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Prototyping with functional fidelity in mind

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Overview

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Why do we prototype?

1. **Explore** - try something new, iteration
2. **Communicate** - to sell or to show to stakeholders
3. **Validate** - validate the concept, everything might not need to be perfect
4. **Test** - the closer it is to “real” the more successful the user test.

Prototyping needs to be just enough effort; to balance the opportunity to learn vs. the cost to learn.

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It’s not what we can do with prototyping but more so “how can we make the most out of prototyping?”

- 🧐🧐🧐

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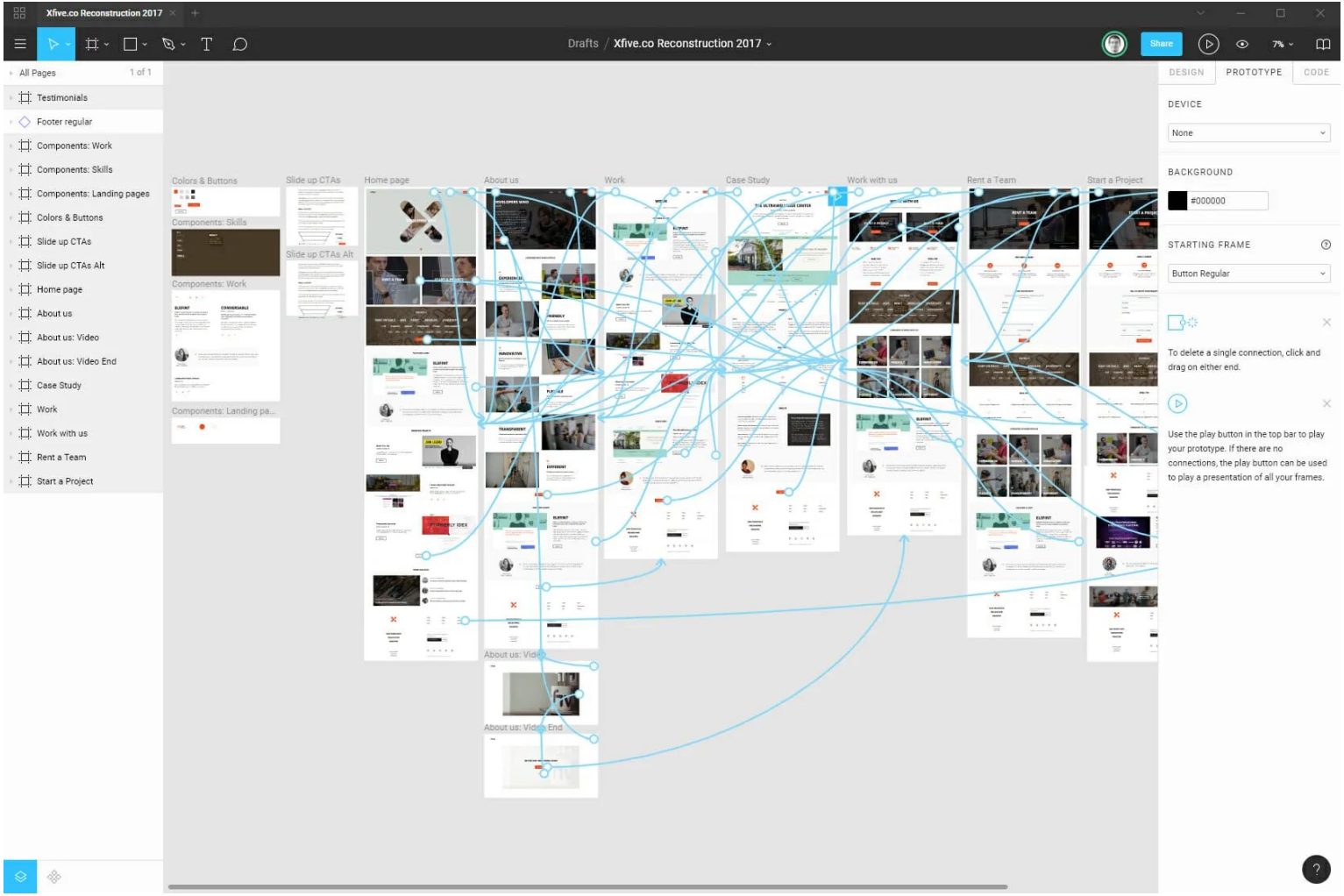
Xfive.co Reconstruction 2017
Drafts / Xfive.co Reconstruction 2017
Share
All Pages
1 of 1
Testimonials
Footer regular
Components: Work
Components: Skills
Components: Landing pages
Colors & Buttons
Slide up CTAs
Slide up CTAs Alt
Home page
About us
About us: Video
About us: Video End
Case Study
Work
Work with us
Rent a Team
Start a Project
Colors & Buttons
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Home page
About us
Work
Case Study
Work with us
Rent a Team
Start a Project
Components: Skills
Components: Work
Components: Landing pa...
Slide up CTAs Alt
About us: Video
About us: Video End
DESIGN
PROTOTYPE
CODE
DEVICE
None
BACKGROUND
#000000
STARTING FRAME
Button Regular
To delete a single connection, click and drag on either end.
Use the play button in the top bar to play your prototype. If there are no connections, the play button can be used to play a presentation of all your frames.

