



Low Fidelity Prototype User Testing

Team

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Introduction

Forty-nine million Americans are living without health insurance [2], which every year results in about 45,000 deaths [1]. These startling numbers help attest that more work must be done to provide more forms of health care to those living without health insurance. When a person is feeling ill or has a minor injury, it would be particular helpful if there was a tool with which a person could gain insight from a doctor about the health condition with no additional financial burden. WebClinic is one such tool; it is a tool that provides a person with no health insurance a place where they can describe their condition for a volunteer doctor to view, and get the appropriate care that the patient needs within a short time frame.

Paper Prototype

Our low-fidelity prototype (figure 1) consists of two frames for our WebClinic website, a collection of removable screens that can be swapped out depending on where the user is navigating during the testing process (figure 2 and 3), and a set of post-it notes that serve as a way for the user to enter data into fields such as text boxes, radio buttons, and drop-down menus (figure 4). The goal for the low-fidelity prototype was to match the simplicity that was reflected in the selected interface design. We were very careful to include enough white space and enlarged buttons to assist users in finding what they needed.

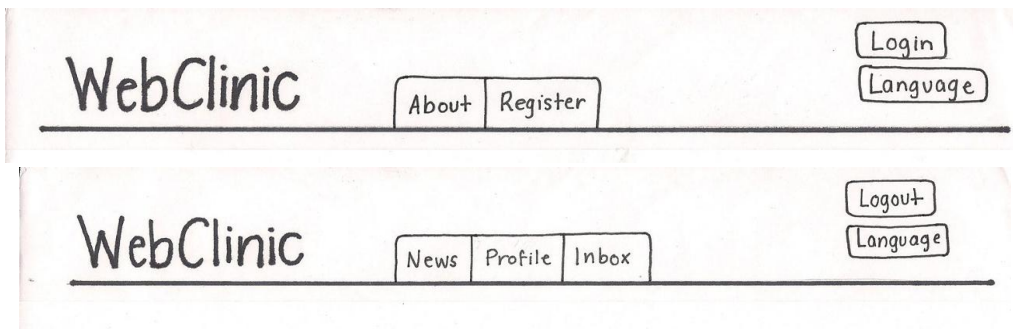
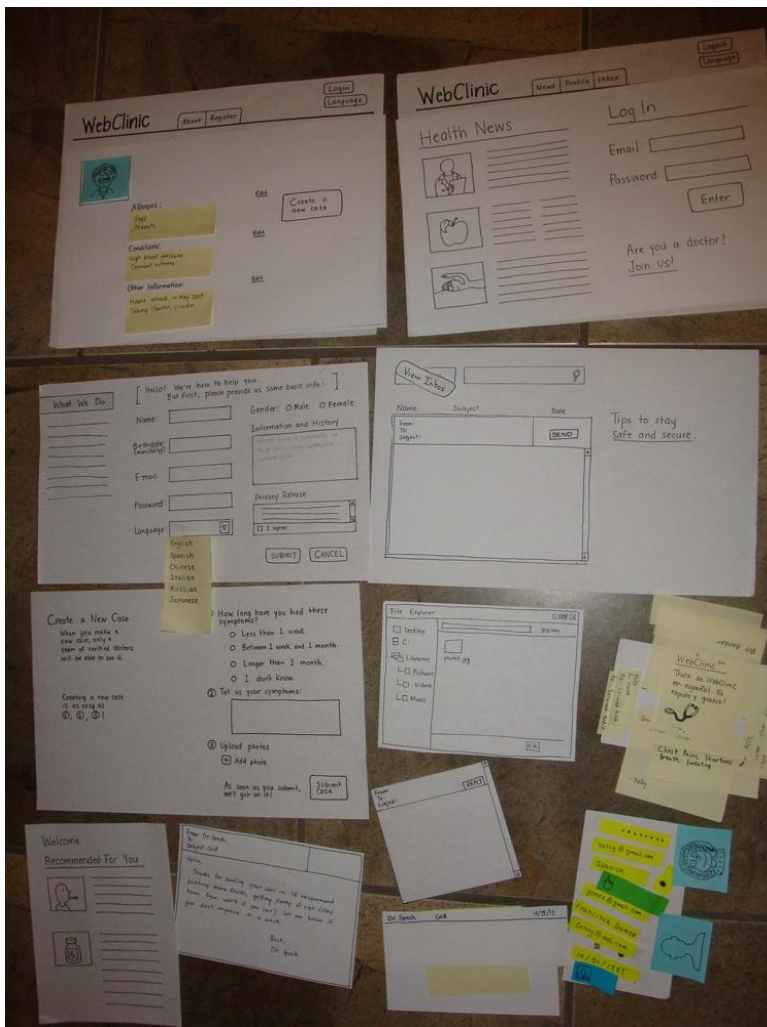


