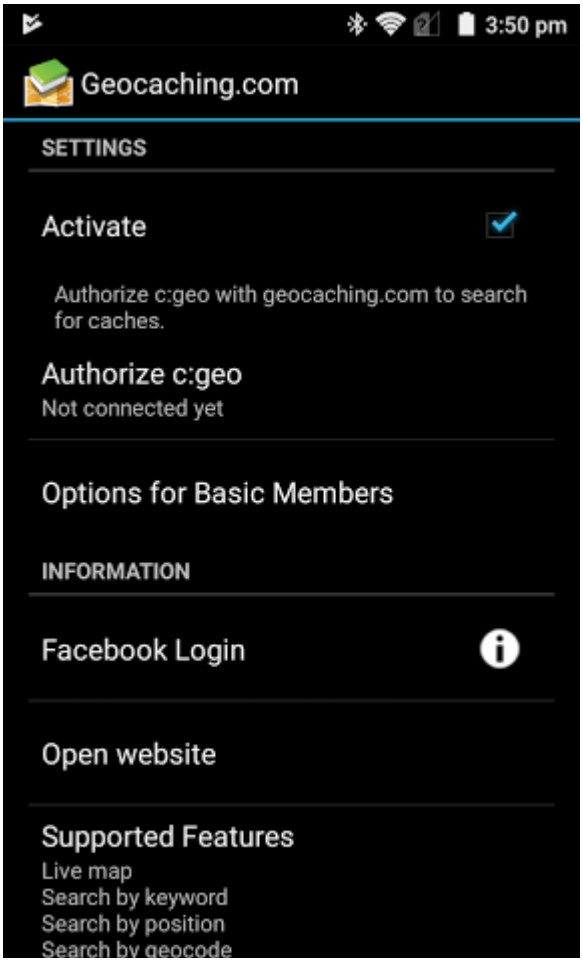

Figure 1

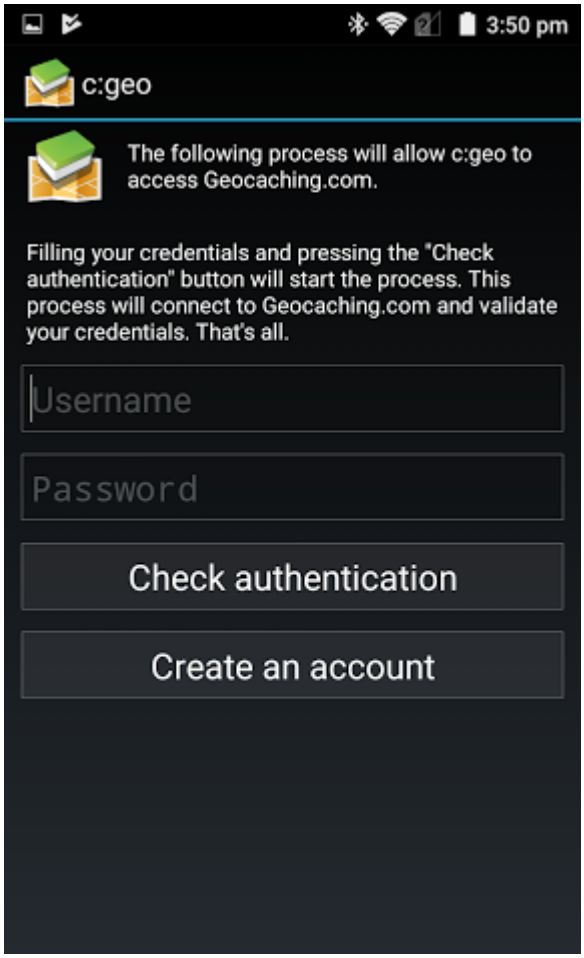

Figure 2

After creating or entering their account, the app opens the main page with six thumbnails, shown on Figure 4. The background image of the app's main page is whatever the user has set as a wallpaper on their phone. Onto this main page, the user would probably first tap on the map icon. Figure 5 shows the map with a one-time pop-up which tells that the user can save data for offline use.

