



flowspace

a mindful approach to deep work

CS147 Winter 2021

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## **Problem:**

The 21st century workflow is marked by a constant bombardment of notifications, messages, and other distractions. Indeed, this information overflow and constant connectivity make it difficult to get into the right physical and mental environment for deep, concentrated and productive work. These conditions perpetuates stress-induced burnout, causing both health and economic ramifications.

## **Solution:**

FlowSpace reimagines how we engage with productivity, helping people immerse themselves in the flow state and structure their lives around doing so. FlowSpace blends approaches from mindfulness practice with your daily work habits, enabling guided flow states, goal-oriented work, and the development of long-term flow habits. In doing so, FlowSpace aims to re-invent the relationship between humans and technology, providing a mindful approach to deep work.

## **Needfinding Interviews:**

Our 5 needfinding interviews helped us gain a more nuanced understanding of the problems plaguing the modern workplace and the relationship between health and technology.

Our first interview was with Elliot, a software engineer who lives in Wisconsin. From his interview, we heard about the isolation from family and friends that he has felt during the pandemic. We heard about how remote work has altered his relationships. Further, as Elliot is a software engineer and his job revolves around technology (even before the pandemic), he told us about the ways he strives to find balance and walked us through a typical day in his life.

Next, we interviewed Angela, a student taking remote classes who is studying psychology and works as a peer counselor. Angela told us a lot about how she finds

technology sometimes “inextricably lonely”. She provided interesting insights into the mental health landscape among college students, especially in the face of COVID-19.

After Angela, we interviewed Sophie, an elementary school student in Kansas who now has a hybrid of online and in-person school. Sophie talked about elements of online school that she finds difficult. She told us about how before the pandemic, she liked to use her tablet when she got home from school, but now any break she has, she tries to not use technology due to Zoom fatigue. She mentioned that she has to take more naps now.

Then we interviewed Jennie. Jennie is a first-grade teacher who now has to work entirely online. She told us about the challenges she faces trying to keep students engaged online and how it perpetuates and reveals existing inequalities. Further, she talked about different technologies and tools that she has found useful as she adapts to being a fully online teacher.

Lastly, we interviewed Jeff, a UI Designer who has worked remote even before the pandemic. He talked about how he has helped teams go remote since the pandemic. Further, he provided interesting insights into how constant connectivity perpetuates stress and burnout and is often counterproductive to productivity.

### **Salient Quotes from Interviews:**

“People aren’t equipped yet to realize that in some ways, they might actually be helping themselves by not being always available.”

“That’s one of the hardest parts, not feeling you just have to respond to everything.”

“It’s about having a good understanding of what you need to accomplish, and which info channels you use.”

“It’s kind of like this screen is a duty and it feels like my master at this point.”

“I think there’s something about an iPad. It’s like relatively low functionality.”

## Common Themes Across Interviews

- Control
- Want to be productive
- Desire to avoid distraction
- Feeling stressed and overwhelmed
- Constant connectivity
- Isolation and loneliness

## Empathy Map (Say, Do, Think, Feel) from Needfinding Interviews with Sophie (Purple) and Angela (Green)

### SAY

"Screen fatigue has been a huge thing for me"

"Especially since school started"

"That's impacted my energy"

**"It's kind of like this screen is a duty and it feels like my master at this point."**

"I think I kind of screwed up during my winter break in that I didn't like **proactively plan enough non screen time**"

"I think there's something about an iPad. It's like relatively **low functionality.**"

"I also relied on [my laptop] more for my day to day. In-between times"

"I hate online school with a passion"

"Recess and lunch are my favorite parts of online school"

It's awkward to interact with teachers all online.



# THINK

I wish socializing could be off the screen and more real

School contributes a lot to extra screen fatigue

Keeping workspaces organized helps with focus

I used to love screen time before COVID, but now it is awful.

**I don't know how to care for myself when I'm always online**

I'd rather see my friends online than not at all

Technology is **draining my energy** throughout the day.

I need to find new ways to be fulfilled during COVID

Being busy is the only way I am operating right now, and **I can't control it**

I miss the unplanned daily interactions with other people

# DO

takes 5 minute breaks from the computer

now spends **leisure time as well as work time** on screens

only has seven or eight tabs open at a time

Structures **breaks to be non-screen time**, with family, on trampoline, doing gymnastics

**Socializes with friends over zoom**

new habit with friends of work-sessions over zoom

was dancing around and doing gymnastics during call

Needs to **take naps to recharge** during the school day

took on miscellaneous on-screen tasks during the break

Gets distracted by people around her during school

## FEEL

Lonely because I am not able to see friends in real life

Disoriented by all of my tasks being on a screen

Frustrated because **my time doesn't feel like my own anymore**

So **tired of always being on a screen all the time**

More comfortable when there are fewer things to navigate

Forgotten by the people I used to get to interact with

Restless all the time, itching to move and talk to people

**Unsatisfied with my rest time** and with how I'm feeling.

Extreme dislike of online school. It feels icky.

Less spontaneous and joyful, lethargic, **missing human contact**

## Point of Views (POVs) & Experience Prototypes:

We then distilled our needfinding interviews into the below point of views (POVs). After fleshing out our POVs, we brainstormed a series of different possible solutions that stemmed from our “How Might We” statements. We then chose our top four solutions and turned them into prototypes that we could test to get rapid feedback on core assumptions of each solution (referred to as our experience prototypes and summarized below).