Figure 1

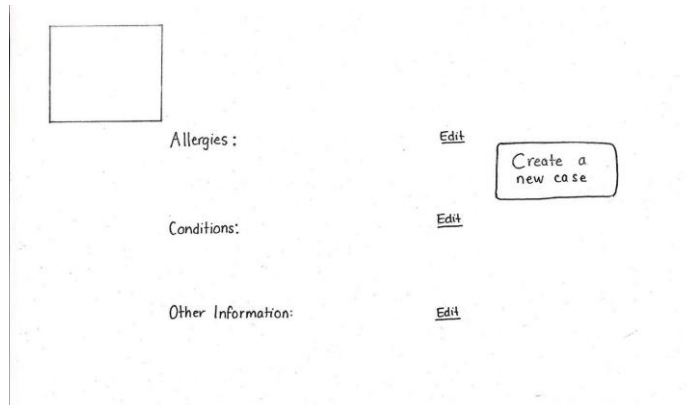


Figure 2

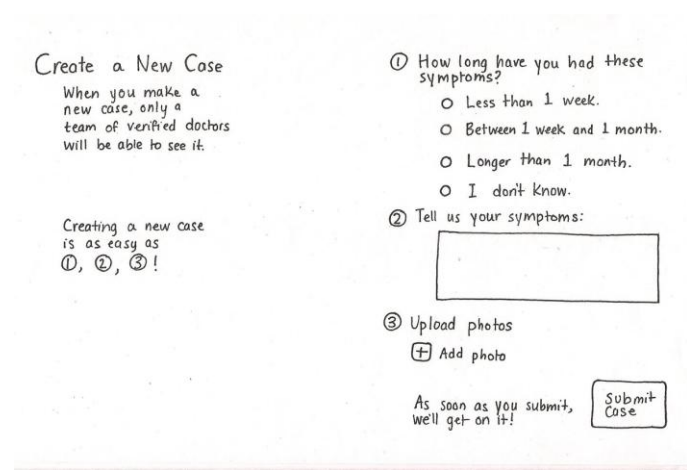


Figure 3

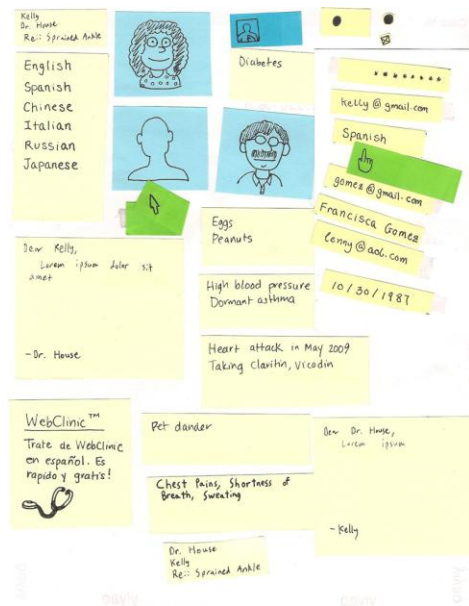


Figure 4

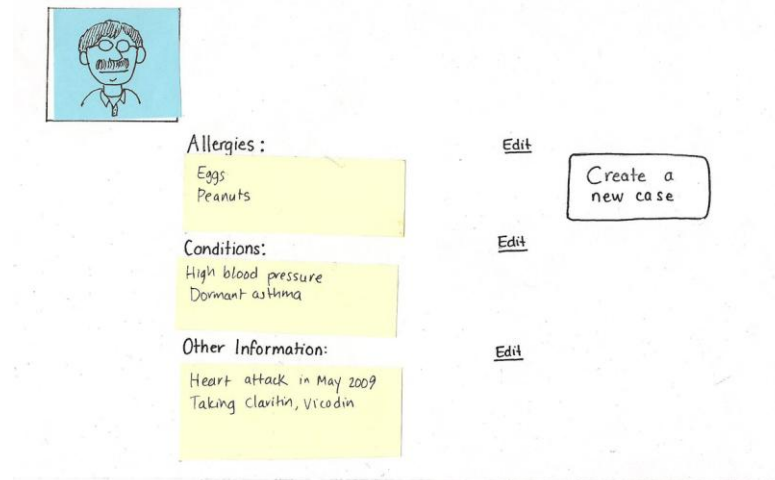


Figure 5

The low-fidelity prototype supports the following tasks:

- Registering a new user account
- Creating a new case for a medical condition
- Checking user account e-mail

The most important part of our paper prototype were the collection of removable mock-up screens that can be swapped out depending on where the user is navigating during the testing process. These included: registration, welcome screen, news, user profile, create a new case, inbox, and compose new message. These mock-up screens support the three tasks (listed above) and the common activities that the user will encounter. To help make these mock-up screens interactive, we provided sticky notes with which the user can upload her or his profile picture and additional information such as name, birth date, and medical conditions.

Testing Method

Participants

We randomly hand-picked four participants to ask if they would be willing to take part in our user testing. Access to hospitals and clinics was also forbidden, so we decided to randomly hand-pick participants in public spaces. We wanted to seek out the same participants with whom we conducted the contextual inquiry, but they were unavailable for user testing.

Participant one is a young Asian female. She is majoring in economics and although she is insured, some of her friends are not.

Participant two is a mid-20s White male. He just graduated from college with a degree in history and has no health insurance.

Participant three is an African American male in his late 20s. He is majoring in geography and we do not know if he has health insurance or not.

Participant four is a male in his mid 30s. He is a post-doc in the biology department and has health insurance. He has only lived in the United States for four years.