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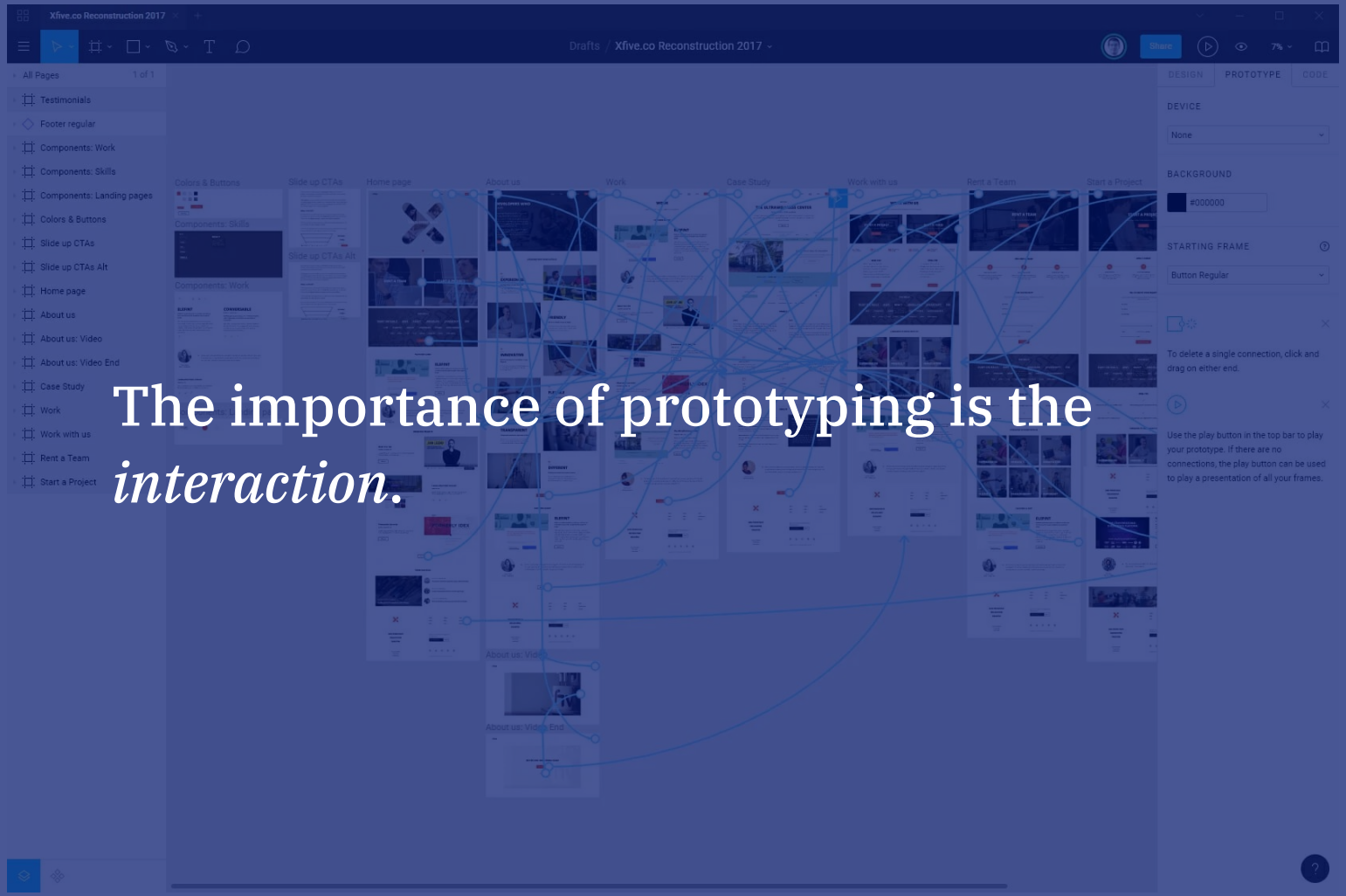

The importance of prototyping is the *interaction.*

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The importance of prototyping is the *interaction.*

🚀 This is where functional fidelity comes in 🚀

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Why is this important to PD?