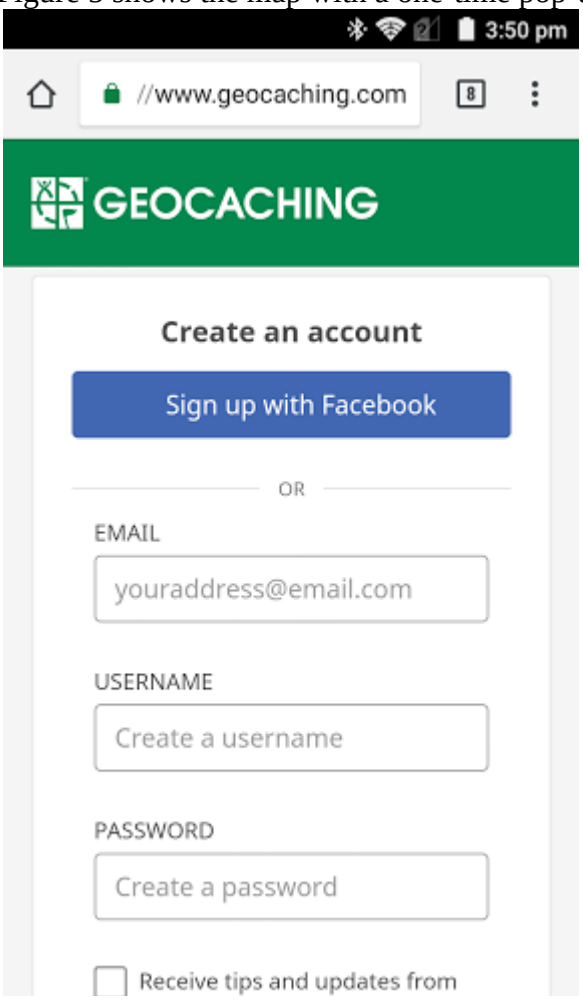

Figure 3

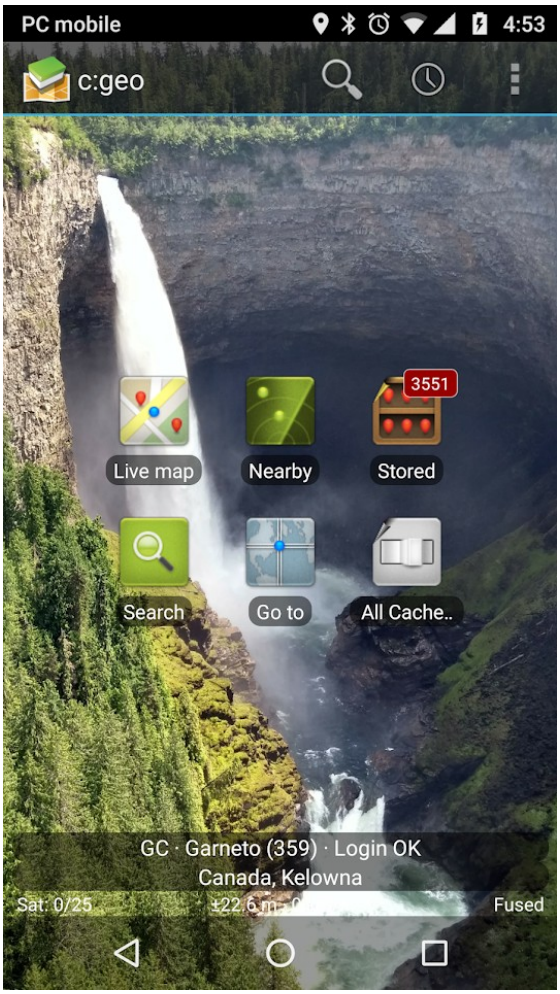

Figure 4

After tapping 'Ok', Figure 6 is a sample of the map displaying a blue arrow to show the user's location, zoom in/out buttons and other icons which present geocaches and their types. The user can zoom in/out on the map, and tap on any geocache icon. The grey circle with points 'Locator' icon in the upper black toolbar in Figure 6, if tapped puts the blue arrow, user's location, in the centre of the screen. Next the user can tap a geocache icon and it would open a pop-up window, Figure 7, showing basic info about that geocache. Figure 7's sample geocache is one that I made. Figure 8 shows a sample of what opens next when tapping for more details. It is quite easy to learn how to use the app and its system. The app leads the user into making or connecting to an account straight from the start.

