

# courtesy

court, with support.

## **Courtesy: Lo Fi Prototyping and Pilot Usability Testing**

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### ***Introduction***

#### **Value Proposition:**

Court, with support.

#### **Mission Statement:**

Courtesy aims to make the process of preparing for court less overwhelming and more accessible.

#### **Problem-Solution Overview:**

Being summoned to court is a stressful and overwhelming process, which is only worsened by a lack of resources. The consequences of failing to appear in court when summoned are always disruptive, and can range from a fine to a warrant for arrest.

Our app, Courtesy, provides defendants with a way to track and confirm the logistics of their court dates, like transportation and legal representation, to hopefully feel more confident leading up to their hearing. It also provides space for users to read testimonials of others who have completed court appearances, and provide their own testimonial once their court appearance is done. Courtesy aims to be a supportive and easy tool for those lost in the paperwork of preparing for court.

# Sketches

## Overview:

We brainstormed six different modalities, or app realizations across different platforms, to narrow down the two that best fit our mission statement.

## Concept Sketches (15-25):

Figure 1. AR Modality: Glasses & app combination

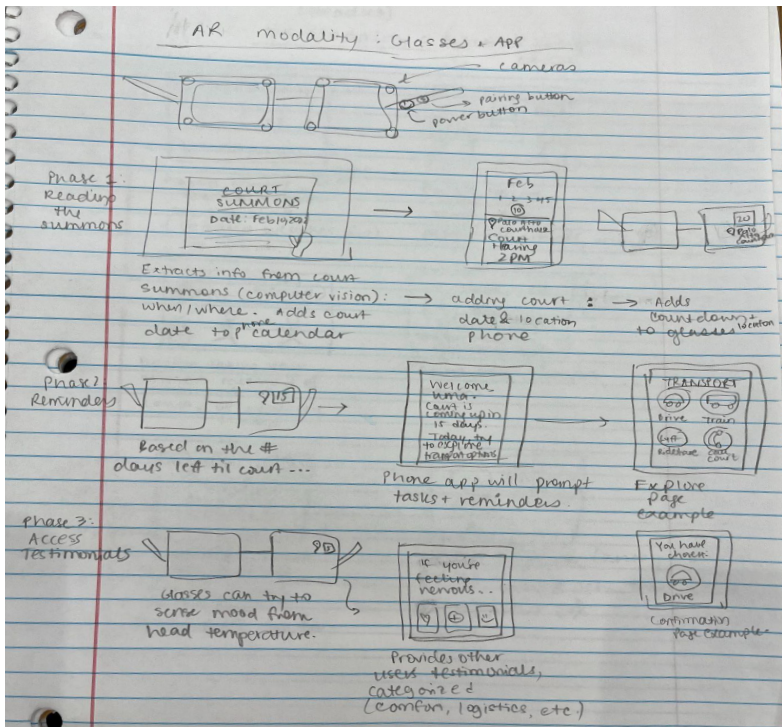


Figure 2. VR Modality: Trace-your-way-through-court headset app

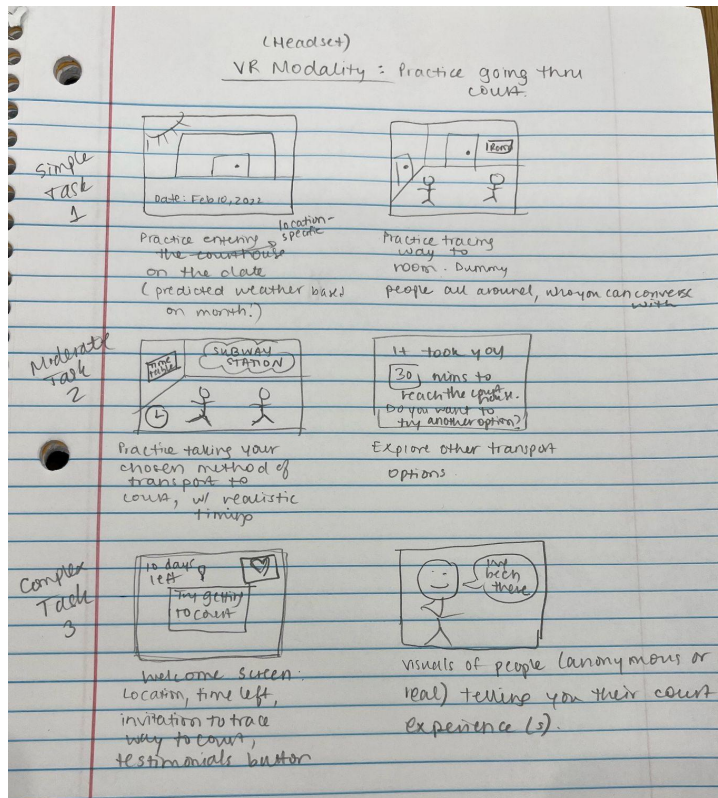
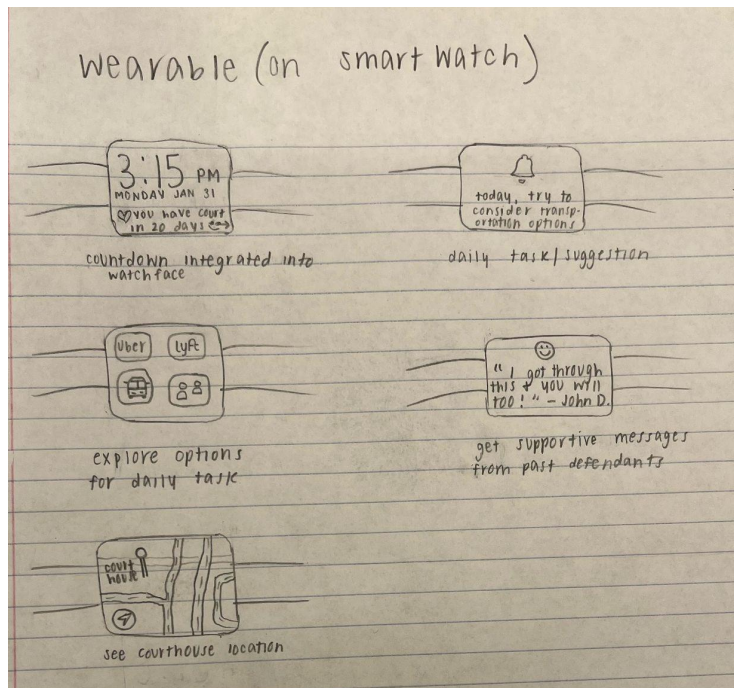
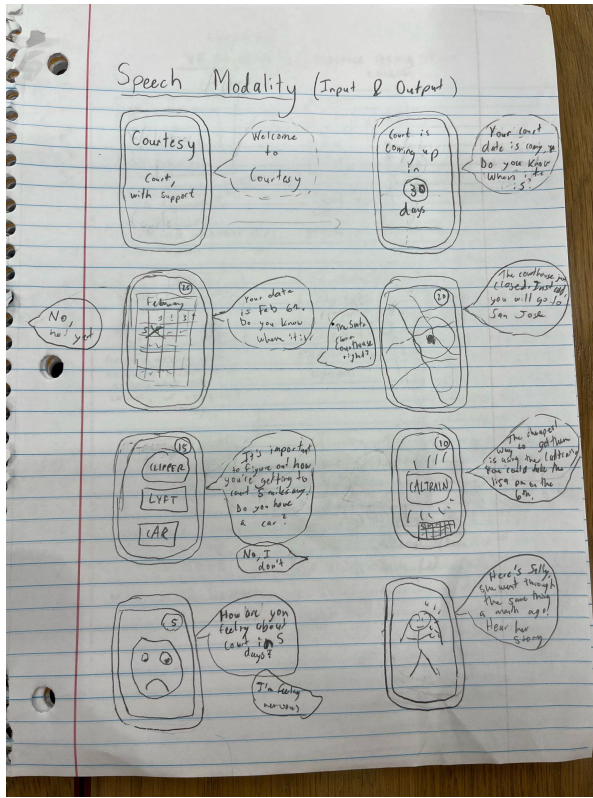


