Evaluation Assignment 4

Usability Test Plan

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Application: ObservAnt

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1. About ObservAnt Project

1.1. ObservAnt Goal

ObservAnt is a mobile application designed to well equip scientists to conduct their researches in recognizing North America ants' behavior. This app is designed for mid/high school students in the first place, but generally everyone interested in the forestry and geology may find this app useful. To learn more about ants' behavior, scientists need to gather more information about ant mounds. Students using ObservAnt can explore a forest are and record ant mound's location, dimension and photo and send them to a database which is accessible to the scientists.

1.2. ObservAnt Design

First user passes the login page, then he starts a new "Transect Path", when he finds a mound he starts the "Transect" and then to submit information he goes to "Records Ant Mound". After entering the requested data he "Submit" the information. In the resulting page, he has an option to record another mound's information or "End Transect". After "End Transect" he takes a photo of area of Transect and then "Submit Transect". In the resulting page, he can start over another Transect with the same procedure as described. Then to finish and exit the app he may choose "Finish".

2. Usability Test Goal

Usability test is a well-planned process with multiple benefits. First it makes sure that the fundamental functionality of the app is achieved. But the development team usually is more interested to figure out any application bugs and errors in practice. So development team has a chance to fix all these misbehaviors before releasing the practical version. Also development team will understand more about experience of using their app; easy to use, enjoyable, address specific needs, informative, etc. Considering the fact that each tester/user brings a new point of view, the development team will learn more about users' needs and expectations. So they can add unpredicted features to the app to make it more realistic or remove difficulties which make app usage complicated/boring. Finally, the more precise usability test plan, usually leads to a better quality of the product which means less needs to future modifications/patches.

3. Usability Test Plan

3.1. Test Setup

Six test sessions are planned at 12th and 14th of April. Six participants from CS2321 and CS3425 would attend, one student at each session. Test location is Fisher Hall 325 and each test session is designed for one hour. During each test session two undergrad students would cooperate to conduct test scenarios. One of them takes care of documentation, recording app's behavior and participant's interaction with the app during the test. The other student first gives general information about app, its goal and employment, each scenario's instruction and in the case of facing with bugs or errors would trouble shoot the app. The followings are test steps:

a) The test participant reads and signs the consent form

b) The test participant reads and answers pre-test questions

c) The test participant receives information about app itself and then each scenario's instructions and goals

d) The test participant reads and answers post-test questions

3.2. Signing the Consent Form

At the beginning of the test session all the participants would be asked to read and sign the consent form to show their awareness and agreement with the rules. Also they would explicitly be informed that this session is to test the app not the participant's abilities and skills, so they will do the test comfortably. We will use this consent form:

Computer User Interface Usability Testing

You are being invited to participate in a research study to determine the usefulness and usability of computer user interfaces. This study is being conducted by Dr. Robert Pastel of Michigan Technological University Computer Science Department and students in Dr. Pastel's Human-Computer Interaction (HCI) courses. The students are performing the usability tests as part of their project and to fulfill the HCI course requirements.

There are no known risks if you decide to participate in this research study. There are no costs to you for participating in the study. The information you provide and tasks that you will perform will determine the usefulness and usability of user interfaces. The questionnaires and the tasks should take less than an hour to complete. The information collected may not benefit you directly, but the information learned in this study should provide more general benefits.

The questionnaires and test are anonymous. Do not write your name on the survey. No one will be able to identify you or your answers, and no one will know whether or not you participated in the study except for the instructor of the class that is giving you credit for participating. Should the data be published, no individual information will be disclosed.

Your participation in this study is voluntary. By completing the questionnaires and performing the tasks, you are voluntarily agreeing to participate. You are free to decline to answer any particular question you do not wish to answer or not to perform a task for any reason.

If you have any questions about the study, please contact Dr. Robert Pastel, Assistant Professor, Computer Science Department, Michigan Technological University, Houghton, MI 49931.

The MTU Institutional Review Board has reviewed my request to conduct this project. If you have any concerns about your rights in this study, please contact Joanne Polzien of the MTU-IRB at 906-487-2902 or email jpolzien@mtu.edu.

Participant signature and date:

3.3. Pre-Test Questionnaire

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 android application.

   1) Strongly agree
   2) Agree
   3) Neutral
   4) Disagree
   5) Strongly disagree

3. Please indicate your level of agreement to the following statement:

   Usability test uncovers bugs and errors of the app.

   1) Strongly agree
   2) Agree
   3) Neutral
   4) Disagree
   5) Strongly disagree

4. Please indicate your level of agreement to the following statement:

   I feel comfortable to use new technology.

   1) Strongly agree
   2) Agree
   3) Neutral
   4) Disagree
   5) Strongly disagree

3.4. Test Scenarios

The version of the app which I received to design my test plan is a single task app which means: there is no “review” page to review the entered information, no “edit” page to edit the entered information, no “sign up” page to create a new account, no interaction with database to change an already submitted transect, no “help” to use in the case of confusion and test its usefulness and no immediate feedback is provided for any single task or tap. As a result, the only task to be done is: start a new Transect, enter the requested information and submit it. So to meet the requirement of at least two scenarios, I decided to design two scenarios with different conditions; in the first scenario, the test conductor describes the general idea and purpose of the app but doesn’t provide any specific instruction or demo about how to create and submit a Transect. In this scenario the user will be asked to complete one transect including one mound. In the second scenario, the test conductor provides a full instruction and demos for the app employment. In this scenario the user will complete two transects each of them records one mound.