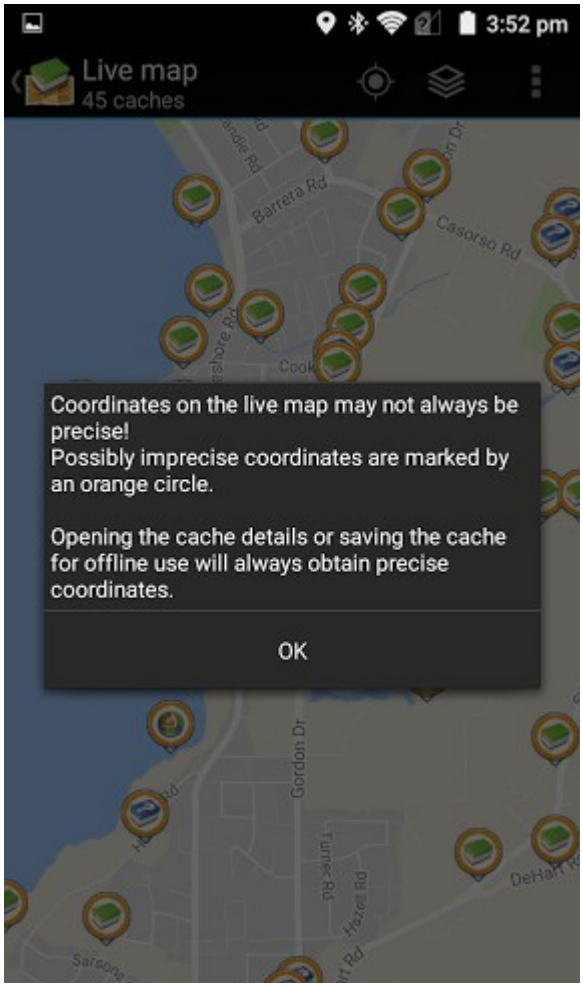

Figure 5

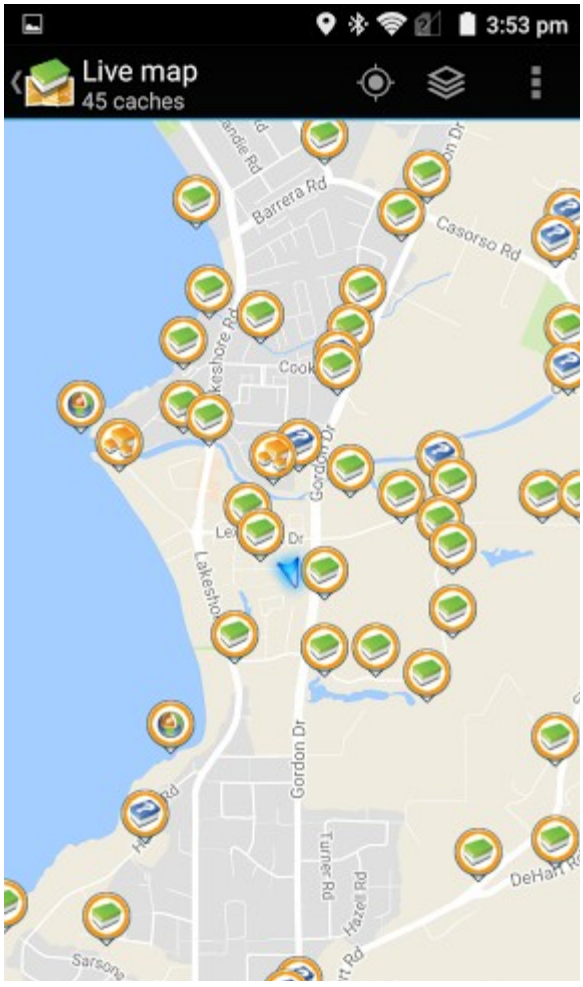

Figure 6

System's Efficiency

The icons, text and buttons are intuitive in what they do, open or present. They are consistent throughout the app. A user can easily save geocache data for offline use, claim that they found a geocache, claim that they found a 'Travel Bug' or 'Geocoin' and where they put it and many other tasks.

