Abstract:

My Mobile Closet is a mobile application where fashionistas share clothing styles, trends, and recommendations to accentuate each others' personal wardrobe. It was created to increase womens' use of technology while enjoying a product catered to their needs and desires. The application was built using flash lite, PHP, and My SQL. Both the shortcode and application components of My Mobile Closet are currently working with a list of future work in the making. With My Mobile Closet in mobile devices, women will increase their use and interest in technology.

Description:

Concept Overview:
My concept is a mobile phone application with two main components. The first is a shortcode component where users are able to send an SMS (short message service) with item number to a designated shortcode # (41411 MYMC), thereby adding said item to their mobile closet for later use. The second component is the actual programmed application where users are able to create a login and sigin to view items added to closet, create outfits from items in closet, share with friends, comment, and "raid" items from friends closets. With all components considered My Mobile Closet has become a mobile social network where girls and women can go to share the latest beauty and fashion trends.

The application is designed in Adobe Flash Lite 2.1 with backend programmed in actionscript 2, php, html, and sql.

Concept Diagram:

Shortcode:

Fig. 1.1 Shortcode diagram

Application:

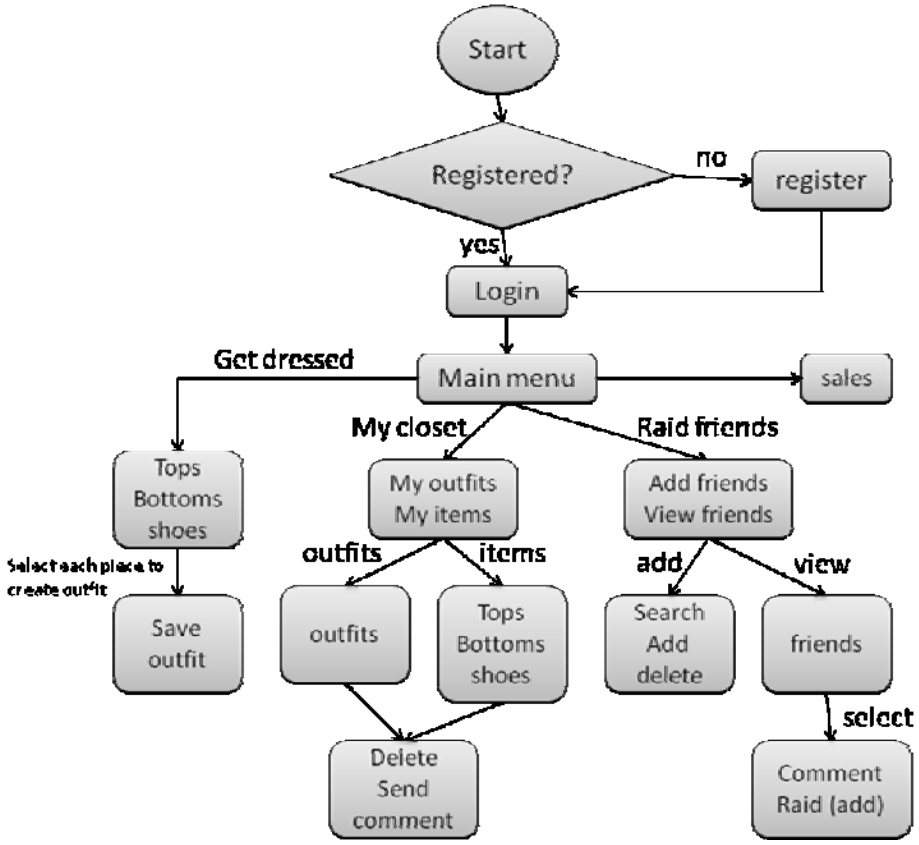

Fig. 1.2 Application flowchart

Rationale:

Women love to shop and better yet shop with friends to gain others opinions, congregate, and bond (ritual). With the advent of the cellular phone and the hyper speed that we receive information, it would be great to receive instant feedback about an outfit without physically being present. How many times have you thought…"what am I going to wear tonight?" trying to remember every article of clothing you possess in your closet? My Mobile Closet can do that and more. Ever wanted to borrow an item from a friends closet but you're unsure if it will match what you're contemplating it would look good with, or you're not exactly sure what size shoe they wear…profiles will contain all relevant information.

