



*MoodPanda*



*Moodtrack Diary*

# Project 4: Comparison Study and Report

MoodPanda iOS app vs. Moodtrack Diary iOS app

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**Group 2:**

Camille Celone

Dorian Anderson

Elisandra Diaz

Straton Roberts

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# Executive Summary

Continuing our previous usability research of MoodPanda, we set out to perform a comparison study between the MoodPanda iOS app and a competing mood tracking product – the Moodtrack Diary iOS app. We focused on the process of recording a mood for a previous date and time. We measured ease-of-use by identifying error rate while performing this task. Based on our data gathered, we found that MoodPanda was statistically more difficult to use than Moodtrack Diary when recording a previous mood. In this report, we discuss this issue and provide recommendations to improve the user experience and ease-of-use for the MoodPanda iOS app.

## Purpose and Test Objective

During our effort in conducting usability research on MoodPanda’s desktop website, we identified an ease-of-use issue when adding a mood to the log that occurred at a previous date and time. All of our early participants struggled with this task. In order to gain greater insight and develop more helpful recommendations, we will compare the *MoodPanda* iOS app and the *Moodtrack Diary* iOS app. Our objective is to *compare how easily users can record a mood for a previous day and time in each of these mobile apps*. To answer this, we studied the *number of errors during task completion* to make our comparison.

## Methodology

### Participants

A total of 12 participants took part in this study. Participants were recruited from friends, family members, and co-workers of the test moderators. It was ensured that participants had not used either of the apps prior to the usability test. Our test is designed as a *within-groups study*, which means that each participant completed the task in both apps. To counterbalance potential bias from previously-acquired knowledge, half of our participants used MoodPanda first, then Moodtrack Diary second – and vice versa for the other half of our participants.

### Test Environment

The usability tests were conducted in Chicago, Illinois, Arlington, Virginia, and Logan, Utah – and took place in a private area to avoid outside distraction. Sessions were not recorded due to the short length and minimal data being gathered. Before the sessions started, the test

moderators downloaded the MoodPanda and MoodTrack Diary iOS apps onto an iPhone and logged into their own test (“fake”) account, then loaded the default home screen of the app.

## Procedure

Test moderators used the Moderator Script (Appendix B) during the session to introduce the study, and gathered informed consent from all participants. Participants were asked to complete the task outlined in the section below, while the moderators took note of the number of errors while completing the given task. Due to caching issues with MoodPanda, each app was manually closed from the iOS multitasking screen after each session.

## Task

To help us compare how easily users can record a mood for a previous day and time in MoodPanda and Moodtrack Diary, we measured the number of errors during each participant’s completion of the following task scenario:

*“At 3:30pm yesterday, you had a team meeting with your coworkers to discuss an exciting new project. You are really optimistic and confident about the finished product, and your level of general happiness is about an 8 on a 1-10 scale. Please record your mood you experienced at 3:30pm yesterday, along with a short note of what happened.”*

The recommended, pre-defined path for each app is as follows:

### **MoodPanda**

1. Tap the “pencil and paper” (compose) icon at the top
2. Drag happiness slider to about an 8/10
3. Type note
4. Tap “Show Advanced”
5. Tap calendar icon
6. Select yesterday’s date on the date picker
7. Set 3:30pm as the time
8. Tap “Update Mood” button

### **Moodtrack Diary**

1. Tap the “pencil and paper” (compose) icon at the top
2. Type a mood in the “Your mood” textbox
3. Tap gray date selector button
4. Set date/time to 3:30pm yesterday
5. Type note in the “Your thoughts” textbox
6. Tap the “Add” button
7. Tap the “4” star

If the participant deviated from this recommended, pre-defined path or performed actions out of order, we notated an error as our measurement. Figure 1 and Figure 2 show the datetime control interface of MoodPanda and Moodtrack Diary, respectively.