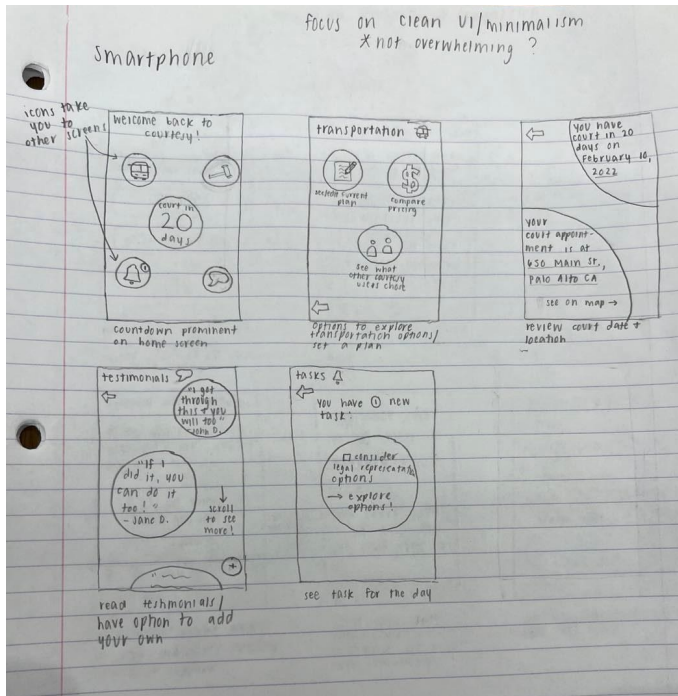
Figure 3. Wearable smartwatch app with haptics



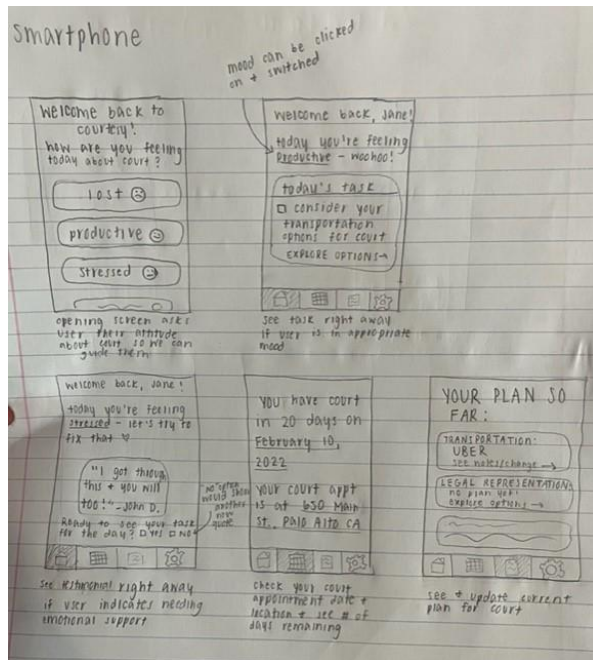
**Figure 4.** Speech-based app with a smart virtual agent



**Figure 5.** Native smartphone app with focus on keeping tasks minimal, less overwhelming



**Figure 6.** Native smartphone app with focus on a warm, supportive UI

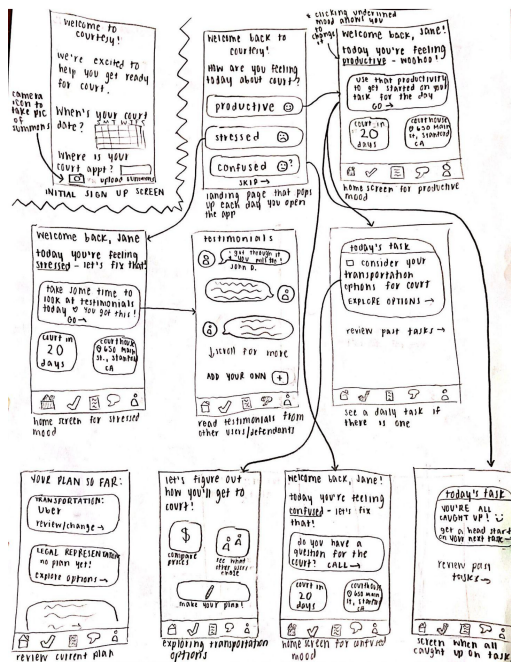


**Top 2 Designs with Further Storyboarding:**

We decided to move forward with one of our native smartphone app ideas (Fig. 6) and our VR app idea (Fig. 2). To us, these solutions were the ones that best combined innovation with efficacy.

