

# **Remind Me**

## Project Part 2

Team 2

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## 1.0 Abstract

The group is developing a graphical user interface for an Android application that people can use to help them remember information. The application will have the ability to be a study tool, a general memorization tool, and also a social network that allows friends to share select information. A list of questions was used to interview targeted users to assist in the interface development process. A prototype of the interface was created and was used to obtain feedback so an iterative development process of the interface can be performed. The feedback received assisted with the creation of use cases, functional requirements, and architecture of the overall system.

## 2.0 Requirements Elicitation

The following interview questions were each answered by two participants.

1. Would you use a mobile application that helps you remember specific information?  
Why or why not?

*Yes, I would use a mobile application for remembering information because it would be any easy way to retain information that I learned. I could use it anytime because I always have my mobile device with me. I would not be restrained by having to use a computer or books to see the information.*

*I might use a mobile application for remembering information if it is easier to use than studying information in notes, books, or on the internet. It would be nice to be able to study information from my cellphone, but I generally just use the internet to access information from my phone.*

2. If you were to use the application, what type of information would you use the application for?

*I would use the application to store information on mathematical formulas, definitions, and most school-related information. I would also use the application to remember song lyrics, or if I were trying to learn something specific, I would put all the information I could find on the subject into the application.*

*I would use the application to store information for school. That way I would not have to be at home or at school to study for my classes. This would be more convenient because I would have more time to study because I would not be restricted by my location. Also, I would probably learn some of the information just by taking the time to enter it into the app.*

3. Are you familiar with any current applications of this type?

*Yes, I have seen multiple memory apps that have similar functionality. They allow the user to store notes on their mobile device, and they use a desktop client that allows the user to access the information on their computers.*

*I have seen memory applications, but they are different from this one. Most of the apps I have seen are focused on exercises for improving memory overall, not remembering specific information. I have also seen apps that simulate note cards that are meant to be used for studying. I have not seen any apps that automatically send you reminders of information or memory apps that use a social network to share information with friends.*

4. What techniques do you use to remember information?

*To remember information, I usually read the information over and over, try to visualize where I saw the information, or sometimes I will say the information to myself aloud.*

*When studying, I usually write out the information by hand and then read it to myself over and over again. I usually try to study the information over a span of multiple days because that helps me remember it better.*

5. What is one of your favorite mobile applications and what is it that you like about it?

*My favorite mobile application is called Alien Blue. Alien Blue is an iOS app that allows the user to view the contents of the Reddit.com webpage without having to use a web browser. Reddit.com is a website where users can post pictures and comments to a blog. I like it because it is simple and easy to use. I also like that it uses animations that are appealing.*

*One of my favorite applications is an Android app called Assignment Planner. I like it because it is an easy way for me to store all of my future school assignments, so I can keep track of when they are due. I like this application because the assignments are organized by class, and I can set reminders of various lengths of time, due dates, and descriptions of the assignments. The reminders are very useful because I can set them to when I have the time to do the homework, and my phone will automatically remind me to do the assignment at that time.*

6. What is one of your least favorite mobile applications and what is it that you don't like about it?

*An app that I do not like is a competing app of Alien Blue called BaconReader. I do not like it because it is not intuitive, especially when compared to Alien Blue. For example, in Alien Blue, the user is able to click on an icon to go to the comments for a post. In BaconReader, the only way to get to the comments for the post is to press the right side of the image. There is no indication of what to press to get to the comments.*

*My least favorite app on my phone is the default internet browser. This app is horrible especially when compared to other available browsers such as Opera and Chrome. The default browser is very slow when loading pages and it is difficult to navigate the pages. Since the pages are difficult to navigate, it is hard to find information.*

7. Would you use an application of this type to share information with your friends or acquaintances?

*I would only use this type of application to share information with friends if I could select the information that I wanted to share. I would want to customize the sharing so that I could select the information and the people with whom I am sharing the information.*

*Yes, I think it would be very useful to share information with friends. It is beneficial to study with friends because you get different perspectives and understandings of the information than if you were to look at the information by yourself. If you were able to share information on a mobile application, then you could view how your friends stored the same information or just different information that they have stored.*

8. Do you think it is beneficial to organize information that you are studying to remember?

*Yes. I always organize information that I want to study because it is easier for me to visualize the information when I think about the subject or category that it belongs to.*

*Yes, I always organize all of my notes and assignments for school. That way, it is easier for me to find something when I am looking for it, or when I am studying for a class, all of the information I need is all in one area.*

9. Do you feel interface design is important?

*Yes, interface design is very important. If an application has a poor interface, it makes me think that the implementation of the application is also poor. If designers do not spend enough time on the appearance of the application, it gives the impression that the entire app did not have enough time spent on it.*

*If I do not like the interface of an application, I just won't use it. There are usually other applications that have the same functionality with better interfaces that I can find. There is no point in putting up with a poor interface if you can find another app with a better interface that does the same thing.*

10. Do you like apps that use push notifications as reminders?

*I like push notifications as long as they are not too frequent. They are beneficial because the user can receive reminders without having the app open, but if they happen too often, then they become annoying.*

*I like push notifications if there are used in a certain way. For example, push notifications are good when used as reminders because humans are forgetful by nature. Push notifications used in other ways may be less helpful and annoying.*

11. Please explain a time when you had trouble accomplishing a task in an application.

*The application Blender is very difficult to use. This is because the menu options are misleading. In other words, the menu options were not descriptive and selecting them took you to places that were unexpected. Also, buttons that performed different functions looked very similar. This made it very hard to remember how to perform tasks.*

*The Bank of America mobile application can be difficult to use because it lacks full functionality that the website provides. I tried to view my cash rewards history for my credit card in the application and I couldn't find a way to do it. I was forced to check it out later when I could access a computer.*

