University of Virginia

CS 4720 - Group Turnip

"UVa Safety" Documentation

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App Description

UVa Safety is an app that was inspired by students at the University of Virginia for several reasons. The first, students at the University often find themselves returning home from the library or social activities well into the night hours when visibility of the surroundings is suboptimal. Secondly, the local citizens of Charlottesville occasionally have uncivil encounters with students, which UVa Safety attempts to minimize as much as possible. The point of the app is to provide and promote safety around UVa Grounds. To do so, we have three services that students can use. The first helps students find relevant police reports on anything suspicious around the area. The second allows students to be able to find the nearest Blue Emergency Post if need be. Finally, the third provides students with information on where the safest location to study is, perhaps if they are trying to go out to study late at night.

Our Web Services

Find Police Report

This is a report query that allows the user to search and find police reports that have been stored in our database. In our real world application the police will have access to our web service, and be permitted to publish official police reports directly to the UVa Safety database. The user, who would in theory be a student, would be able to search for a keyword related to his/her concern or location, and it would be checked against any reports that match the keyword in the report title. This would allow students to be able to know the most recent occurrences regarding the safety concern that they may have before walking towards their destination outside in the dark.

Input: keyword to search in the title of police reports; examples: “murder” or “bomb”

Output: published police reports that match the input keyword in all or part of the title

Find Emergency Post

This service allows students to search for nearby Blue Emergency Posts. The student can search for a location or street name that checks for matches with the locations of the Emergency Posts that we received from the police department. If there is a match, the result will let the student know where the closest Emergency Blue Post is in case of a safety concern.

Input: keyword to search for location of Blue Emergency Post; examples: “lambeth” or “spanish” (does not take inputs of more than one word)

Output: location and relevant information about Blue Emergency Posts where all or part of the location name matches with the input keyword

Find Students

This service allows students to search for departments and finds where the most students are working on the most similar work. This helps students determine where the best location on Grounds to study is so that the students can find a safe and relevant atmosphere to study.

Input: keyword to search for a department that has been added to the database; examples: “CS” or “ECON”

Output: location that matches the keyword and relevant information on the people who are also there

Link To Page Containing Final .apk File

http://plato.cs.virginia.edu/~cs4720s14turnip/final

Lessons Learned

This semester's web and mobile development project turned out to be a success. Throughout the development period, we were able to learn a great deal about Android mobile development. Going hand in hand with that, the design process was fairly interesting and taught us a lot about how a user interacts with our app, and we made sure to incorporate the purpose of our app in the design. In our case, we developed a safety app to promote safety on Grounds at UVa. Thus, we knew that users would be using our app for quick references potentially late at night, which meant that our buttons had to be large, and clearly defined by color. In terms of Android development, we learned how to use the different tools that the Android SDK provides, such as dealing with layouts, handling URL parameters that were used to query databases, working with JSON, and improving our knowledge of activities and intents. Next, the Android app consumed web services that were created by us as well. Through this phase of the project, we learned how to use the MVC framework through CakePHP, how to build a web service that others can use, and how to utilize Windows Azure.

We did run into a few issues that caused some concern, but we were able to handle them either by using outside resources, or by brainstorming as a team. Initially, after we tried to append to an existing app since it had many of the same methods, we found that it was very difficult to work with and expand on the app as we desired. So we learned that it is definitely better to start fresh on an app so that we know the entire ins and outs of the app. Next, we learned to always check the output format of the web service since we ran into problems with JSON Object versus JSON Array outputs. We figured out the difference between the two in order for our web service to work properly. Finally, we learned to be adaptable as a team, and to make sure that if one person did not understand a portion of the project, the rest of us would teach him so that we would all be on the same page. This was done through not only the tutorials and resources from class, but also from other documentation that is easy to find online. Overall, we received a very holistic understanding of the material regarding web and Android mobile development, and set up a solid foundation for further learning in these areas.