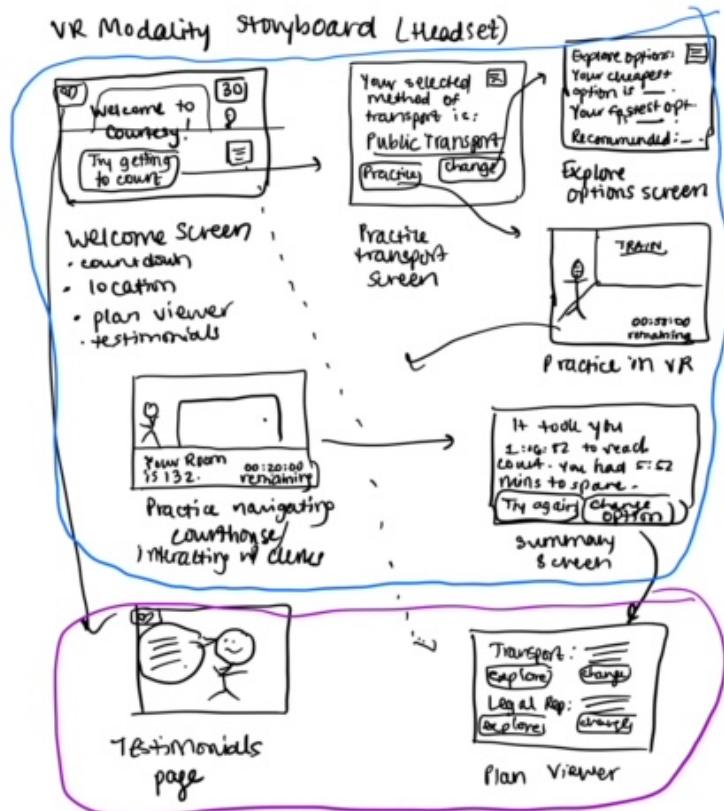
**Design 1**

**Figure 7.** Native smartphone app storyboard with 10 screens and transitions



## Design 2

Figure 8. VR app storyboard with a "trace-through-court" flow and auxiliary screens



Blue outline: "Trace thru Court" flow

Purple outline: Auxiliary pages.

## Selected Interface Design

Ultimately, we decided to proceed with our native smartphone app idea. While we were excited by the ability to put people in quasi-real-life situations with VR, we were more motivated by the idea of creating an accessible smartphone app.

**Figure 9.** Pros and cons of a native smartphone app

Pros	Cons
<ul style="list-style-type: none"><li>- Most easily accessible technology, compared to all the rest</li><li>- Good way of delivering on-the-go notifications and reminders, and allowing for on-the-go plan editing and checking</li><li>- Allows for advanced AI capabilities, e.g. taking picture of summons &amp; extracting relevant info</li><li>- Allows for mood-selecting screen which, based on needfinding, seems like a good way to remind users that this is an emotionally-charged process, and to treat themselves with empathy</li></ul>	<ul style="list-style-type: none"><li>- Not as interactive as other modalities, especially with regards to tracing one's path through court</li></ul>

**Figure 10.** Pros and cons of a VR headset app

Pros	Cons
<ul style="list-style-type: none"><li>- Super interactive and visual, targets the issue of feeling unknowledgeable about the process of appearing in court in a very innovative way</li><li>- Lifelike in a way no other modality can be, good for practicing the process of both getting to and appearing in court</li></ul>	<ul style="list-style-type: none"><li>- Huge accessibility issue - not many people have VR headsets</li><li>- Not on-to-go, so users would be unable to edit plans on the fly</li><li>- No on-the-go notification capability</li></ul>

