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**Room Raider™ Evaluation Report**

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# **Introduction**

## Room Raider

Room Raider is an application developed by Hop-Scotch Mafia. Its intended purpose is three-fold. It allows students to book and find study rooms, form study groups, and communicate with study groups. The purpose of the user evaluation study is to identify target users and allow them to interact with the prototype application. The objectives of this study were to determine the ease of use and efficacy of Room Raider in addition to finding any potential usability flaws. The usability requirements that were tested are understandability, learnability, and operability.

# **Method**

## Participants

The participants of this study were carefully selected to represent as much of the user base as possible. There were five projected users, all of whom are students. The age group was between 21 and 29. There were 3 female and 2 male participants. They came from an assortment of faculties (Biology, Education, Arts, Computer Science, and Software Engineering). The participant’s age gives them an inclination towards technology and allowed us to examine those who regularly use smartphones.

## Procedure

The procedure was carefully laid out as to minimize the difference each participant experienced. There is a set list of tasks for the participant to complete. Each task is attempted beginning at the main screen and each task is individually timed. The list of tasks for the user to complete is below:

* Register a username and password with the system, then log out
* Log in to the system after registering and logging out
* Create a group
* Add users to a group
* Chat with users in that group (other users in the group will be simulated)
* Search for a specified URL in group chat URL history, and
* Book a room at a specified time and place
* Delete a group

The information in the prototype is hardcoded so this user exercise was tailored towards assessing the navigation and feel of the application. The procedure was consistent across all participants and included a one on one evaluation using the laptop version of the prototype (the mobile version wasn’t complete yet).

## Measures

The method used to collect data was co-discovery and question asking. The participants attempted a challenge until the made a mistake or became frustrated and then the evaluator could step in to assist them. The type of data we collected included

* Time to complete each task in seconds
* Number of times the back button was used
* Number of times the participant displayed distress
* Success/Failure of the task
* Usability rating on a ten point scale
* Answers to questionnaire (Appendix A)

## Setting

The evaluations were carried out in a quiet setting to allow participants to focus on the tasks. This was held consistent across all participants so the results of the study weren’t biased. The one on one nature and quiet setting allowed us to get reasonable feedback from the participants.

# **Results**

The following tables describe the data we collected.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **REGISTER** | **LOG IN** | **CREATE GROUP** | **ADD USERS** | **CHAT** | **URL SEARCH** | **BOOK ROOM** | **LEAVE GROUP** |
|  |  |  |  |  |  |  |  |  |  |
| **TIME (s)** |  | 30 | 6 | 23 | 42 | 9 | 19 | 28 | 15 |
|  |  | 25 | 5 | 10 | 22 | 5 | 13 | 18 | 25 |
|  |  | 30 | 6 | 24 | 17 | 9 | 17 | 60 | 33 |
|  |  | 46 | 7 | 12 | 13 | 7 | 35 | 55 | 30 |
|  |  | 20 | 3 | 11 | 98 | 9 | 8 | 17 | 6 |
| **AVG** |  | **30.2** | **5.4** | **16** | **38.4** | **7.8** | **18.4** | **35.6** | **21.8** |

Table 1: Five Participants Time to Complete Eight Tasks

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **REGISTER** | **LOG IN** | **CREATE GROUP** | **ADD USERS** | **CHAT** | **URL SEARCH** | **BOOK ROOM** | **LEAVE GROUP** |
|  |  |  |  |  |  |  |  |  |  |
| **BACK BUTTON** |  | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
|  |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|  |  | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
|  |  | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
|  |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **AVG** |  | **0** | **0** | **0** | **0.4** | **0** | **0.2** | **0.2** | **0** |
| **TOTAL** |  | **0** | **0** | **0** | **2** | **0** | **1** | **1** | **0** |

Table 2: Number of Times Participants Used the Back Button

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **REGISTER** | **LOG IN** | **CREATE GROUP** | **ADD USERS** | **CHAT** | **URL SEARCH** | **BOOK ROOM** | **LEAVE GROUP** |
|  |  |  |  |  |  |  |  |  |  |
| **DISTRESS** |  | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
|  |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|  |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|  |  | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |
|  |  | 2 | 0 | 0 | 12 | 0 | 1 | 0 | 0 |
| **AVG** |  | **0.8** | **0** | **0** | **2.8** | **0** | **0.4** | **0.2** | **0** |
| **TOTAL** |  | **4** | **0** | **0** | **14** | **0** | **2** | **1** | **0** |

