

# CareSupport

## Members and Roles

Cameron Lewis - Project Manager, Writer, Prototype Design

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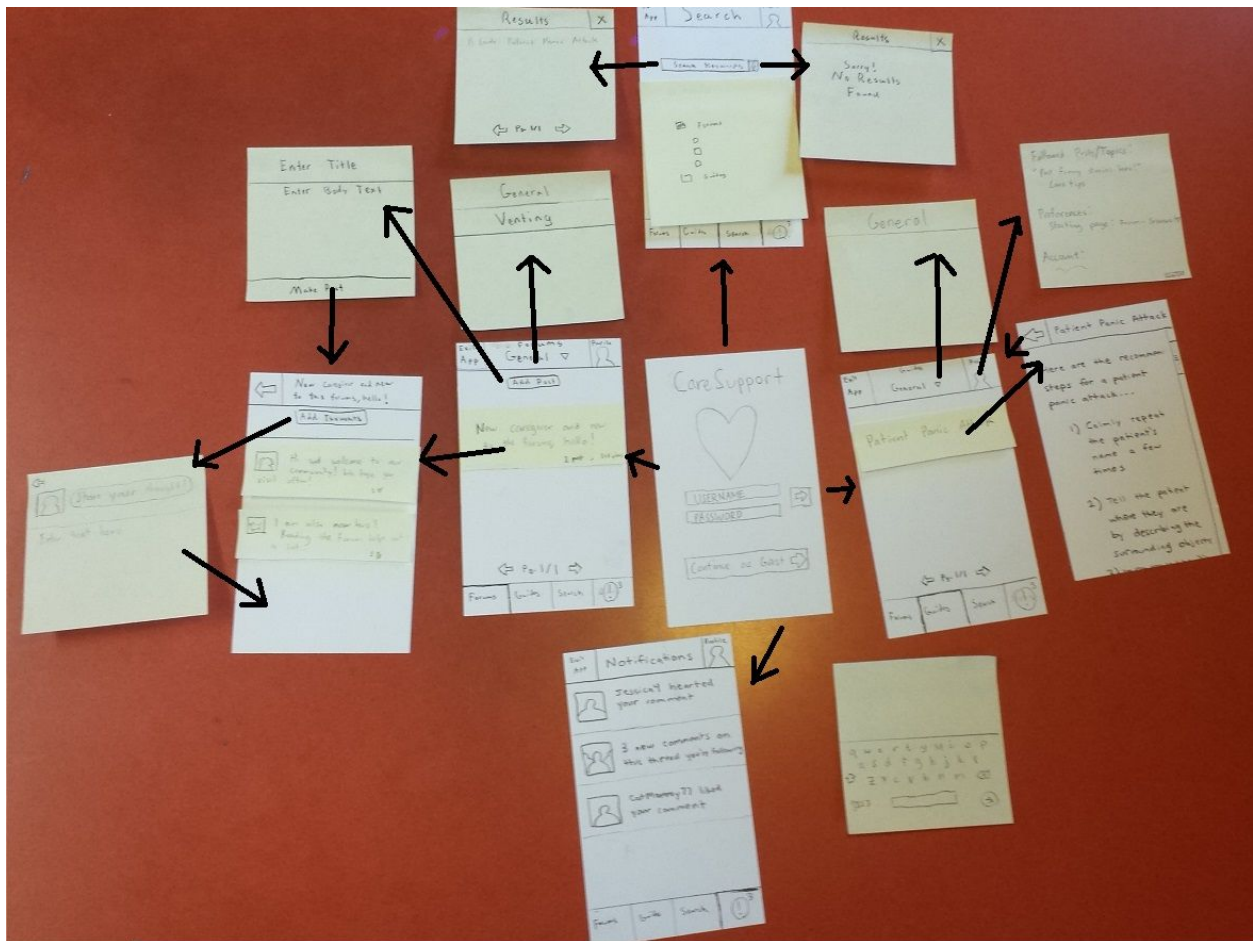
## Problem and Solution Overview

When an individual develops a condition such as Alzheimer's or other forms of cognitive impairment, it becomes less and less possible for them to take care of themselves and their daily tasks without assistance. In cases where their family cannot afford professional care, one of their loved ones must devote a significant portion of their life to become a caregiver for that individual. Without the experience and training that a medical professional might have, the transition to caregiver can be extremely taxing as they adjust to a complicated new role that they are unprepared for. It can harm the social lives, professional careers, and psychological health of these people as they must devote their free time to learning how to take care of a loved one. Our phone application seeks to lessen these negative consequences by helping a caregiver adjust to this new role. It will assist the caregiver in their everyday life with the psychological impact of their new responsibilities and the loss of their free time as well as aiding them in learning the skills they need for their new position. It will provide an important tool in their caregiving role that will be accessible any time that they need it.

## Initial Paper Prototype

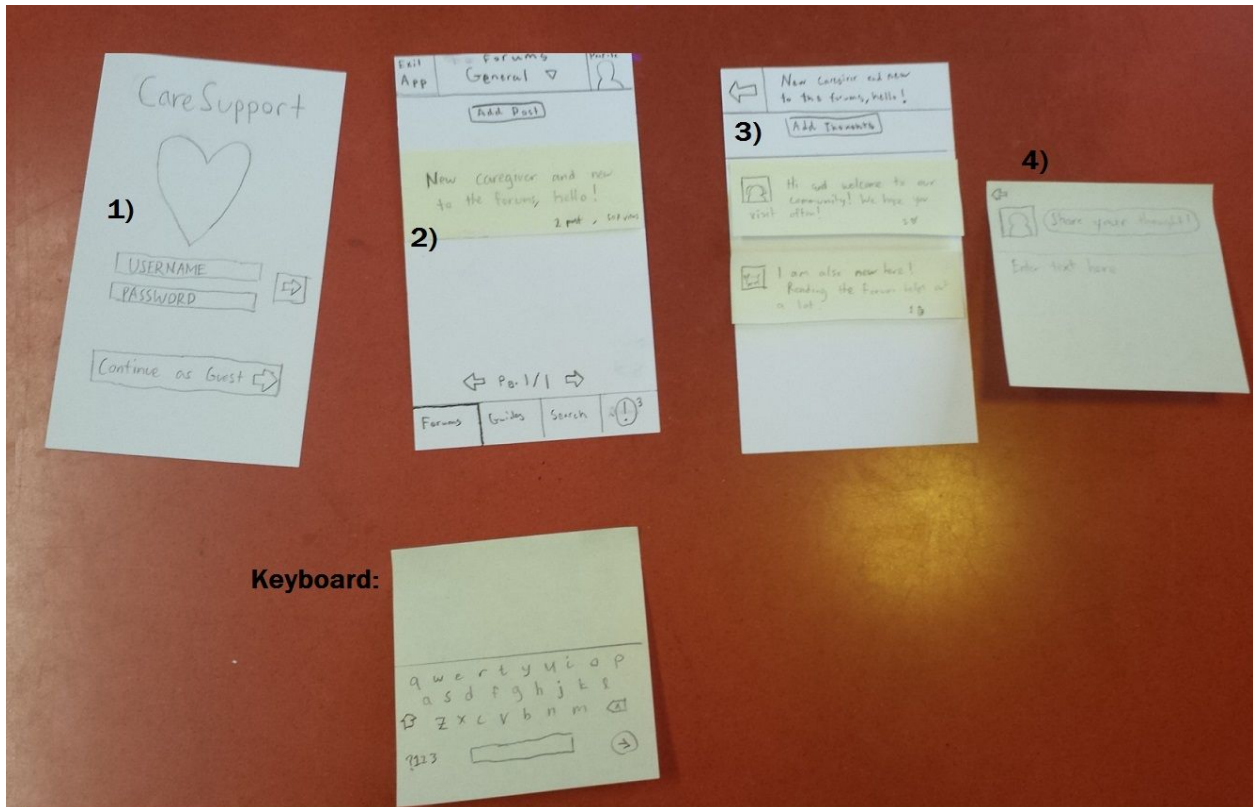
### Prototype Overview:

Each arrow leads from a button to the resulting screen after pressing the button.