Environment

We went to three public university libraries: Odegaard Library, Allen Library, and Health Sciences Library. All of the user testing subjects completed our tasks in a library environment on a Saturday afternoon. We chose this time because it is usually not very busy in the campus libraries and therefore, our user testing would have a better chance of happening in a more relaxing environment. In the library, we chose quiet areas that were somewhat far from other groups and individuals so that our testing would not be disrupted.

To conduct our user testing easily and efficiently, we chose areas in the libraries that had a large desk space to accommodate our user testing.

Tasks

Task one: Register a new user account

Pretend as if you have never used WebClinic before and you want to register a new account.

Task two: Create a new case

Imagine you are having a bad cough, a headache, and the chills. You are already logged onto WebClinic and you want to describe your conditions to be submitted to a doctor.

Task three: Check WebClinic e-mail

Imagine you are already logged onto WebClinic and you submitted a case three days ago. Read your WebClinic e-mail.

Procedure

To accomplish the user testing, we divided the roles for each person conducting the user testing. The roles stayed the same throughout all of the user tests. ShanShan was the observer, Matthew was the facilitator, and Mai played the computer.

Before user testing begins, Matthew gives the user a brief overview of the purpose of WebClinic. We then briefly interview them to gain some background information. The user testing begins with Matthew asking the user if s/he has any questions. If no, then we proceed with the tasks. Matthew tells the user what task s/he is trying to accomplish. Mai begins playing the computer, swapping out the screens for each button on the prototype that the user “clicks” (tapping with the button with a pen).