## Task Flows:

**Figure 11:** Simple Task, Check how many days you have remaining until court, and the location



**Figure 12:** Simple Task, Check your current court plan



**Figure 13:** Moderate Task, Explore transportation options, and then make a plan for yourself

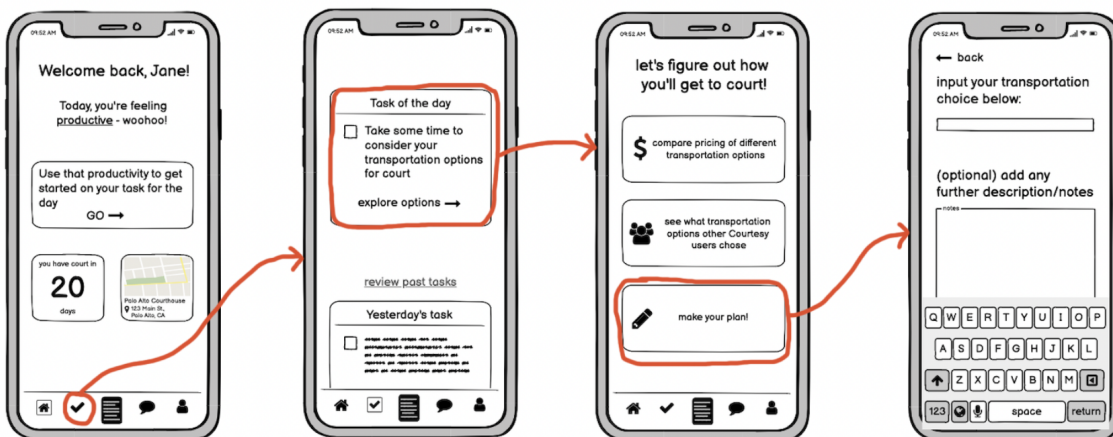


Figure 14: Complex task, Access testimonials and then post one yourself



## Low Fidelity Prototype Description

We created our low-fidelity prototype on Balsamiq, for ease of conducting interviews over Zoom. We used our paper storyboard to build out the actual task flows in Balsamiq. We designed a native smartphone prototype that is interacted with through click input, to move through visual screens. The user operates it by clicking through transitions we have hooked up. The interface itself relies on patterns seen in other types of planning apps, but the tasks are novel.

**Figure 15.** Entire prototyping system used in interviews, designed in Balsamiq



## Testing Methodology

### Participants & Environment:

Our participants were all people who have experienced Failures-to-Appear in court. We recruited them by posting on Craigslist labor gigs in the NYC and Bay Area forums, and compensating the participants for their time with \$10.

- Our first interviewee is a 40-year-old man originally from Kenya who has court experience.
- Our second interviewee is a 34-year old woman from Pleasanton, who experienced numerous failure-to-appears, at times when she didn't even have a phone.
- Our third interviewee is a 58-year old from San Jose, who experienced a felony FTA and was facing jail time

We conducted all testing remotely through Zoom, and had participants share their screens showing the prototype.

### Tasks:

1. **Simple:** Check how many days you have remaining until court, and the location.
2. **Simple:** Check your current court plan.
3. **Moderate:** Explore transportation options, and then make a plan for yourself.
4. **Complex:** Access testimonials and then post one yourself.

### Usability Goals & Measures:

**Efficiency:** How many total taps were taken to get to the destination screen for each task?

**Robustness:** How many "wrong" taps were made in the course of a task?

We chose the usability goals of **efficiency** and **robustness** because we think our app should decrease the amount of time people spend stressing about court, which means it should be error-free (robust), and quick (efficient).

### Procedure:

We used the same script with all participants. At a high level, the interviews went as follows (see Appendix for full script and materials):

- Ask for interviewee's consent to record, and brief demographic information
- Explain that the purpose of this interview is to evaluate rough UI ideas
- Demo the system at a high level, then send the Balsamiq link
- Emphasize the importance of speaking aloud throughout the interview
- Observe interviewees' performance on four tasks, outlined above
- Debrief and ask follow-up questions about specific screens and perceived usefulness of the app

**Test Measures:**

- Success:
  - User was able to complete a task without any help from facilitator
  - User got to the correct screen in the minimum number of clicks
- Error:
  - User had to ask a clarifying question about language used on screens or screens themselves
  - User made any wrong taps in the task flow

**Team Member Roles:**

We kept team roles the same throughout the process, to ensure consistency in each interviewee's experience, and consistency in the scale of critical incidents that we logged.

