ThermoBank

Test Findings Report

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EXECUTIVE SUMMARY

This document is a report on the usability testing results of the ThermoBank mobile app and hardware device. This testing was done on April 12-18. In order to measure app performance, we tested 8 participants completing a series of tasks. By observing users performed these tasks, we gained a better understanding of user satisfaction, design concerns and app/device strengths.

Conducting the test session

Testing was conducted with 8 participants who all belong to the target group of the ThermoBank app – students, travel and hiking lovers. All 8 participants were tested individually. All tests were conducted around Georgia State University campus. Each session took from 5 to 15 minutes. Before testing, participants were asked about their use of the mobile apps and power banks. During the testing process, participants were asked to complete tasks using the ThermoBank app and device. Participants were encouraged to "think loudly" when solving test problems. After testing questionnaire sheet was filled out. After each test session, we had to review the notes written during the testing.

ANALYZE DATA AND OBSERVATIONS

The usability testing of the ThermoBank mobile app has shown that the app has a convenient and standard interface for visitors. As a result of testing, no problems with the interface were identified that would require major changes, but errors and omissions were identified that caused difficulties in the implementation of the tasks assigned to respondents testing the mobile app.

Based on ratings received in aesthetic and comfort categories of actual charging device, the usability testing showed that users found it to be less aesthetically pleasing and comfortable compare to a standard wristwatch. The rather industrial profile and materials used in the ThermoBank device were not favorable among users. Participants had overwhelming opinions on the width, height, and weight of the device favoring the physical characteristics of typical wrist accessories such as smart watches. Overall, test participants found the device to be close in comfort to a standard watch; however, they were also displeased by the larger than normal width. The weight of the prototype was a bright spot as users found it to feel light. Also, post-test questionnaire determined that the device would be useful for participants during their travelling.

REPORT FINDINGS AND RECOMMENDATIONS

After analyzing data collected during testing sessions, design solution has to be proposed by exploiting the user-centered-design principles.

The most important positive aspects of the app:

- *Users were able to find all park/tutorials/battery information easily*

Users were easily able to locate any asked information by clicking to a corresponding icon on a main page or on the navigational menu at the bottom of the screen without getting frustrated.