If the user had a question during the task, we made sure not to help them if it would affect our user testing. For example, if a user asked, “should I click here?” (pointing to a button), Matthew answered: “I don’t know.”

Test Measures

Our test measures were focused on qualitative observing, rather than quantitative measuring. For example, we did not incorporate Fitt’s Law into our user testing process. During the user testing process, the observer recorded any comments or questions that our participants had, and included any steps where the user seemed off-track. Repetitive steps that participants took could suggest flaws in our design (such as moving back and forth between screens). The observer also recorded the steps that the user successfully took, such as a task that mimicked how we envisioned a particular task would be performed. Finally, the observer recorded if the user took an unusual amount of time to accomplish a step in a task.

Testing Results

All users’ comments were generally positive, and said our design is fairly straightforward. Users were especially pleased with the simplicity in design, one user even commented that the design was very “quick and simple” and it saved him time and money that he would otherwise spend going to the doctor.

Welcome

The Welcome screen was confusing for all of the participants. The users didn't know where to begin the task, and always began trying to login when they were tasked to find the Register button and create a new WebClinic account. We also realized that we had two ways of logging in, one way by filling out the fields on the Welcome screen and another way by clicking "Login". However, the Language option on the Welcome screen stood out as a helpful feature. In our tasks, we didn't even address the option to change the language, however, one Japanese participant decided to press the Language button on the Welcome screen. This presented him with a number of languages from which he could choose. He pressed "Japanese" and commented that he would definitely use WebClinic since this feature is really helpful for people like himself.

User profile

The user profile screen testing had mixed results. Users understood that to upload a photo, they could just click "Upload photo" on the square. Users also easily understood each of the fields: Allergies, Conditions, and Other Information. However, it was confusing for most of the users why we had the word "Edit" on the right side of each of these fields. When clicking on "Edit", they were able to edit whatever field on which they had clicked, but this wasn't very intuitive.

Create a new case

The "create a new case" screen was easy to find and well received. Users liked the instructions on the left side of the screen and generally said that all of them were easy to understand and follow. However, uploading a photo was confusing for most of the participants. They weren't sure whether to click the + sign or click "Add photo" or if they could just leave the field blank. When the user clicked the + sign, we mimicked a Windows dialog appears for the user to upload a photo, but this was still a confusing concept.

Inbox/Compose a message

The inbox and compose a message screens were easy to understand. Although our task three only asks the user to read his or her e-mail, users generally clicked on "Reply" to see what it did. Users were pleasantly surprised by how easy WebClinic e-mail was to use. However, two of our users double-clicked on the title of the message in the Inbox to read the e-mail. This may be attributed to the e-mail client that the user uses, such as Microsoft Outlook. We need to be aware of this and design so that if a user double-clicks, then nothing unexpected happens.

Interface Revision

The Welcome screen was changed so that both the Register button and Login button were equally weighted above the navigation bar. We emphasized the Registration button when explaining what WebClinic actually is, however, to provide a more clear and easy way of registering.