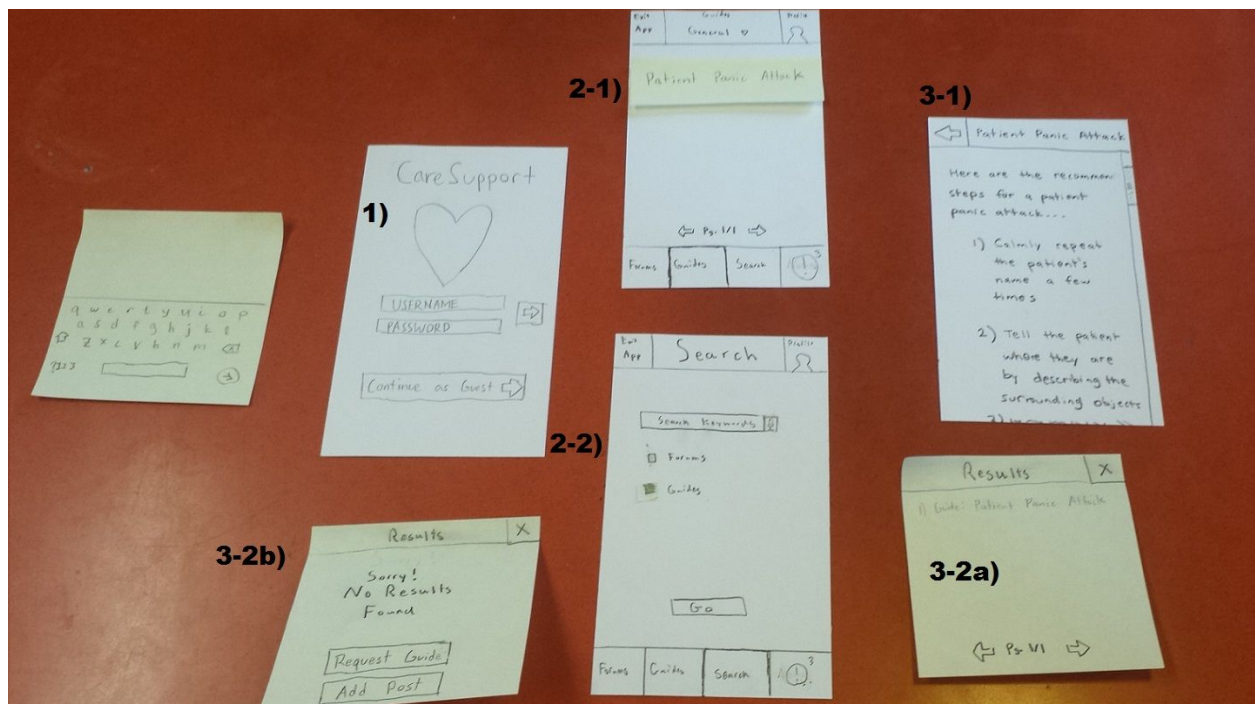
### Task 1)

The user wishes to go introduce herself to other caregivers by posting a comment within the app's forums. She logs into CareSupport by entering her username and password (1). This takes her to her preferred home page, the general section of the forum. Before she is about to add a new post, she sees post of an user who is also new to the forum and wishes to go to that thread also to introduce herself (2). She taps the forum post and is taken to the thread. She quickly reads through what others have posted, and decides to also leave a message by pressing the "Add Thoughts" button (3). A popup appears on the screen so she can type her message and post it to the thread. Once she is finished typing, she hits "Share your thoughts" to post her introduction comment into the thread (4).



## Task 2)

The person the caregiver is taking care of is having a severe panic attack caused by memory loss and the caregiver wants to find a guide on how to deal with the situation. The caregiver enters the application as a guest because she is in a hurry **(1)**. She enters the app with her preferred tab open. She decides to find a guide either by navigating to the search tab **(2-2)** or the guides tab **(2-1)**. In the search tab, there is an option to click on the microphone button and search using voice-command, which can be especially useful in an urgent situation. In the guides tab, she can see the list of recent guides and might see one entitled "Patient Panic Attacks" either on the first page or by navigating through all the pages of guides. She clicks on the title which takes her to the guide **(3-1)** that she need for the situation. If she searched using relevant keywords with the "Guides" box checked, she could possibly get multiple results or even no results. If she get no results **(3-2b)**, she can make a request for a guide to be added or add a post to the forums. After entering a keyword such as "panic", she will get a list of relevant guides **(3-2a)**. By clicking on one of the titles, she will be taken to the guide she was looking for **(3-1)**.



## Testing Process

### Testing Method:

First we introduced ourselves and told them that we were testing the prototype design instead of them so that if there were any mistakes, it would be our fault not theirs. Then we asked the participant to search for a guide on how to calm down a panicking loved one, follow a post, make a comment on a thread, and unfollow a post. We ask them to talk us through their thought process as they attempted the tasks and if there were any confusions they had. If they had trouble completing the task, we would let them continue to work through the design until they reached a point where they could not continue at all. After the test, we would ask them what the major problems they encountered were and what they were thinking that led to that point. The main change in our testing process was that we emphasized that we were testing the design not the user, as our first user felt nervous making mistakes during the testing.

### First Participant:

For our first user test, we wanted to use a user who fit the profile of a new caregiver using the app for the first time. Our ideal user was someone proficient with technology with very limited experience accomplishing the desired task within our app, even though they would know what tasks they wanted to accomplish. The first participant was a male student proficient with technology and we tested in a quiet room. Cameron was the computer and Tony was the administrator and note taker.

### Second Participant:

For the next user test, our participant was a 24-year-old male who takes care of his elderly grandfather every weekend. He has no professional training. While his grandfather is not suffering from dementia or memory loss, our participant must care for his grandfather and be alert if his grandfather were to suffer another heart attack or stroke. Thus, we concluded that he was very similar to our user group of caregivers for people with dementia/memory loss. The environment we chose was on UW's campus, as it made it the easiest for all parties involved in terms of reaching the chosen location. Louis was the facilitator while Cameron was the computer and Tony was the observer. This test was completed with changes A through D added to the paper prototype.

### Third Participant:

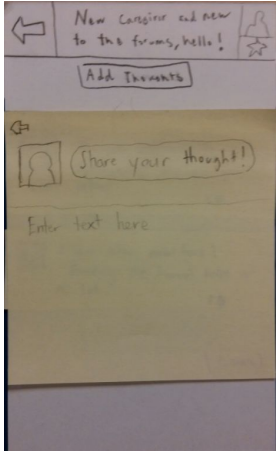



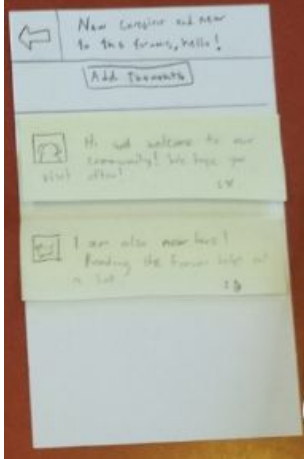
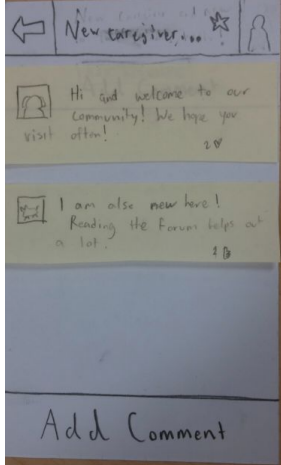
For the third test, we tested our paper prototype with a woman between her 50s and 60s. This person assists with caring for her elderly mother on the frequent occasions where her sister is unable to do so due to important work or personal commitments. We chose this person as a participant because we wanted to make sure that the design was usable by someone in an older demographic who is not as comfortable with technology as well as because this person has prior experience as a caregiver, though it is not full-time. This test was done at the participant's home to make them feel more comfortable with the procedure. This test was completed with changes A through D added to the paper prototype. Cameron facilitated and acted as the computer for this test while Louis took notes.