Many technical devices and applications are designed from/for a male perspective. Specifically mobile applications have yet to fully tap into the female arena. The few applications that cater to women's needs are things such as keeping track of ovulation/cycle or cleaning, household, chore, grocery list types of programs. Phones like the blackberry designed for the business minded or phones like the sidekick designed for the always connected always on the go teenager; the next step should be obvious when it comes to enjoyment for women.

This is also an opportunity for the multi trillion dollar fashion industry to capitalize on. Everyone has a mobile phone/device, and through my mobile closet designers have a chance to enable sales through the application. One way to increase sales is to advertise in the sale section. Another option is to include pictures of inventory items in the database for users to access through the use of SMS shortcode, thereby adding the item to said users closet for user and users' friends to view. This tremendously increases visibility of the designers' products.

Goals:

To increase women's use of technology by providing interaction with a medium most enjoy. To provide a new creative avenue for designers to reach their target audience. To create a mobile social network for women.

Audience, Location, Interaction time:

My target audience is for girls and women ages 15-30 and anyone who enjoys fashion. The location can be anywhere as long as the user has access to wifi or has an internet data plan include in their mobile service. Interaction time would be short intervals 2-8 minutes at a time.

Core Features and Functionality:

- Shortcode to add items viewed in magazines, newspapers, billboards
- Create outfits from your closet or friends closets
- View current sales
- Comment on items and outfits
- Add friends
- User Profiles that include clothing sizes

Backend: The backend is used for user profiles, storing clothing images, and interacting with the shortcode system. It is made up of server-side scripts and a My SQL database. This is the heart of the application; every action that the user enacts on the screen must flow through the backend before results are sent back to the user.

Application: The application is run on the users' mobile device through the flash lite 2.1 software. This is the graphical user interface (GUI) that allows the user to view items in their closet and access other features as described above.

Shortcode: The shortcode system is a special telephone number used to address a SMS message to add a certain item to a users' closet. In my project the number used is from the Textmarks Mobile Application Services Platform. When the user is ready to add an item to their closet from viewing a magazine or another source of advertisements they sent a new SMS to 41411 and include in the message MYMC "item number". The text message is sent to the textmarks proxy server which sends an html request to my backend to add an item to the users' closet.

Describe relevant background and working method information:

When developing a mobile application one must consider the programming aspects of the project. You have to create a series of server-side scripts that will interact with the web and return results to the application. I have decided to use the PHP scripting language for My Mobile Closet. To keep track of my many PHP files I created a folder called backend to contain all files in the same location on my hard drive.

Since this application is dependent on a server to get and send data, I have utilized the ITP server to house my PHP scripts and other files as needed. I used the POST method in the scripts because of security reasons (using the GET method often logs files on the server because that data is part of a URL), and because I am using images as the main context of this project, with POST I am able to send larger amounts of data to and from the server.

All data, from user information to images of items are stored in a My SQL database. Many pages in the application are populated from PHP calls to the database. For example when the user creates an outfit from clothing in their closet, the items in their closet and the newly created outfit are drawn from and saved to the database. Creating the structure for the database was a huge part of the project because every aspect of the application interacts with the stored data.

Another part of this application is the sale section where users are able to view the latest sales in stores. In order to populate the data in this section I used a XML file. Flash lite parses the XML structure to populate the store name, sale information, and what dates the sale will be on.

There are six sections the user interacts with in My Mobile Closet, and one outside of the application.

1. Register: Creates a unique user ID and updates database.
2. Login: Retrieves user ID to populate closet and friends.
3. Get Dressed: Populate closet and create new database entries.
4. My Closet: Populate closet, create new database entry, delete database entry, and create email messages to send to friends.
5. Raid Friends: Populate friends list and create new database entries.
6. Sale: Populate list with XML data.
7. Shortcode: Populate closet.

