Saint Marys Mobile Application Design Brief
SMMAPPS

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Purpose

To provide a platform which can easily be extended beyond its current functionality without changes to the main user interface or code base. As a proof of concept we will be implementing our main app, along with several “mini apps” within. The set of mini apps will include a Saint Mary’s news viewing tool, an interactive campus map, a course registration and optimization tool, and a course / grade viewing tool.

Abstract

Our web application will be designed in such a manner as to make it easy to integrate additional features as plugins with minimal changes to the code base. This will be done by providing the user with a splash screen, followed by a main screen consisting of the Saint Mary’s news and a bottom bar labeled “SMU Tools”. The “SMU Tools” toolbar may be opened by sliding it up the screen, displaying to the user a dashboard of Saint Mary’s Mini Apps. Each of these Saint Mary’s Mini-Apps (SMMApps) will be represented by their own SMU themed app icon and will add functionality and selling value to our app. Our implementation will include an Interactive Campus Map SMMApp, a Course Registration and Optimization SMMApp, and a Course View SMMApp. The Interactive Campus Map SMMApp will be available to both students and non-students, while the the course related SMMApps’ will be available only to students currently logged in.

Overall we are looking to provide the user with four functional tools: a mobile feed of Saint Mary’s news, an interactive map of the the Saint Mary’s campus, a mobile view of their current courses, grades, and course schedule, and a registration tool aimed to optimize student schedules. Though these features are useful, our team feels our main selling point will be the ability to add additional functionality in a modular, plugin-like fashion.

Please Note : We have begun implementation of SMMAPPS as of February 9th, 2013 with a large portion of the front end completed. Our progress and a rough concept of the functionality can be seen here : http://cs.smu.ca/~g_wiechert/SMUMobileApp/app.html

Overview

Please note that all numbering corresponds to labelling present on the application designs in the next section. Please refer to the next section for visual reference.

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Content

1. Splash Screen

1.1 Saint Mary's Logo

The default Saint Mary's logo will be displayed upon the Splash screen. The splash screen will fade as the app loads, revealing the app underneath. This fade transition will cause the white Saint Mary's text to appear to be cut out of the background, acting as a window to the app beneath.

1.2 Background

The background color will be the Saint Mary's maroon.

2. Main View

The Main View is transitioned to directly after the splash screen by the fade out of the Splash Screen. This screen contains the app header, a Rotating News Feed, Saint Mary's Advertisement Space, and the SMU Tools. This screen is the top level of the application navigation tree.

2.1 Header

The application header is present on the main screen and persists throughout all additional views. This is done to create a sense of unification between the different views presented to the user. Each SMMApp may differ in its use of the screen drastically though framing them all with the same persistent header creates a sense of familiarity between each SMMApp. The header contains the following components :

2.1.1 SMMAPPS

In the top left corner of the header is the application title, SMMAPPS. This stands for Saint Mary's Mini Applications. This header will be in white on a maroon background and will also serve as a clickable home button, returning the user from any SMMApp to the main screen.

2.1.2 Login / Sign up Button

The Login / Sign up button will be located in the top right corner of the header. Upon click a floating sub window will open prompting the user to enter his/her login credentials. The login credentials will consist of the student s-number and password, matching there login for all other Saint Mary's services.

If a user has not previously logged into SMMAPPS they will be asked to approve SMMAPPS to use their personal and student information. This constitutes signing up for SMMAPPS. If the user does not

approve they will not be logged in.

Logging in will populate SMU Tools with additional SMMApps that can only be accessed while logged in (such as course registration, or viewing current and past grades).

The login button will be present in the header from any view. This allows the user to begin using a SMMApp that is accessible while not logged in, login, and then continue using the SMMApp uninterrupted.

2.2 Rotating News Feed

The Rotating News Feed will be pulled directly from the Saint Mary's website and presented as the center component of the SMMAPPS Main View. This prevents the need for administration to update both the Saint Mary's website and SMMAPPS news feed, and will allow administration to continue to update only the Saint Mary's website news feed. These updates will then automatically feed into SMMAPPS.

Upon clicking on the news image the app will transition to the News View where the article corresponding to the image will be presented.