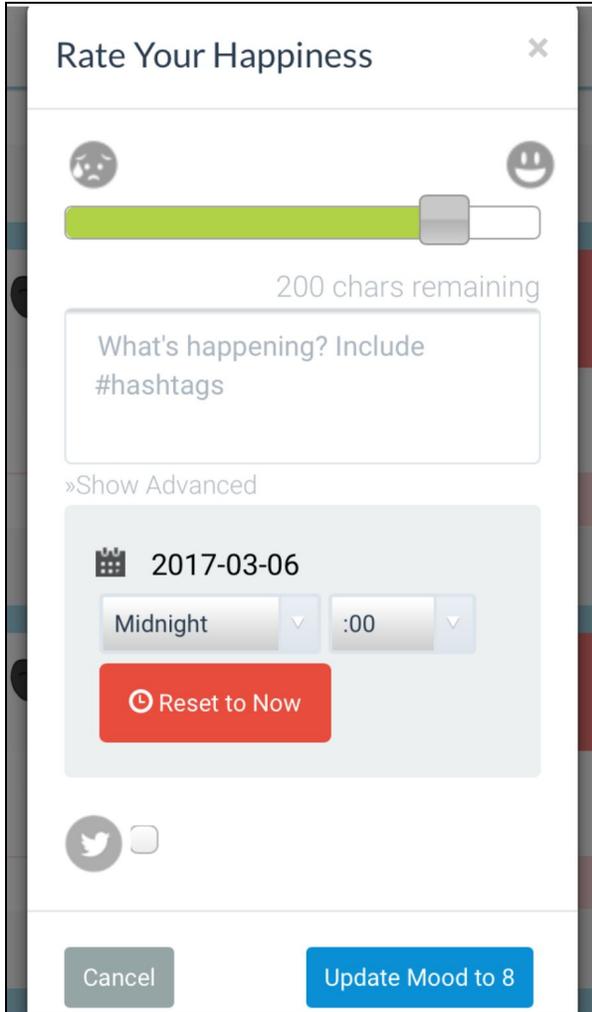


Figure 1 - MoodPanda datetime control

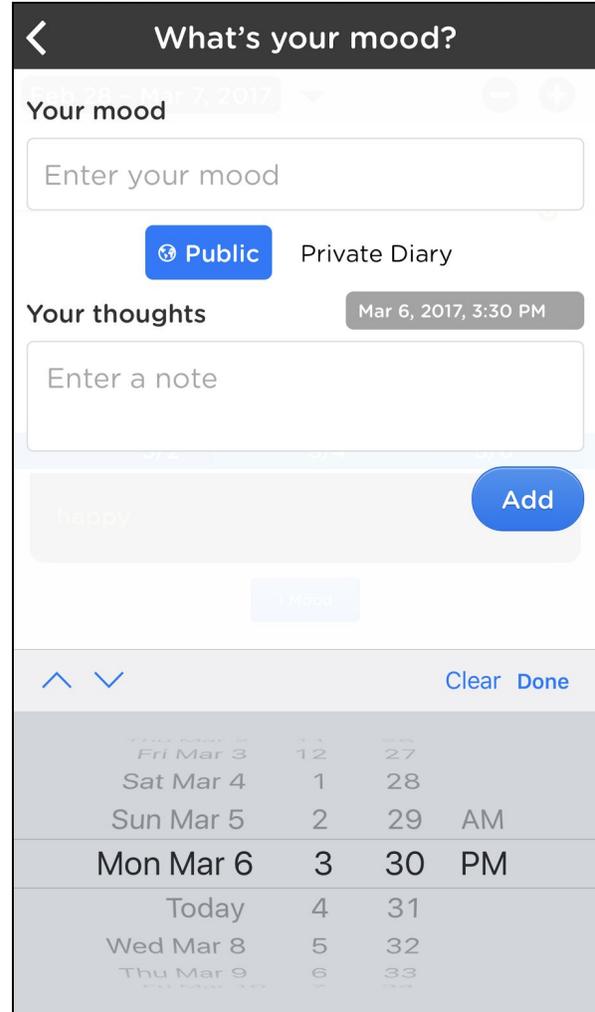


Figure 2 - Moodtrack Diary datetime control

# Results

In our comparison test to determine ease-of-use, we documented the number of errors encountered while completing the task in the pre-defined path to record a previous mood. See Appendix C for raw data. For our research, we studied the data based on the following hypotheses:

## Null hypothesis

*There is no difference in error count for recording a previous mood in MoodPanda and Moodtrack Diary.*

## Alternate hypothesis

*There is a difference in error count for recording a previous mood in MoodPanda and Moodtrack Diary.*

## Data Analysis

Based on the total number of potential correct steps (steps × participants), the 12 participants testing MoodPanda reached a 53% error rate (51 errors / 96 possible), while Moodtrack Diary had a 16% error rate (14 errors / 84 possible). The following tables (Table 1 and Table 2) illustrate the breakdown of totals by each task.

MOODPANDA	
1. Tap the “pencil and paper” (compose) icon	3
2. Drag happiness slider to about an 8/10	2
3. Type note	2
4. Tap “Show Advanced”	11
5. Tap calendar icon	10
6. Select yesterday’s date on the date picker	11
7. Set 3:30pm as the time	11
8. Tap “Update Mood” button	1
<b>TOTAL</b>	<b>51</b>

*Table 1 - Number of errors encountered at each step in MoodPanda*

MOODTRACK DIARY	
1. Tap the “pencil and paper” (compose) icon	3
2. Type a mood in the “Your mood” textbox	0
3. Tap gray date selector button	5
4. Set date/time to 3:30pm yesterday	6
5. Type note in the “Your thoughts” textbox	0
6. Tap the “Add” button	0
7. Tap the “4” star	0
<b>TOTAL</b>	<b>14</b>

Table 2 - Number of errors encountered at each step in Moodtrack Diary

**Statistical Analysis**

We conducted a paired t-test to compare the total number of errors (invalid actions based on the pre-defined path) between the two mobile apps when recording a previous mood. We found a significant difference ( $t(11) = 6.00, p < .05$ ), such that participants made more mistakes when completing the task using MoodPanda ( $M = 4.25, SD = 1.82$ ) than when using Moodtrack Diary ( $M = 1.17, SD = 1.03$ ).

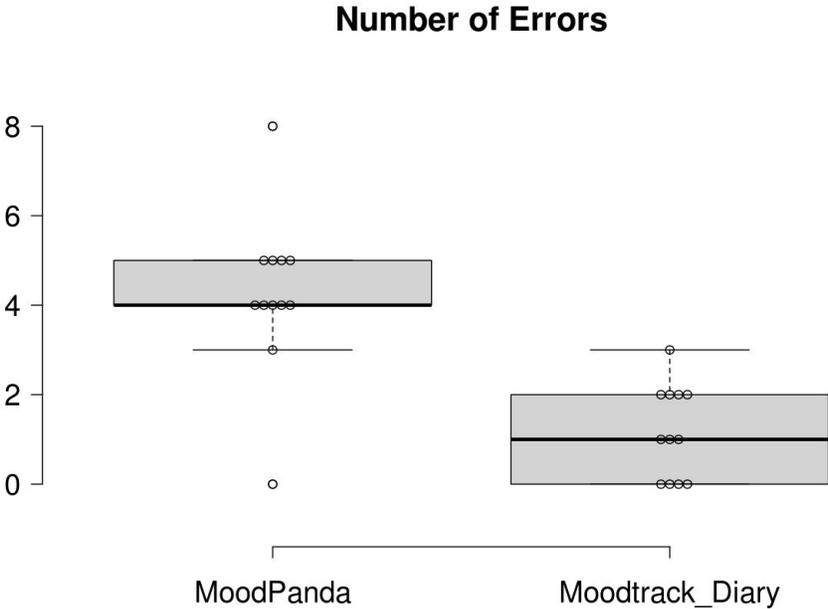


Figure 3 - Box Plot of error rate

# Findings and Recommendations

In the following sections, we interpret the results of our study and provide recommendations to improve the MoodPanda iOS mobile app.