12. After using the interface, do you have any suggestions for the app? What did you like/not like about it?

*I don't like that you can change the information in the reminder section of the application because it should be about remembering information, not creating and changing it. I also don't like that there is not any help section. I do like the color scheme of the application. I think that the ability to search the notes from the main is very convenient. One suggestion I have is that the categories and information tabs have different titles to help make them distinguishable. Overall, I do like the social aspect of note and information sharing.*

*I liked the file system because it conveniently organized all of the information. I don't quite get the point of the reminder part of the application. I would like my information to only be able to be shared with specific people, if possible. I think the sharing of note card like pieces of information with other users is a great idea.*

### 3.0 Use Cases and HCI Scenario

#### 3.1 Use Cases

UC01	RemindMe	When the user presses the “RemindMe” button, previously entered information is relayed back to the user. The user is able to set how well he or she remembered the information on a scale of 1 to 5.
UC02	DisplayMyInformation	The user presses the “My information” button on the main screen and is navigated to a new page that lists already existing categories and gives the user the option to create a new category.
UC03	CreateCategory	The user presses the “Add category” button is presented with a dialog box that prompts for the category name. Once the user enters a name and presses “Create”, the category is created and added to the list of categories.
UC04	SelectCategory	The user selects a category and is navigated to a new page that displays general information for that category as well as a list of subcategories for the selected category. This process can be repeated until the desired information is reached or the final layer of the category hierarchy is reached.
UC05	DeleteCategory	The user holds their finger down on the category until a dialog box is displayed that asks the user if they would like to delete the category. If the user selects “yes” the category will be removed from the category list.
UC06	ViewInformation	The user selects a piece of information in a category to view the information in a new page.
UC07	CreateInformation	The user navigates to the category for which he or she would like to insert the information and presses the button “Add information.” When the button is pressed, the user is taken to a new page containing a text box that allows them to enter information. The user is required to rate the importance of the information of a scale of 1 to 5. When the user hits the “Add” button, the information will be added to the category.

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UC08	EditInformation	The user navigates to already-entered information and selects that information. The user is able to modify the information or its importance rating.
UC09	DeleteInformation	The user holds their finger down on the information until a dialog box is displayed that asks the user if they would like to delete the information. If the user selects “yes” the information will be removed from the category.
UC10	ViewFriends	When the user presses the "Friends" button, a list of all the user’s friends will be displayed. The user can select a specific friend and view any of the friend's information they have shared.
UC11	Search	When the user presses the "Search" button, a search box will appear and the user can search for a specific set of categories or information that has be already created.
UC12	Logout	When the user presses the "Logout" button, the user will be signed out of the application and be taken to a login screen.

### 3.2 Scenario

Our persona is a student who is studying for Core Humanities. The student has trouble retaining the information for the class, and needs a tool that will assist with remembrance. They decided to download the Remember Me mobile application to help with studying.

<i>Use Case: RemindMe</i>	
Use Case ID	UC01
Actor	User
Precondition(s)	1. The application is running and the main menu is displayed.
Primary Scenario	<ol style="list-style-type: none"> <li>1. The use case starts when the user hits “Remind Me!” button on the main page.</li> <li>2. A new Reminder activity is launched.</li> <li>3. An algorithm determines which piece of information is most likely to have been forgotten by the user, and loads it.</li> <li>4. The user reads over the loaded information.</li> <li>5. The user sets how well they remembered the information out of 5 stars.</li> <li>6. The user hits the “next” button to view the next piece of information or hits the “cancel” button to go back the main page.</li> </ol>
Secondary Scenarios	Information Algorithm
Postcondition(s)	None

### 3.3 Use Cases Diagram

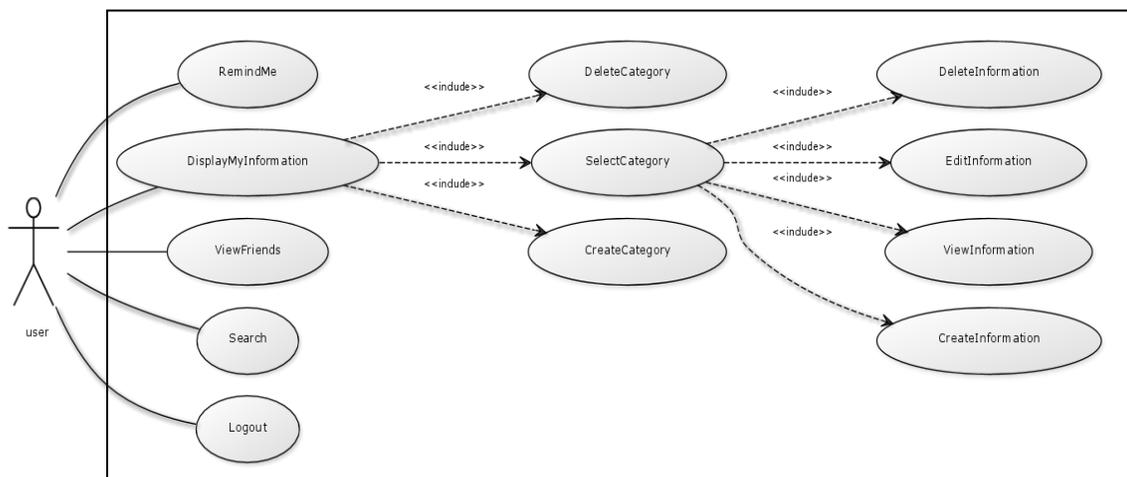


Figure 1: Use Case Diagram

## 4.0 Functional Requirements

FR01	[1]	Remind Me shall display a username and profile image on the main screen.
FR02	[1]	Remind Me shall display buttons on the main screen that represent all of the main functions.
FR03	[1]	Remind Me shall provide visual feedback to the user to indicate when buttons have been pressed.
FR04	[1]	Remind Me shall take the user to a new page in the interface when a button is pressed.
FR05	[1]	Remind Me shall allow the user to store textual information.
FR06	[1]	Remind Me shall allow the user to create new categories for information.
FR07	[1]	Remind Me shall allow the user to view previously entered information by category.
FR08	[2]	Remind Me shall allow the user to rate information on a 5-star scale.
FR09	[2]	Remind Me shall allow the user to search for information by entering keywords.
FR10	[3]	Remind Me shall have a desktop client to allow for easier data entry for the application.
FR11	[3]	Remind Me shall provide a method to input formulas into the information textfield.
FR12	[3]	Remind Me shall use an algorithm that uses rating, number of views, and last time viewed to determine what information should be presented to the user.
FR13	[3]	Remind Me shall allow users to share select information with selected users through the social network.