### POV 1

**We met** Angela, a Stanford student who is a peer counselor at The Bridge. **We were amazed to realize that** she stayed more focused on her work when using her iPad, which had lower functionality. **It would be game changing to** help users feel more powerful and goal-directed when using their devices.

**How might we:** Help people be more intentional about their tech usage? Lower functionality of laptops/phones? Encourage users to control their devices?

### POV 2

**We met** Angela, a Stanford student studying remotely and a peer counselor at The Bridge. **We were amazed to realize that** she found video call interfaces lonely, with having to see her friends in boxes (In other words, it might be the interface itself that amplified the feeling of

loneliness). **It would be game changing to** make video calls feel more meaningful and less mechanical.

**How might we:** Make the Zoom interface friendlier? Emulate in-person interactions? Facilitate meaningful relationships over Zoom?

### POV 3

**We met Jeff**, a UX architect who worked remotely before COVID but now is helping people who have gone remote since COVID. **We were amazed to realize that** Jeff thinks people can help themselves and their companies by not always being available and choosing not to respond immediately or at all. **It would be game changing to** help people feel less overwhelmed by work communications.

**How might we:** Change the culture around responsiveness? Make notifications better, more helpful, less distracting? Help people manage which notifications to pay attention to?

### Top 4 Prototypes from How Might Wes

1. Nutrition labels for apps
2. Mandatory goal-setting
3. Mindful deep cleaning
4. Customized flow<sup>1</sup> state extension

#### 1. Nutrition Labels for Apps

What: Collecting and summarizing data (structured like a nutrition label) about each app that displays before download/usage.

Assumption:	Testing:	What worked:	Didn't work:
Wellbeing information (time used, number of notifications, engagement label, productivity, etc) is useful for users to decide whether to download apps.	Printed out apps with standard app store info, along with nutrition labels, for in-person "app store." Asked 3 people to browse store synchronously.	Participants found physical "app store" setup to be fun, reminded them of grocery shopping.	Customers rely more on screenshot previews, ratings, and # downloads to judge app.  Didn't like that label had to be explained.

#### 2. Mandatory Goal-setting

What: Prompting users for their goals when using their device (e.g. What do you need to do? How long will it take? Which apps and websites will you need?).

<b>Assumption:</b>	<b>Testing:</b>	<b>What worked:</b>	<b>Didn't work:</b>
Users are willing to set goals (time, apps needed) before using technology, and doing that is helpful.	Asked someone to join Zoom call, set a goal for the next 10 minutes, and which programs they need. Or, fill out a Google Form prototype that tests goal-setting.	Synchronous user was very productive!  He knew which apps would distract him	Couldn't differentiate between effects of zoom call and the prototype itself on productivity.  Can't enforce using specific apps asynchronously.

### 3. Deep Cleaning

What: Regular, guided wholesale cleaning up settings and deleting of apps based on users' data and research.

<b>Assumption:</b>	<b>Testing:</b>	<b>What worked:</b>	<b>Didn't work:</b>
People want to declutter and optimize their technology usage.	Asked a synchronous participant (artist at San Francisco Conservatory) to do a series of guided exercises on his email usage.	3 part process: starting with defining goals -> guided deep cleaning -> reflection.  Framing technology cleaning as a mindfulness exercise.	Part of the inbox was too messy to clean.  Longer session would have been nice.

### 4. Flow State Extension

What: A customized extension that optimizes tasks to have challenge-skills balance, clear goals and unambiguous feedback.

<b>Assumption:</b>	<b>Testing:</b>	<b>What worked:</b>	<b>Didn't work:</b>
People know when they are in flow, and computers/devices can help get them there.	For synchronous, asked 3 participants to engage with a challenging puzzle. Questionnaire to measure their level of flow afterwards.	Challenging, fun puzzle inspired a mini-flow state.  Distractions definitely detract.	Time limit can hinder flow state.  A puzzle that is too challenging can demotivate.

# Design Evolution:

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## flow - /fləʊ/

“The mental state in which a person performing some activity is fully immersed in a feeling of energized focus, full involvement, and enjoyment.” ([Wikipedia](#))

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### Overall Experience Prototype Findings

- **Data** influences and supports, if in the right context.
- **Social and coaching components** are key.
- **Mindfulness** reframing is helpful.
- Users know their goals, but **distractions** get in their way.

### Final Solution: FlowSpace

- According to overall experience prototype findings.
- FlowSpace is a mobile app that uses **guided, distractions-free sessions** to help users enter their own unique flow state, where they work with more **intention, focus, and clarity**.
- The app also helps users develop long-term flow habits through self reflection, **data visualization** of habits, and long-term project planning.