## Findings

Our t-test results were significant: we can accept the alternative hypothesis, and reject the null hypothesis. *There is a difference in error count for recording a previous mood in MoodPanda and Moodtrack Diary.* When users attempted to record their previous mood, MoodPanda's error count was higher than Moodtrack Diary. Nearly every participant failed to set a previous date in MoodPanda, while only half of the participants failed to set a previous date in Moodtrack Diary.

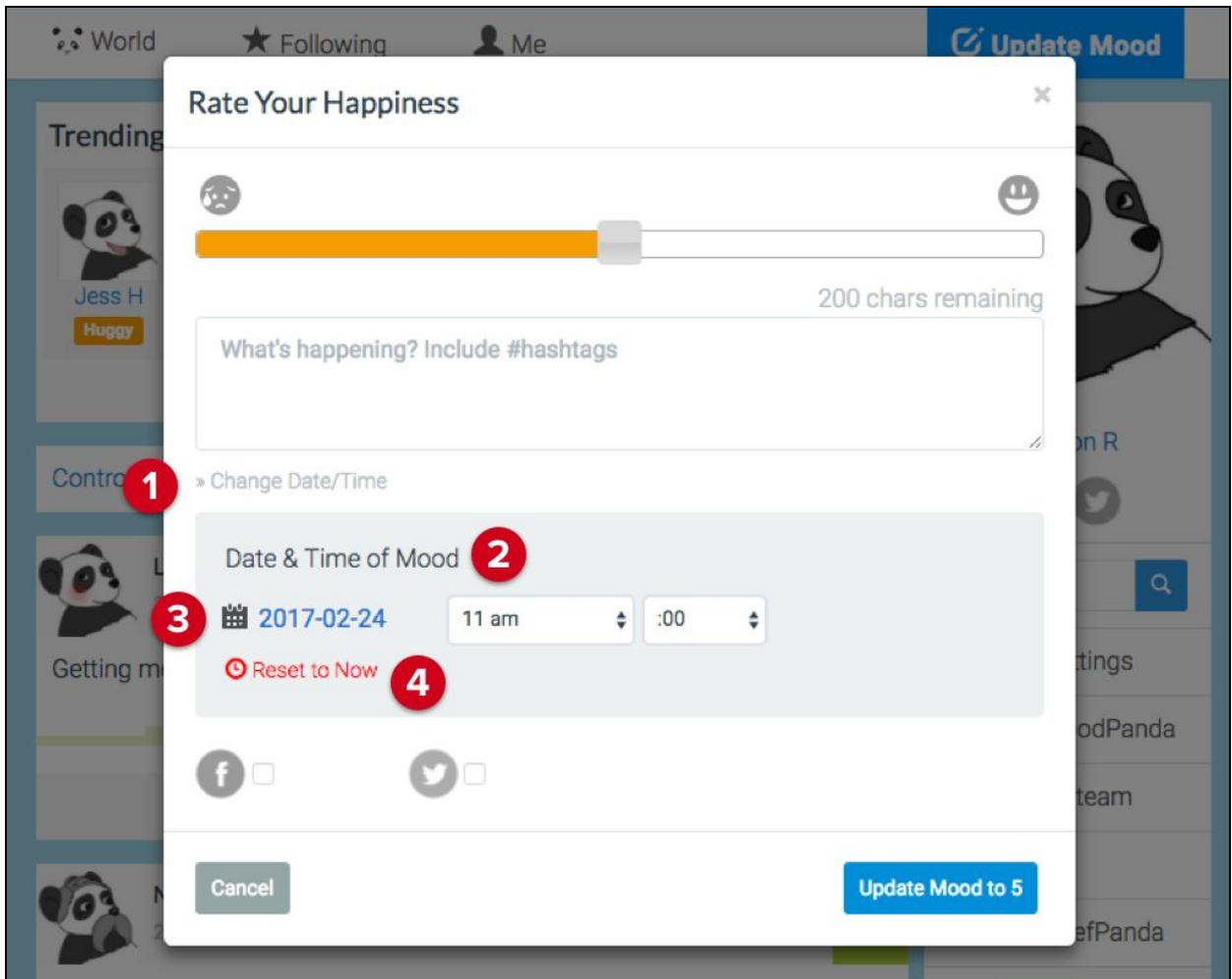
Although both apps have a relatively low discovery rate for the datetime control, the main difference is that the control on Moodtrack Diary is visible by default – not hidden under a toggle like MoodPanda. Based on our results, we can infer that the high error rate on MoodPanda is an effect of this “hidden” control.