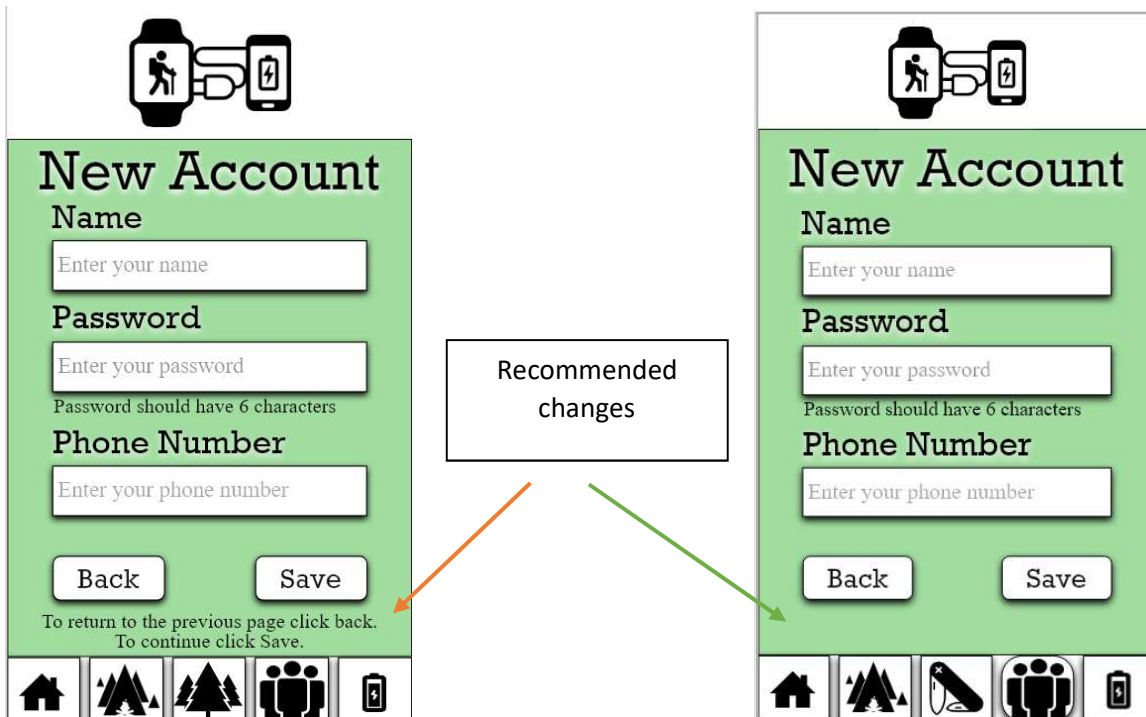Example: this is the Park Info that users were able to easily find
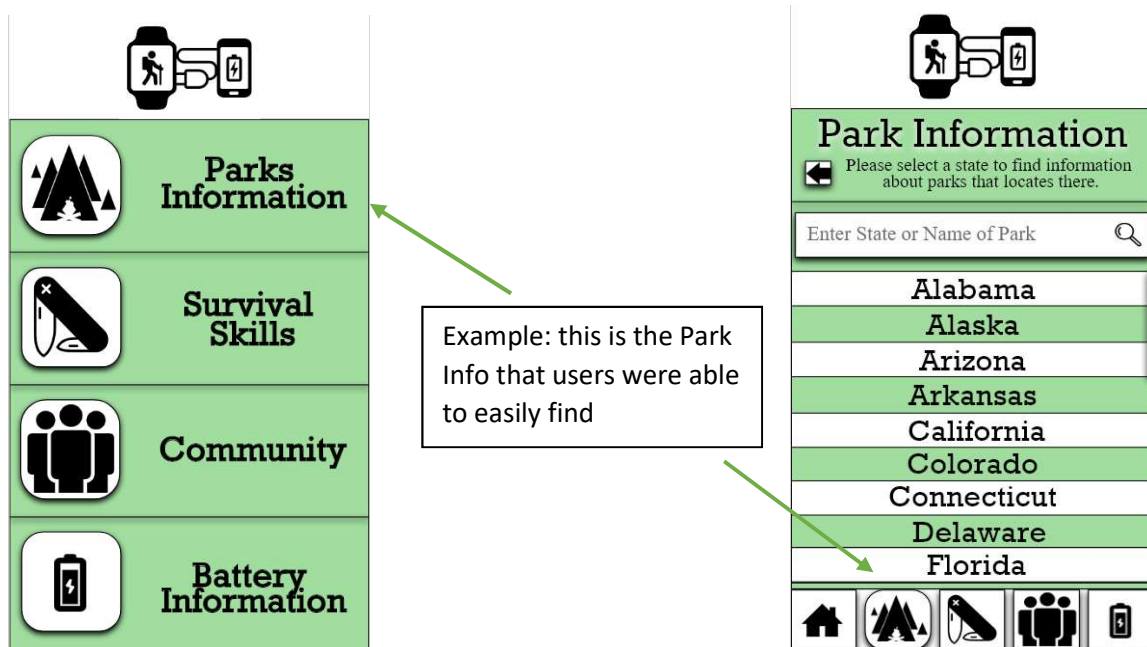
- *Users were able to easily make an account and log in to the app*
- *Users could successfully share the review about the park*
- *Users were satisfied with the overall look of the app and navigational process*
- *Users liked the option to insert profile picture at the app logo*
- *Users determined that the text size and font is easy to read*
- *Users seemed to react positively towards the main purpose of what we had integrated*