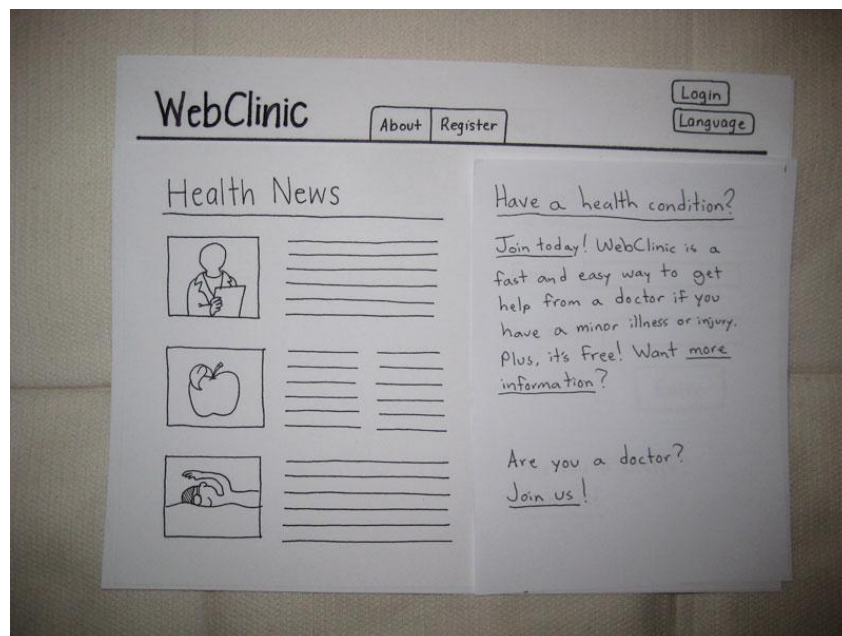


Figure 6

The Create a new case screen was changed so that the user could click an Add Photos button (figure 7) instead of the + sign that we previously had (figure 3). We also decided to add "(optional)" text beside the Upload photos feature because, based on user feedback, the user wasn't sure if uploading photos was necessary (especially when describing a non-visual related illness, such as describing a cold).

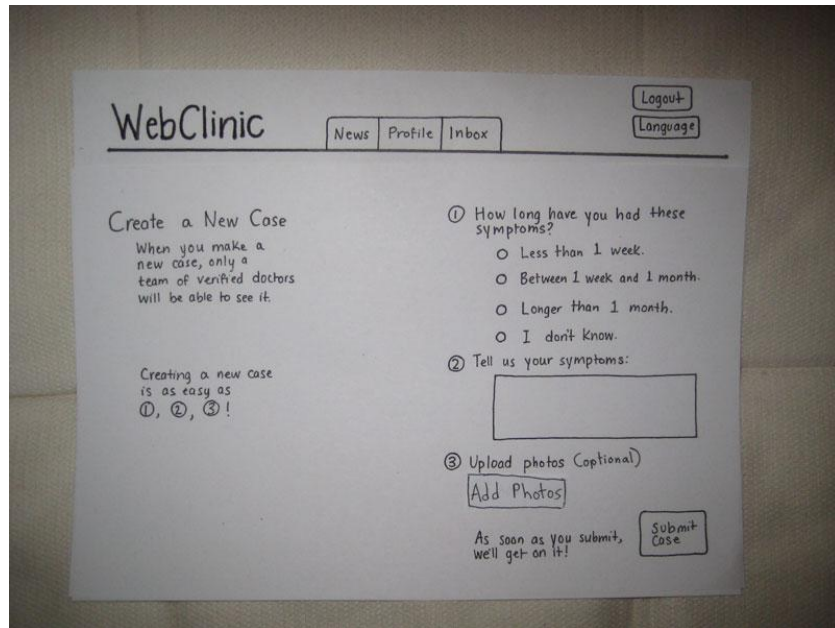


Figure 7

For the user profile screen (Figure 8), we deleted the “Edit” button next to the Allergies, Conditions, and Other Information fields because they were confusing. Instead, we chose to make this screen consistent with our other screens (Figure 3). In this way, the fields have a box under each of them to help the user know that s/he can edit these fields.