### Main Tasks

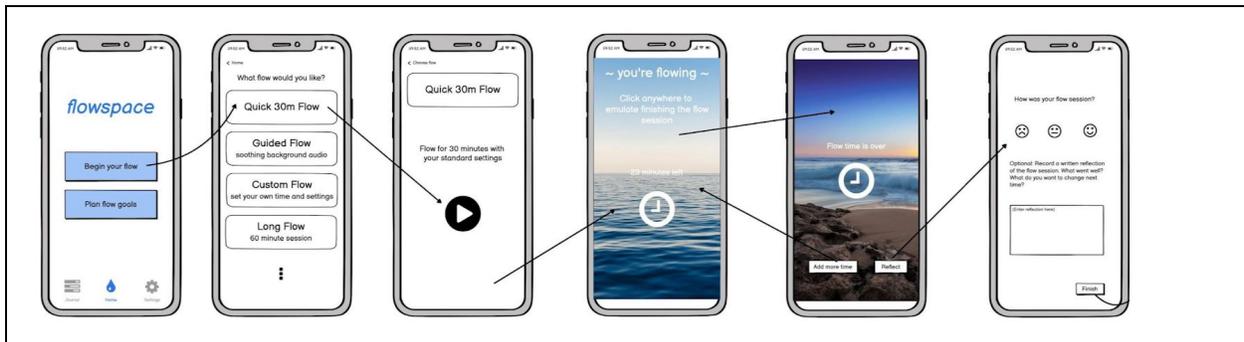
Simple: Begin flow	Medium: Reflect on flow	Complex: Enter long-term flow
Most basic, core functionality of app: to flow.  Decide which tasks to flow for.	Respond to prompts about personal experience during flow state.  Requires deeper thinking from users.  This helps user plan for how to improve future flows, flow easier in future.	Set up flow routine for long-term projects, requires deep thinking and commitment from users.  Reflect long-term on a project, resolve to change high-level habits.  Helps user wield flow as a long-term habit to achieve long-term goals.

## Additional Tasks

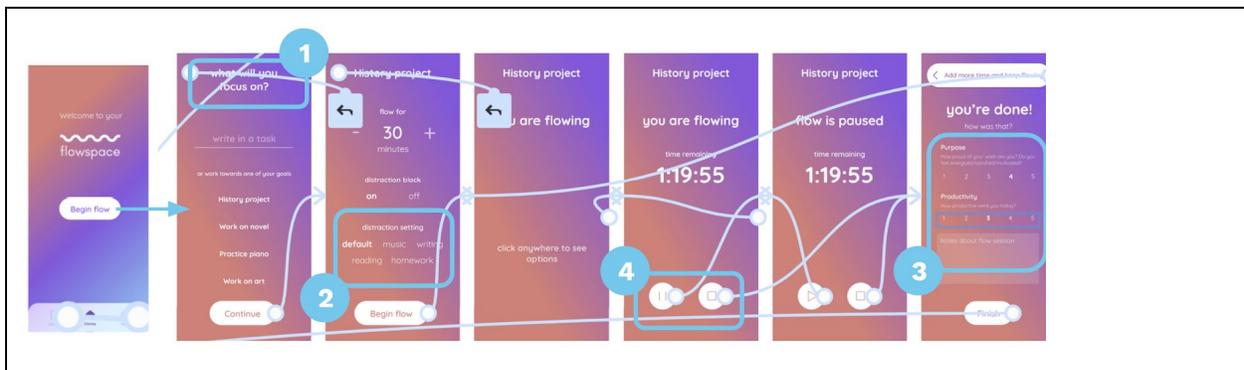
<p><b>Extra task 1: First-time onboarding &amp; set flow settings</b></p>	<p><b>Extra task 2: Modify flow settings</b></p>
<p>Included this because it's necessary for first-time users to learn what is "flow" and how to use app for flowing.</p> <p>Also allows user to set flow session settings.</p>	<p>Added this in case user wants to modify flow session settings.</p>

## Design Evolution of Simple Task

### Lo-fi



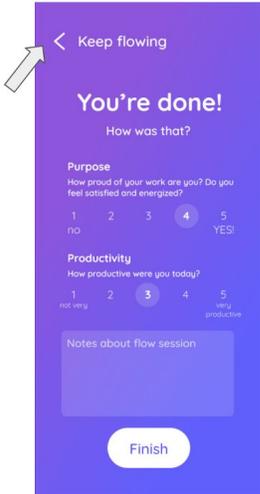
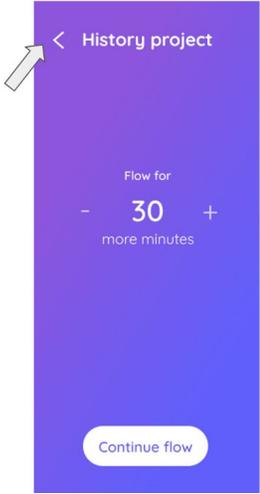
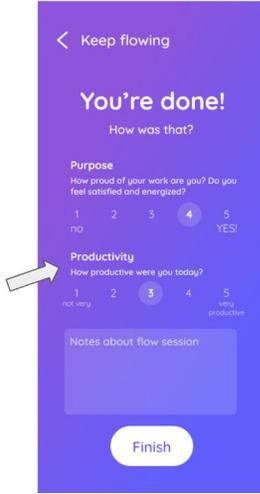
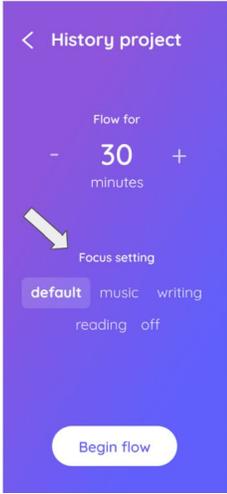
### Med-fi