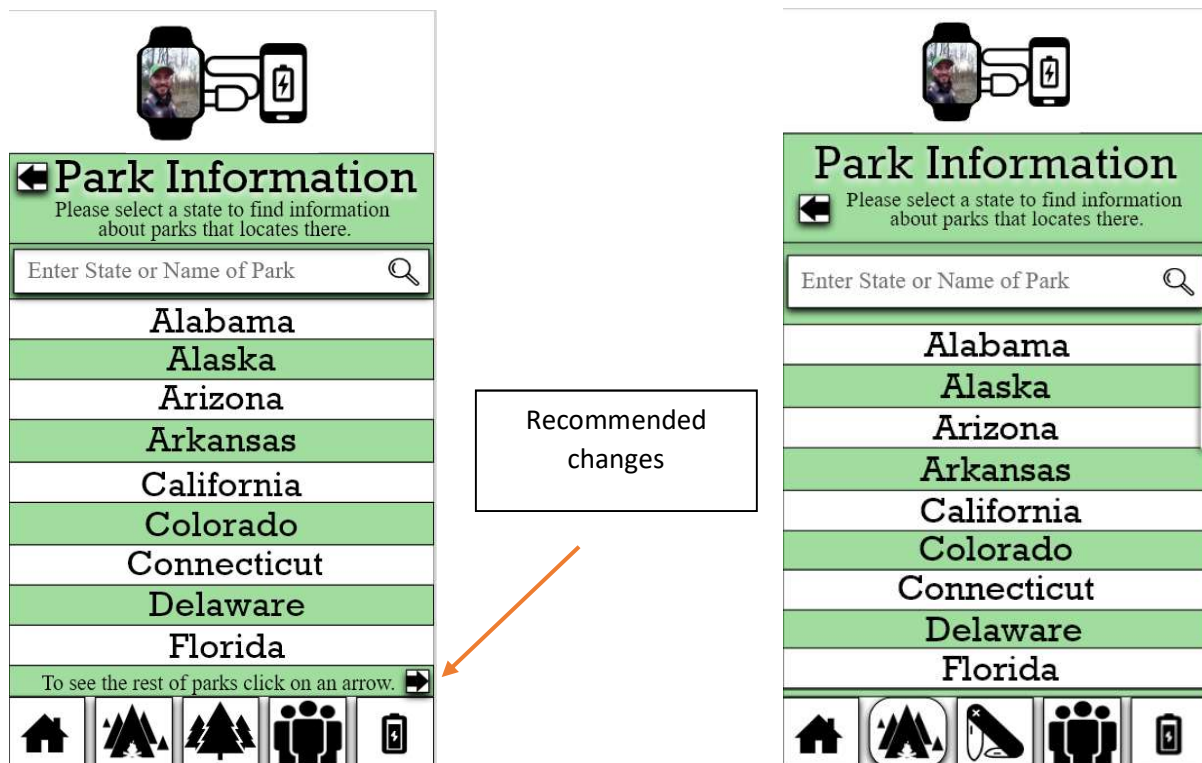**The most important points to improve the app:**

- *Users determined that there is some unnecessary text that could be omitted*
- *Users noticed that it is hard to use arrow button in states/park menu*
- *Users could not understand what the survival skills icon mean*

Based on the identified problems, it is recommended:

- *Remove the unnecessary text in the app*

New Account

Name
Enter your name

Password
Enter your password
Password should have 6 characters

Phone Number
Enter your phone number

Back   Save

To return to the previous page click back.
To continue click Save.

Recommended changes

New Account

Name
Enter your name

Password
Enter your password
Password should have 6 characters

Phone Number
Enter your phone number

Back   Save

- *Remove arrow button and use scroll instead*

← **Park Information**
Please select a state to find information
about parks that locates there.

Enter State or Name of Park 🔍

Alabama
Alaska
Arizona
Arkansas
California
Colorado
Connecticut
Delaware
Florida

To see the rest of parks click on an arrow. ➡

Recommended changes

Park Information
← Please select a state to find information
about parks that locates there.