## Functional Requirement Descriptions

Functional Requirement	Description
FR01 [1]	At the top of the main screen, a username and profile image will be displayed. This is to imply that the user is able to create an account and select a profile picture. However, for this project, this information will most likely remain static.
FR02 [1]	The main screen shall display the following buttons: “Remind me”, “My information”, “Search”, “Friends”, and “Logout.” These buttons represent all of the main functions of the application.
FR03 [1]	When the user presses a button, the color gradient of the button becomes inverted. This visual feedback is interpreted as the button being pressed.
FR04 [1]	Depending on the button pressed, the user will be navigated to a new page. For example, if the “My information” button is pressed, the user is taken to a page that displays categories of information.
FR05 [1]	When the user presses the “My information” button, he or she will be taken to a page that allows the user to create a new category in which information can be stored.
FR06 [1]	The user is able to store textual information once a category is selected.
FR07 [1]	Once the user has entered textual information, the user will be able to rate the information on a scale of 1-5 stars. The rating is requested so it can be used in the algorithm that determines what information to remind the user about.
FR08 [2]	The information's rating is defaulted to 3 stars, but the user can change it to reflect the importance of the information.
FR09 [2]	When the user presses the “Search” button, he or she will be prompted for keyword(s) or a phrase to search for. The application will then search through all of the previously entered information and return results containing the keyword(s) or phrase.
FR10 [3]	A desktop client will allow the user to navigate and manage all their information easily. The user can add or delete categories and information in the categories. The client would be web-based.

FR11 [3]	The user can select the formula icon to allow for easy entry of mathematical formulas into the information textfield. Functionalities of this type can be seen in Microsoft Word.
FR12 [3]	The algorithm will use user ratings, number of views and last time viewed to determine which note cards should be more likely to be displayed when the user selects the "Remind Me" button.
FR13 [3]	The user can select what information can be shared with their friends The user can also view their friend's information through the social networking aspect of the application.

