

Mobile Student Lookup

Milestone 1 Hand-In Document

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Executive Summary

We are producing a mobile application for iPhone and iPod Touch (iOS) for the clients Tim Ekl and Eric Stokes. The features of this application will include, but not be limited to: searching for a student's schedule by username, searching by classroom, searching by separate terms, overlaying schedules (comparing more than one schedule), and syncing with the Calendar app on the iPhone. The user needs this application to be easy to use, easy to navigate, and easy to read. Having an application on the iPhone will drastically improve the process of looking up schedules on the iPhone. In the future, we may extend this project to iPad, or even Android platforms.

Introduction

Currently to view their schedule on the iPhone or iPod Touch, students have to manually navigate through the Safari mobile web browser to the Rose-Hulman website, and then to the registrar's office, logging in with their Kerberos password several times before they can access their schedule. We want to simplify this experience for mobile devices, and make it easier and quicker for students to access this data. We will be designing a mobile application on iOS for iPhone, which will allow students to access all available schedule data from the registrar's office website. The application will be capable of storing the password, so students will not have to type it in more than once. Students should be able to easily look up their own schedules, easily find a classmate's schedule, and view all of the members of their classes.

A More Detailed Look

Client Background

We have two clients for Mobile Student lookup, Erik Stokes and Tim Ekl. Both are former undergraduate students at Rose-Hulman. Tim Ekl is currently a graduate student at Rose-Hulman for Engineering Management, he spends a lot of his time managing his proposed projects in the CS Labs. Erik Stokes works for a software development company based out of Colorado. Both of the clients have very good technical skills and vast knowledge about what kind of systems and software the proposed software would use. The clients will maintain and update the system at the conclusion of the junior project series. (Ekl & Stokes, 2011)

Current System

In order for students today to check their class schedules on their mobile phones, they have to go to the Schedule Lookup page on Banner Web, in the same manner as they would on a computer. First, they would have to log in using their usernames and Kerberos passwords. Once they reach the main page, there are three search boxes they could use: search by a student's ID number or username, by room number, or by course ID. They can search for this information from different school years and terms as well. Also on the main page, the users can select the layout of their search query. By default, the schedule has a table listing class information - class ID number, name, instructor, credits, students enrolled, term schedule, and time of class final – and another table showing the times, class periods, and

days the classes meet. Additional layouts include the class information table and finals table, the class information table only, and a course matrix. The course matrix allows students to type in various class IDs and several valid schedule possibilities are generated based on the information provided. Lastly, under the search functions are instructions regarding how to use search functions, information about registration process, and various dates pertaining to registration.

When a user has searched by his username, his schedule is shown, in the layout that he had indicated in the previous page. Several items are hyperlinks, meaning they lead to a new page when clicked. These hyperlinks are the instructor names and course IDs. Selecting the instructor pulls up the instructor's schedule. Selecting the course ID goes to a new page, which lists all the students enrolled in that class. The columns of the table include the person's username, full name, campus mailbox number, declared major, class, advisor, and email address. Clicking on the username pulls up the respective person's schedule. The advisor's name can be selected as well to display his or her schedule.

Searching by a room number returns a result similar to the class information table and class times table for a student, but instead, it displays all classes that meet in that specific room. Inputting an asterisk in the search query displays the list of all classes, and the times they all meet.

The third search method, searching by course ID, allows the user to type in the course ID, and all sections of that class will be returned, as well as the times and places those classes meet.

The interface is easily navigable on a computer. However, on a mobile device that has a smaller screen, the website is extremely difficult to manage. The tables are too small to read without zooming in. Additionally, the hyperlinks are too small and close together, so the user's fingers can't accurately select the links; either the wrong one would be selected, or no link will be selected.

Alternatives and Competition

There are hardly any alternatives available to mobile phone users in terms of browsing a student's schedule. Currently, there is no application available on the App Store that provides a schedule lookup for Rose-Hulman students. The only way a student can look up the schedule is through the mobile browser. Possible competition for this project would be other students who designed their own product similar to this one.

User Profile

Students would most likely be concerned with the speed and ease of accessing their own schedule, as they would be mainly using the app to find where their next class is while they're on their way to classes. They would probably be fairly comfortable using the iPhone and its apps.

Professors would use the program mostly to look at rosters for their classes. They would probably be concerned with the information being formatted in an easy-to-read way. They may or may not be comfortable with the iPhone.

Advisors would use the program to check on the classes of their advisees. They would probably be concerned with finding pages of students easily. They would be as comfortable with the iPhone as other professors.

User Needs

Streamlined Process

Right now, the process to look up anything on the schedule look up page is difficult. It includes logging in each time, as well as navigating pages never meant for iPhone use. The new system would store login information, eliminating that part of the procedure. There would also be faster and easier ways to search and view your personal schedule, which would make looking up information much faster.

