

Michigan Tech University

Usability Test Report

CS5760 Human-Computer Interactions & Usability

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➤ DEVELOPMENT TEAM DOCUMENTS

■ The undergraduate team's website

<http://www.csl.mtu.edu/classes/cs4760/www/projects/s16/group6/www/>

■ design details

<http://www.csl.mtu.edu/classes/cs4760/www/projects/s16/group6/www/design-docs/DesignChangeDocument1.pdf>

<http://www.csl.mtu.edu/classes/cs4760/www/projects/s16/group6/www/design-docs/Design%20Changes.pdf>

➤ Introduction

■ Short description of the undergrad design

This application would function to allow users to document and identify bird mortality events. The application is broken down into three main parts, the data entry which is done on the main app page itself, the database which will sit on the back end somewhere and store all gathered data, and the data view which will allow scientists who are interested in this information to examine it.

Our app has a data entry portion, which is comprised of the main app web page itself. This will be the part of our app that is seen and used by end users. This will include the part of the app which takes pictures of dead birds/roadkill, collects GPS data, weather data, speculative cause of death, and speculative species of dead animal. This part of the app will also interface with the database and send all the information that the user enters into to the database.

The database part of our app is the part that will store all of the information gathered from the data entry part of our application and facilitate its connection to the data view part of our application.

The data view is the part of our application that will be used by scientists. It will provide various ways to view the gathered data, including the ability to directly display the pictures that have been collected, as well as display GPS information conveniently in the form of heatmaps. It will also allow scientists to access all other gathered data in the hopes of extrapolating something useful from it.

■ Usability Test Goals

The goal of this usability test is to collect information about how users are using Dead Bird App and whether they experience difficulties performing simple and more complex tasks using this App. So we can propose improvements to the App developers.

■ Brief Description of Tests

1. Create account and login(5 min)
2. Record dead birds information and submit to the website(10 min)
3. Use admin account to verify the data(8 min)

➤ Test Plans

■ Before Test

● Sign in Consent

● Pre-test Questions

1. How many years have you used a smart phone?
2. Please indicate your level of agreement to the following statement: I am very interested in the testing of this application.
 1. Strongly agree
 2. Agree
 3. Neutral
 4. Disagree
 5. Strongly disagree

● 3.3 Test set up details

- A) Set up the computer to have the website open.
- B) Set up the webcam/voice recorder/screen capture software.

■ Usability Test Scenario

● Scenario description

Assuming you are a student in a biology group with some professors, they are developing a new project with a dead bird app and need volunteers to collect data. Volunteers could get one credit so you should have your own account in this app for proving. There would be one month to do this work. Volunteers are expected to take camera of dead birds and record some information so that scientists could make analysis.

● Test Scenario 1: Create your own account and login

✓ Test Goals for the Scenario

To test if the login function is ok and construct intuition and first impression for users.

✓ **Task List**

- A) Go to the home page and press “sign up today”
- B) Fill in the sign up form, input to “username”, “first name”, “last name”, “email”, “password” and etc.
- C) Submit the form
- D) Go back to the home page and press “login”
- E) Fill in the login form, input username and password
- F) Submit the form

✓ **Quantitative measurement list**

- 1) Actual Time to complete each task
 - a) Length of time each participant spends on filling in the “sign up” form
 - b) Length of time each participant spends on “login”
- 2) Number of participants completing tasks within allocated time
- 3) Number of participants completing tasks with extra time
- 4) Number of errors the participants made
- 5) Number of problems encountered, so that need help from coordinators
- 6) Number of unsuccessful retries to solve one error or problem and the length of time if resolved.
- 7) How many times the participants hesitate?

✓ **Qualitative measurement list**

- 1) Facial expressions
- 2) Verbal comments when they think out loudly
- 3) Spontaneous verbal expressions
- 4) Miscellaneous activities (stretching, wanting breaks, etc.)

✓ **Potential observations of participant**

1) Participants may be a little surprised when the password is not available, because there must be at least one character, one number and one symbols like @#\$(*_

2) Participants may feel difficult to recognize the words in the login form because of the color.

3) Participants may ask for help to find the login page after creating an account.

● **Test Scenario 2: Submit the report data and view the record**

✓ **Test Goals for the Scenario**

To test if the report function is ok and help participants get the main use for

this app.

✓ **Task List**

- A) Go to the home page and press "Report Form"
- B) Fill in the form, check the location and input necessary information.
- C) Submit the form
- D) Go back to the home page and press "Table Data"

✓ **Quantitative measurement list**

- 1) Actual Time to complete each task
- 2) Number of participants completing tasks within allocated time
- 3) Number of participants completing tasks with extra time
- 4) Number of errors the participants made
- 5) Number of problems encountered, so that need help from coordinators
- 6) Number of unsuccessful retries to solve one error or problem and the length of time if resolved.
- 7) How many times the participants hesitate?