## 5.0 Design

### 5.1 High Level Design

#### System-Level Structural Diagram

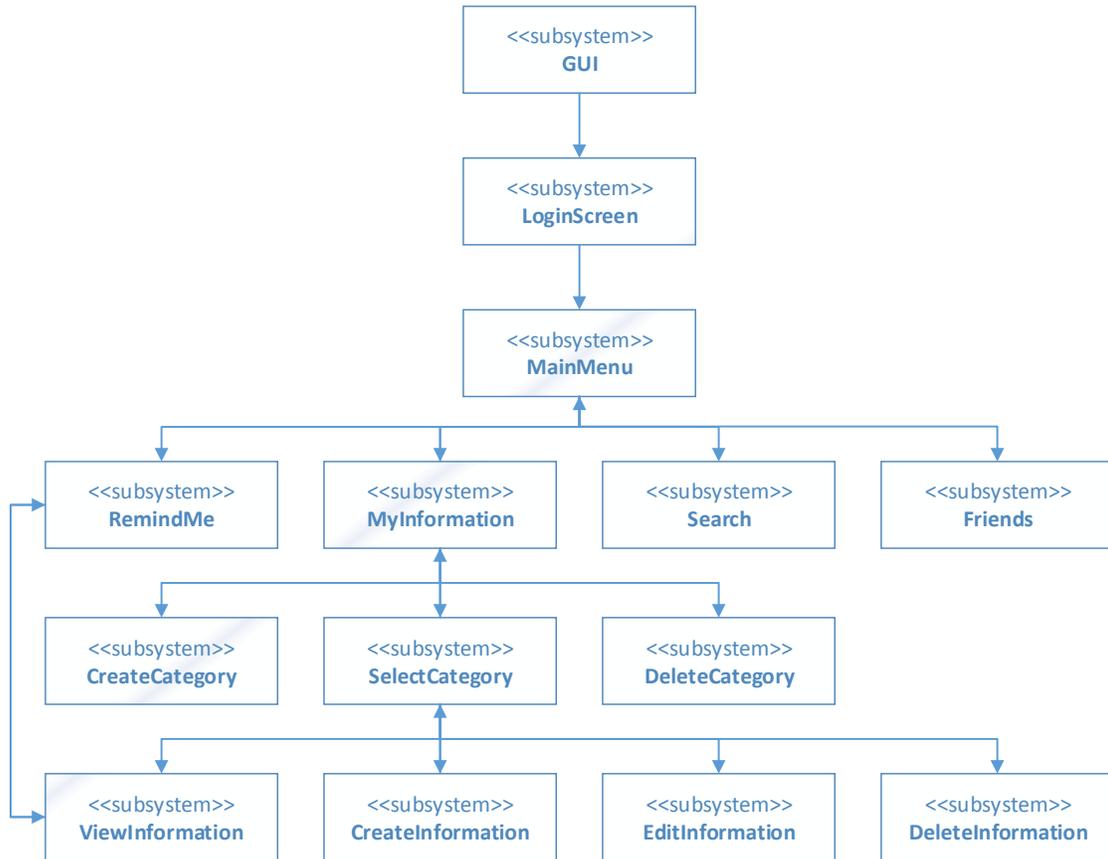
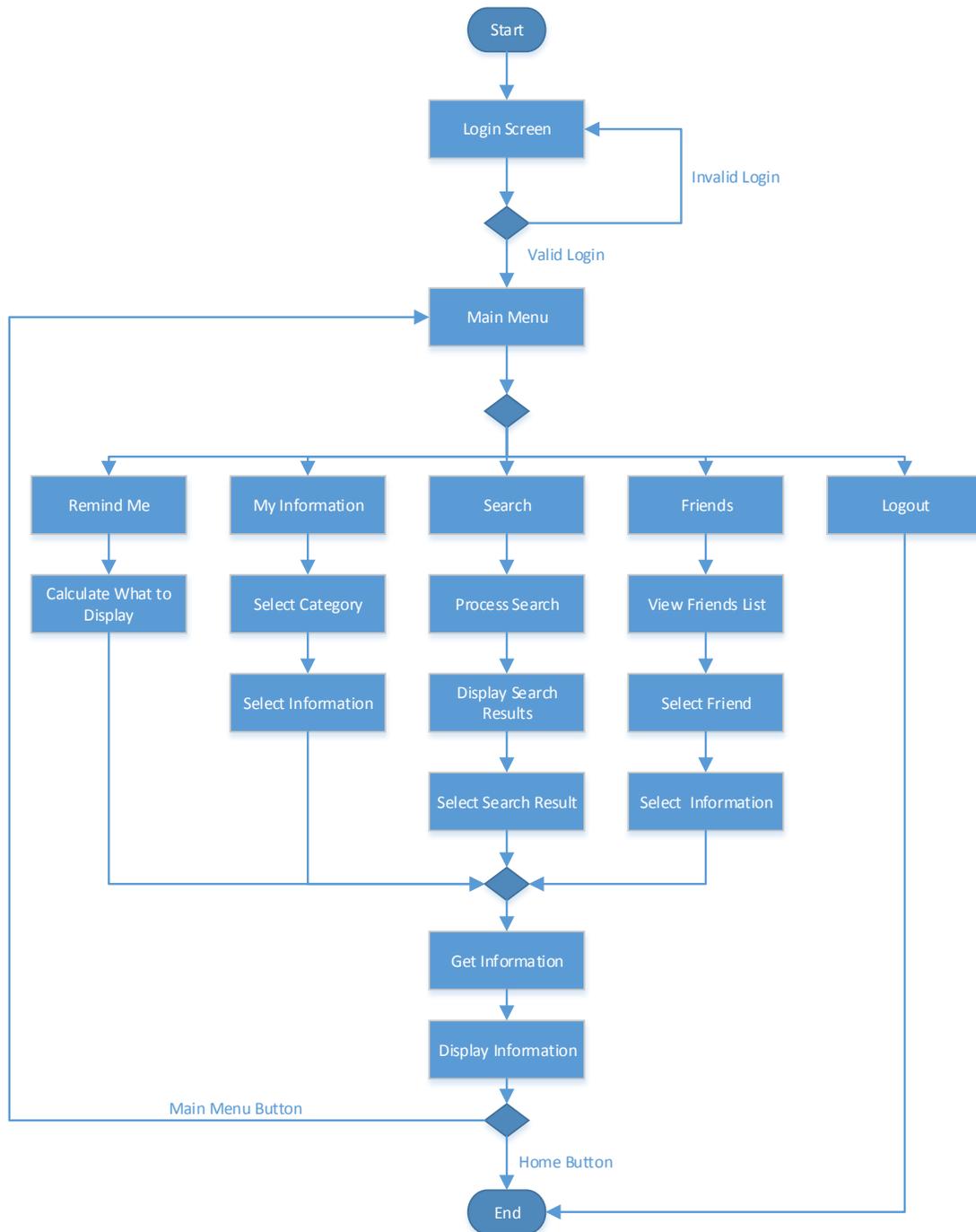


Figure 2: RemindMe System Architecture Diagram

## System-Level Behavioral Diagram



**Figure 3: RemindMe System Activity Diagram**

## 5.2 Static Interface Design

### 5.2.1 Initial Login Screen

Figure 4 shows the initial login screen that is presented to the user when the application is executed for the first time. The user will need to supply their user name and password to login, or register to create a new account.

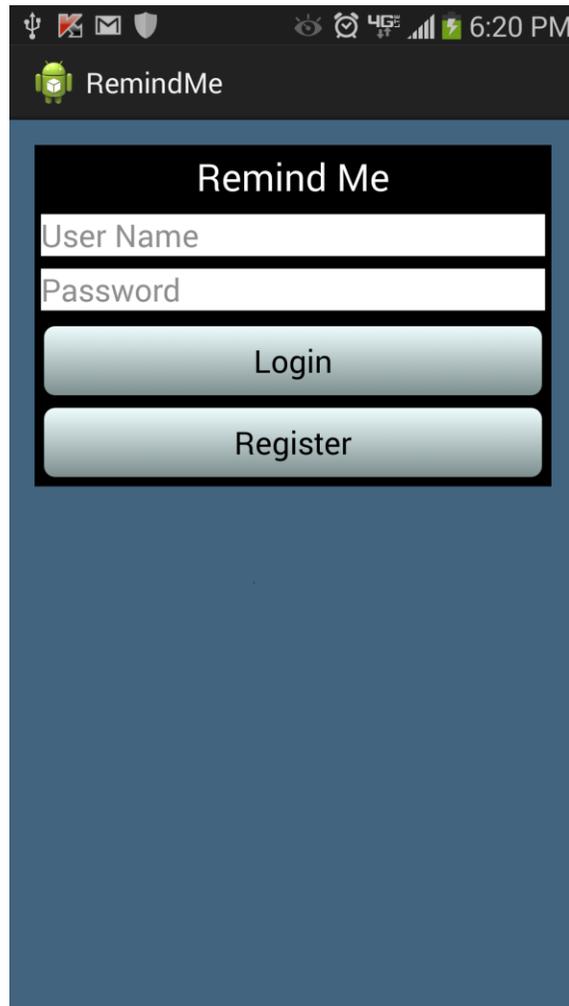


Figure 4: Initial Login Screen

### 5.2.2 Main Menu Screen

Figure 5 shows the main menu screen that is presented to the user when logged in or after successfully logging in. The user's name and profile picture are listed at the top, and the user can select any of the available buttons to access different parts of the application.