Registration:

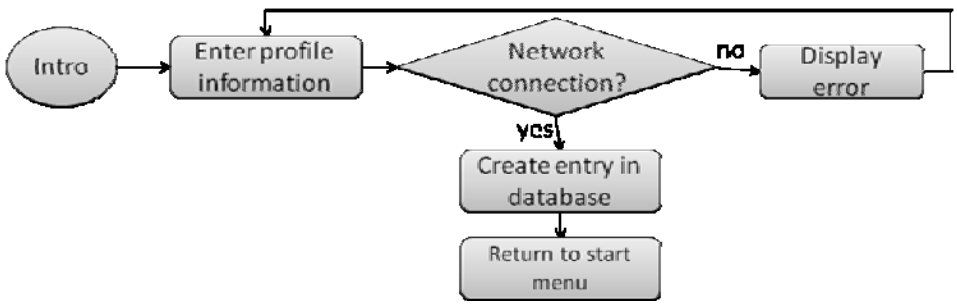

Fig. 2.1 Registration flowchart

The above flowchart (Fig. 2.1) displays how the registration process is executed in My Mobile Closet. When the user enters data into the registration page (Fig. 3.1), flash sends the users data to the register.php file. The PHP file sends the data using an INSERT statement to the SQL database to create a new record.

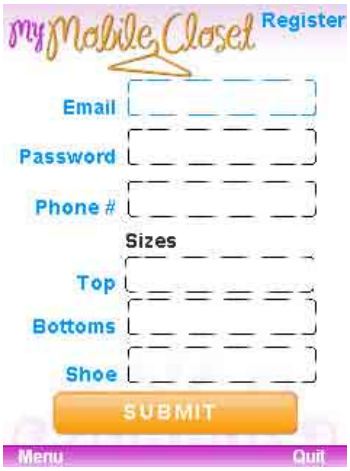

Fig. 3.1 Registration screen

Fig. 3.2 Network error

If the user does not have a network connection the flash file will display an error message (Fig 3.2). Similarly, if the user does not enter an email, password, and phone number the flash file will display an error message indicating an unsuccessful registration (Fig. 3.3). After a successful registration the user will then be directed to the main menu to login.

Fig. 3.3 Unsuccessful registration

Login:

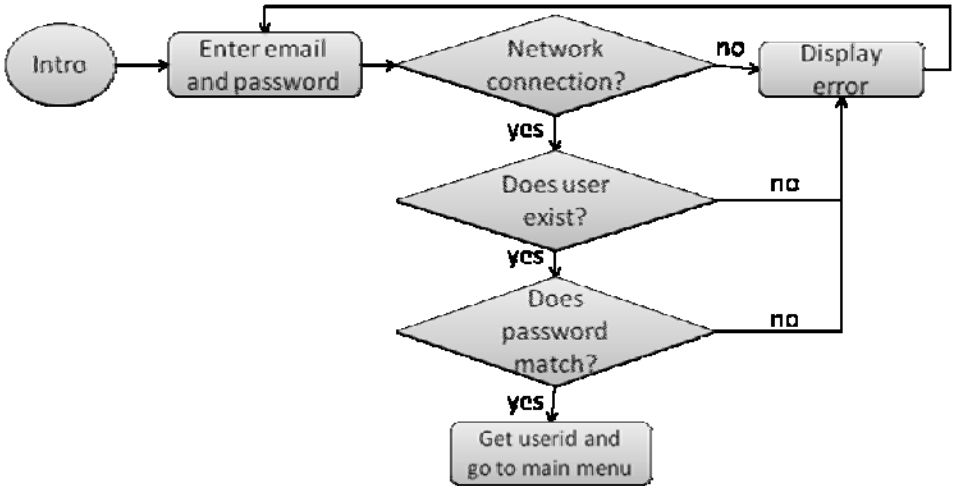

Fig. 2.2 Login flowchart

Fig 2.2 displays the login process. When the user enters their email and password into flash (Fig. 3.4), login.php checks to see whether the email and password match those that are in the database. If the email and password do not match any records in the database an error is sent to flash and the corresponding page (Fig. 3.5) is displayed to the user. When both email and password match a record in the database the user is taken to the logged in menu of the application.

Once logged in the user has the ability to interact with four separate menu items. The first is "Get Dressed". This section leads the user to another menu where they are able to select a top, bottom, and shoe to create and outfit and save said outfit to their closet. Flash sends the already saved user ID from login to Inventory.php to retrieve items in the users' closet (Fig. 3.6). Once the user selects items, they can view them together by clicking outfits (Fig. 3.7). Last step is to use saveoutfit.php to add each item to a group, to be retrieved later for viewing in the users' closet.

