




PSU Locator

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Portland State Summer 2017
CS461P Open Source Software Development



Overview

- Project idea: : Develop a mobile application that will help a user navigate through a large campus, in this case Portland State University
- Github: <https://github.com/vunhi/CS461P>
- Intended users: PSU students, faculty members, and guests
- License: MIT License
- Contact info to learn more about the project or report bugs: vunhi@pdx.edu

About PSU Locator

- Based off of my work for a Capstone project
- Dynamic enough to apply to any campus
- 3 major features: interactive campus map, search functionality, favorites section
- Provides multiple ways for a user to navigate to a particular room floor plan
- Easier than having to navigate to a PSU campus map online or looking at an actual physical map
- Allows users to store frequent locations like a classroom - users don't have to search a classroom up on Banweb

How does the app work?

- PSU Locator demo:
<https://appetize.io/app/xcrg55th46amgv69kufwtfrgc4?device=nexus5&scale=75&orientation=portrait&osVersion=7.0>



Design Changes During Development

- Originally wanted to include GPS in the app to allow the user to have a path to the room
 - Complexity beyond my scope and limitations with using GPS indoors
- Changed to a room locator concept instead
- Highlighted rooms changed to static location marker
 - Vector drawing beyond my scope - unable to achieve that with time limitations
 - Originally used multiple drawables to have each room highlighted = too many drawables
 - Settled on using a static image marker instead
 - Multiple drawables = one xml layout file
 - Less drawables = multiple xml layout files

Struggles

- First time doing mobile dev
 - Getting used to Android studio and xml files
 - Learned how to work with XML layouts and navigating through Android activity pages and working with Android widgets
 - Limitations in Android studio: certain desired features not included for specific API levels or in general
- Problems with XML layouts and screen resolutions
- Collaborating with other programmers
 - Merge conflicts on Github
 - Difference in opinions and implementation styles
- Lack of time spent designing/planning lead to inefficient process
 - Inefficient, “ugly” initial coding that was later optimized - should spend more time designing and planning first. Example: Building + Room names started out as one large string which was meticulously parsed, was optimized to Object classes with different fields

Improving the Project

- Adding more data to the project (buildings, floors, rooms)
- Improving specific limitations
 - Rooms are only identified with one specific format (CH 101), must find a way where they can be identified with other formats as well (Cramer 101)
- Making app work for all screen size resolutions
 - Currently only works for a specific size screen (the one I was testing on)
- Simplify process of adding buildings, floors, and rooms
 - Currently to add new floor layouts you must add a new xml layout for that floor and manually add in the marker locations - each floor uses a different layout. Want to try to find a simple way where you use only one layout so you don't clutter up the project code
- Improve and Simplify code overall
 - Reduce code redundancy that I didn't have time to clean up
- Add more features/Modify current ones
 - Customizing favorite locations with own user entered string
 - Allowing user to search by Building Floor (and not just Building and Room name only)
 - Test floor numbers < 0 or > 10
- Create a version for iPhones or a web app

Questions???