2.3 SMU Advertisement Space

This space is located directly below the Rotating News Feed on the SMMAPPS main screen and extends beyond the bottom of the screen. It is intended to be used as a space to promote Saint Mary's events and societies. The space will present adds in a tiled fashion resembling the Windows 8 start interface. This is optimized for touch and will allow events to be easily pushed to students at mass, with their importance indicated by their height from the bottom of the list (thus more important events can be floated to the top).

2.4 SMU Tools

The SMU Tools are a collection of mini applications, or SMMApps, encapsulated within SMMAPPS and accessible through the SMU Tools toolbar. The SMU Tools toolbar is located only on the main screen of SMMAPPS and can be opened either by double clicking, or a dragging the toolbar up the screen. The SMU Tools toolbar components are explained in further detail in section 3.1 of the application overview.

3. Main Screen - SMU Tools Expanded

The Main Screen with the SMU Tools toolbox expanded will allow the user to view the currently

accessible SMMApps. A SMMApp is accessible depending upon whether or not the user is logged in. Once a user is logged in a role system could be implemented to give some users administrative roles with specific SMMApps available to those roles, though our proposal does not include any administrative functionality.

While SMU Tools is open the main screen will be covered by the toolbox except for the header.

3.1 **SMU Tools toolbar**

The SMU Tools toolbar provides access to the SMU Tools.

3.1.1 **Touch Indicator**

The touch indicator is present to imply to the user the ability to open the toolbox and manipulate the SMU Tools toolbar with touch interactions. The goal is always to make the applications interactions more intuitive to the user.

3.1.2 **List / Tile Switch Box**

The List / Tile Switch Box is present on the right hand side of the SMU Tools toolbar while SMU Tools is expanded. It used to switch views of the SMMApps between Tile View and List View.

3.2 **Tile View**

In tile view SMU Tools will display all SMMApps as icons formatted in two rows. The SMMApps will extend beyond the screen to the right allowing the user to scroll the inner panel of the SMU Toolbox horizontally.

3.3 **List View**

In list view the SMMApps will be displayed within the SMU Toolbox as list entries with their icon preceding their label. This will relate the name of the SMMApp to the icon displayed in tile view. The benefit of list view will be the ability for the user to sort the list on different criteria and find SMMApps more quickly.

4. **SMMApps**

SMMApps, or Saint Mary's Mini Applications, are what give SMMAPPS its usefulness. SMMApps are small, single function, applications built using HTML, CSS, and Javascript, and then wrapped up in a modular fashion.

4.1 **News View**

The News view is transitioned to either through clicking the main news image or through opening the News SMMApp. This view provides the article associated to the image formatted to fit elegantly on a mobile device while still remaining readable. This application will also be used to push important notifications to the students, such as school cancellations.

4.1.1 **News Image**

The news image will match the article being presented though will not rotate to the next image automatically as it does on the Main View.

4.1.2 **Bumper Functionality**

The bumpers present on either side of the image from the main view will still be present in the News SMMApp though there functionality will be extended. Rather than rotating the image they will rotate the image and article, iterating cyclically through the news items. The transition from one news item to the next will not match the transition from the main app to the SMMApps. This will imply to the user that they are still within the same SMMApp. An alternative to the bumpers while navigating the news items will be to swipe horizontally left or right across the screen.

4.1.3 **News Article**

The news article will be contained within a panel extending beyond the bottom of the screen and will be scrollable vertically.

4.2 **Interactive Campus Map**

The Interactive Campus Map will be one of the main features of SMMAPPS. It will be designed to serve as a tool for students to locate useful on campus resources.

4.2.1 **Map**

The main UI component of the map SMMApp will be the interactive map. This map will function in the same fashion as Google Maps though will be built on top of a free and open source vector mapping technology called OpenLayers. Students will be able to use this map to navigate campus, zoom in on a classroom to view the current class scheduled to be in the room, and find out more general information on campus buildings.

4.2.2 **Search and Locate**

The Interactive Campus Map SMMApp will also provide search functionality under the tab labelled “Locate”. This will provide students the ability to search for classrooms, or locate their current class. Students will also be able to search for resources, such as the nearest free computer lab, or printers.

4.3 **Current Grades**

The current grades SMMApp will allow students to view their transcript, schedule, and class list. This SMMApp will also allow students to register for future courses though depending upon our time constraints this feature may be broken off into its own separate SMMApp.