Memorability

The main and most commonly done tasks are all simple and self-explanatory. After a user takes a break for sometime and comes back to using the app, it still has whichever geocache data the user saved for offline and the user is already logged in, so on the main page it already shows their account name and status.

Errors

There are a few possible issues(no standard error: Error 304...) that a user could run into. An occasional one is when claiming that the user found a certain geocache, but realizes that they claimed the wrong one on the map. The fix is very easy – the user just deletes that claim and then taps and claims the correct geocache. A rare issue is deleting some data without noticing.

Satisfaction

For geographic maps, there are several online sources a user can choose from, to use. There are also a few sites that hold optional map files, a user can choose a source and save some files for offline use (map file of certain state, province or country). Geocache began in USA, Oregon on May 3, 2000 and now, eighteen years later, there are already over three million geocaches. **'c:geo'** was the first app

to use for geocaching and has encouraged many to start geocaching. There are already over 3 million geocachers of which over 1 million use this app.

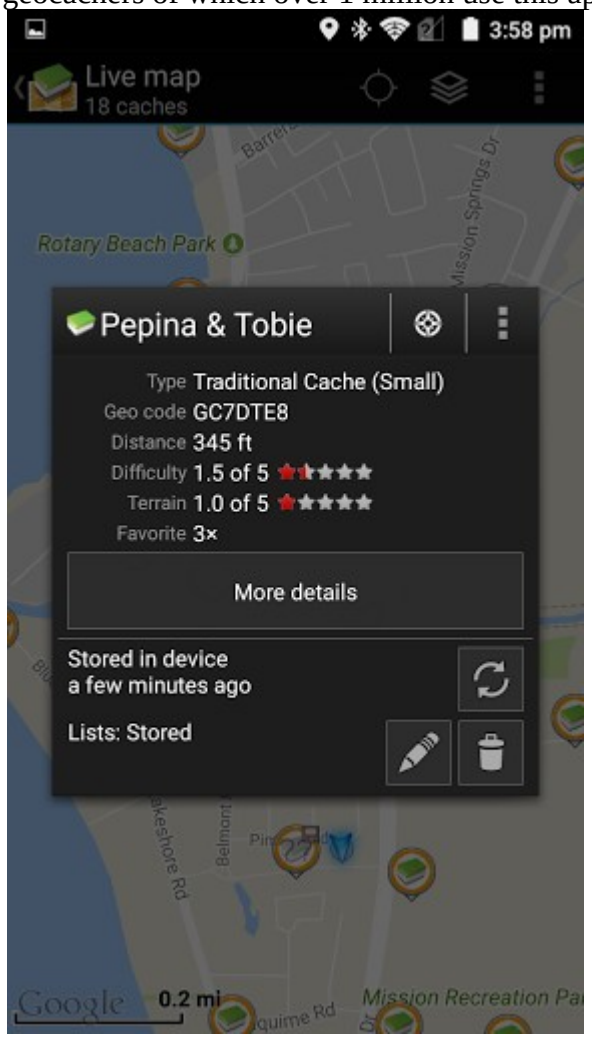

Figure 7

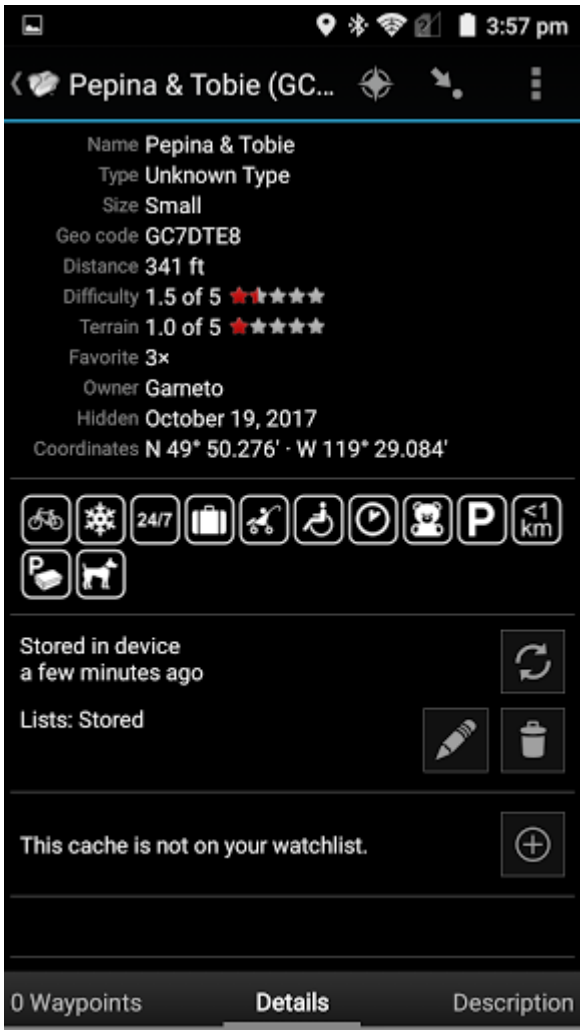

Figure 8

Summary – 10 Rules of User Interface Design

‘c:geo’ has great **visibility** and brightness meanwhile, when on a page with black background, it still has good bright white/grey text. **‘The match between the system the real world.’** The icons, thumbnails, labels are simple and recognizable and the app is already setup in over 24 languages. There is easy and good **control and freedom** in using this app. Most tasks have very few steps to do, meanwhile they also have few options: cancel, restart, reset, delete or back buttons. **‘Consistency and standards’,** Most icons have their own single use or meaning. Only the list icon serves different lists on different pages. There is strong **error prevention**, no standard errors, but there are a few occasional possible issues. **‘Recognition rather than recall’**, users don’t need to remember really any info or data, they can save lots for offline and use that instead. There is great **flexibility and efficiency**, many map choices and the app has its own appearance control page for changing the measure unit, brightness