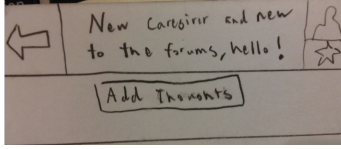
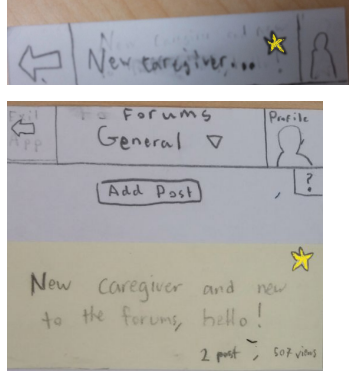
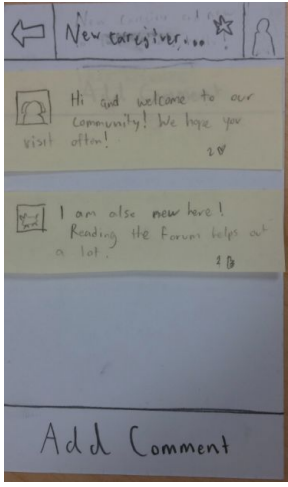
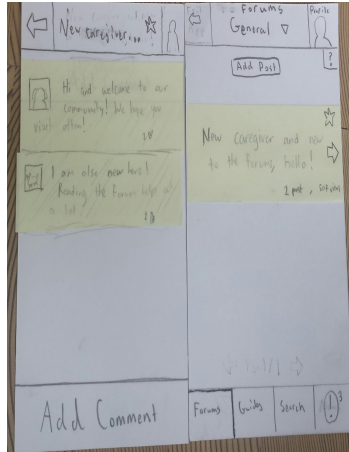
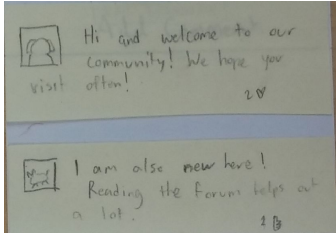
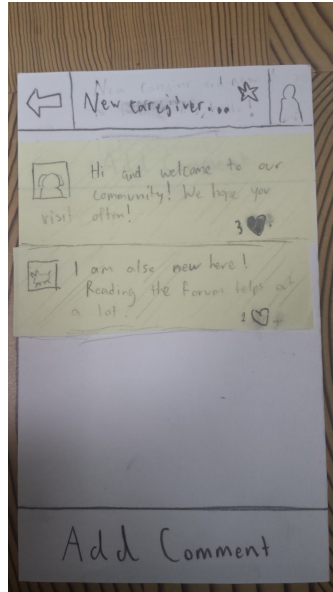
## Testing Results

The first user was able to understand the “Share Thoughts” and the “Post your Thoughts” button so we did not think this was a problem. The user however was confused on the general layout of the application such as the comments looking like they could be clicked and could not find some of the functions such as the follow button that were mentioned. We refined our prototype by adding a help button to explain the features of the applications and implemented the missing functions with color and in a different position so it was more visible to the user.

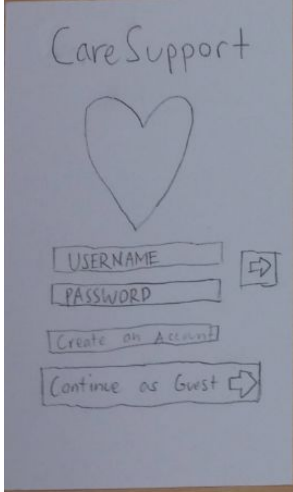
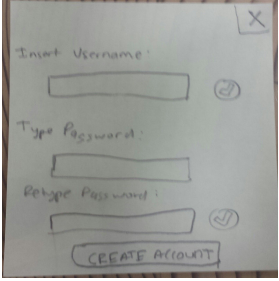
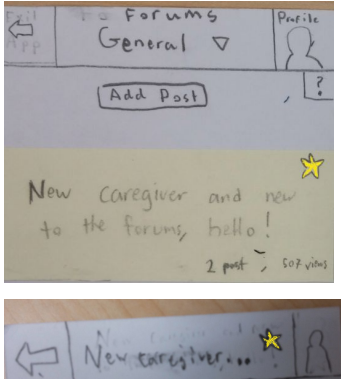
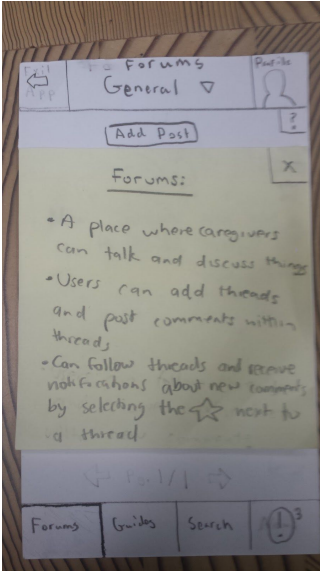
For the second and third users after the first revision, we found that a lot of our problems was the user not understanding or not being able to find a particular thing. This is an issue to watch for our design because we want the design to be easy to use for those new to the app. We want to eliminate completely any problems that make the app hard to understand for new users. For example, the participants could still not figure out how to follow/unfollow a post. We decided to add an info guide that pops up when a button is clicked to explain to them how to follow things and how what the forums/guides were for and general information and color the follow button. A lot of users were used to having “Add Comment” instead of “Share Thoughts” and we didn’t want to alienate them away from the app so we changed into “Add Comment” to follow convention. There was also an oversight in long titles, would we have to squeeze the entire title to the top of the screen? We decided to shorten the title so that the user knows what thread they are in without attacking them with the entire title.

Another major concern for our design was the ease of use in terms of accomplishing tasks. Any elements of our design that make working within our group’s application more difficult than it needs to be should be fixed. One such problem we encountered were more concerns about the “add comment” button, specifically its location. If the button is static and located at the very top of the screen, the user must choose between adding their thoughts to the conversation and reading what others need to say. By moving this button to the very bottom, it becomes much easier for a user to consider what others have to say before commenting on a post.