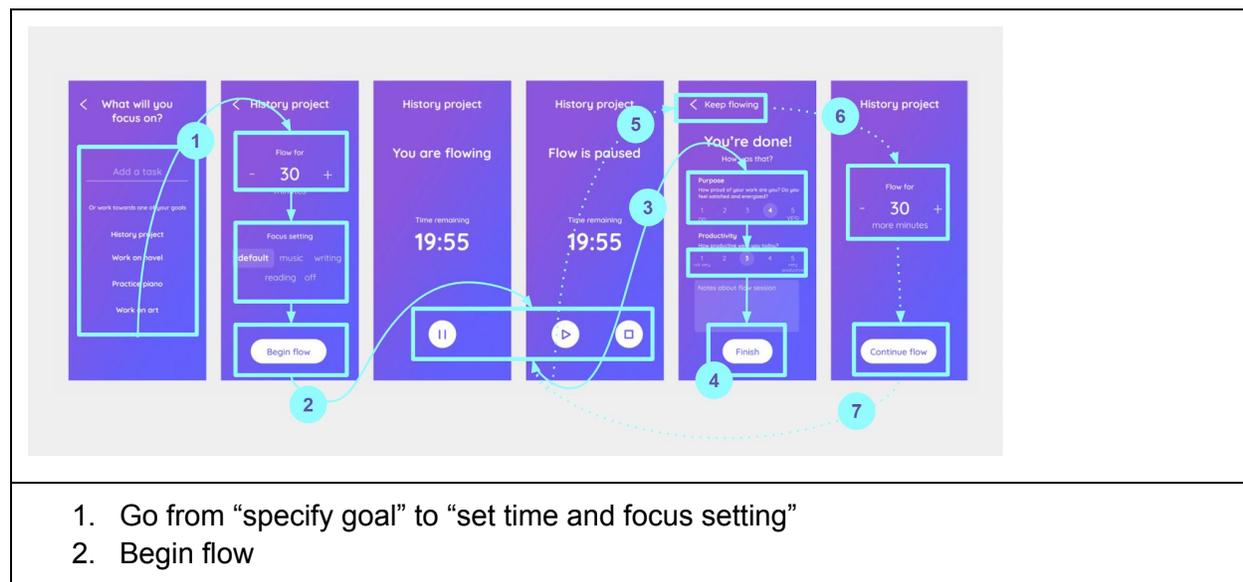
Summary of changes made from lo-fi to med-fi (labelled in med-fi diagram):

1. Select long-term goal
2. Specify blocked apps
3. Reflection questions: purpose, productivity, overall notes
4. Pause or stop session

Summary of changes made from med-fi to hi-fi (from Heuristic Evaluations):

<p>Severity 4: Clicking the “add more time and keep flowing button” takes users back to the “Begin flow” page instead of the “you are flowing” screen</p> <p>Fixed: Fixed the “Keep flowing” button</p> 	<p>Severity 4: After flowing once, the back button on the History Project takes the user to “you are done”, creating a loop without an exit</p> <p>Fixed: Adjusted back button</p> 	<p>Severity 3: Too much text on the you are done screen and the questions screen.</p> <p>Fixed: Reduced words</p> 	<p>Severity 2: Rename the distraction setting to something more intuitive.</p> <p>Fixed: Renamed distraction setting</p> 
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Final hi-fi



1. Go from “specify goal” to “set time and focus setting”
2. Begin flow

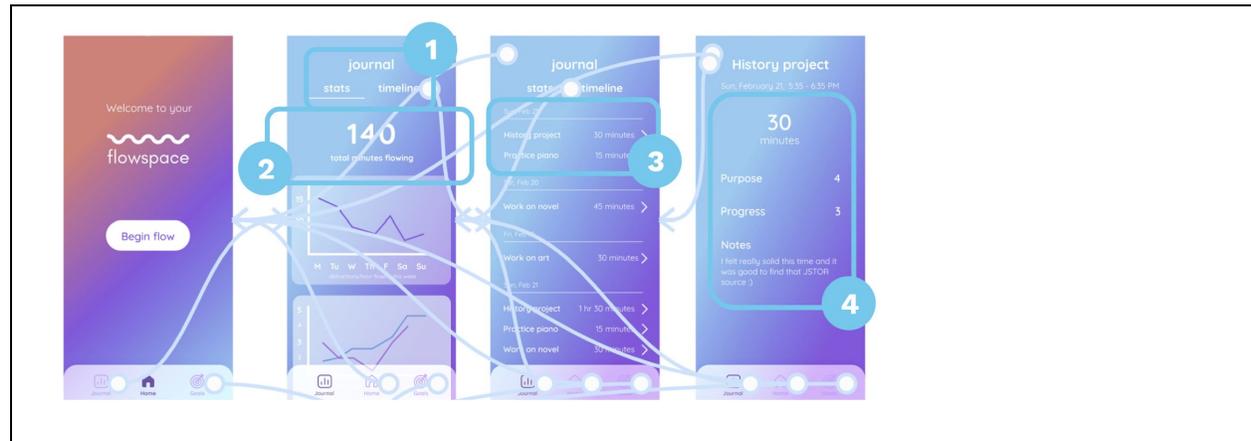
3. Finish flow, go to “reflect flow”
4. Exit flow session completely
5. *Alternative: Choose to extend flow session*
6. *Specify how much more time to add*
7. *Go back to flowing*

