Creating an Application to Help Students Organize Workload

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Description of Project

Our project was building a scheduling/calendar mobile application called the Comp-Sci Studify App. Our target users were Computer Science students at Western, and our initial purpose was to reduce the complexity of looking for a student's schedule on Western's home-site. We thought it would be beneficial for students to be able to add their classes that would automatically be put on their personal calendar. Along with their classes on the calendar, our system would also automatically pull project and test due dates onto the calendar. The calendar also allows students to add any other type of events as well as tasks with specified priority.

Implementation Detail

The implementation process heavily involved Android Studio. Since most of us were fairly new to Android Studio, a lot of our group work was learning how to build specific features for our mobile app. First, we learned the basic functionality of Android Studio where you can drag and drop features onto your program, and after that we learned how to make those features work through the backend. The other main piece of technology used was Github, which we used for our version control software. We chose it over competitors, as it allowed distributed file sharing and seemed to be an industry standard and thus would be the most beneficial to learn.

The features that we used included buttons that associate with the navigation of our system, ListViews, Alert Dialogs, DatePicker and TimePicker fragments. We created buttons in order for the user to navigate to the home menu, calendar and also when they needed to add a task or event. The use of ListViews was to make the list of tasks and events scroll on a layout page. Alert Dialogs were used as a pop-up screen for the user to choose the dates and times from the DatePicker and TimePicker libraries for their events and/or tasks.

Plan for User Evaluation/Experiment Methodology

Using a prototype app that logs the number of buttons that are clicked before an actual task is repetitively used is our plan for methodology. This way we will know if we need to improve the cognitive design of letting the users understand the path they should take to get to their task. Users we want to focus on are students from WWU. Maybe a class of students can get extra credit if they use the app for a week. We will also know if they really used the app by the number of clicks. We will ask questions like "did you enjoy using it", "would you use it again", "what did you not like about it", "would you prefer to use the default installed calendar app on your phone", and

varying rates of what features about the app they liked the best. This would be included in the 5 why interview technique.

Challenges

Throughout this project we faced many different challenges, particularly with learning Android Studio and Github. Since some of us were working on Mac's while one of us was working on Windows, transferring projects across computers turned out to have many confusing bugs that took a good amount of time to fix. Learning how to properly use Github also provided many complications. We were all working on the same set of files, so merging changes before pushing our code often caused conflicts that took a while to resolve. Also at certain points some of the computers were running on different versions of Android Studio and/or different versions of the Android SDK which caused more issues with merging code.

As far as implementation goes, one of the bigger challenges we faced was transferring data across activities, and between fragments. There are certain ways that Android wants things like that to be done, which were confusing to all of us. In the end we had to use some global variables, which is an implementation that can cause issues if done properly. However since our application is mostly single threaded, we figured it should not cause us any problems for now.

Limitations

There were many limitations involved with our implementation of the calendar application. One of the limitations is that there are only a certain selection of classes available for the user to select to add to their calendar. Because the data for the classes from the University hasn't been added to a database yet, it is difficult to gather all the class data for a particular discipline without having unsatisfactory runtimes. If the class data (including credit hours, weekly class meetings, professor name, etc) is all stored in a database, it makes it easy to update the calendar in a quick manner.

Another limitation of the calendar application is that it is not connected to Web4u. It is a program used by the University to keep track of a student's class schedule and credit hours as well as sign up for courses. If the application was connected to this service, users could have their class schedule downloaded in the calendar after logging in. Another benefit of having Web4u integrated with the application is that users can sign up for their classes directly from the system we created. They can select the upcoming quarter and then choose the subjects and corresponding courses they are planning to take.

Areas of Improvement:

There are several ways we would really hope to improve this application as time goes on. The first thing we would want to do, is actually add a way for Universities to synchronize with our app, so we can pull data regarding the different classes at that

school. The data for classes from the University can be kept in a database that is updated quarterly so that it is easy to access everything and update the calendar. This is the key thing that would separate us from other competitors so being able to do this would be crucial to the success of our application. The next thing we would like to do is add a way for people to pull their events from other scheduling applications, as well as potentially Facebook. The easier we make it for people to make the switch over to our application without having to spend time filling out their schedule, the more likely potential users are to actually try out our app.

The last area of improvement is one suggested by one of the judges who saw our poster presentation and gave very valuable feedback. Once we have it set up so people can upload their classes, it would be cool to add a recommended priority feature. An example of this would be if fifteen people in the same course as you add a project to their calendars your application would see this and recommend you do the same. This way users can easily upload priorities that they would have elsewise forgotten.