and other parts. It has an impressive **aesthetic and minimalist design**, simple icons, labels, buttons, and et cetera. Even as a junior member, there is no ads in the app, meanwhile the other app for geocaching has ads taking up some screen space. This app, **‘c:geo’** is better than that second app **‘Geocaching’**. The app can **help users recognize, and recover from issues** and it has no standard **errors**. The app has many simple, recognizable buttons for when a user wants to cancel, go back a step

or delete during or after many tasks. There are good **documentation** pages in the app to learn about the app and for recognizing many icons.

Design Suggestions

My first suggestion is to add a pop-up for whenever a user taps to delete some offline data. The pop-up asks if they are sure and confirms that they want to delete that data. The second suggestion is to add an icon into the map's top toolbar which whenever tapped, saves the geocache data for offline use, for all geocaches that are currently shown in the screen. With that, the user could save offline data for many geocaches more quickly.

Rule of Thumb	Is this rule being applied? How so?	Is this rule violated? How so?	How can this rule further improve usability, utility and desirability?
1. Visibility of system status	Bright Text, Map, Icons Shows user's status, and each geocache's status	No	
2. Match between system and real world	Already in 24+ languages. Leads users to great places.	No	
3. User control and freedom	Any can make or find geocache quite easily.	No	
4. Consistency and standards	Icons, thumbnails are simple or labelled.	No	Suggestion(above) for adding a new certain icon
5. Error prevention	No standard error	2 issue suggestions	Suggestions are above
6. Recognition rather than recall	Can save lot of data, source shows what users' found.	No	
7. Flexibility and efficiency of use	Many appearance options, easy icon navigation.	No	
8. Aesthetic and minimalist design	Rarely used pages are hidden in pop-up list icons.	No	
9. Help users recognize, diagnose and recover from errors	Accessible pages to learn about geocache, icons guide page, no standard errors and more.	No	
10. Help and documentation		No	

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Note: I personally have vast experience with this app. I found 360 Geocaches in six years, 352 in BC and 8 in Alberta using this app.

Sites about geocaching:
Geocaching Site, Geocache Map, Geocaching Wikipedia