- Greeter/Facilitator: Alissa
- Notetaker on Usability Goals: Olivia
- Notetaker on Critical Incidents: Uma

## **Results**

### **Positive:**

- Home screen layout was intuitive and easy to return to via the navigation bar
- Countdown information was easy to find and not stressful to look at
- Transportation plan screen was universally seen as useful and well-designed
- It was easy to add information to a sub-plan plan, add extra information, and add testimonials

### **Things to improve:**

- Some screens need explicit “back” buttons, rather than relying on the bottom navigation bar
- We discovered a tension between having clearer labelling on icons vs. using fewer labels to decrease the impediment of a language barrier
- Getting to the “make your plan” page was universally confusing, suggesting a need for clearer terminology
- The language of “court testimonials” was confusing
- The initial mood-selecting screen received mixed reviews, with some people finding it helpful and others finding it unnecessary
- More tasks can be integrated into the app (e.g. arranging childcare)
- It would be nice to be able to react to or interact more heavily with the testimonials

## **Discussion**

Ultimately, we received helpful design suggestions and confirmation of the value-add of our app. No one was confused about how to actually manipulate or use the prototype, validating our use of Balsamiq.

On the positive side, every interviewee said this app would have been helpful ahead of their court dates. One told us she'd "never seen anything like this before" and that it "would have helped [her] for sure" in avoiding FTAs when she had reliable phone access. Another explained transportation issues were the biggest reason he failed to appear, and he would have felt less lost if he had had Courtesy. Our tracker of date and location, transportation and legal representation plan, and testimonials were all viewed as valuable by various interviewees.

Our usability goals of efficiency and robustness were mostly proved to be met by our prototype, with 2 interviewees having few negative critical incidents, and minimal "wrong" taps (See Appendix for raw data.). However, our interviewee with a language barrier had significantly more errors, showing us we should work to improve our interface to transcend such gaps.

Based on these results, our most significant areas of improvement include adding translations or making clearer icons to improve components for those with a language barrier, revising the initial mood-selecting screen and the app flow that centers users' moods, further centering the "your plan" full page, and making the testimonials page more interactive.

Overall, we received feedback that validated each feature we included. The experiment was unable to reveal how users with even more varying technological abilities would interact with this app, and how that might change over time.

## Appendix

**Word Count:** 1496

### Testing Script:

#### *Introduction*

Thank you so much for agreeing to be interviewed by our team! My name is Alissa and I will be facilitating the prototyping interview – these are my teammates Uma and Olivia, who will be taking notes.

First, I was wondering if it would be OK with you if we record this Zoom call for personal reference. We were also wondering if we could ask you a few basic demographic questions: how old are you, where are you from, and can you briefly summarize your experience with court hearings? Finally, just a reminder to please sign the consent form I have emailed to you.

#### *Prototyping Interview*

Send the Balsamiq link.

Demo the system at a high level:

- We will try this first with you screensharing the prototype, but if it doesn't work, no worries, we will share and have you tell us which buttons to click!
- Some buttons are clickable, some aren't: if you click on something and nothing happens, try something else.
- You can't input any text or scroll.

The reason why we're doing this interview, as a reminder, is to see if the user interface of our app makes sense; please please please speak out loud the whole time as you're going through the app! It's super helpful for us to know what you're thinking as you navigate the app.

Remind: this app is meant to help you prepare for your court hearing,

#### *Task flows:*

Assume you have already filled out [the 3 fields on the setup screen.] Can you navigate to the home screen?

- *Simple:* Check how many days are left until your hearing, and where your court date is.
- *Intermediate:* Explore transportation options, and then try to access the page to make a transportation plan for yourself.
- Navigate back to home screen
- *Simple:* Check your current plan for court.
- Navigate back to the home screen
- *Complex:* Access court message board about how court went, and then try to add a message yourself.

### *Questions for the end:*

- How easy or hard was it to navigate this app?
- How did you like the mood-selecting screen?
- How useful do you think this app would've been for your court hearing?
- How comfortable would you feel giving your permanent address to this app?
- If you had this app, how often would you check it?
- How many weekly notifications would you want?
- How would you feel about being consistently notified about your court date?
- Which features would've been most useful for you ahead of your FTA?

### *Conclusion*

Thank you, consent form reminder, ask for the best method of payment.

### **Prototype Link:**

<https://balsamiq.cloud/sak6n52/pl14ugg/r43D4?f=N4lgUiBcAMAOIDkpxAYWfAMhkAhHAsjgFpQCM8A0IANoC6AvkA%3D%3D>

### **Critical Incidents Log and Interview Notes:**

#### ***Interviewee 1***

#### **Efficiency**

*Num taps to get to countdown screen: 2 (from sign up screen)*

*Num taps to get to current plan: 6 (before giving up)*

*Num taps to get to task screen: 2*

*Num taps to get to add transport plan screen: 4*

*Num taps to get to add testimonial screen: 7*

#### **Robustness**

How many "wrong" taps did they make?