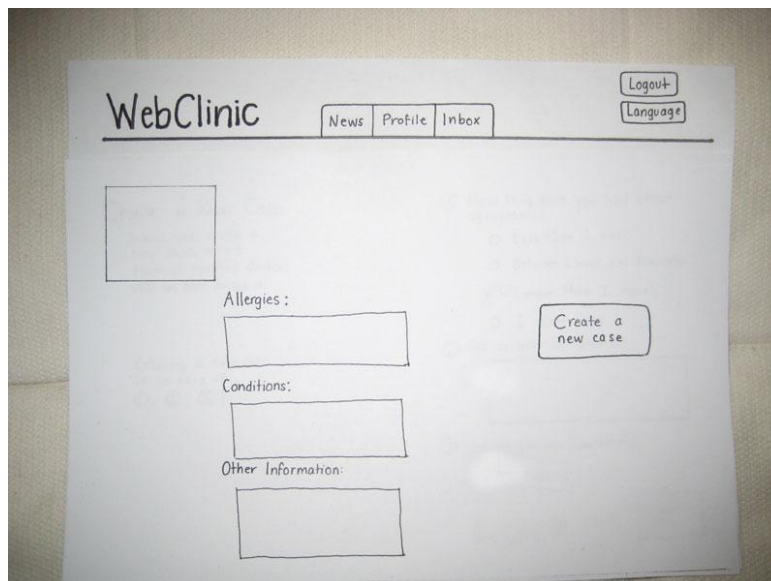


Figure 8

Discussion

Our biggest “take-aways” from our user testing were that we need a better way to introduce the user to WebClinic and we have to make the design more intuitive. Before our design revision, the user was welcomed to the website without any text explaining what WebClinic actually is. The login fields were too big and overshadowed a way for the user to register for a new account. We decided to solve this problem by giving equal visual weight to both Registration and Login above the navigation bar and to welcome the user to join WebClinic in the application’s description. The small description is an easy way of communicating WebClinic, and if the user wants more information then they can click the “More Information” link.

We also learned that we have to make the design more intuitive. We had two different ways of communicating to the user that s/he can edit a field: (1) by clicking an Edit button that looked like a link and (2) by clicking within an editable field. We decided to streamline the editing field process by only having editable text box fields. We also expected the user to know what “+” meant when uploading a photo, and did not explain that this field is actually optional for visually related injuries or sicknesses. We decided to make the Upload photos feature more intuitive by explicitly stating that it is an optional field by having the functionality look like a button.

All together, we’re proud of our design. From user testing, we learned that we are on the right track with regard to designing a web application for people without health insurance. The user testing was beneficial because it allowed us to understand, from a user-centered design perspective, how we can improve on our design. However, we wish we had interviewed our users more to find out if they would feel comfortable and secure explaining their health condition on a website. We also wish we had asked the users who were double-clicking to select an e-mail why, to find out if the current e-mail client they are using is the underlying reason for this behavior.

References

1. Cecere, David. "New study finds 45,000 deaths annually linked to lack of health care coverage." Harvard Science. 17 Sept. 2009. Harvard University. 19 Oct. 2011. <<<http://news.harvard.edu/gazette/story/2009/09/new-study-finds-45000-deaths-annually-linked-to-lack-of-health-coverage/>>>.
2. Hadley, Jack."Sicker and Poorer: The Consequences of Being Uninsured". 2003. Washington, DC: The Kaiser Commission on Medicaid and the Uninsured. Print.

Appendix A: Script

Hello, we're a group of computer science students who are taking a class in user-centered design. We would like your feedback on a website we designed that is for people without health insurance. Would you be willing to be a user of our paper website so that we can approve upon it? Great, I am Matthew, and this is ShanShan and Mai. ShanShan will be taking notes and observing, and Mai will be playing the "computer" a.k.a. swapping the pieces of paper.

There are three tasks in this process that I will ask you to complete. At any time you can stop the user testing. If you have a question or concern, please feel free to ask us. We might say, "I don't know" – but that only means that we either really don't know, or we want to see how you can navigate through the given task. Also, please feel free to speak aloud what you are thinking through the testing process. It helps us to improve our design if we know what you are thinking. Remember, you may stop the user testing at any time, for any reason. Do you have any questions?

Task One

Your e-mail address is `jk@aol.com`. Your password is 12345. Create a new user account. You may fill out the information for the new user as if it's your own, or just make it up.

Task Two

Imagine you are having a bad cough, a headache, and the chills. You are already logged onto WebClinic and you want to describe your conditions to be submitted to a doctor. Create a new WebClinic case and describe your conditions.