Enter State or Name of Park 🔍

Alabama
Alaska
Arizona
Arkansas
California
Colorado
Connecticut
Delaware
Florida

- *Change survival skills icon*

Participants Data

ThermoBank team used Georgia State University campus common areas to interview and scout potential participants. Potential Participants were asked questions by team members about frequency and intensity of hiking and outdoor activities, using of mobile apps and charging their phone issues.

Participant #	Age	Occupation	Gender	Notes
Participant 1	18	student	F	GSU student; loves playing games; charges her phone 3 times a day
Participant 2	21	student	F	GSU student; regular traveler; always using power banks
Participant 3	20	TA assistant	M	TA assistant at GSU computer science department; loves using mobile apps
Participant 4	18	student (athlete)	M	Professional athlete; regular hiker and mountain climber; loves the idea of using wrist device charger from body heat
Participant 5	25	programmer	M	Programmer at a start-up; uses mobile apps on a regular basis; has experience in app creation and design
Participant 6	18	student	F	GSU student, sociology major
Participant 7	20	student (hiker)	M	Transferring student at GSU; hiking 2-3 times a month; liked the idea of ThermoBank charging device
Participant 8	22	student	M	GSU student, computer science major

Usability tasks

To test the accessibility and learnability of the app, as well as determine performance benchmarks, the 8 participants completed a series of tasks.

Task #1	Locate the navigation bar
Successful Completion Criteria	Participant opens the app and finds the navigation bar

Task #2	Create a new account
Successful Completion Criteria	Participant opens the app, clicks on Community link and completes steps required to create a new account

Task #3	Locate park information by states
Successful Completion Criteria	Participant successfully finds the park information menu on the app

Task #4	Share review about the park
Successful Completion Criteria	Participant finds the required park and able to share the review within the community

Task #5	Locate the battery info bar and describe the information presented
Successful Completion Criteria	Participant successfully finds battery info and clearly understand what is described there

Task #6	Describe the overall feeling of the wearable device (size, weight, comfort, appealing)
Successful Completion Criteria	Participant describe the device as user-friendly, comfortable and aesthetically attractive.

Metrics + Results

Task 1	Completion	Time to Task	Error Rate	Notes
Participant 1	yes	2 seconds	0:1	Very easy to find
Participant 2	yes	1 second	0:1	Simple to find the required info
Participant 3	yes	3 seconds	0:1	Very easy to find
Participant 4	yes	3 seconds	0:1	Found it easy to locate information
Participant 5	yes	1 second	0:1	No errors - "nice, really smooth"
Participant 6	yes	2 seconds	0:1	Easily finds the navigational bar and describes the purpose of each one
Participant 7	yes	2 seconds	0:1	Very easy to find
Participant 8	yes	4 seconds	0:1	Easy to locate

Task 2	Completion	Time to Task	Error Rate	Notes
Participant 1	yes	5 seconds	0:1	Went straight to community tab and successfully created an account
Participant 2	yes	7 seconds	0:1	Easy finds a way how to create an account
Participant 3	yes	5 seconds	0:1	Completed task quickly and was very confident
Participant 4	yes	17 seconds	1:1	Account registration was hard to find, but after the follow-up question "Where do you think it might be" completed the task
Participant 5	yes	15 seconds	1:1	Completed task quickly, but was not confident in completing task, "Maybe if I go here?"
Participant 6	yes	5 seconds	0:1	Very easy to find
Participant 7	yes	5 seconds	0:1	Simple and easy
Participant 8	yes	10 seconds	0:1	Was unsure at first, but still able to complete task fairly quickly

Task 3	Completion	Time to Task	Error Rate	Notes
Participant 1	yes	1 second	0:1	Easy to find
Participant 2	yes	2 seconds	0:1	Easy to find
Participant 3	yes	1 second	0:1	Completed task quickly and was very confident
Participant 4	yes	4 seconds	0:1	Easy to locate
Participant 5	yes	3 seconds	0:1	Was very clear on where he needed to click
Participant 6	yes	3 seconds	0:1	Finished task quickly
Participant 7	yes	2 seconds	0:1	Very intuitive, quick process
Participant 8	yes	1 second	0:1	Very easy to find