Easier to navigate

The system now has computer-friendly links that are hard to press on the iPhone. The new system will have large easy-to-press buttons that will make navigating between pages easier.

Intuitive

The system now is fairly intuitive, and the new system should keep that, through all the aesthetic changes in how the information is presented.

Easier to read

The current system is in small print, which is reasonably easy to read on a computer, but difficult on an iPhone without zooming in. The new system would have larger writing, organized in such a way that you can still easily access all relevant information.

Product Perspective

The student schedule system we are building would be a mobile native application, but the current system in place is a web based system. However, the underlying databases of the current system are not available to our application. In order to access the necessary information, we will have to access the web based version of the site and parse the information accordingly. Once we have that information, we will have a UI that displays it appropriately for the mobile format. We want to really simplify the UI and make it intuitive. We intend to have only one search bar for user names. The current system will not be affected from the mobile application, since we are only scraping data from it, and they will have no interaction beyond the occasional data access. The mobile application will heavily rely on the web app, but the web app does not care that the mobile app exists.

Feature Listing

Below is a listing of the proposed features for the mobile student lookup app. The priorities have been assigned based on input from the client, while effort, risk, and stability have been estimated from previous experience developing apps for the iOS platform.

- Users will be able to view schedule information for all quarters supported by schedule lookup page

Status	Proposed
Priority/benefit	High
Effort	Medium
Risk	Medium
Stability	High
Target Release	Version 1.0
Assigned to	Team
Reason	Allows users to view historical or future information without needing a computer. Could be useful when seeing if a friend has already taken a class.

- Look up schedule information based on class section number.

Status	Proposed
Priority/benefit	High
Effort	Medium
Risk	Medium
Stability	High
Target Release	Version 1.0
Assigned to	Team
Reason	Useful if attempting to view how many sections are currently offered or various professors teaching a certain class

- Click on a username anywhere in the app to view the user's email, campus mailbox number, and current schedule.

Status	Proposed
Priority/benefit	High
Effort	Medium
Risk	Medium
Stability	High
Target Release	Version 1.0
Assigned to	Team
Reason	Often when looking up the schedule of others, the user intends to contact that user in some fashion.

- Open a new email in the native email client addressed to another student or faculty when clicking on any email address in the app.

Status	Proposed
Priority/benefit	High
Effort	Medium
Risk	Low
Stability	High

Target Release	Version 1.0
Assigned to	Team
Reason	The ability to quickly compose an email to a student or faculty member from within the app would streamline even communication with others

- Lookup a schedule based on room number.

Status	Proposed
Priority/benefit	Low
Effort	Medium
Risk	Low
Stability	High
Target Release	Version 1.0
Assigned to	Team
Reason	Students and teachers alike often wonder whether a certain room has class during a specific period to determine whether or not that room would be a useful meeting location.

- Sync current schedule with calendar app simplistically.

Status	Proposed
Priority/benefit	Low
Effort	High
Risk	High
Stability	Medium
Target Release	Version 1.0
Assigned to	Team
Reason	This would provide a simple way to get schedule information into a user's calendar which will sync automatically to any backend calendar already used on the device.

- Provide a layover of various schedules to help determine common breaks for meeting times.

Status	Proposed
Priority/benefit	Low
Effort	High
Risk	High
Stability	High
Target Release	Version 1.0
Assigned to	Team
Reason	This functionality is not present in the current schedule lookup page, but it is frequently the goal of users looking up schedules to identify common breaks for meetings.

- Access a list of favorite users to quickly get up-to-date information on commonly viewed schedules.

Status	Proposed
Priority/benefit	Low
Effort	Low
Risk	Low
Stability	High
Target Release	Version 1.0
Assigned to	Team
Reason	The majority of users don't access a wide variety of schedules on a regular basis, but want to visit a few schedules quickly and frequently.

- Send any schedule information to another person via email.

Status	Proposed
Priority/benefit	Low
Effort	High
Risk	High
Stability	Medium
Target Release	Version 1.0
Assigned to	Team
Reason	The intention of the user may be to look up a specific schedule in order to share it with group members or other interested parties. This would simplify that process.

Constraints

Several constraints on the project were discovered through conversations with the client. They are listed below.

- The mobile application developed will be an iOS native app on iPhone and iPod Touch devices.
- The development will be done using the latest version of xCode and targeting the latest released version of iOS.
- The app will follow all of the constraints discussed in Apple's Human Interface Guidelines.
- The language used in the development of this app will be Objective-C

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Glossary

iOS	The mobile operating system developed by Apple that runs on iPhone, iPod Touch, and iPad devices
Rose-Hulman	The number one undergraduate engineering school in the nation, and the school at which the schedule lookup app will be used

Bibliography

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