Kevin Ehresman
Assignment 2 - Project Proposal and Specifications

VM: http://csc415-server29.hpc.tcnj.edu/
Password: Starwarsclone55

Project Name: MyHometown
Github repository URL: https://github.com/ehresmk/MyHometown

In my hometown, the town uses the alert system Nixel to send alerts about police activity as well as Recreation department news which I believe is a misuse of the system. However, it came to my attention that not every town has such an application. For example, New Brunswick uses a text alert system similar to what TCNJ uses, however this may not be an option for some people. Perhaps they can't afford a texting plan or they don't have a plan that covers SMS texting making it a problem for some people to use. My idea is to simply the whole process with a free to download app that any town or city can use.
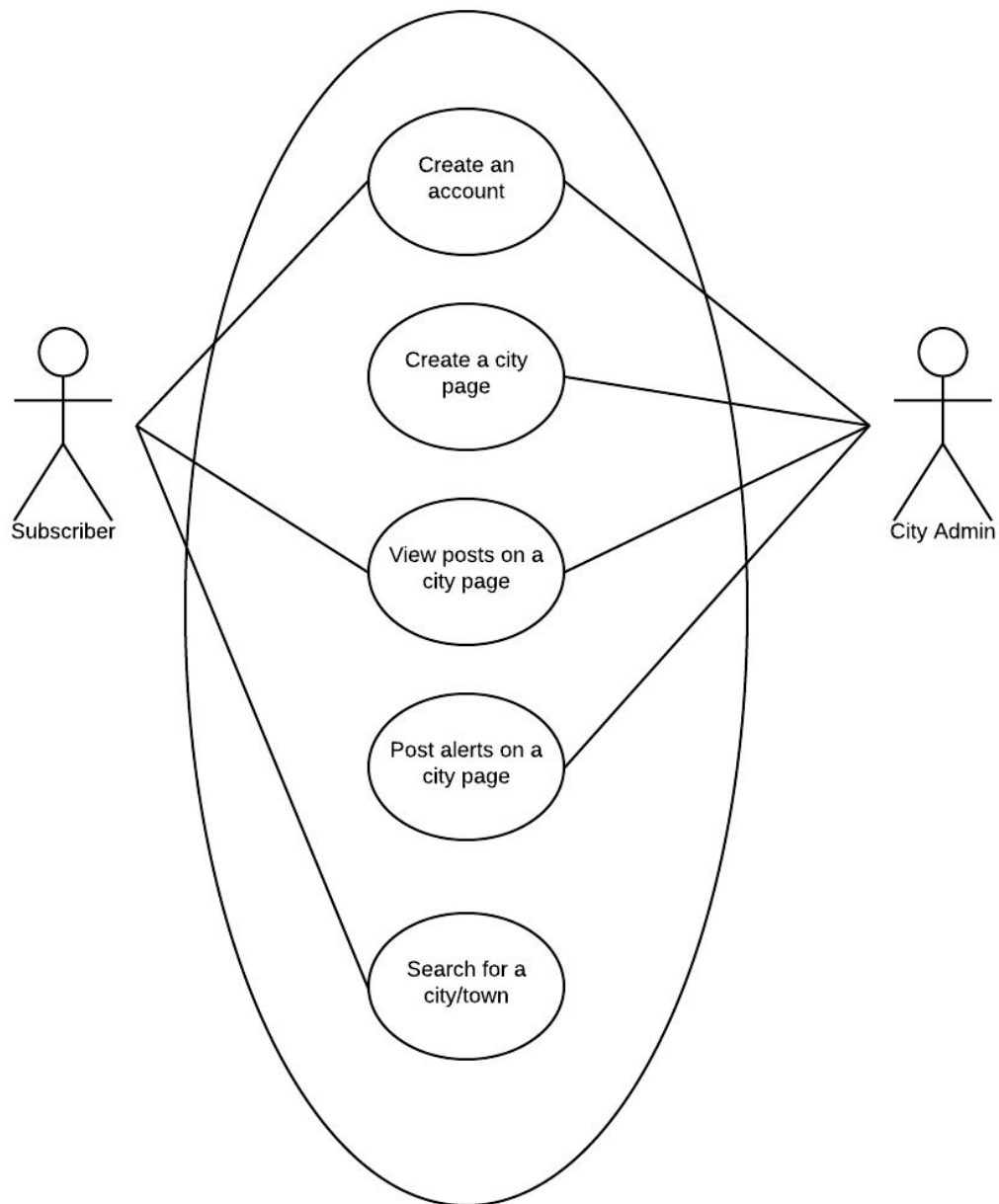
I chose Option 2 specifically because I wanted to try and solve a problem that directly affected myself or someone I knew. I felt that if I had a personal connection to the problem that I would be both more motivated and more determined to try and solve the problem because I truly believe it is something that needs to be fixed.

I am going to implement this project with a mobile application. I plan to do so using Android Studio with Kotlin. In one descriptive sentence my project idea is as follows: MyHometown will provide cities and towns with a simple and efficient way to keep citizens safe with alerts sent right to their smartphones.

My application is going to simplify and consolidate how cities and towns can send alerts to their citizens. The idea is that each city/town can create a verified page and citizens can create an account and subscribe to their hometown to receive alerts about police and fire department activity. Not only will this be a free way for citizens to stay informed and safe, but it allows all cities and towns to use a single app, and not have different systems from town to town. This way, if someone travels around the state a lot, they could subscribe to multiple towns to receive alerts.

My main goal is to get a single city page functional, meaning that subscribers can subscribe to the page and the users will get notifications when alerts are pushed to that page. If time permits there is some secondary functionality I would like to implement. First will be multiple city pages, to accomplish this I would use a database to store all of the city pages. The second functionality I would like to accomplish (if time permits) would be a city page search function which would allow subscribers to search the list of cities to see if their city has a page.

Below is a UML Use-Case diagram for MyHometown.

Below is a rough timeline of my design and development process:
(Note: This timeline is not set in stone and is subject to change)

2/24/20 - 3/9/20: During the first two weeks I will review Kotlin and download Android Studio and work on familiarizing myself with the language and simulator. Kotlin is very similar to Java so I predict that I will begin working on the basic UI designs before the end of this two week period.

Resources:
https://kotlinlang.org/docs/tutorials/
https://developer.android.com/training/basics/firstapp

https://developer.android.com/courses

3/9/20 - 3/23/20: The UI of the application will be developed during this stage, and the login functionality should hopefully be completed by the end of this phase.

3/23/20 - 4/6/20: In this stage the main functionality of admins creating city pages will be implemented. The functionality of subscribers being able to subscribe to a page and receiving notifications from said page will start to be implemented but possibly not finished in this stage.

4/6/20 - 4/20/20: The main functionality of the app will be completed in this stage. A subscriber will be able to receive notifications from a single city page. From there I will move on to getting multiple city pages functioning using a database. If time permits I will also implement a city search function available to the subscriber.

Software Engineering concepts I expect to reinforce during the duration of this project are a programmer's code of ethics, the process of prototyping, and writing modular and adaptive code. My application will need to be secure, if time permits I will try to implement an admin verification system, that will only allow verified admins (verified city officials) to be able to create city pages. I will need to utilize multiple prototypes in order to ensure the functionality of my application, and by writing modular and adaptive code I will be able to add more functionality like multiple city pages and city search functionality much more easily and efficiently.