Task Three

Imagine you are already logged onto WebClinic and you submitted a case three days ago. You had a really bad headache and had trouble sleeping. You took the doctor's advice and got enough rest and drank plenty of fluids. The doctor said she would e-mail you in three days. You want to read your WebClinic e-mail and get an update from your doctor about your condition.

Appendix B: User Testing Notes

User 1 at Odegaard Library

Task 1	Task 2	Task 3
Main log in page	Log in	Log in
Filling out logIn and password And clicked submit	Profile Page	Profile Page
Receive "Account is not in the system" message	Create a new case	Inbox
Click on Registration tab of log in	Upload photo	Double click on the title
Create a profile and Submit	Submit	Read the message

Task 1

Question : "Do I just click submit?" during creating a new profile

(We were not clear on how to filling out the information using a pencil and using it to stimulate a mouse)

Question : When user 1 saw our main log-in page, she asked what the lines under news section are. And she commented why we don't just fill out the information. (And those lines we are used for substituting actual texts for Health News)

Observation: She seemed unsure about clicking registration

Task 2

Question: She saw the "Upload Photo" button while she filled out the information on the profile page, she asked "So do I take a picture and upload it?"

Task 3

Question: Since we didn't explain if the message will be sent in actual email account of the inbox of the website, user asked for clarification.

Overall Comment: Uploading picture is confusing, since if a person has a cold, he/she doesn't have a picture to upload.

User 2 at Allen Library (Geography Major)

Task 1	Task 2	Task 3
Main log in page	Log in	Log in
Filling out logIn and password And clicked submit	Profile Page	Profile Page

Receive "Account is not in the system" message	Click edit on the profile page	Inbox
Click on Registration tab of log in	Create a new case	Double click on the title
Create a profile and Submit	Upload photo	Read the message
	Submit	

Task 1

Observation: After he clicked submit, there is a message of "account is not in the system", he looked at the main log-in page and then tried to click registration

Task 2

Question: Confused with edit button and create a new case button, and asked "which one should I click?"

Comment: When he see the upload photo button, he skipped it and said " won't need a photo in this case".

Task 3

Question: Asked " Do I click the email to check it?" He wasn't sure the method of opening the email.

Overall Comment: It is really straight forward and easy to use.

User 3 at Health Science Library (History Major)

Task 1	Task 2	Task 3
Main log in page	Log in	Log in
Filling out logIn and password And clicked submit	Profile Page	Profile Page
Receive "Account is not in the system" message	Create a new case	Inbox
Click on Registration tab of log in	Upload photo	Click on the title
Create a profile and Submit	Submit	Read the message

Task 1

Comment: While he was filling info, he commented "So I put my info in email and just submit".

Comment: After he received the account is not recognized message, he commented "Oh, I should click registration". It seemed that is obvious but he just didn't see the button

Task 2

Comment: Once our description is done, he clicked create a new case and commented “so I create a new case like that “. It seemed to be a easy task for him. He ignored upload photo button.

Task 3

Comment: Comment “so you can click on that” when he clicked the title, it seems really obviously to him.

Overall Comment: It is really simple and convenience.

User 4 at Biology Department (Biology Major)

Task 1	Task 2	Task 3
Clicked on language pull down menu	Log in	Log in
Main log in page	Profile Page	Profile Page
Filling out login and password And clicked submit	Create a new case	Inbox
Receive “Account is not in the system” message	Upload photo	Double click on the title
Click on Registration tab of log in	Submit	Read the message
Create a profile and Submit		

Task 1

Question : “I guess I just fill in the information?” He asked, while he was suppose to register (clicking the registration tab) instead of filling log-in information

Comment: After the participant saw what the language option does, he commented it is really cool.

Task 2

Question: “What kind picture do I upload?” he asked when he saw the upload button

Task 3

Comment: “Simple system” (he was suggesting the mail system).

Overall Comment: He really likes the language option, and he said it would be helpful to people like him and he will definitely use it. He also comment it is really quick and easy to use. He can just fill out during work (and the user testing took place during his break from work).