Table 3: Number of Times Participants Exhibited Distress

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **REGISTER** | **LOG IN** | **CREATE GROUP** | **ADD USERS** | **CHAT** | **URL SEARCH** | **BOOK ROOM** | **LEAVE GROUP** |
|  |  |  |  |  |  |  |  |  |  |
| **SUCCESS** |  | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| **FAILURE** |  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table 4: Success Rate

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | **Participant 1** | **Participant 2** | **Participant 3** | **Participant 4** | **Participant 5** |
|  |  |  |  |  |  |  |
| **RATING** |  | 8 | 6 | 6 | 9 | 8 |
| **FINAL RATE** |  | 7.4 |  |  |  |  |

Table 5: Usability Ratings

The expressed functionality of this application revolves around booking rooms so it is pertinent to look at the room booking times.



The average time to book a room is 35.6 seconds with the range being from 17 to 60 seconds.

We presented the participants with some questions and here are the results of them:

1. **“Did you enjoy using Room Raider? Why/why not?”**

-It was okay. Buttons were hard to press sometimes and frustrating.

-yeah, sure. felt kinda slapped together, the hardcoded values were confusing.

-Yes, it is an excellent concept. “I like the chat layout, and I like the dark easy on the eyes background”.

-Yes. Features are simple and easy to use. Would be an excellent program for large companies in addition to universities.

-Yes, it made group creation / management and room booking easy.

2. **“What did you like about Room Raider’s UI? What didn’t you like?”**

-Could use more colour. Brown looks ugly. Font was good.

-back button is intuitive. didn’t like log out button. liked email invitations. no group member list (see who's currently active/not active). home screen didn’t feel like it should be the home screen. didn’t like that the scrolling didn’t do anything. not as intuitive as it could be. spread out over too many screens. didn’t know that the home button was a button/what it did.

-Easy to read and it is dark and easy on the eyes.

New group should have been added to the my groups list and should not have to go into manage groups in order to view the group made. Logout should have been labeled.

-It is straightforward and free of clutter. Useable without direction.

-Visual cues for room availability

3. **“Were there any problems that you encountered while performing a task? What were they?** **What task were you performing at the time?”**

-Sometimes unclear about what supposed to do. Buttons hard to press sometimes.

-took a long time to find/see logout button (task 1). no confirmation on task 7 (no feedback to the user). “send invitations” on task 3 was confusing. settings icon on “some group I own” seemed like it should perform some other action (rather than the same action as clicking the button) (task 4).

-Number 4: difficulty understanding where to go to access the setting for “Some group I own” (see question 3).

-It took me a moment to figure out how to log out, as I was looking for words but as soon as I saw the image it was pretty obvious.

-No

# **Discussion**

### Limitations

Unfortunately this study is limited in its usefulness. The nature of only having five participants is that any data is highly subjective to who the participants chosen were. In order to combat this we attempted to select participants from a multitude of backgrounds. Because our main target user is students we tried to have 5 different faculties represented. We also had a mixture of males and females and all users were well acquainted with technology. Another limitation is that the interview questions were pre written and didn’t allow for freedom for the interviewer to ask specific questions based on the users’ responses.

### Results

Room Raider is a room booking application first and foremost so the focus should be on how booking a room went. The average time to book a room is 35.6 seconds with the range being from 17 to 60 seconds. Room booking had the largest range of any task. This indicates that there is definitely some people who aren’t on the same page taking three times as long as the shortest amount of time. Looking at the feedback there was some confusion with selecting groups versus selecting group settings. This resulted in people clicking around before finding the room booking feature. The room booking is buried too deep in the application. Another large piece of qualitative feedback was that the log out button was difficult to find and identify. There was a lot of feedback about the UI. Some of this was a result of the prototyping software we chose to use. When participants complained that, “buttons were hard to press”, we pointed out that the final product would be streamlined. The very applicable feedback was that the colour scheme was random and difficult to look at. Users commented that, “Brown looks ugly”. Our attempts at a subtle dark coloured application failed.

### Improvements

We present our three major improvements to our stake holders on March 26th. They are

* Change the colour scheme from dark brown to light blue-grey with green accents
* Change the logout button to one with logout text on it
* Use a better prototyping platform and support mobile evaluations

My recommendation to the team is to bring room booking to the forefront of the application. Everyone wants to use to book rooms, not necessarily to chat or form groups. From the home page there will be one button that takes you in to room booking.