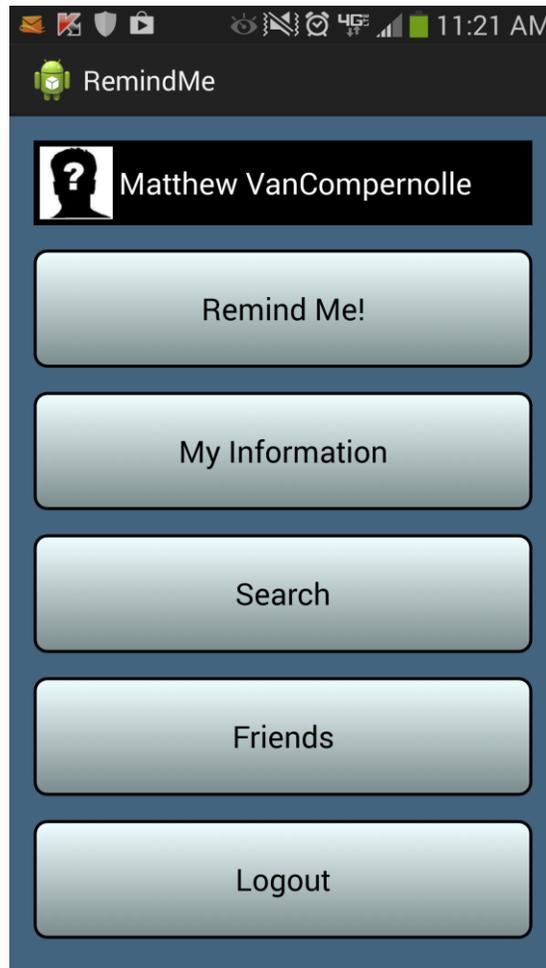


Figure 5: Main Menu Screen

### 5.2.3 Remind Me Screen

Figure 6 shows the reminder page that appears after the user hits the “Remind Me!” button in the main menu. The page is filled with previously entered information so that the user can read over it and rate how well they remember it. The user can hit “next” to view additional information, or hit “exit” to return to the main menu.

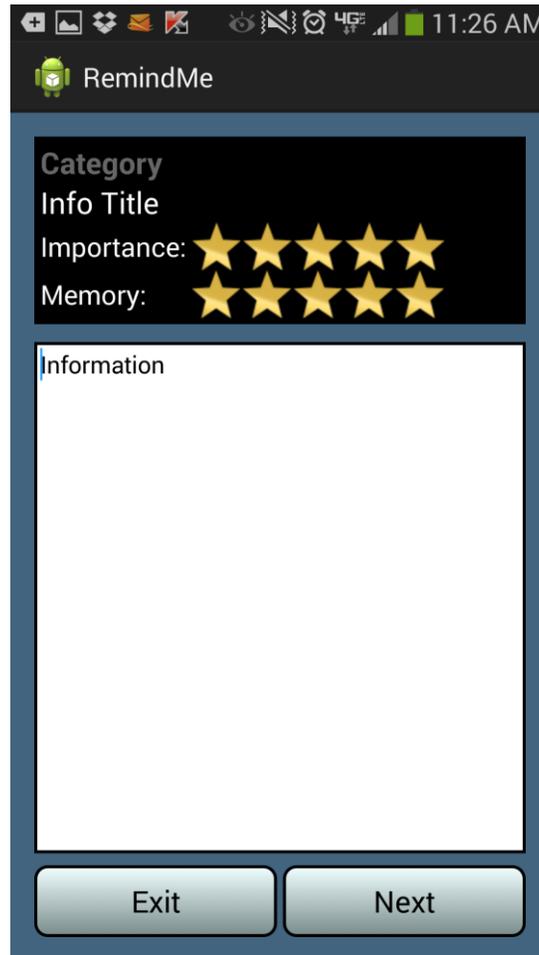


Figure 6: Remind Me Screen

### 5.2.4 Show Categories Screen

Figure 7 shows the categories tab that is displayed when the user hits the “My Information” button in the main menu. The name of the category is located at the top and the user can hit the “Add Category” button to create a new subcategory. All of the subcategories are listed below and can be entered if selected by the user.