✓ **Qualitative measurement list**

- 1) Facial expressions
- 2) Verbal comments when they think out loudly
- 3) Spontaneous verbal expressions
- 4) Miscellaneous activities (stretching, wanting breaks, etc.)

✓ **Potential observations of participant**

- 1) Participants may be confused for some input like speed limit.
- 2) Participants may want to click the map to choose the location rather than locate automatically.
- 3) Participants may ask for help to fill the form.
- 4) Participants may be frustrated to the result table.

● **Test Scenario 3: use admin account to verify the data**

✓ **Test Goals for the Scenario**

To test if update function is ok.

✓ **Task List**

- A) Login with admin
- B) Go to database/table view
- C) Update the information and click "submit" button

✓ **Quantitative measurement list**

- 1) Actual Time to complete each task
- 2) Number of participants completing tasks within allocated time

- 3) Number of participants completing tasks with extra time
- 4) Number of errors the participants made
- 5) Number of problems encountered, so that need help from coordinators
- 6) Number of unsuccessful retries to solve one error or problem and the length of time if resolved.
- 7) How many times the participants hesitate?

✓ **Qualitative measurement list**

- 1) Facial expressions
- 2) Verbal comments when they think out loudly
- 3) Spontaneous verbal expressions
- 4) Miscellaneous activities (stretching, wanting breaks, etc.)

✓ **Potential observations of participant**

- 1) Participants may be difficult to find the “update” button.
- 2) Participants may be frustrated to find the entry of edit.

■ After Test

● Post test questions

1. Are you satisfied with the amount of time it took to complete this task?
 - a) Strongly agree
 - b) Agree
 - c) Neutral
 - d) Disagree
 - e) Strongly disagree
2. Overall, are you satisfied with the support information (tutorial, messages, and hints) when completing this task?
 - a) Strongly agree
 - b) Agree
 - c) Neutral
 - d) Disagree
 - e) Strongly disagree
3. Do you feel this App reliable as a tool for related research and environment?
 - a) Strongly agree
 - b) Agree
 - c) Neutral
 - d) Disagree
 - e) Strongly disagree
4. Which design did you find the most difficult to manipulate?
 - A) Sign up form
 - B) Login form

- C) Report dead bird data
 - D) View the table data
 - E) None
5. What tasks were easy to complete?
- A)sign up form
 - B>Login form
 - C)Report dead bird data
 - D)View the table data
 - E) None
6. Would you recommend this App to a friend or other scientists?
- A) Yes
 - B) No
 - C) Depends
7. What suggestion do you have for us to improve or make it easy to use?

➤ Results

Every participant has at least 2-year experience to use the smart phone and computer.

■ Time Distribution

Time(min)	1	2	3	4	5	6	7
task 1	14	5	3	4	2	1	2
task 2	3	3	1	2	4	4	4
task 3	5	4	3	2	3	3	3

Most participants found task 1 is more difficult to complete than task 2 and 3.No. 1 spent 14 minutes in task 1 and made several errors during the test, he has trouble in password filling due to the bug, and he did all manipulation in someone's laptop, which is unfamiliar for him so time may be longer than others. No.6 skipped email verification and log in directly with new account. In conclusion, participants could complete task 1 in 5 minutes.

The average time for task is 3 minutes and task 3 is about 3.3 minutes, which are normal. However, No. 7 didn't know how to fill in the report form in step 2 so all the manipulation is under our guide.

■ Quantitative results-error times



During the process of usability test, almost everyone made errors in password this part, since there is required format as at least one number, one word and one special character. Plus, no hints for the password length so most people met problems. As for location in the report form, there are three row text fields under the map, but some participants can't relate them with location, so they try to input manually or just skip. Besides, since some professional information need to be record and no description for explaining, half of participants can't understand the meaning like speed limit. Email verification part has only one sentence so it may be ignored.