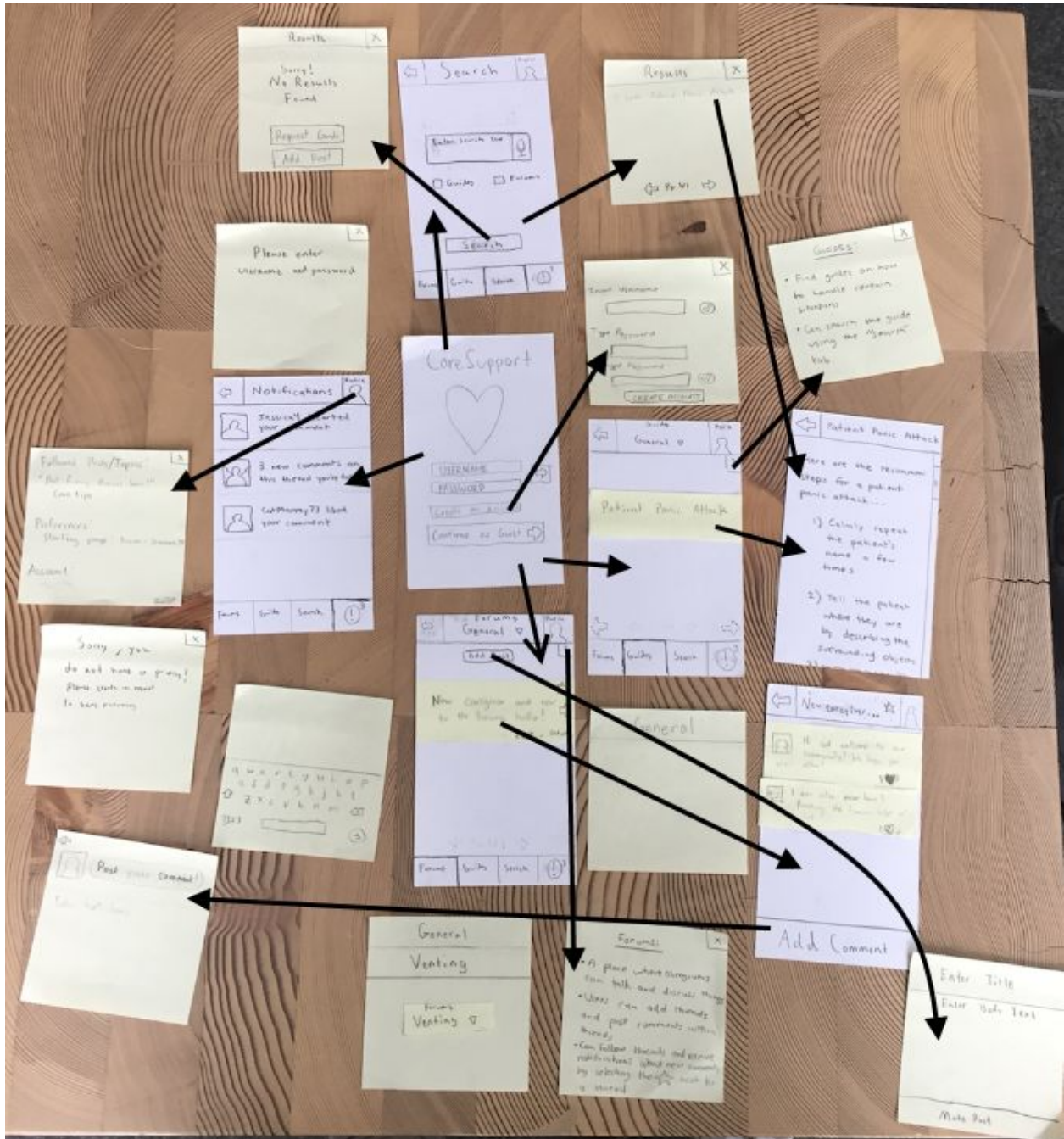
Issue	Severity Rating	Change	Pre-change image	Post-change image
The language used on the button that posts a user's comment ("Share your thoughts") doesn't completely match it's function	3	Change the text of the button to simply "add comment"		
It was hard for the user to read the options and the text on the search page	1	Increased the size of the text to make it easier for the user		
As the create comment button was at the top of the page, the user had to scroll up to find it again	3	Moved the button to the bottom		

<p>There was an option in the user's profile for followed posts and information about it in the notifications, but it was unclear how to follow a post</p>	<p>2</p>	<p>Add a "star" icon to forum posts to indicate that the user can click and favorite forum posts</p>		
<p>The user thought they could click on a comment because it looked like a thread from the page before.</p>	<p>2</p>	<p>Organize the comments so they are lined up next to each other, making it more clear that they are ordered comments. Make comments a different color than threads to differentiate them. Add a button to thread titles indicating they open another page.</p>		
<p>There was no button to like/heart something even though the user could see that others did so</p>	<p>1</p>	<p>We made the heart icon bigger to indicate the user can click on it. It will fill in and increment the count when they do</p>		



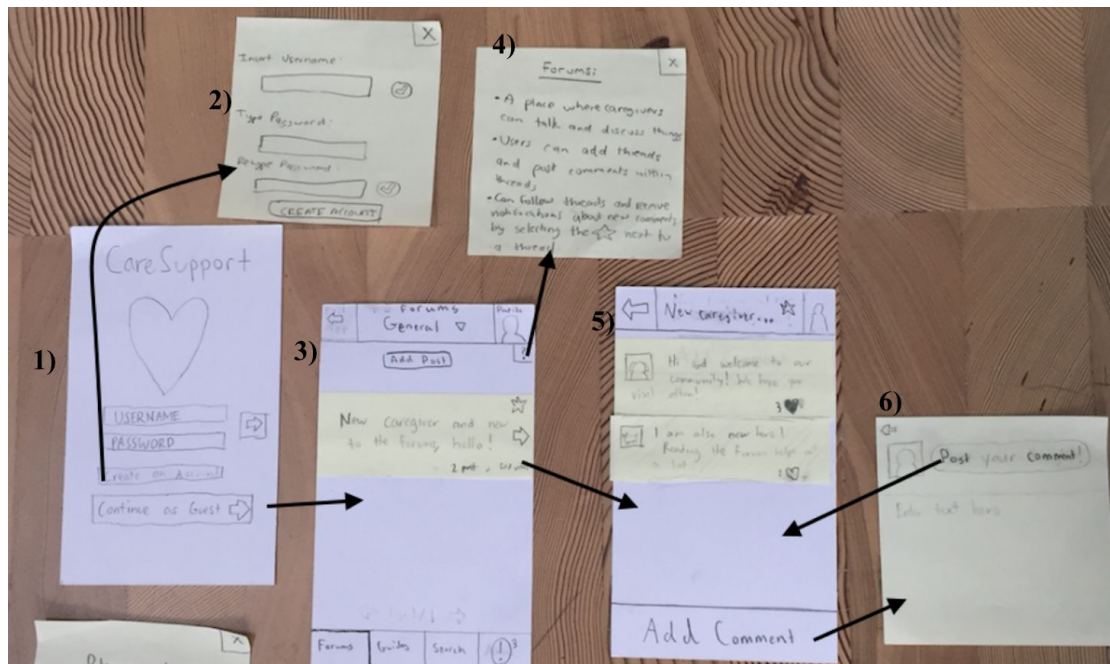
<p>Thought that when you hit the create an account button, a new signup page would appear</p>	<p>1</p>	<p>A new page pops up when they create an account that lets them enter all the needed information</p>		
<p>Couldn't figure out how to follow/unfollow a post and didn't understand the need for this task</p>	<p>3</p>	<p>The info guide that pops up when they click the question mark on the page now.</p>		
<p>Tried to add a new post instead of adding a comment on existing thread</p>	<p>0</p>	<p>Was an error on our part in describing the task</p>	<p>N/A</p>	<p>N/A</p>

# Final Paper Prototype



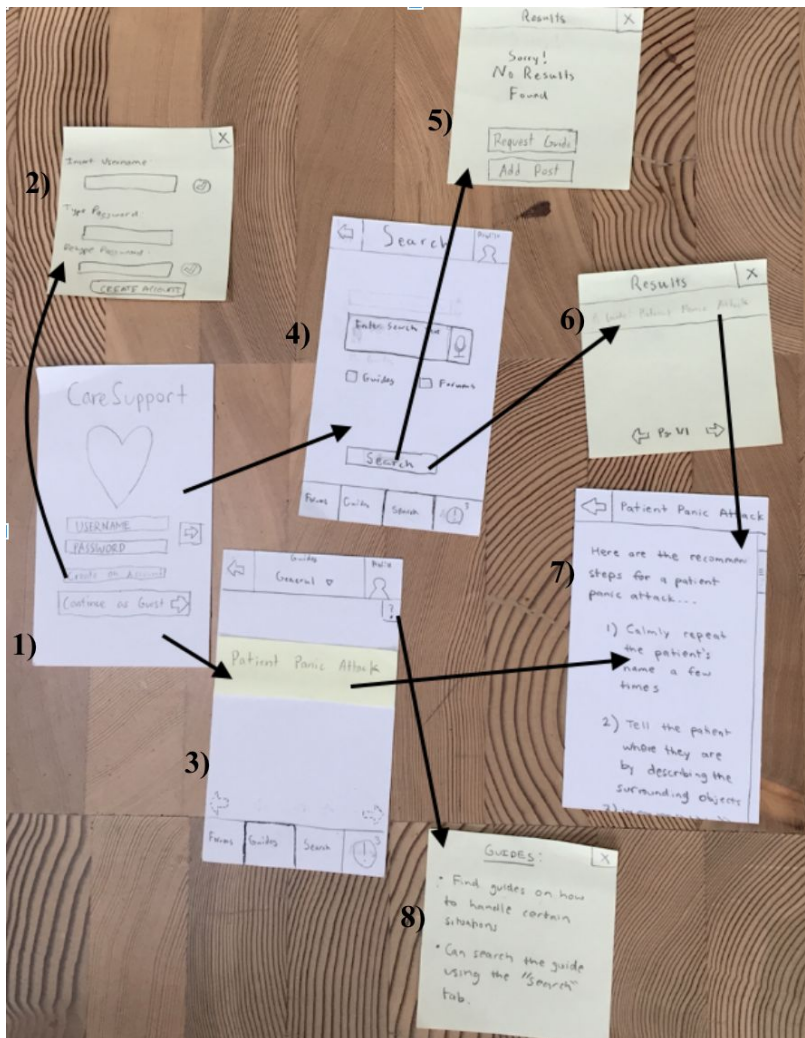
### Task 1)