5 while looking for plan

6 while looking for testimonials

11 in total

Incident	Score
Confused while getting to the "make your plan" page	2
Was able to parse the transportation resources (said it would be helpful for him to decide which method he would choose!)	0
Confusing to determine how to check the current plan for court / differentiating this from the transportation plan screen -> maybe use different language?	3
Navigating back to the home screen was easy	0
Hard to differentiate between the transportation idas & testimonials -> maybe make the bottom icons visible for all screens	2
Seemed to be looking for a back button when on the "explore transportation options" page (moved mouse to top left corner)	1
Language of "Testimonials page" is potentially confusing, he thought the transportation of other users was equivalent to testimonials	3
Seems like it's unclear on how to get to the "your plan" page. I think labels would be helpful	1
One tap from testimonial screen to add your testimonial - understood transition +1	0

## **Interviewee 2**

### **Efficiency**

*Num taps to get to countdown screen: 2 (from signup screen)*

*Num taps to get to current plan screen: 2*

*Num taps to get to add transport plan screen: 3*

*Num taps to get to add testimonial screen: 2*

### **Robustness**

How many "wrong" taps did they make?

Current plan: 1

Incident	Score
Maybe a little confusing to get from testimonials back to the home screen ? Or like the first time, the transition from "you're feeling stressed, read testimonials" back to the home screen could be confusing b/c there's no back button.	2
Super easy to get to countdown info	0
Unclear what "your current plan for court" is, I think. She clicked on the tab and it was still unclear that it was the tab for "your plan"	4
Very easy to get to transport screens	0
Would use "add any further description" section to give herself reminders about getting transportation on time	0
"This is something I wish I had when I was going to court"	0
Seems easy to get to testimonials and write about your court experience	0

### **Interviewee 3**

#### **Efficiency**

*Num taps to get to countdown screen: 2 (from sign up screen)*

*Num taps to get to current plan: 3 (before giving up)*

*Num taps to get to task screen: 3*

*Num taps to get to add transport plan screen: 2*

*Num taps to get to add testimonial screen: 5*

#### **Robustness**

How many "wrong" taps did they make?

3 while looking for plan

Incident	Score
Seems confused by the mood screen when it pops up	2
Normally wouldn't want to be reminded of court date	0

but thinks the way it was done is subtle and not jarring	
Was confused about what tasks they would do when they had already made their plans	2
"Transportation was the biggest thing that caused me to fail-to-appear" - would not have FTAed if he had had this	0
Loved the plan and reminders to keep them accountable throughout the process	0
Did not think they would use testimonials since they tend not to use those features in apps	3
Wished there was some guide to contacting the court when they did it or some way to ask some questions rather than simply having people's stories	3

## Blank Consent Form:

### Consent Form

Courtesy's prototype is being produced as part of the coursework for Computer Science course CS 147 at Stanford University. Participants in the experimental evaluation of this prototype provide data that is used to evaluate and modify the interface of Courtesy. Data may be collected by interview, observation and questionnaire.

Participation in this experiment is voluntary. Participants may withdraw themselves and their data at any time without fear of consequences. Concerns about the experiment may be discussed with the researchers (Uma Phatak, Olivia Otto, or Alissa Vuillier) or with Professor James Landay, the instructor of CS 147:

James A. Landay  
CS Department  
Stanford University  
650-498-8215  
landay at stanford dot edu

Participant anonymity will be maintained by the separate storage of names from data. Data will only be identified by participant number. No identifying information about the participants will be available to anyone except the student researchers and their supervisors/teaching staff.

I hereby acknowledge that I have been given an opportunity to ask questions about the nature of the research and my participation in it. I give my consent to have data collected on my behavior and opinions in relation to the Courtesy's research. I understand that I may withdraw my permission at any time.

I give consent to be videotaped during this study:

Yes       No

I give consent to be audiotaped during this study:

Yes       No

I give consent for video or audio recordings from this study to be shown to people not directly involved with this research during/in class, seminars, reports, or scientific presentations.

Yes       No

Name \_\_\_\_\_

Participant Number \_\_\_\_\_

Date \_\_\_\_\_

Signature \_\_\_\_\_