## Design Evolution of Medium Task

### Lo-fi



### Med-fi



Summary of changes made from lo-fi to med-fi (labelled in med-fi diagram):

1. Stats and timeline tabs
2. Large display of the total time flowing
3. Past flows arranged by date and clickable
4. Simplified reflection summary page

Summary of changes made from med-fi to hi-fi (from Heuristic Evaluations):

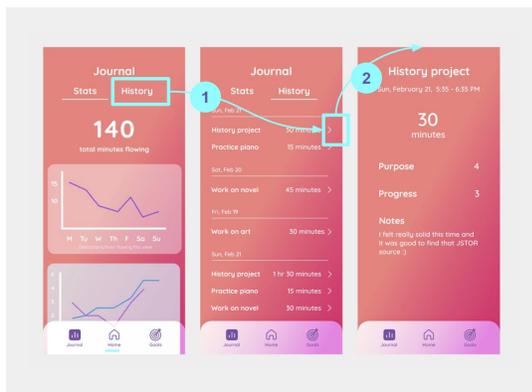
*\*Note: there were no 3-4 severity fixes specific to the journal task*

Severity 2: Numbers on the Y-Axis are different sizes

Fixed: Make number sizes consistent



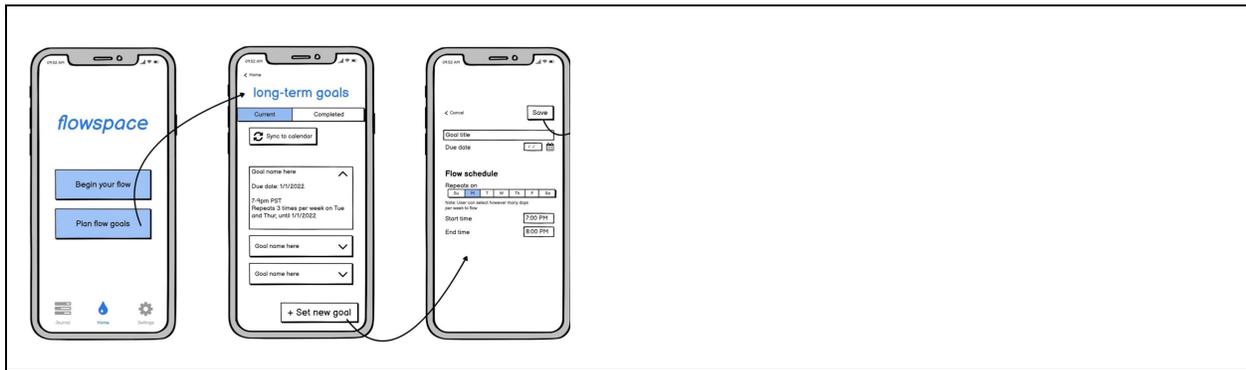
## Final hi-fi



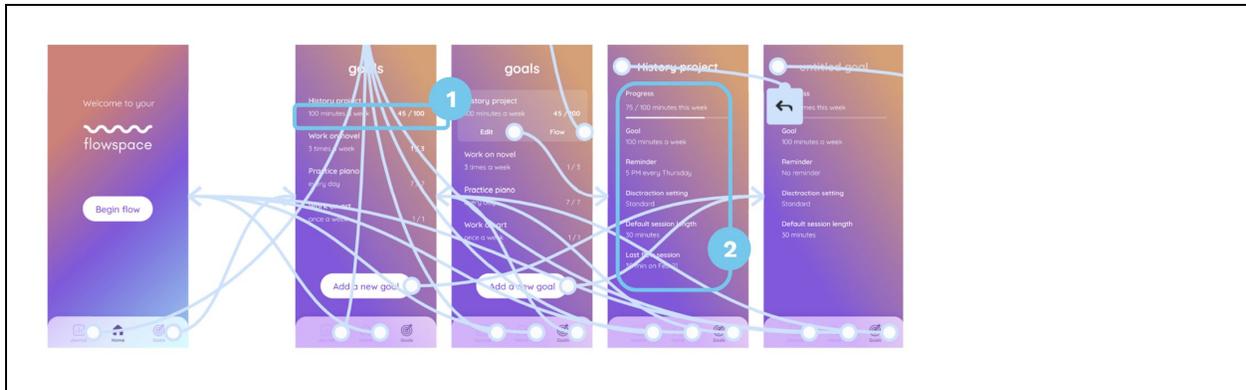
1. Switch from "stats" to "history" view
2. Select specific flow session to view details

# Design Evolution of Complex Task

## Lo-fi



## Med-fi



Summary of changes made from lo-fi to med-fi (labelled in med-fi diagram):