The user wants to introduce herself to others, in the form of a comment on a thread. She starts on the login screen (1) and clicks on the "Create an Account" button. This leads to a pop-up where she creates her username, creates a password, and confirms the password before finalizing her account by clicking on "Create Account" (2). This leads her to the forums tab (3). She wants to know more about the forums, so she clicks on the help button and gets an informational popup (4). She exits out of that and then clicks on the thread she wishes to comment on, which leads her to that thread (5). She clicks on "Add Comment," which opens up a box (6) for her to write her comment. She writes her comment and clicks "Post your comment!"



## Task 2)

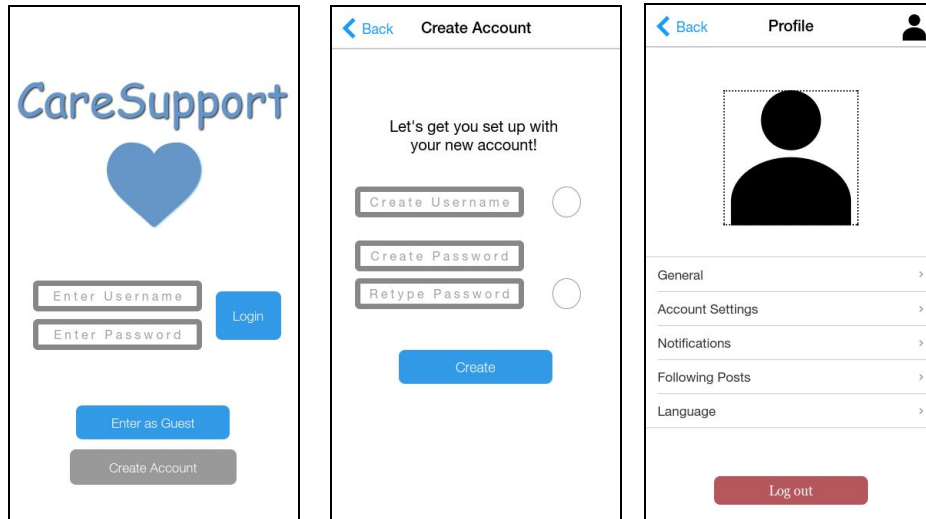
The person the caregiver is taking care of is having a severe panic attack caused by memory loss and the caregiver wants to find a guide on how to deal with the situation. She starts off in the login page (1) and had this been her first time using the app, she would have created an account (2). However, she had already created an account and set Guides as her preferred home page, so she is brought to the Guides page upon login (3). She could have found the specific guide she is looking for in the Guides page, but she is in a rush and does not want to look for things. She clicks on the Search tab and is brought to the search page (4). She is in a rush and decides to search using the microphone option, so she says "patient panic attack!" and the results show up in a popup (6). She clicks on the result and it leads her to the guide on how to deal with patient panic attacks (7).



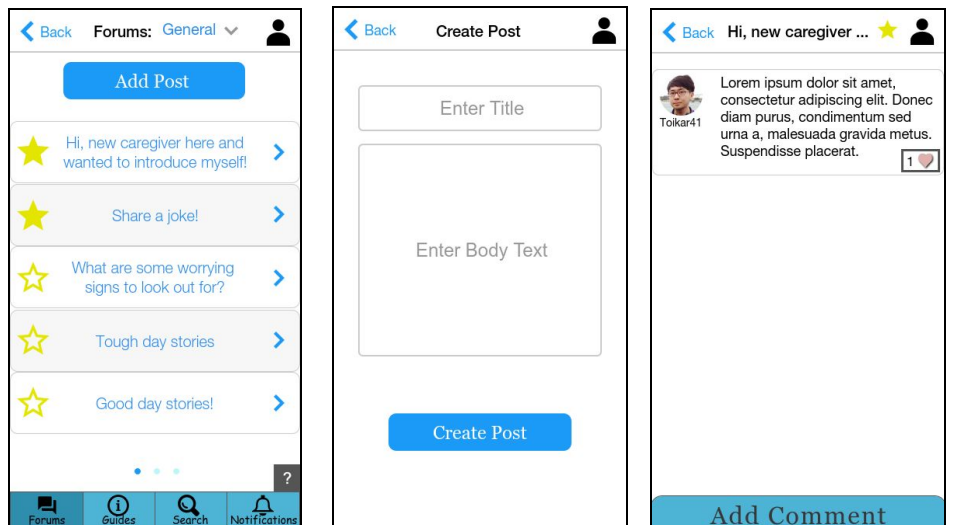
## Digital Mockup

### Overview:

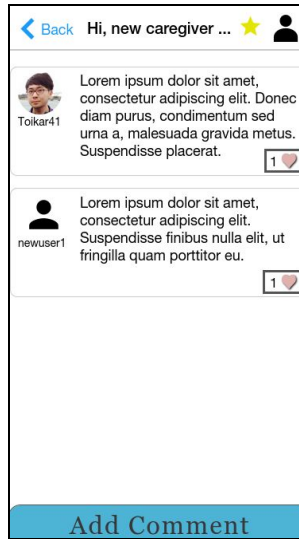
Login, creating an account, and profile:



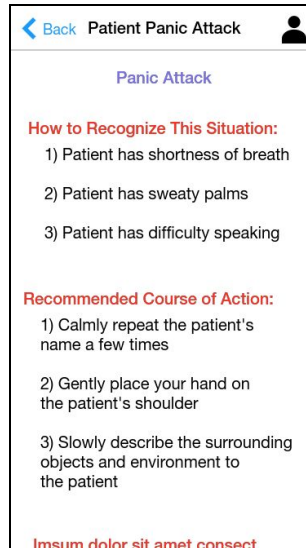
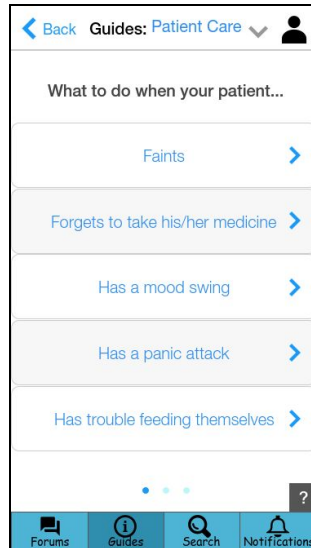
Navigating the forums (and adding threads and comments):