4.3.1 **Class List**

This element will list the students current classes vertically. Each class may then be clicked to attain a description of the class, along with the times, room number, and professor teaching it. The room number may then also be interrogated which will result in the Interactive Campus Map being opened and the room being highlighted.

4.3.2 **Schedule**

The Students current schedule will be listed across the top of the screen horizontally. Time will progress towards the right of the screen. This will provide the student fast access to their days schedule.

4.3.3 **Grades**

Student grades will of course be provided through the Current Grades SMMApp. Once clicked the student will be provided with a transcript by term ordered from most to least recent.

4.3.4 **Course Information and Registration**

A major functionality and one of the first things on our implementation path will be the ability for students to register for courses through SMMAPPS. The registration interface is currently planned to be sitting within the Current Grades SMMApp though depending on the scope of the SMMApp it may be decided to break this functionality off into its own SMMApp.

Students will be able to look up future courses, rate courses they have taken, and be suggested additional courses through the Course Information and Registration functionality of the Current Grades SMMApp. The main piece of the registration functionality will be the ability to optimize courses. Students will be able to enter their preferred times to be attending classes and their preferred classes and the registration tool will then suggest schedules to the student which may then be modified, approved, or dismissed.

Basic Interface

Splash Screen - 1

Splash Screen in Portrait iPhone 5

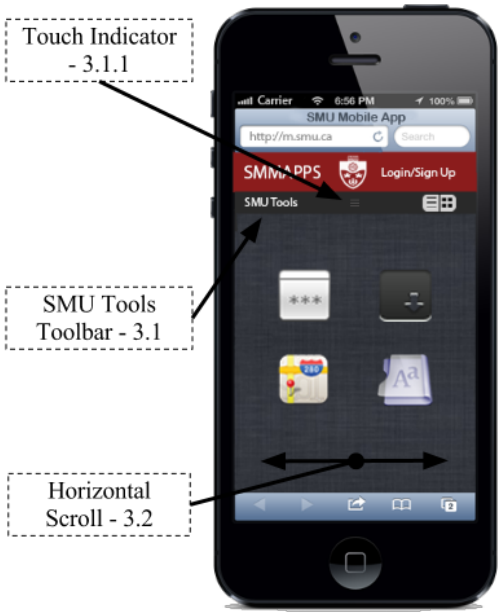
Splash Screen in Portrait Samsung Galaxy 3S