## Recommendations

These findings confirm our earlier recommendations to improve visibility of the datetime controls in the MoodPanda application. Through this comparison study of Moodtrack Diary, we are able to verify that showing a portion of the datetime control by default is an effective method to increase ease-of-use when recording a previous mood.

Within the “Update Mood” modal, we recommend modifying the label of the button to access the time settings. Changing “Show Advanced” to “Change Date/Time” will allow for better recognition, as will a label to explain what the datetime control does (e.i. “Change time that mood occurred”). We also recommend considering having this option visible by default, depending on how frequently it is being used in real-world scenarios. *See Figure 4 for a visualization of our recommendations.*

Due to the focused, but limited, data that this comparison study provides, we recommend further usability testing with a re-designed low-fidelity prototype for the task of *recording a previous mood.*



- 1 Change “Show Advanced” to “Change Date/Time”  
(Also, consider having this expanded by default when opening the modal)
- 2 Add heading of “Date & Time of Mood”
- 3 Change color of the the clickable link from black to blue
- 4 De-emphasize the “Reset to Now” button by styling it like a link  
(Also, hide the link when the current time is set to “Now”)

Figure 4 - Mockup of recommendations

# **Appendix**

# A. Informed Consent Form

## ADULT CONSENT TO PARTICIPATE IN RESEARCH

### Comparison Study

**Principal Investigator:** Dorian Anderson

**Institution:** DePaul University, Chicago, Illinois, USA

**Department (School, College):** College of Computing and Digital Media

**Faculty Advisor:** Enid Montague

**Collaborators:** Camille Celone, Elisandra Diaz, Straton Roberts

#### **What is the purpose of this research?**

We are asking you to be in a research study because we are trying to learn more about the usability of two mood tracking websites. This study is being conducted by four graduate students at DePaul University as a class requirement to obtain our Master's degrees. This research is being supervised by our professor, Dr. Enid Montague.

#### **Why are you being asked to be in the research?**

You are invited to participate in this study because you indicated that you use a digital device to take notes and/or manage a calendar. You must be age 18 or older to be in this study. This study is not approved for the enrollment of people under the age of 18.

#### **What is involved in being in the research study?**

If you agree to be in this study, being in the research involves observing you using the mood tracking websites to complete various tasks.

The usability test may be audio/video recorded and transcribed into written notes later in order to get an accurate record of what you said.

#### **How much time will this take?**

This study will take about 5-10 minutes of your time.

#### **Are there any risks involved in participating in this study?**

Being in this study does not involve any risks other than what you would encounter in daily life.

**Are there any benefits to participating in this study?**

We hope that what we learn will help improve the usability of mood tracking sites.

**Can you decide not to participate?**

Your participation is voluntary, which means you can choose not to participate. There will be no negative consequences, penalties, or loss of benefits if you decide not to participate or change your mind later and withdraw from the research after you begin participating. You may end the test at any time, for any reason and receive full compensation for your participation. Your decision whether or not to be in the research will not affect your grades at DePaul University.

**Who will see my study information and how will the confidentiality of the information collected for the research be protected?**

The research records will be kept and stored securely. Your information will be combined with information from other people taking part in the study. When we write about the study or publish a paper to share the research with other researchers, we will write about the combined information we have gathered. We will not include your name or any information that will directly identify you. We will make every effort to prevent anyone who is not on the research team from knowing that you gave us information, or what that information is. However, some people might review or copy our records that may identify you in order to make sure we are following the required rules, laws, and regulations. For example, the DePaul University Institutional Review Board, may review your information. If they look at our records, they will keep your information confidential.