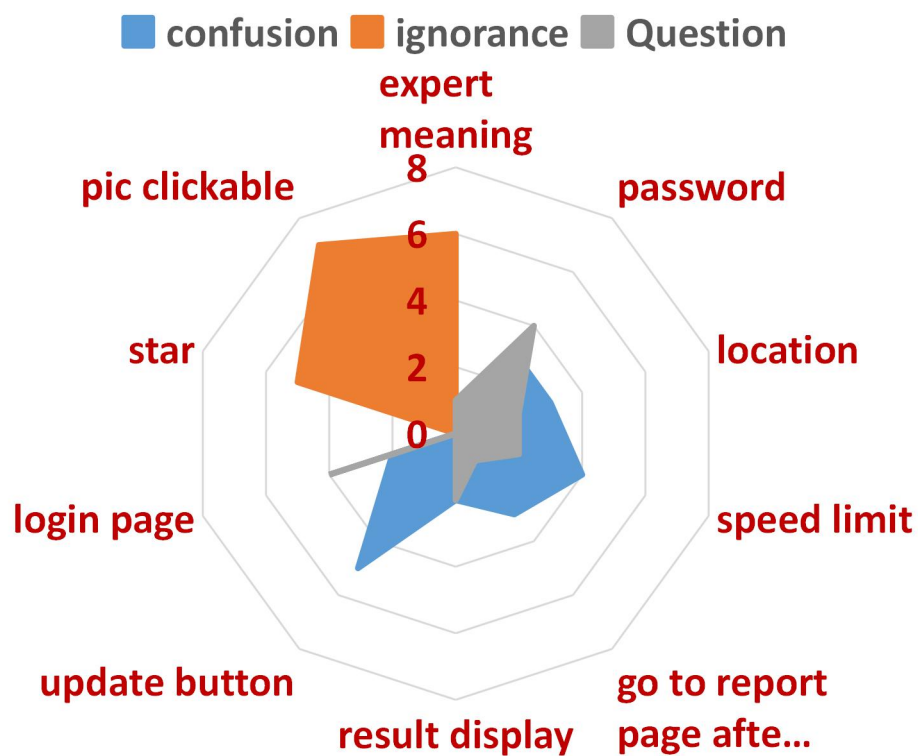
■ Qualitative results

We collected 10 aspects that lead to confusion, ignorance and question. About half of participants ignored the expert checkbox, clickable picture in the table view, and star character in the report form. Participants don't know the meaning of "expert" when signing up. After they submitted the record, a table of results will be displayed but there is no implication for pictures to click. In the report page, star character represents required information, but most didn't notice that because it's between the tag name and text field and the color is same as tag.

During the test process, most questions are related to the password and

login function. Users tried several times to input password but still can't get pass, that is because the password format has been set previously and the bug of password length can't be solved. Then some went to their mail inbox to get the verification letter and came back to log in, the "login" button doesn't have reaction since the current status is "login" so login again will not be invalid, but participants couldn't check the status at that time.

In addition, we found participants are confused with editing the record, some spent one minute on seeking for "update" button because the edit page is same as report page. And they don't know the right meaning of "speed limit", they regarded it as bird fly speed mistakenly. But we also found those with driver experience could understand in the first time.



➤ Conclusion

In Conclusion, the average time in each task is within limited time though some errors exists. According to the post questionnaire, sign up form is difficult to manipulate so hints could be given in the first time (Username format, check if email has been registered, password format and length).

Password and information explanation in report page are the major confusion for participants. Besides, the feature is not clear in some operations like required information symbol, update button, and clickable picture in the table view.

Therefore, we proposed some recommendations to improve this application.

1.in login page, the contrast color should be more obvious since current background is light gray and tag is white.

2.Star "*" could be put after text field in report form.

3.readdress after confirmation: when people verified their email, the skip page should address to report form directly. (because report record is the main function)

4.hints for account creating could be given in the first time, so that users could make less mistakes.

Schedule Form

Day of Week	Date	Time	Location	Participant		Please fill in your name, email and course to res	
				Name	Email	Course	Attended
Tuesday	4/12/2016	11:10-12:00	Rekhi323	Ridwan Ahmed Khan	ridwank@mtu.edu	CS5760	yes
Tuesday	4/12/2016	2pm-3pm	Rekhi323	Mohammad Sajib Al Seraj	malsaraj@mtu.edu		yes
Wednesday	4/13/2016	5:30pm-6:30pm	Rekhi323	Nichole Mackey	nsmackey@mtu.edu	CS3425	yes
Thursday	4/14/2016	11:10am-12pm	Rekhi323	Li Gou	lgou@mtu.edu		yes
Thursday	4/14/2016	4pm-5pm	Rekhi323	Matthew Wenzel	mcwenzel@mtu.edu	CS2311	yes
					Jinxiang Liu		yes
					Avinash Subramanian		yes

Bug Form

number	Bug name	uniqueness	location	description
1	password	no	Sign up form	Lack of Password length description so right format may be invalid
2	slide	no	homepage	Can't move left or right on mobile
3	location	yes	Report form	Delay or fail to locate
4	Picture edit	no	Update form	the picture uploaded by users disappear

5	picture required	No	Report form	someone didn't choose pic but submit successfully