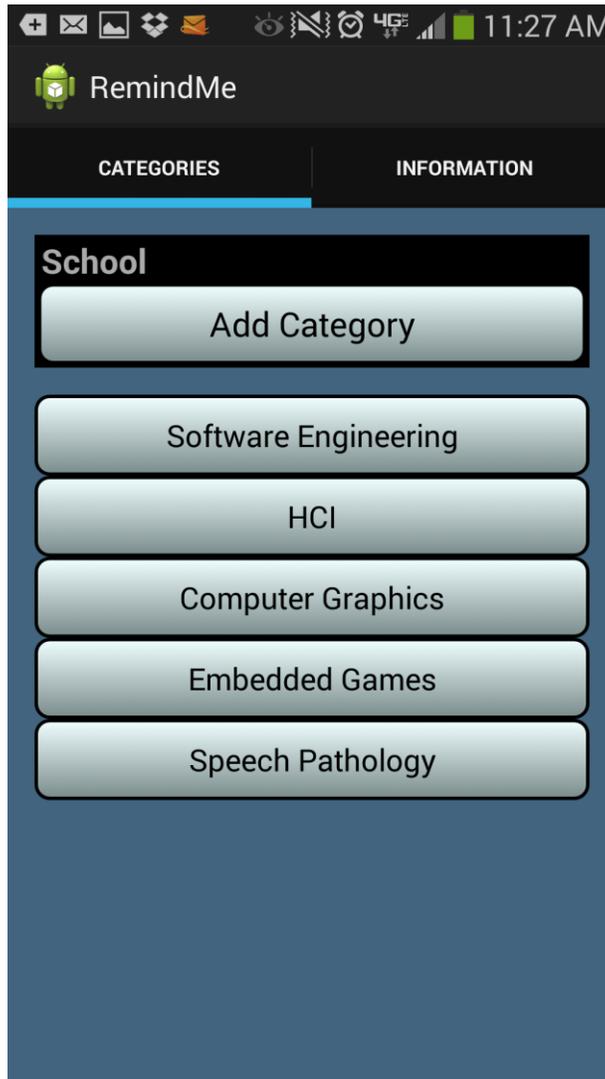


Figure 7: Shows Categories Screen

### 5.2.5 Create Categories Screen

Figure 8 shows create categories screen that displays a dialog box when a user hits the “Add Category” button in the categories tab under the “My Information” section. The user can enter in a category and hit the “Create” button to create a new subcategory in the current category, or hit “Cancel” to exit the dialog box.

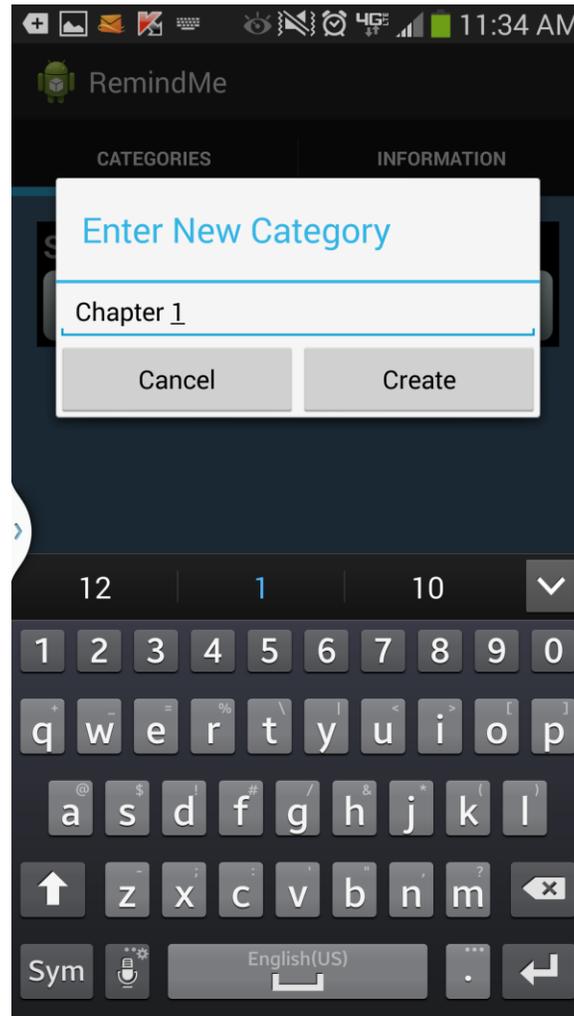


Figure 8: Create Categories Screen

### 5.2.6 Select Information Screen

Figure 9 shows the select information screen that is displayed when the user selects the “Information” tab. The name of the current category is located at the top and the user can hit the “Add Information” button to create new information for that category. All of the information for the category is listed below and can be loaded if selected by the user.



Figure 9: Display Information Screen

### 5.2.7 Add and Edit Information Screen

Figure 10 shows the add and edit information screen that is displayed when the user hits the “Add Information” button or selects previously entered information. The black box at the top shows the name of the current category, the title of the information, and the user rated importance of the information out of 5 stars. The white box shows the content of the information. If the user hits the “save” button, the information is either created or edited.