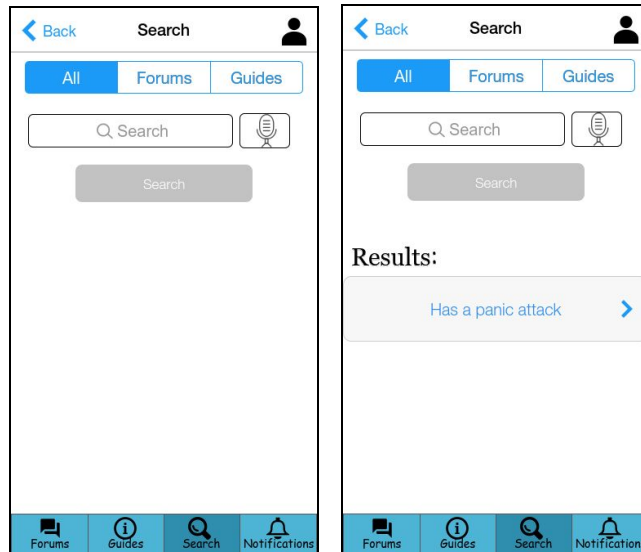
Navigating the forums (cont.):



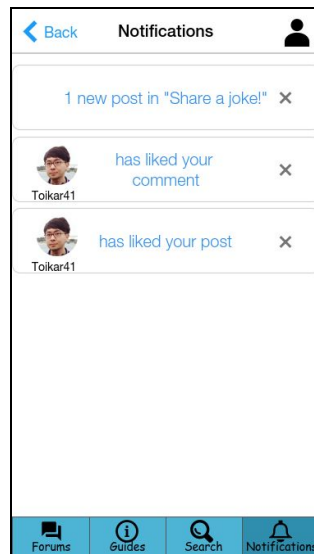
Navigating the guides:



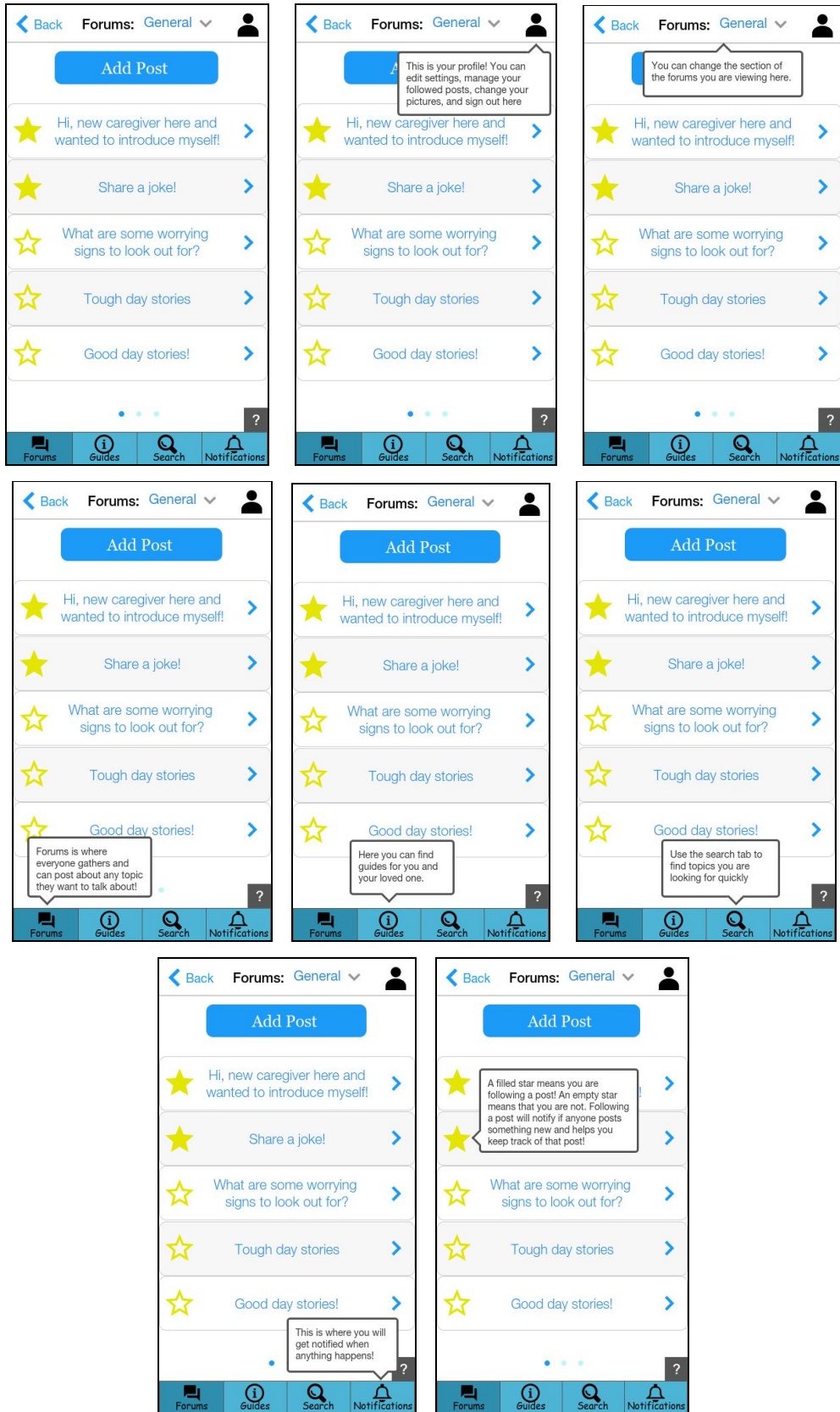
Using the “search” tool:



Viewing notifications:

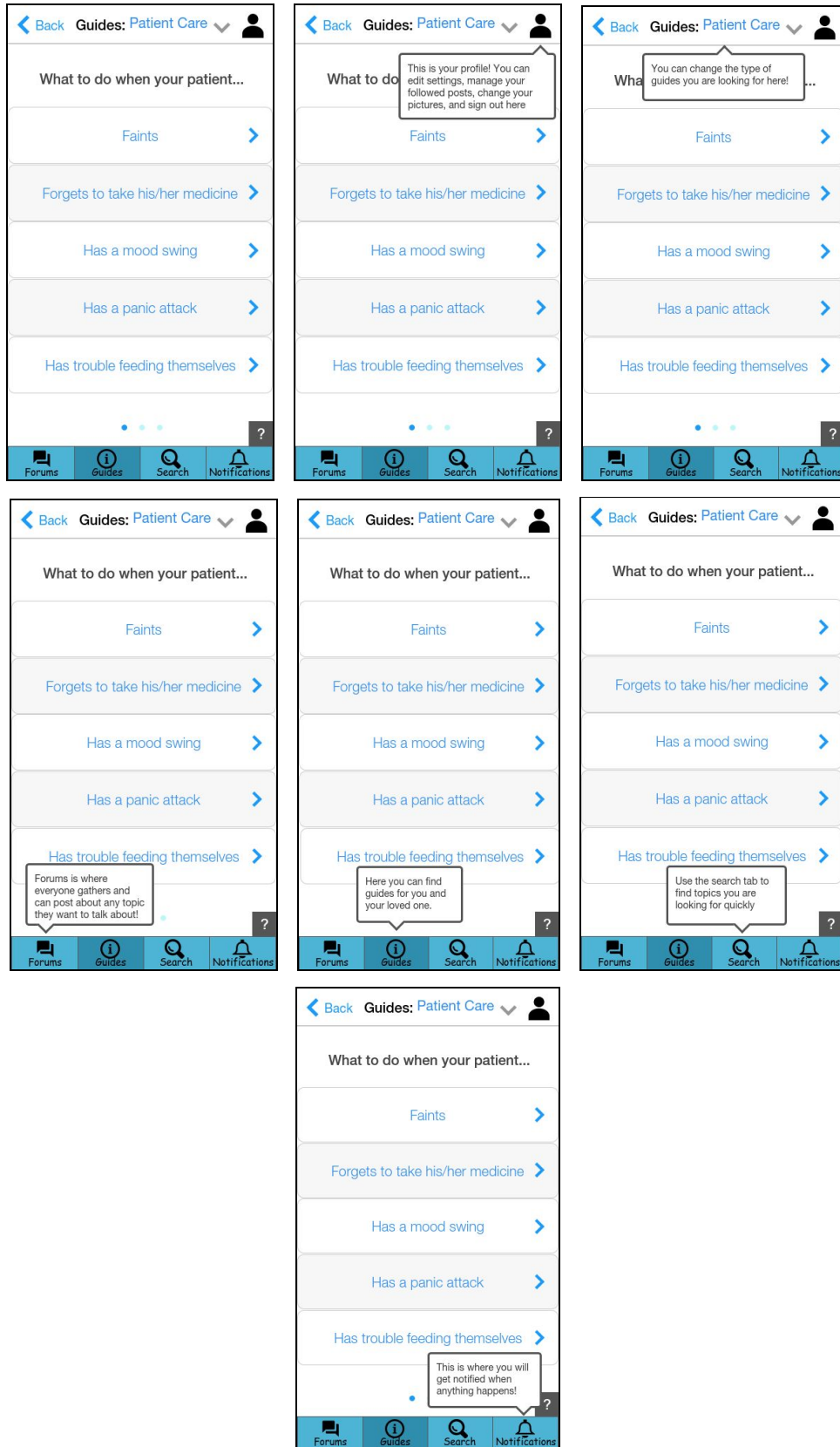


## Accessing the help wizard on the forums tab:





# Accessing the help wizard on the guides tab:



### Task 1)

The user wishes to go introduce herself to other caregivers. She opens up CareSupport and remembers she doesn't have an account (**Figure 1**), so she hits create account. On the create account page (**Figure 2**) she quickly enters her username and password and logs in for the first time. This takes her to her preferred home page, the general section of the forum (**Figure 3**). Before she is about to add a new post, she sees post of an user who is also new to the forum and wishes to go to that thread also to introduce herself. She taps the forum post and is taken to the thread. She quickly reads through what others have posted, and decides to also decides to leave a message (**Figure 4**). She types up her comment introducing herself as well (**Figure 5**), and posts it to the thread. At this point, her comment has been shared to the rest of the community and she has introduced herself (**Figure 6**).

Task 1 Images:

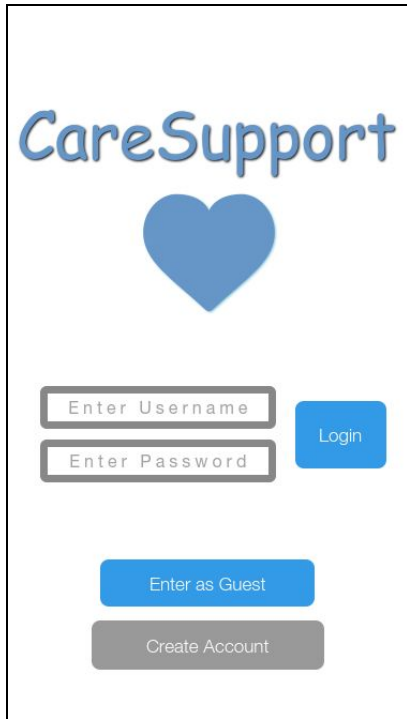


Figure 1

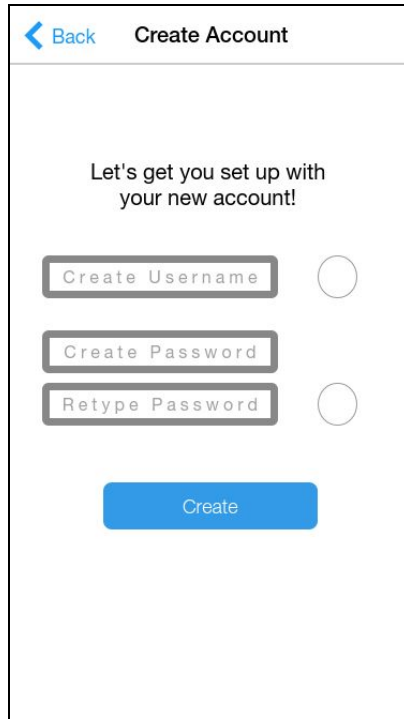


Figure 2

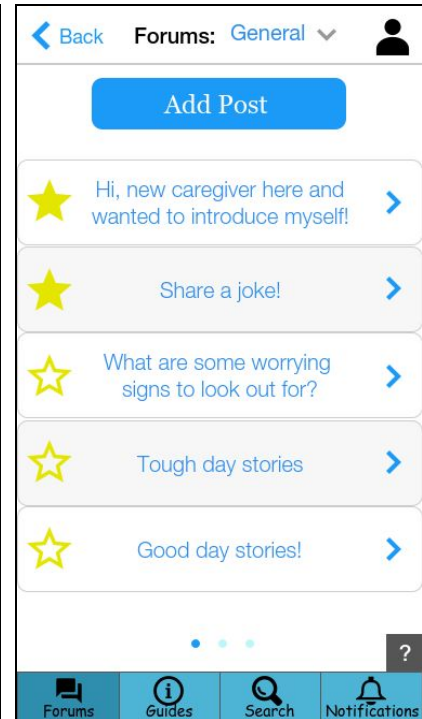


Figure 3



Figure 4



Figure 5

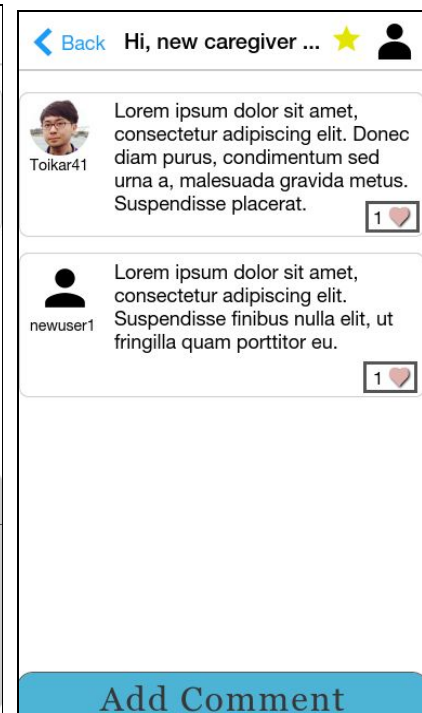


Figure 6

## Task 2)

The caregiver's patient is taking care of is having a severe panic attack caused by their memory loss; the caregiver wants to find a guide on how to deal with the situation. The caregiver enters the CareSupport app as a guest because he is in a hurry (**Figure 7**). The app opens up to the Forums tab (**Figure 8**). He decides to find a guide either by navigating to the search tab (**Figure 10**) or the guides tab (**Figure 9**). In the search tab, after entering in the phrase "panic attack", one very relevant guide shows up in the results on the screen (**Figure 11**). The guide itself is on a single scrollable page to make it easier to navigate. Clicking on the title brings the caregiver to a guide with the relevant information for handling the situation (**Figure 12**). If the caregiver had instead navigated to the guides tab, they would start out in the patient care section. They would see a guide with a relevant title (**Figure 9**), which would take them to the same relevant guide (**Figure 12**).