3.4.1. Scenario 1: Create and submit one Transect (no instructions)

Test Goals for Scenario 1: To determine how much the first-time user of app could understand the app environment and its employment and complete the main task without assistant. The general idea and purpose of the app would be described for the participant but no instruction or demo on the app would be shown.

Scenario Description: You are a high school student and you along with your classmates are in a forest for one of the science classes. You are requested to

explore the forest and record any observed ant mound's information. So you should login to the app using default username: "user" and password: "password", you start a transect, enter all information for one mound, submit the transect and exit the app.

Task List:

1. Login to the app using default account information
2. Start the "Transect Path"
3. Start a new "Transect"
4. Start "record ant mound"
5. Take photo of "surrounding area", "undistributed mound" and "mound with first layer(s) gone"
6. Enter "longest diameter", "shortest diameter" and "height"
7. "Submit mound"
8. "End transect"
9. "Submit Transect"
10. "Finish"

Quantitative Measurement List:

1. The participant could finish the task or not
2. Time to complete the task
3. Number of times the participant asked for help/assistance
4. Number of wrong taps/errors in entering data

Qualitative Measurement List:

1. The confusing pages/tasks for the participant

2. The reason that the participant asked for assistance/help
3. Facial and verbal expression

3.4.2. **Scenario 2**: Create and submit two Transects (with instructions and demos)

Test Goals for Scenario 2: To determine effects of instructions and demos on the user's ability to correctly employ the app. So if there is a significant difference between scenario one and two's results, the corresponding "Help" or "FAQ" should be added. Also to discover whether the user can distinguish between one transect with two mounds and two transects each of which with one mound, this time he will be asked to submit two Transects while each one records a single mound. An instruction to the app and a demo about how to use the app would be given to the participant before starting this scenario.

Scenario Description: You are an enthusiast citizen interested in forestry. You are in a forest, you have the app installed on your device and you know how to employ it. When you find the first mound, you login to the app, start the first transect and record the mound's information. Then you continue your exploration and you will find the second mound, you start the second transect, record the mound's information and finally submit the two transects and exit the app.

Task List:

1. Login to the app using default account information
2. Start the "Transect Path"
3. Start a new "Transect"
4. Start "record ant mound"

5. Take photo of “surrounding area”, “undistributed mound” and “mound with first layer(s) gone”
6. Enter “longest diameter”, “shortest diameter” and “height”
7. “Submit mound”
8. “End transect”
9. “Submit Transect”
10. Start a new “Transect”
11. Start “record ant mound”
12. Take photo of “surrounding area”, “undistributed mound” and “mound with first layer(s) gone”
13. Enter “longest diameter”, “shortest diameter” and “height”
14. “Submit mound”
15. “End transect”
16. “Submit Transect”
17. “Finish”

Quantitative Measurement List:

1. The participant could finish the task or not
2. Time to complete the first transect
3. Time to complete the task
4. Number of times the participant asked for help/assistance
5. Number of wrong taps/errors in entering data

Qualitative Measurement List:

1. The confusing pages/tasks for the participant
2. The reason that the participant looked for assistance/help

3. Facial and verbal expression

3.5. Potential observations of participant

We could expect to see some issues when user interacts with the app, because:

1. Lack of immediate feedback
2. Lack of help/FAQ
3. Many tasks to be done in one page
4. Improper size and position of buttons
5. Lack of edit page
6. Lack of exit from app
7. Inappropriate names for buttons and pages
8. Too many steps to complete a task

3.6. Post-Test Questionnaire

1. Please indicate your level of agreement to the following statement:

Overall, this mobile application was easy to perform the task.

1) Strongly agree
2) Agree
3) Neutral
4) Disagree
5) Strongly disagree

2. Please indicate your level of agreement to the following statement:

I enjoy using this mobile application.

1) Very much
2) A little bit
3) Neutral

4) Not very much
5) Not at all

3. Please indicate your level of agreement to the following statement:

I would use this mobile application again.

1) Strongly agree
2) Agree
3) Neutral
4) Disagree
5) Strongly disagree

4. Please indicate your level of agreement to the following statement:

The terminology used throughout the app is self-explanatory and clear.

1) Strongly agree
2) Agree
3) Neutral
4) Disagree
5) Strongly disagree

5. Please indicate your level of agreement to the following statement:

The app provides enough feedback and help to guide new users.

1) Strongly agree
2) Agree
3) Neutral
4) Disagree
5) Strongly disagree

6. Please indicate your level of agreement to the following statement:

I understand the difference between “Submit Mound” and “Submit Transect”.

1) Strongly agree
2) Agree
3) Neutral
4) Disagree
5) Strongly disagree

7. Please indicate your level of agreement to the following statement:

Number of steps to submit a transect are reasonable.

1) Strongly agree
2) Agree
3) Neutral
4) Disagree
5) Strongly disagree

8. Please indicate your level of agreement to the following statement:

Adding review/edit page before submitting a transect would be helpful.

1) Strongly agree
2) Agree
3) Neutral
4) Disagree
5) Strongly disagree

9. Describe any difficulties you had during the whole test.

10. Do you have any suggestions or comments which make using this app better/easier?

3.7. Bug Report Form

Number	Name	Uniqueness	Location	Description
1				
2				
3				
4				