The audio/video recordings (if used) will be kept until accurate written notes have been made, then they will be destroyed.

You should know that there are some circumstances in which we may have to show your information to other people. For example, the law may require us to show your information to a court or to tell authorities if you report information about a child being abused or neglected or if you pose a danger to yourself or someone else.

Please be aware that disclosing experiences with sexual or relationship violence during the course of research does not constitute a formal report to the University and will not begin the process of DePaul providing a response. If you are seeking to report an incident of sexual or relationship violence to DePaul, you should contact Public Safety (Lincoln Park: 773-325-7777; Loop: 312-362-8400) or the Dean of Students and Title IX Coordinator (Lincoln Park: 773-325-7290; Loop: 312-362-8066 or [titleixcoordinator@depaul.edu](mailto:titleixcoordinator@depaul.edu)). Individuals seeking to speak confidentially about issues related to sexual and relationship violence should contact a Survivor Support Advocate in the Office of Health Promotion & Wellness for information and resources (773-325-7129 or [hpw@depaul.edu](mailto:hpw@depaul.edu)). More information is available at <http://studentaffairs.depaul.edu/hpw/shvp.html>. Individuals are encouraged to take advantage of these services and to seek help around sexual and relationship violence for themselves as well as their peers who may be in need of support.

If you do disclose an experience with sexual or relationship violence, we will also provide you with a resource sheet containing this information at the end of the study.

**Who should be contacted for more information about the research?**

Before you decide whether to accept this invitation to take part in the study, please ask any questions that might come to mind now. Later, if you have questions, suggestions, concerns, or complaints about the study or you want to get additional information or provide input about this research, you can contact the researcher, Dorian Anderson, [dorian.c.anderson@gmail.com](mailto:dorian.c.anderson@gmail.com).

If you have questions about your rights as a research subject you may contact Susan Loess-Perez, DePaul University's Director of Research Compliance, in the Office of Research Services at 312-362-7593 or by email at [sloesspe@depaul.edu](mailto:sloesspe@depaul.edu).

You may also contact DePaul's Office of Research Services if:

- Your questions, concerns, or complaints are not being answered by the research team.
- You cannot reach the research team.
- You want to talk to someone besides the research team.

***You will be given a copy of this information to keep for your records.***

**Statement of Consent from the Subject:**

I have read the above information. I have had all my questions and concerns answered. By signing below, I indicate my consent to be in the research.

**For Online Participants**

By completing the online observation you are indicating your agreement to be in the research.

Signature: \_\_\_\_\_

Printed name: \_\_\_\_\_

Date: \_\_\_\_\_

## B. Moderator Script

Hi, my name is \_\_\_\_\_ and I will be the moderator for this study. I appreciate you taking the time to participate today. We will be looking at two mood tracking mobile apps and testing part of their functionality.

The study will take 5-10 minutes, and you will be asked to complete two tasks.

Your participation is completely voluntary. You have the right not to complete any task, and to stop at any time, for any reason.

First, I will need you to read and sign a consent form.

- Pass consent form and pen to participant
- Walk through the consent form with the participant
- Request acknowledgement and signature

Great, thank you! Let's get started.

I'm going to walk you through the scenario and give you a task to complete. You will perform the same task once in each of the two mood tracking apps we are testing today

- Read task
- Give cutout of task to participant for reference

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*“At 3:30pm yesterday, you had a team meeting with your coworkers to discuss an exciting new project. You are really optimistic and confident about the finished product, and your level of general happiness is about an 8 on a 1-10 scale. Please record your mood you experienced at 3:30pm yesterday, along with a short note of what happened.”*

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- Have user perform this task in each app (make sure to rotate which one you do first)
  - Open respective app to the home screen, with the “compose” button visible
  - ( #1 / #2 ) MoodPanda
  - ( #1 / #2 ) Moodtrack Diary
- Take notes of the each error in the grid below  
NOTE: This is a pre-defined sequence, mark an error if performed out of order