Fig. 3.4 Login screen

Fig. 3.5 Login error

The second menu item is "My Closet". This section is where the user can view all items, comment, send to friends, and delete. View items simply draws from inventory.php all items in the database the user has added to their closet. In order to add comments to a specific item, the item name was stored in a variable and then linked to the comment in the database. To retrieve comments from the database the stored image name is submitted to get_comments.php which then searches the comments table for all comments linked to said image name. When the user chooses to send an item to a friend they enter the email address of the friend and a personalized message. Delete is a simple action driven by submitting the image name into the delete.php script, thereby deleting the item from the database.

Fig. 3.6 Add item screen

Fig. 3.7 View/Save outfit screen

The next menu item is "raid friends". Once the user clicks raid friends they are shown a list of their current friends (Fig. 3.8). This is done by matching the current user id with entries in the friends table and sending all user information back to flash. If a user wants to add a friend (Fig. 3.9) to their list they are able to search friends. Searchfriend.php searches records in the user table to find a match for the email the user decided to

search for. Once a friend is found the user is then able to add said friend based on friend id to the friend table. Lastly to raid friends' closets, better known as adding items from friends closets to your own, the user must first select a friend. Once a friend is selected a page with their profile is displayed and items in their closet (Fig. 3.10). A users' profile consists of their clothing sizes (top, bottom, shoe) and name. The user can scan through the friends' items and add items they like to their own closet.

Fig. 3.9 Search/Add friend

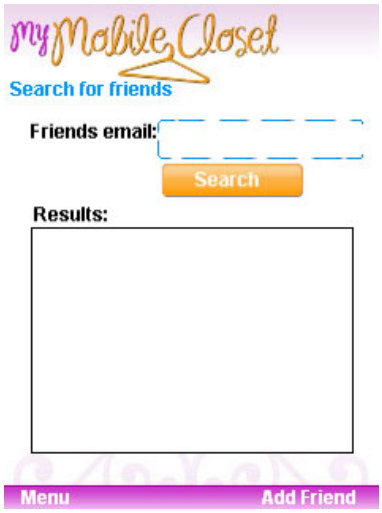

Fig. 3.8 Friend List

Fig. 3.10 Friends closet

The final main menu item is the sales button. This is the only section that uses the XML format to populate the flash application. When the sale section is selected the user is brought to a page that displays store name, sale, and dates of the sale (Fig. 3.12). The XML file is stored on the server as salelist.xml and can be updated accordingly.

Fig. 3.12 Sale screen

The last part of my project is the shortcode section. When a user sends a SMS to 41411 MYMC with an item number in the message body that they have seen from an advertisement, the message is sent to the textmarks server. I setup my textmarks server

to hit mymc.php script to respond to the users request. The php script first checks to see if the user is registered for My Mobile Closet, if the user is a member a message is sent back to the user indicting the item was added to their closet, otherwise the user is instructed to register for an account. Additionally, if the item number is not found in the database an error message is sent to the user indicating so. Adding items based on advertisements is solely based on designers agreeing to add an inventory of items to the My Mobile Closet database.

Summary/Conclusion:

After working diligently for the past three months My Mobile Closet has evolved from concept to reality. In my original proposal I stated I would "construct a mobile application where women will share recommendations, information, and communication to accentuate and aid shopping roles." I feel as though with the state my project is in now, I have accomplished the main two components of my thesis: Shortcode and flash lite application.

After finally learning and understanding php I found that error checking is extremely important especially when programming across multiple platforms. Also having a good naming convention for files is a good practice so you can remember the function of the file. When programming in any language an application that has many screens can often become a jumbled mess, therefore I learned to keep it simple and clean. The initial wireframes of the application are fairly different from the final project, which is fine, but it was great to see the previous sketches to be able to create modifications along the lines of the original concept. I've also learned that with mobile applications, specifically those requiring a network connection, should always be tested on a device multiple times during production simply because the emulator isn't exactly true to the actual device or the providers network. It helps in that you will alleviate many problems such as usability issues and problems of latency etcetera.

Future work on My Mobile Closet will include additional features and functionality. I would like to add the ability to delete friends, a more versatile gallery to view items in the closet, uploading and resizing users' pictures of their own clothing to their closet, recommending the application to a friend, purchasing clothes right from the application; the possibilities are endless. From a technical standpoint I would add a flash media server to increase the speed of image downloads instead of the progressive download approach. Also adding encryption to data send to and from the server to further protect user login.

Overall I think my progress over the semester was great and I definitely learned a lot. I hope to continue working on My Mobile Closet during the summer while conducting some extensive user testing. Please find a list of flash lite compatible devices on the following page.