Main and News View - 2 & 4.1

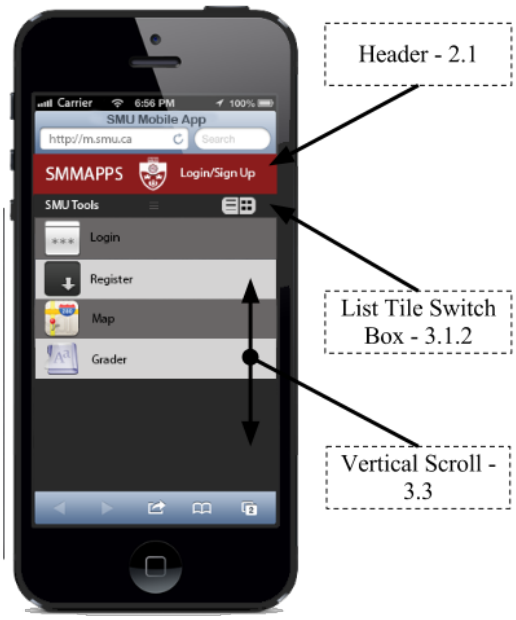
SMMAPPS Main View

SMMAPPS News View

Main View - SMU Tools Expanded - 3

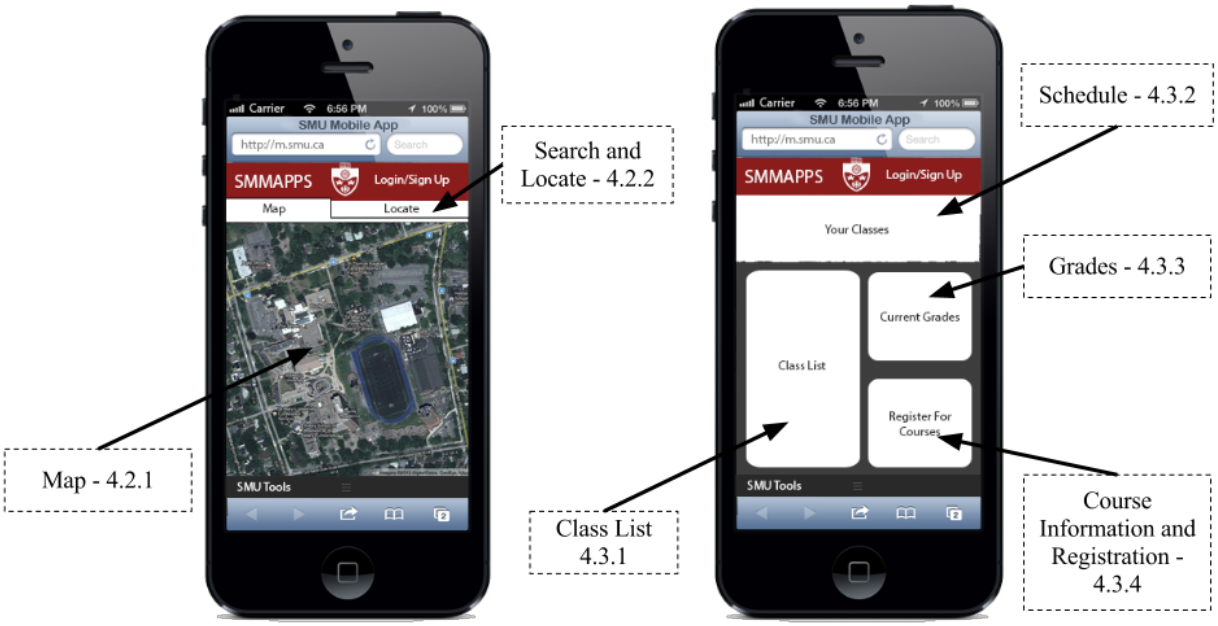


SMU Tools Expanded - Tile View



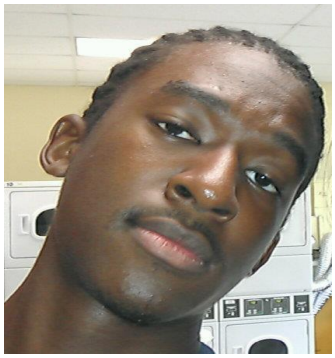
SMU Tools Expanded - List View

Map and Grades View - 4.2 & 4.3



Individual Profiles

Daniel F Lockhart



Role : Back-end Coder, Team Coordinator
Major : BSc Computer Science and Diploma in Engineering, Second Year

Mr. Lockhart can be described with a lot of words, but the best one would be "smart". A second year computer programmer experienced in writing in C++/Java as well as general programming languages such as LISP and FORTRAN, Daniel knows his way around Databases and programming languages. With a keen sense of awareness of a person's abilities and limits, he has thus been set as our Team Coordinator for his keen insights on the team's strengths and weaknesses so that the team stays of one mind.

Languages : C++, Java, Lisp, Fortran, HTML

Dawson Reid

Role : Director, Front-End Coder
Major : Computer Science, Minor in Mathematics
LinkedIn : ca.linkedin.com/pub/dawson-reid/46/b77/59b/

A computer programmer with roughly two years of work experience in the industry, Mr Reid is the most experienced team member. He is currently working as a Junior Software Developer for Select Technology Corporation where he has developed installers for desktop applications along with a client application completely composed of Windows services. Overall he is extremely experienced and motivated despite his age. Dawson will keep the team heading towards the goal , no matter what.

Languages : SQL, C, C++, Java, C#, Javascript (including usage of jQuery), HTML (including XHTML), CSS, Bash, Python (basics), PHP

Glavin Wiechert

Role : Server Side and Front-end Coder
Major : Double BSc in Computer Science and Mathematics
LinkedIn : http://www.linkedin.com/in/glavin

Mr. Wiechert could be described as a very experienced computer programmer with an unhealthy obsession on anything programming. He has worked at numerous electronic stores such as Best Buy and Future Shop while also pursuing side projects with companies such as NewStar Properties Inc. as a webmaster. Glavin is an extremely talented individual with a lot of passion, who will keep the team's spirits high and act as a support for the whole team.