Task 4	Completion	Time to Task	Error Rate	Notes
Participant 1	yes	10 seconds	0:1	Simple to find the link
Participant 2	yes	15 seconds	0:1	Did not see right away, but after some exploring, she got there
Participant 3	yes	30 seconds	1:1	It took some time to find the "share" option. Wasn't sure what does the "share" means
Participant 4	yes	10 seconds	0:1	Very easy to find
Participant 5	yes	15 seconds	0:1	Easily clicked on the park menu and found "share" option
Participant 6	yes	20 seconds	0:1	Easy to find, but wanted clearer info or explanation
Participant 7	yes	10 seconds	0:1	Completed task quickly and was very confident
Participant 8	yes	20 seconds	0:1	Quickly located park list and "share" link

Task 5	Completion	Time to Task	Error Rate	Notes
Participant 1	yes	5 seconds	0:1	Easily finds battery info menu and understands what it means
Participant 2	no	15 seconds	1:1	Was easy to find battery info menu but she could not clearly explain what it means
Participant 3	yes	5 seconds	0:1	Very easy to find; the information is clear
Participant 4	yes	10 seconds	0:1	Quickly located the required menu, but was asking follow-up questions about the info represented
Participant 5	yes	2 seconds	0:1	Easily clicked Battery Info link and explained what she saw
Participant 6	yes	5 seconds	0:1	Went straight to battery bar and described the information successfully
Participant 7	yes	3 seconds	0:1	Was very clear on where he needed to click
Participant 8	yes	10 seconds	0:1	Very intuitive, quick process; clear info

Task 6	Completion	Time to Task	Error Rate	Notes
Participant 1	yes	10 seconds	0:1	Not aesthetically pleasing and comfortable than a standard wristwatch
Participant 2	yes	1 minute	0:1	Didn't like the look and feel but mentioned that would use the device for travelling
Participant 3	yes	30 seconds	0:1	Described ThermoBank as comfortable device and lightweight
Participant 4	yes	10 seconds	0:1	Not good looking and bulky but can be useful in some activities
Participant 5	yes	2 minutes	0:1	Large size, very loose on a thin hand
Participant 6	yes	45 seconds	0:1	Comfortable on a hand but described the device less aesthetically pleasing than similar wrist devices
Participant 7	yes	1 minute	0:1	Great idea and will probably use such device during hiking
Participant 8	yes	2 minutes	0:1	Liked the idea of the charging device and would like to use it

The average rating from 8 participants was taken and included in the table below.

POST-TEST QUESTIONNAIRE	
Statement	Scale: 1 Strongly Disagree- 5 Strongly Agree
I think that I would like to use this app.	4.5
I thought the app was easy to use	5
I found the app to be overly complex	1
I found the various functions in the app were well-integrated.	4.2
I thought there was too much inconsistency in this app.	1.75
I would imagine most people would learn to use this app quickly.	5
I found the app cumbersome to use.	1.6
I felt very confident using this app.	4.7
I needed to learn a lot of things before I could get going with this app.	1
I found the look of the device plausible	2.9
I found it comfortable using the wrist device	4

CONCLUSIONS

Our team conducted a usability test during the development of ThermoBank hardware and mobile application. The goals of usability testing included establishing a baseline of user performance, establishing and validating user performance measures, and identifying potential design concerns to be addressed in order to improve the efficiency, productivity, and end-user satisfaction.

The recommendations contained within this report are designed to improve the existing functionality and level of user confidence. We arrived at these recommendations by performing eight in-person usability tests and evaluating the quantitative and qualitative data we observed from those tests. By following these recommendations, the ThermoBank was able to make changes to the app design in order to enhance users' experience and satisfaction with the app.