1. New method for planning long-term goals
2. More goal attributes

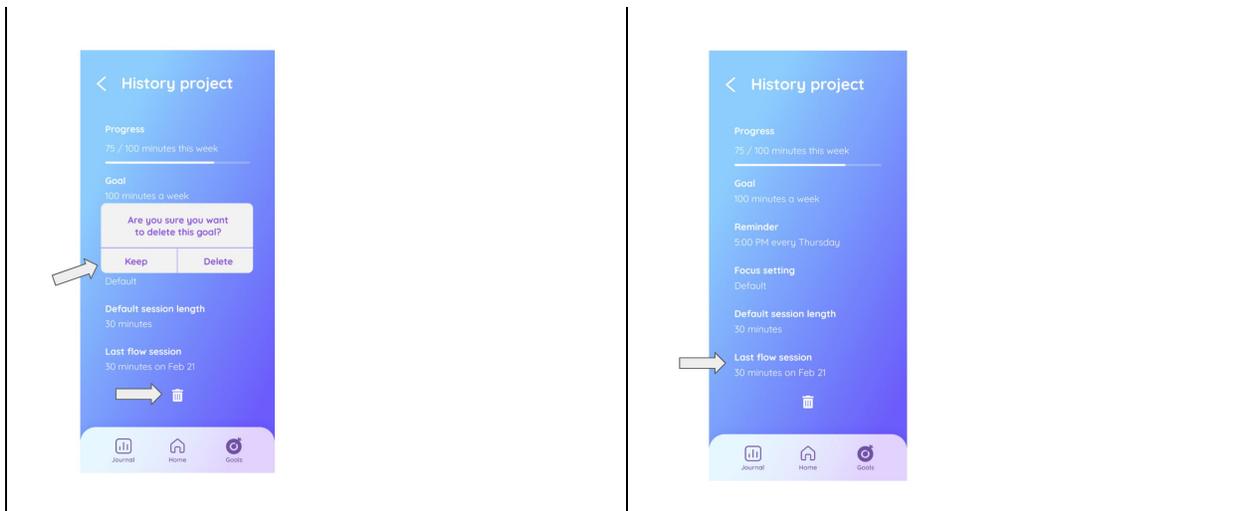
Summary of changes made from med-fi to hi-fi (from Heuristic Evaluations):

Severity 4: The user is unable to remove a goal they have set

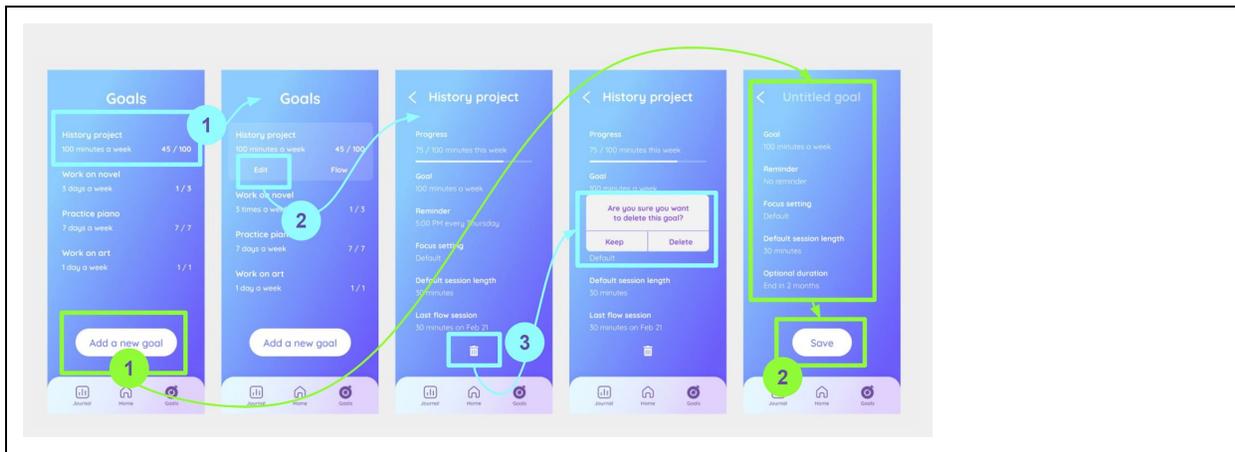
Fixed: Added delete option via trash icon

Severity 3: There is no option to set a goal for a predetermined period of time (no end date option)

Fixed: Added an optional duration selection when creating a goal



## Final hi-fi



### Option 1:

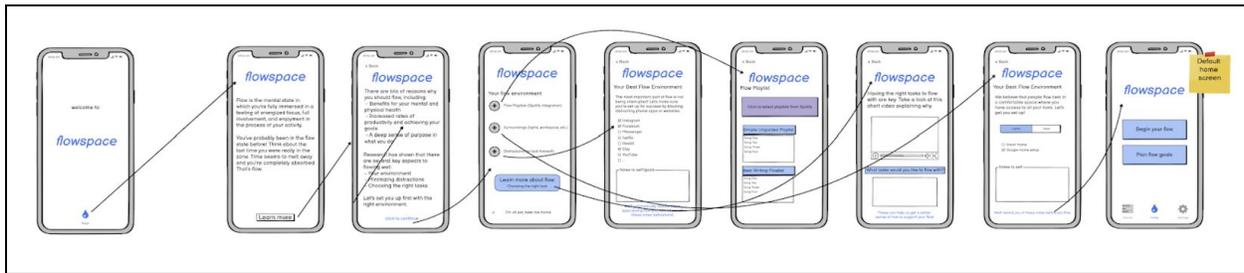
1. Select existing goal
2. Choose to edit that goal
3. Option to delete goal (confirmation box)