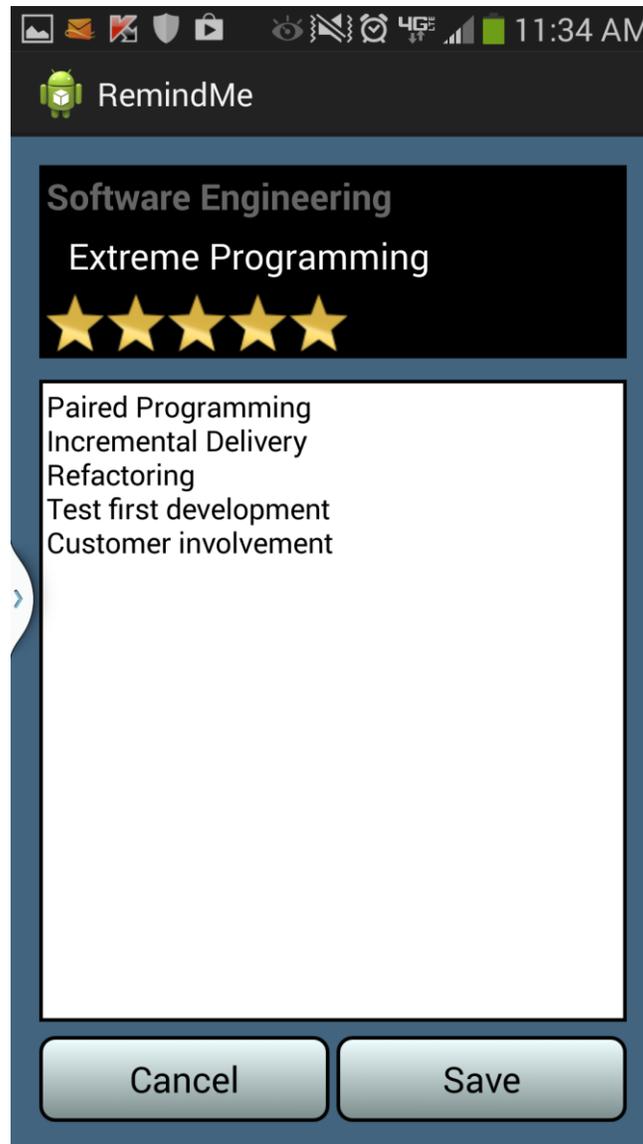
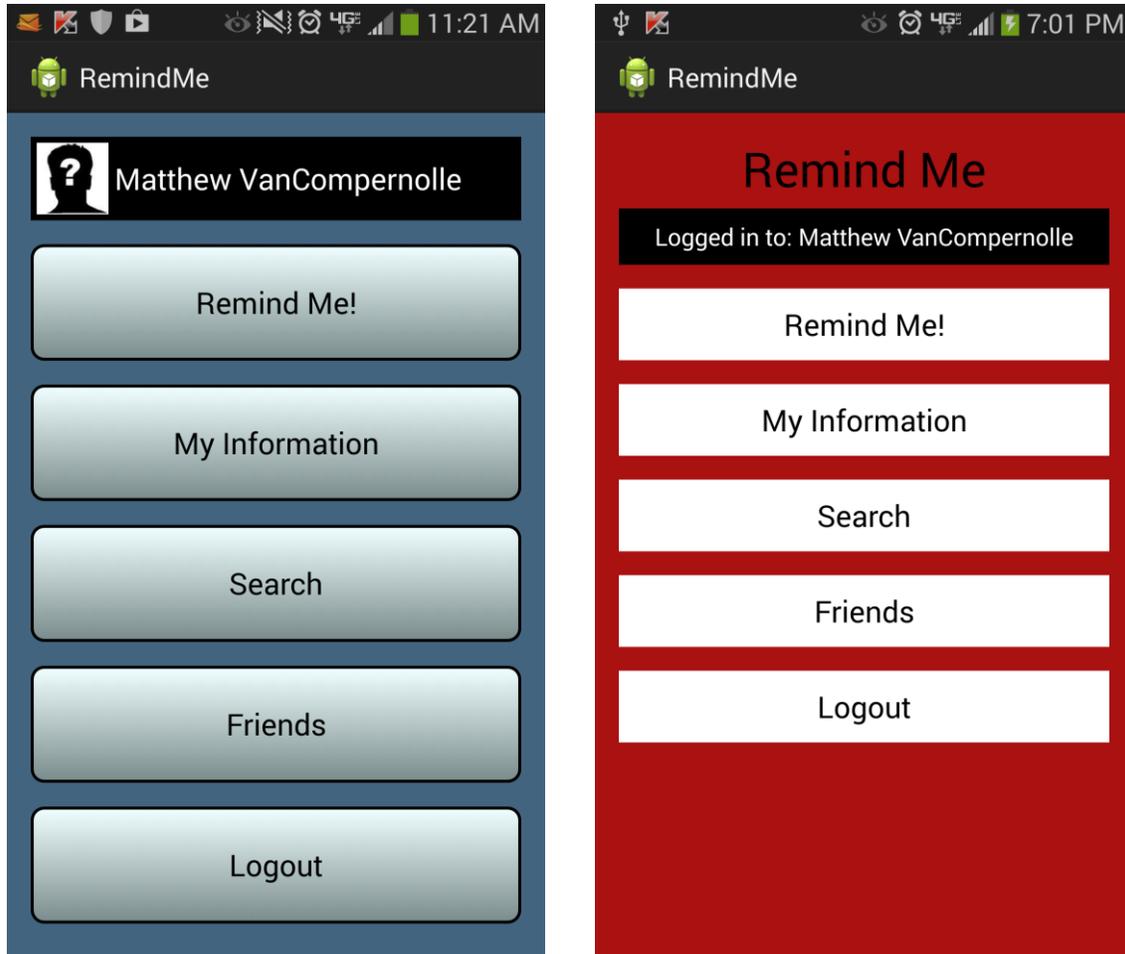