## Task 2 Images:

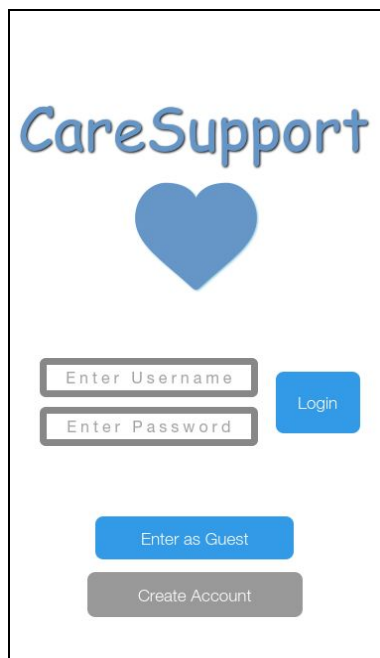


Figure 7

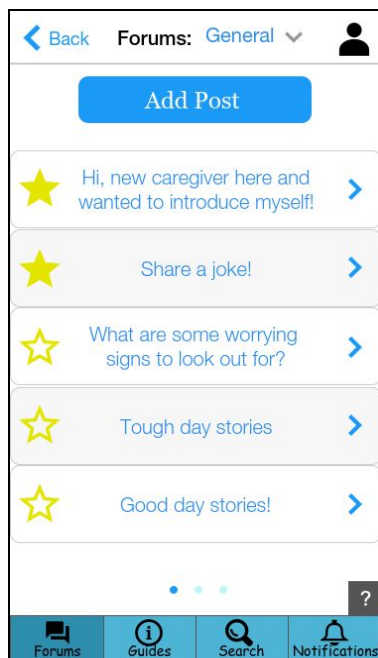


Figure 8

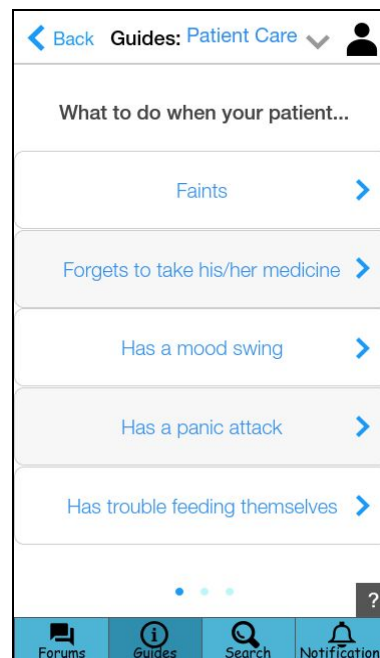


Figure 9

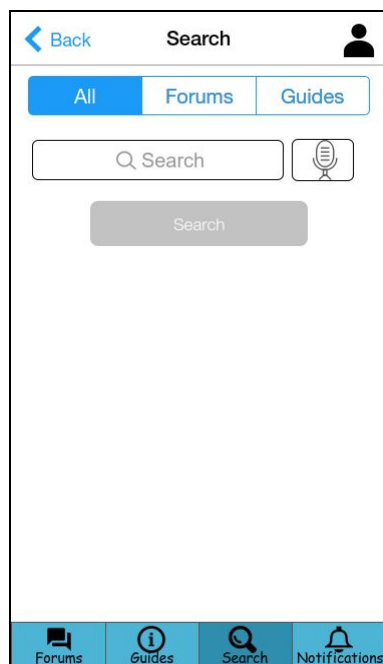


Figure 10

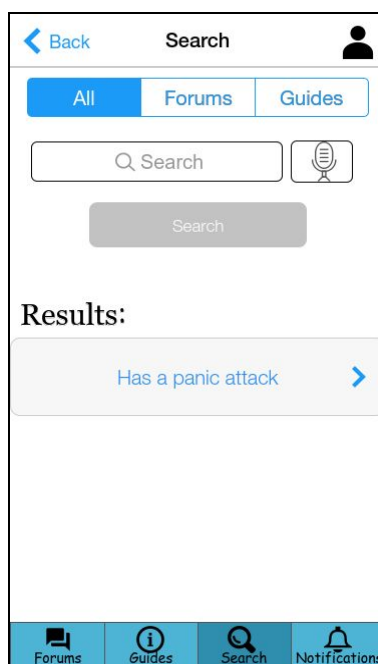


Figure 11

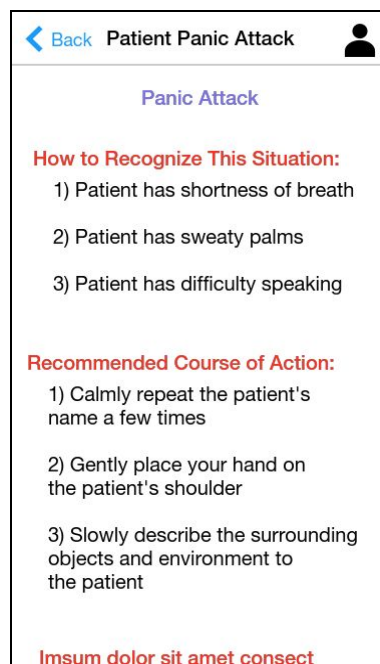


Figure 12

**Changes:**

The main focus of our changes in the digital mockup was translating the rough designs of each screen from the final version of our paper prototype onto the new medium. Whereas before our design research had served to give us important information on the terminology used and the optimal placement of different elements, in this phase our group on making the design both visually appealing and easy to understand. In terms of visual appeal, we changed the appearance of the interactive elements so that they were more rounded and less sharp as well as adding a consistent color palette to our application. As far as making the app more accessible, we differentiated more between interactive elements and plain text so that the user knew which buttons or tabs had some function that the user could utilize. Another major change for this purpose was merging the search tab and the search results tab, which made it more clear to the user what content they had searched for and in which areas. Finally, we added a wizard in the form of a question mark button on the guide and forums tabs that guides the user through the app's design and describes the function of each of the sections of the app.

## Discussion

The iterative design process taught our group the importance of adapting and improving our design from every step from start to finish. From the beginning, we had to be willing to listen to input we received from outside sources, which helped us develop the initial concepts within the design. It taught us the importance of being willing to change and not becoming too attached to one's own ideas. We also learned about how necessary it is to receive outside feedback.

This process had its greatest impact through the changes we made in response to the feedback we received. The feedback gathered over the course of the project continuously redirected our design's path towards a more successful finish. The largest change made was the switch we made in our target audience; our research led us to believe that caregivers would be a better target for our design than the patients themselves. This research also motivated our invented tasks that a user might want to accomplish. However, the small changes we made once we had a base design were just as vital. It would have been difficult for us as a group to criticize our own ideas, so the fixes recommended by our users allowed us to improve our design in ways we wouldn't have seen on our own. Thus, our design became more refined and usable as the process continued up until the moment our project was completed.

Even though we changed the tools a user could access to accomplish a task, the main tasks we wanted our design to support remained constant. These tasks, which we determined after our user research was complete, were the basis for our choice of design concept. We chose a mobile application as we felt it would best suit the tasks we wanted to support. The only specific tasks we changed was the wording of the tasks we gave to the users in our testing stage. We made our wording more vague during our testing so that we wouldn't lead the participants too far, which improved the data we gained from these tests.

We believe more iterations would have improved our design further, especially if we were able to test with our digital mock up and our final paper prototype. With the digital design, we were able to make the application aesthetically pleasing and implement the harder functions such as the user walkthrough and we would have loved to test this version with other users to refine it more. It would allow us to further improve upon the improvements we've made. As we only did user testing with three individuals, it would also allow us to find errors that could have also been missed in our first usability tests. Some of the other functions in our application were less tested like the search/notifications page because we wanted to focus our attention more on our two main tasks. Additional testing regarding those pages would also be helpful for our design.

## Appendix

### Task Descriptions:

We read the following task descriptions to our users:

Task 1: "Introduce yourself to others in a comment on one of the threads in the forum."

Task 2: "Find a guide for what you should do if your patient has a panic attack."

Task 3: "Follow a thread on the forums."

Task 4: "Unfollow a thread on the forums"

### Critical Incidents:

From our tests with our three users, we identified the following key critical incidents:

User 1:

- Unable to complete the task of following a thread
- Thought comments were clickable when they were not
- Tried to comment when he was signed in as a guest

User 2:

- Thought that when you hit the create an account button, a new signup page would appear, when it in fact did not
- Unable to follow a thread (and didn't understand its purpose either)
- Tried to add new post instead of adding a new comment
- Did not like that he had to scroll back up to create a comment

User 3:

- Mistook a comment for a thread since they looked alike
- Difference between hearts/likes was confusing
- Also no option to heart/like a thread or comment