### Option 2:

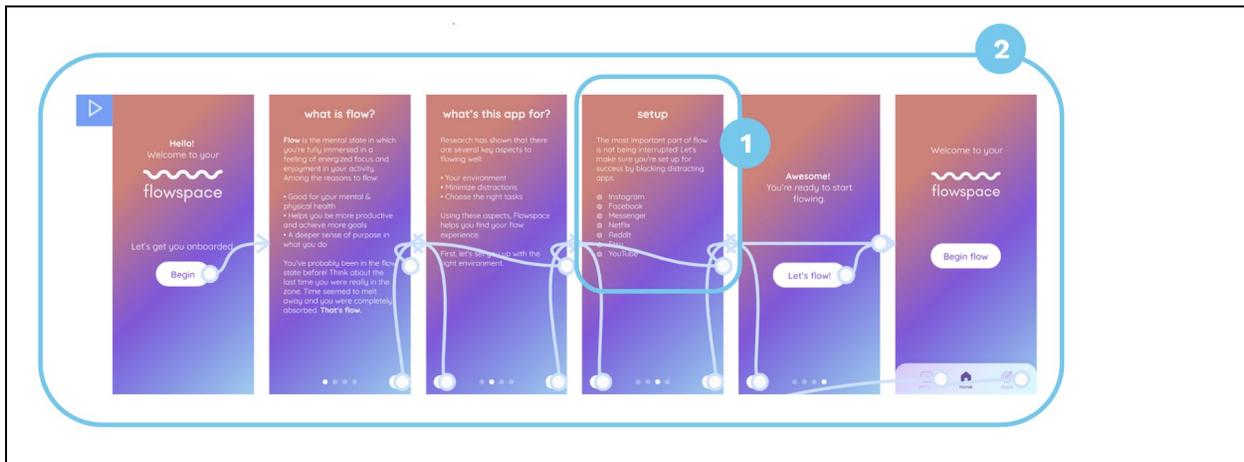
1. Create new goal
2. Save new goal

# Design Evolution of Extra Task 1

## Lo-fi



## Med-fi



Summary of changes made from lo-fi to med-fi (labelled in med-fi diagram):

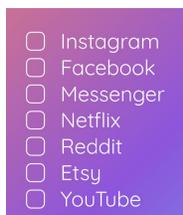
1. Flow environment setup only block notifications
2. Consolidate content for less # steps

Summary of changes made from med-fi to hi-fi (from Heuristic Evaluations):

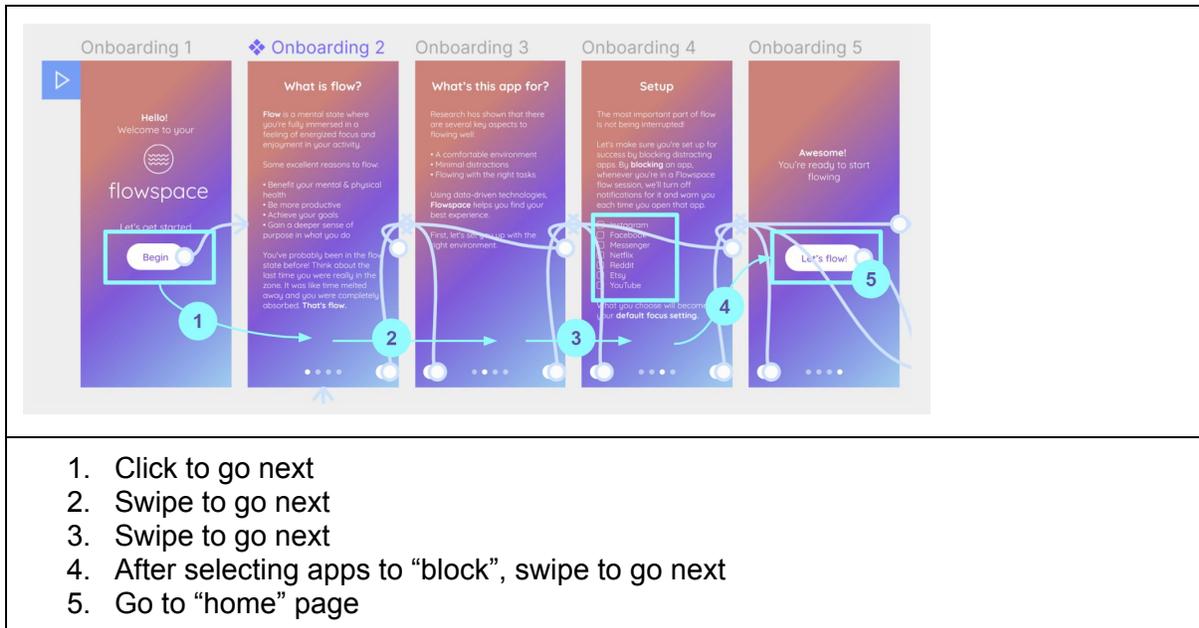
*\*Note: there were no 3-4 severity fixes specific to the onboarding task*

Severity 1: Circular checkboxes don't look checkable

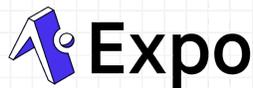
Fix: Make selectable checkboxes next to apps look more like checkboxes