### Conclusion

Once again I will state the objectives of this study were to determine the ease of use and efficacy of Room Raider in addition to finding any potential usability flaws. The usability requirements that were tested are understandability, learnability, and operability. This study found potential usability flaws in booking rooms efficiently, and difficult to use software prototyping. This study found the application had a mediocre level of learnability as the range of times between tasks did not decrease by any significant measure as people used the application more. This study found an understandability flaw with the logout button and the operability was seen to be satisfactory as shown by the qualitative feedback. The objectives of this study were met and the application must be refactored going forward.

# **Appendix**

## Consent Form

**For Participation in the Study Entitled:**

**“Designing and Evaluating a Study Group Application”**

You are being invited to participate in a study entitled *Designing and Evaluating a Study Group Application*that is being conducted byHop-Scotch Mafia. You may contact Konrad Schultz by email at schultzk@uvic.ca if you have further questions.

The purpose of this research project is to design and evaluate the user interface of a simple group forming application. You will be interviewed about your previous experiences with study groups and the tools you used to communicate.

You will be asked to answer a series of questions about your experience with group study, How often you work in groups, the applications you like, and new features you would like to have. Your participation should require about 10 minutes of your time. The results will be reported in a project report for SENG 310 in the Faculty of Engineering at the University of Victoria.

Your participation is completely voluntary and you can withdraw from the study at any time, without explanation. You have the right to refuse to answer **any** questions for any reason.

Any data collected in the study will remain confidential; interview results and questionnaires will be kept in a locked filing cabinet in a locked office. Only the principal

and co-investigators (Jim Galloway and Jakob Roberts) will have access to the data. Your name will not be attached to any published results, and your anonymity will be protected by using code numbers to identify results obtained from individual subjects.

Whether you participate or choose not to participate will have no bearing on your

grade / employment status / academic standing / job / services received.

**Signature of participant: Researcher:**

**Date: Phone:**

***A copy of this consent will be left with you, and a copy will be taken by the researcher.***

## Research Sheet

Name of Participant: \_\_\_\_\_\_\_\_\_\_\_\_\_ Age: \_\_\_\_\_ M / F Start time:

Name of Researcher: \_\_\_\_\_\_\_\_\_\_\_\_\_ End time:

**STAGE ONE: Tasks to complete**

*Each task should be performed starting from the specified start screen. All input is simulated.*

1. Register a username and password with the system, then log out.

*Time to complete: \_\_\_\_*

*Number of times back button was used (in error):*

*Number of times the participant expresses distress:*

*Success Failure*

2. Log in to the system.

*Time to complete: \_\_\_\_*

*Number of times back button was used (in error):*

*Number of times the participant expresses distress:*

*Success Failure*

3. From the main page, create a group (Study group #256).

*Time to complete: \_\_\_\_*

*Number of times back button was used (in error):*

*Number of times the participant expresses distress:*

*Success Failure*

4. Once the group has been created, add users to “**Some group I own**”.

*Time to complete: \_\_\_\_*

*Number of times back button was used (in error):*

*Number of times the participant expresses distress:*

*Success Failure*

5. From the main page, simulate chat with users in **CSC 225.**

*Time to complete: \_\_\_\_*

*Number of times back button was used (in error):*

*Number of times the participant expresses distress:*

*Success Failure*

6. From the main page, search for the URL sent by **Jim** on **December 1st, 2015.**

*Time to complete: \_\_\_\_*

*Number of times back button was used (in error):*

*Number of times the participant expresses distress:*

*Success Failure*

7. From the main page, book a study room for **February 29th, 2015** from **7:00 to 9:20** in **ECS 116.**

*Time to complete: \_\_\_\_*

*Number of times back button was used (in error):*

*Number of times the participant expresses distress:*

*Success Failure*

8. From the main page, delete “**some other group**”.

*Time to complete: \_\_\_\_*

*Number of times back button was used (in error):*

*Number of times the participant expresses distress:*

*Success Failure*

**STAGE TWO: Follow up questions**

**(don’t forget to get them to sign the consent form)**

1. “On a scale of one to ten, how would you rate Room Raider on its usability?”

1 2 3 4 5 6 7 8 9 10

2. “Did you enjoy using Room Raider? Why/why not?”

3. “What did you like about Room Raider’s UI? What didn’t you like?”

4. “Were there any problems that you encountered while performing a task? What were they?

What task were you performing at the time?”