Figure 10: Add and Edit Information Screen

## 5.3 Alternative Designs

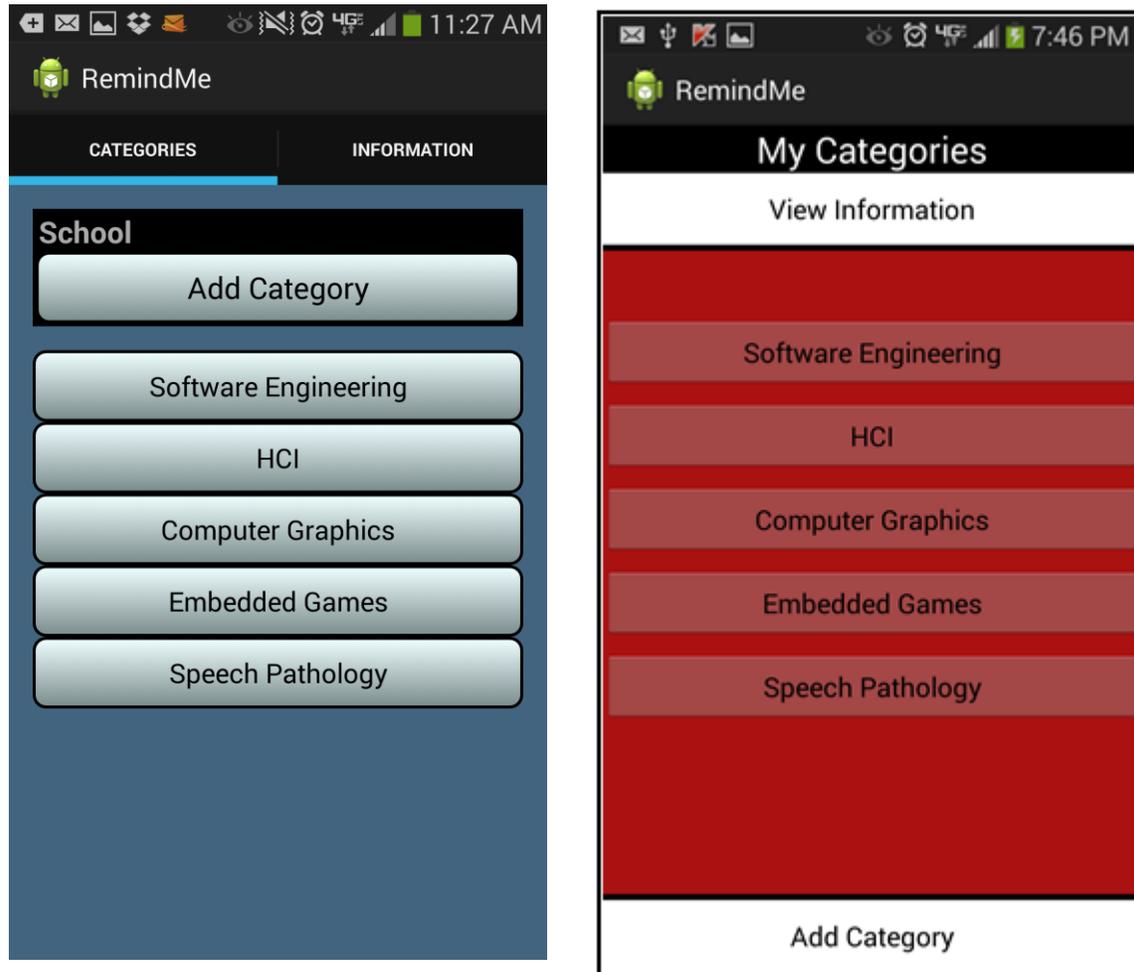
### 5.3.1 Alternative Main Menu Screen



**Figure 11:** The images above show the chosen overall design and color scheme (on the left) and an alternative design and color scheme that was considered (on the right).

The group chose to use the design and color scheme on the left in the Figure 11 over the one on the right for several reasons. The first reason is that the one of the right uses an aggressive color scheme that is not easy on the eyes, while the one on the left is very neutral and pleasant to look at. A second reason that the alternative design was not chosen is that it contains very little style, as its interface is completely flat and made up of solid colors. It looks as if little to no time was actually spent trying to make it visually appealing. The alternative design additionally does not use all of the available space as well as the chosen design, and presents obvious and unnecessary information to the user. For example, the title “Remind Me” and the string “Logged in to:” preceding the user name are obvious and just act as a visual distractions. The final issue with the alternative design is its lack of a profile picture. This makes the app feel non personal, when the goal of the application is to create an application for storing and sharing personal information.

### 5.3.2 Alternative Show Categories Screen



**Figure 12:** The image above shows the chosen categories view (on the left) and the alternative categories view (on the right).

The alternative design for the categories view shown in Figure 10 on the right has several major flaws that make it subjectively inferior to the chosen version of the categories view. The first flaw is that instead of using another tab to view the information of a category, a button labeled “View Information” is included that takes the user to a new view that shows the category’s information. The problem with this button is that it is not entirely obvious what it does, makes the process of viewing information slower, and makes it nearly impossible to view different categories and information simultaneously. Another issue with the alternative design is that the “Add Category” is positioned in an odd place on the screen where it does not seem like it is associated with the current category, which may make it confusing to some users. A final flaw in the alternative design that is not in the chosen design is that its subcategory buttons in the middle do not stick out well and do not look like they are related in any way. Just by looking at the subcategories, one would probably not be able to recognize that these are items of the same nature.

## 6.0 References

Clifton, Ian G. *Android User Interface Design: Turning Ideas and Sketches into Beautifully Designed Apps*. Upper Saddle River, NJ: Addison-Wesley, 2013.

This book describes how to effectively design and organize different components in an Android application. The whole development process is described, going from a rough sketch to a finish application. All the different Android interface components, such as views, layouts, images and styles, are described in detail and how to use them effectively.

Lehtimaki, Juhani. *Smashing Android UI*. Hoboken, NJ: Wiley, 2012.

This book describes how to lay out an intuitive and easy to use Android application. The book explains how to use adaptive layouts and fragments in order to create an application that can be used on any device. These ideas will create a natural and easy to user interface for the user, while allowing for the application to be responsive and adaptive.

Luostarinen, R. Manner, J. Maatta, J. Jarvinen, R. "User-centered Design of Graphical User Interfaces," MILITARY COMMUNICATIONS CONFERENCE, 2010 - MILCOM 2010 Pages 50-55.

This article discusses methods of designing graphical user interfaces for general usability, usability in challenging environments, and usability on varying terminal devices. The article focuses on the concept that a GUI must be simple, easy to use, and the user must be able to complete common tasks quickly. The common actions should be accessible in the main view and more advanced infrequent actions should be located in sub views or menus.

Morris, Jason. *Android User Interface Development: Beginner's Guide*. Birmingham: Packt, 2011. Print.

This book describes methods for designing user interfaces specific to Android applications. The book explains with the numerous amounts of Android applications that have recently been developed, user interfaces must be compelling and easy to understand to be able to compete in the market. The techniques are specific to touch screen devices, and are intended to assist with bringing unique style to the applications.

Wade, Jill. "Practical Guidelines for a User-friendly Interface." *ACM SIGAPL APL Quote Quad* 14.4 (1984): 365-71. *ACM*. Web. 25 Oct. 2013.

This article describes guidelines on how to develop an interface to be user-friendly and design decisions to make an interface intuitive. The way data displayed and handled is an important factor to consider when designing the interface. This article provides detailed guideline to handle data in the interface, as well as error handling.

## **7.0 Contributions**

Christine Johnson contributed the following:

- Requirement Elicitation
- Use Cases/Scenario
- Static Interface Design
- Annotated References

Eric Klukovich contributed the following:

- Requirement Elicitation
- Use Cases/Scenario
- High Level Design
- Static Interface Design

Matthew VanCompernelle contributed the following:

- Abstract
- Requirement Elicitation
- Functional Requirements
- Static Interface Design