## Final hi-fi



## Final Prototype Implementation:

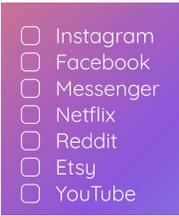
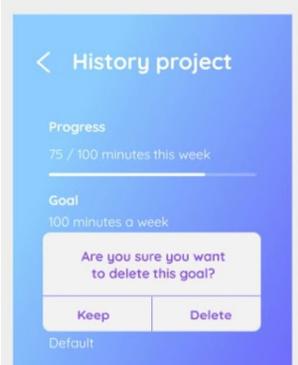


### Tools Used

- React Native - Programming language
- Expo - Online tool that allows easy testing of React Native app

How tools helped:	How tools didn't help:
<ul style="list-style-type: none"> <li>• React Naive and Expo not too difficult to learn</li> <li>• Ability to create consistent React "Components" helped with maintaining consistency across prototype</li> </ul>	<ul style="list-style-type: none"> <li>• Couldn't animate gradient background to swirl when doing flow session</li> <li>• Couldn't efficiently store back-end data for goals, had to hard-code data instead</li> </ul>

## Wizard-of-Oz Techniques

<p>Onboarding: When user selects apps to block them, selecting actually doesn't do anything</p>	 <ul style="list-style-type: none"><li><input type="checkbox"/> Instagram</li><li><input type="checkbox"/> Facebook</li><li><input type="checkbox"/> Messenger</li><li><input type="checkbox"/> Netflix</li><li><input type="checkbox"/> Reddit</li><li><input type="checkbox"/> Etsy</li><li><input type="checkbox"/> YouTube</li></ul>
<p>Goals: Users can delete goals, but this delete is only temporary</p>	

## Hard-coded Data

<p>Goals: Several goals are already pre-set</p>	 <table border="1"><thead><tr><th>Goal</th><th>Frequency</th><th>Progress</th></tr></thead><tbody><tr><td>History project</td><td>100 minutes a week</td><td>45 / 100</td></tr><tr><td>Work on novel</td><td>3 days a week</td><td>1 / 3</td></tr><tr><td>Practice piano</td><td>7 days a week</td><td>7 / 7</td></tr><tr><td>Work on art</td><td>1 day a week</td><td>1 / 1</td></tr></tbody></table>	Goal	Frequency	Progress	History project	100 minutes a week	45 / 100	Work on novel	3 days a week	1 / 3	Practice piano	7 days a week	7 / 7	Work on art	1 day a week	1 / 1
Goal	Frequency	Progress														
History project	100 minutes a week	45 / 100														
Work on novel	3 days a week	1 / 3														
Practice piano	7 days a week	7 / 7														
Work on art	1 day a week	1 / 1														

Journal: Pre-set flow history and data visualizations



## Summary & Next Steps:

### Main Learnings

Over the course of these past ten weeks, this project has been a time of rapid learning. From our initial problem domain brainstorming sessions to conducting our first needfinding interview to producing our final high-fidelity prototype of the FlowSpace app, we have been building out our design thinking toolkit. We have learned that the design thinking process moves super fast and that its backbone is constantly iterating and building. Through this process, we have learned to challenge our assumptions by seeking feedback. We have learned how critical human-centered design is to building effective and impactful technologies.

The biggest challenge- and growth opportunity- for us was distilling down our ideas and translating our ideas into a tangible product. After all the interviewing and experience prototyping and analyzing data, we learned how to convert this data into creating a product that users would want. Throughout the entire process, we benefited again and again from the many notes we took from the interviews and testing. User feedback guided us to our final concept of FlowSpace. Though the focus on the human “flow” state was already one of our experience prototypes, we also had many other different prototypes like app nutrition labels, email inbox cleansing, mandatory goal-setting before using a tech device. Only after user testing, we realized which aspects of these experiences users liked, and which they did not like. To our surprise, no single prototype came out as a clear winner. “FlowSpace” was a combination of aspects from not just the flow prototype, but also other prototype aspects that users liked. Looking at the journey of FlowSpace as a whole, we all definitely feel amazed and proud being part of a product cycle from idea to reality. Some final quotes from the team:

“Especially with the hands-on aspect of the project, I’ve learned so much about the design thinking process than I thought I’d ever learn.” - Helen

“This process has taught me to be relentlessly focused on building something people want by constantly getting user feedback and observing what people say and don’t say.

Further, instead of getting stuck in cerebral circles of thinking about ideas, I have learned how to distill them into their smallest piece and rapidly build and test.” -Erin

“This group of people was hands-down one of the best to work through the design process with. I loved brainstorming, building, bouncing implementation ideas off of, and truly creating something beautiful with them. I am so grateful for this experience“ -Karen

“Beyond just the theory, I learned how to apply the design process to a real problem under time constraints, with an amazing team. Each week felt like its own journey to figuring out a critical part of the project, and by the end of quarter, we were able to get a great result.” -Roy

#### **If We Had More Time: A Wishlist**

- Add back-end functionality when users set “focus setting”
- Add more customized and interesting stats in the Journal page
- Add calendar sync option for long-term flow goals
- Incorporate more references from the Disney movie *Soul*, it mentions “flow” a lot (in fact, our app’s gradient theme is inspired by the movie’s aesthetic)