<b>P1</b>	<b>P2</b>	<b>P3</b>	<b>P4</b>	<b>MoodPanda</b> (Mark with X if error occurred or out of order)
				1. Tap the “pencil and paper” (compose) icon at the top
				2. Drag happiness slider to about an 8/10
				3. Type note
				4. Tap “Show Advanced”
				5. Tap calendar icon
				6. Select yesterday’s date on the date picker
				7. Set 3:30pm as the time
				8. Tap “Update Mood” button

<b>P1</b>	<b>P2</b>	<b>P3</b>	<b>P4</b>	<b>Moodtrack Diary</b> (Mark with X if error occurred or out of order)
				1. Tap the “pencil and paper” (compose) icon at the top
				2. Type a mood in the “Your mood” textbox
				3. Tap gray date selector button
				4. Set date/time to 3:30pm yesterday
				5. Type note in the “Your thoughts” textbox
				6. Tap the “Add” button
				7. Tap the “4” star

That’s a wrap! Thank you for your participation today!

Do you have any questions for me?

Great thank you! I really appreciate you helping out.

- ❑ [Close iOS applications and reset to the starting state](#)
  - [Double click the home button and remove the apps from the multitasking app switcher. \(MoodPanda has a bug that will not show the same starting state to your next participant\)](#)

## C. Data

MOODPANDA												
Step	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12
1. Tap the "pencil and paper" (compose) icon at the top	0	0	0	0	1	0	1	0	0	1	0	0
2. Drag happiness slider to about an 8/10	0	0	0	1	1	0	0	0	0	0	0	0
3. Type note	0	0	0	0	1	0	0	0	0	0	1	0
4. Tap "Show Advanced"	1	1	0	1	1	1	1	1	1	1	1	1
5. Tap calendar icon	1	1	0	1	1	1	1	1	1	1	1	0
6. Select yesterday's date on the date picker	1	1	0	1	1	1	1	1	1	1	1	1
7. Set 3:30pm as the time	1	1	0	1	1	1	1	1	1	1	1	1
8. Tap "Update Mood" button	0	0	0	0	1	0	0	0	0	0	0	0
<b>Total # of Errors</b>	<b>4</b>	<b>4</b>	<b>0</b>	<b>5</b>	<b>8</b>	<b>4</b>	<b>5</b>	<b>4</b>	<b>4</b>	<b>5</b>	<b>5</b>	<b>3</b>
MOODTRACK DIARY												
Step	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12
1. Tap the "pencil and paper" (compose) icon at the top	0	0	0	0	1	0	0	0	1	1	0	0
2. Type a mood in the "Your mood" textbox	0	0	0	0	0	0	0	0	0	0	0	0
3. Tap gray date selector button	1	1	0	1	0	0	0	1	0	1	0	0
4. Set date/time to 3:30pm yesterday	1	1	0	1	0	0	0	1	0	1	1	0
5. Type note in the "Your thoughts" textbox	0	0	0	0	0	0	0	0	0	0	0	0
6. Tap the "Add" button	0	0	0	0	0	0	0	0	0	0	0	0
7. Tap the "4" star	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total # of Errors</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>0</b>

## D. Individual Contributions

<b>Team member</b>	<b>Contributions</b>
Camille Celone camille.celone@gmail.com	Moderated tests; input raw data into spreadsheet; collaborated to revise report; helped develop presentation
Dorian Anderson dorian.c.anderson@gmail.com	Developed initial guidelines, topic, and task for report; moderated tests; input raw data into spreadsheet; summarized the findings and recommendations section; collaborated to revise report
Elisandra Diaz elisandra.diaz@gmail.com	Moderated tests; input raw data into spreadsheet; drafted executive summary; collaborated to revise report; helped develop presentation
Straton Roberts stratroberts@gmail.com	Developed test objectives and methodology sections; created informed consent form and moderator script; moderated tests; input raw data into spreadsheet; performed statistical analysis; summarized the results and findings/recommendations sections; collaborated to revise report