Languages : AppleScript, Java, Python, Google Apps Script, C++, HTML (including XHTML, HTML5), XML, CSS (including CSS3), PHP, JavaScript (including usage of jQuery and JSON), Bash, SQL

Mark Slaunwhite

Role : Logistics, Research and Administration, Coder, Presenter
Major : Intending Marketing and Entrepreneurship with Intending Minor in Computer Science
LinkedIn : ca.linkedin.com/in/markslaunwhite

If you can talk about someone on the team who has dipped his feet into everything, it would be Mr. Slaunwhite. Vice President of Data in Enactus, Infantryman in the Canadian Forces for more than 4 years, experience in working with technology and customer service as well as running for Board Of Directors at Saint Mary's University for 2013, he is experienced and professional. Being a coder alongside having the business perspective, Mark is an essential entity for the team.

Titles : Vice President of Data in Enactus, Member of the SMUSA Board of Directors

Moontasir Abeer

Role : CSS/Styling, UI Coding
Major : Intending Major in Computer Science, Minor in Mathematics.
LinkedIn : ca.linkedin.com/pub/moontasir-abeer/64/4a8/4a9/

Even though lacking in experience and knowledge compared to his teammates, Mr. Abeer is dedicated and a hard worker. Experienced in working in a team environment, he knows what to do to get things done. Working at the Saint Mary's ITSS as a Lab Assistant, with a lot of presence in several online communities, he knows what audiences will want and knows how to dissolve volatile situations. A competent coder with a working knowledge of multiple diverse audiences, Moontasir is essential in getting feedback and raise interest in any of his endeavors.

Languages : Java, HTML, C++, LUA

Additional Ideas

1. SMUSA links, event info, volunteering positions and notifications pushed to your every week

2. Metro transit (Closest bus stand times)
   For students who live off campus and are always on the go it would be very advantageous for SMU to offer a quick reference to the metro transit bus times that are common modes of transportation for SMU students, such as the 10 or the 14 bus by Inglis.

3. Event Calendar Sync
   SMU Events, classes, exams, and more: all things students have to schedule in their busy lives. SMU Mobile could allow students to plan these in their own personal calendar, which in certain cases such as class schedules

4. Profiles (With login)

5. Settings, language settings (For ESL students)
   SMU Mobile could offer multiple languages that can be selected by users in a settings menu. The languages offered could be those of the most common dialects of students and faculty at SMU and therefore very useful and personal.

6. Smuport, CCR, SMUSA, jobs, Co-op, Bursary Applications, Career centre, event, and blackboard links

7. Class listings, difficulty, rating system
   It is very common for professors to produce a questionnaire at the end of their term, and ask for student input on the class. This could be furthered by the use of an online distribution system that could be accessed through.

8. Nearest printer and computer on map
   Many assignments are requested to be submitted with a printed typed document, while there are students without access to a printer, or do not know where to go on SMU campus that has printers available. A helpful feature would be to index these printer locations and display them on our campus map, for easy reference for students, especially those who need to print quick.

9. Contact list info per department for professors and tutors
   An easily accessible, searchable, directory of both professors and known tutors. As long as the student can sign in with their A-number and password, they will know their courses, professor names, office hours, and contact information, and if the student is still wanting more, a list of registered tutors for their respective courses can be found.

10. Connect students in the same classes together, such as for asking questions, taking notes, or studying for midterms/exams together.
    I've seen a lot of people posting in Facebook groups asking for other students in class X with prof Y at time Z etc and we will have all of their answers! This is a great idea, maybe we could implement this in everyones profile. ALSO, what would you think of adding a way to link people to facebook? Example: If I click on someones profile, I could see what classes they're in because they are a friend on facebook.

Terminology

SMMAPPS - The title of the proposed application. We are open to alternative titles.

SMMApp(s) - Refers to (a) mini application(s) encapsulated within SMMAPPS and accessible through the SMU Tools interface.

View - Conceptually the same as the term screen. A view differs from a screen when changing between them. Changing between screens causes the browser to reload while changing between views does not. Using views mimics the navigation of a native application.