Knowledge

Product designers can make better design decisions when they use the right tools to create the right prototypes

Empowerment

Product designers can better identify what tools and fidelity prototypes they need to make more informed design decisions.

Cost vs Opportunity

Product designers need to justify the cost with what the prototype can help solve for or help uncover.

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What is functional fidelity?

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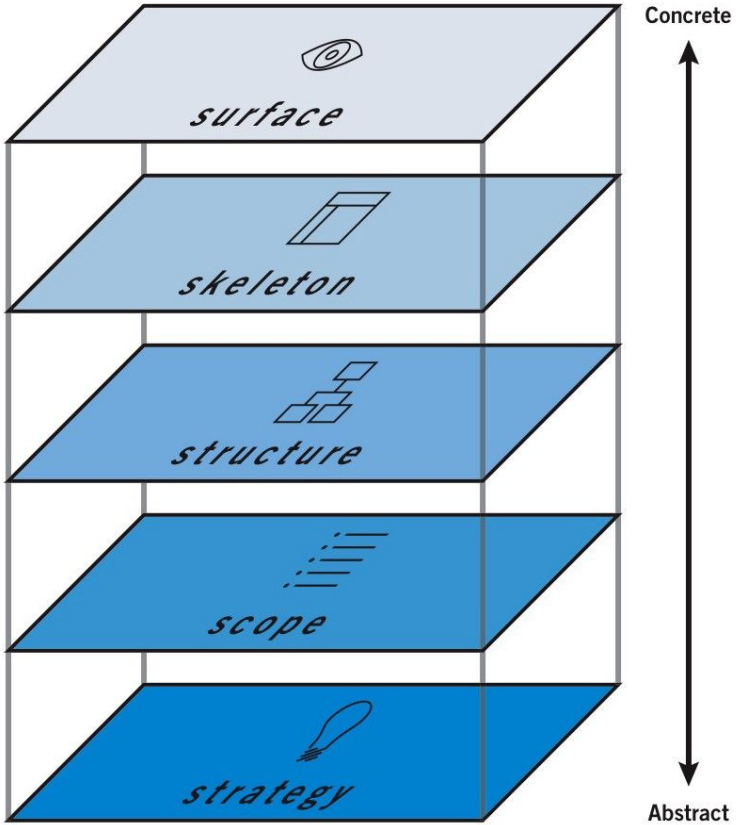
5 elements to user experience



Surface brings everything together visually: What will the finished product look like?

Skeleton makes structure concrete: What components will enable people to use the site?

Structure gives shape to scope: How will the pieces of the site fit together and behave?

Scope transforms strategy into requirements: What features will the site need to include?

Strategy is where it all begins: What do we want to get out of the site? What do our users want?

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What is fidelity?

the degree of exactness of something when it is copied or reproduced.

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“The fidelity of a prototype refers to how it conveys the look-and-feel of the final product.”

Wikipedia

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Types of Fidelity

Category	Low fidelity	High fidelity
👀 **Visual**	*wireframes, paper prototype*	vectors, ui
✍️ **Content**	*placeholder text, lorem ipsum, categories*	*proper copy, polished, etc*
🔧 **Functional**	*clickthrough, many artboards*	*single page app, animations, etc.*

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Types of Fidelity

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👀 **Visual**	*wireframes, paper prototype*	vectors, ui
✍️ **Content**	*placeholder text, lorem ipsum, categories*	*proper copy, polished, etc*
🔧 **Functional**	*clickthrough, many artboards*	*single page app, animations, etc.*

When you are discussing about making a “high fidelity” prototype, make sure to ask “what do you actually mean? the visual, content, or functional fidelity?”

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Design tools with respect to fidelity

	Coded (react, html)	ProtoPie	Framer	Figma prototype, InVision, Marvel	paper
🛠️ Functional Fidelity	✅	⚠️	⚠️	❌	❌
👀Visual Fidelity	✅	✅	✅	✅	❌
✍️ Content Fidelity*	✅	✅	✅	⚠️	❌

✅ = high
⚠️ = medium
❌ = low

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Functional fidelity characteristics

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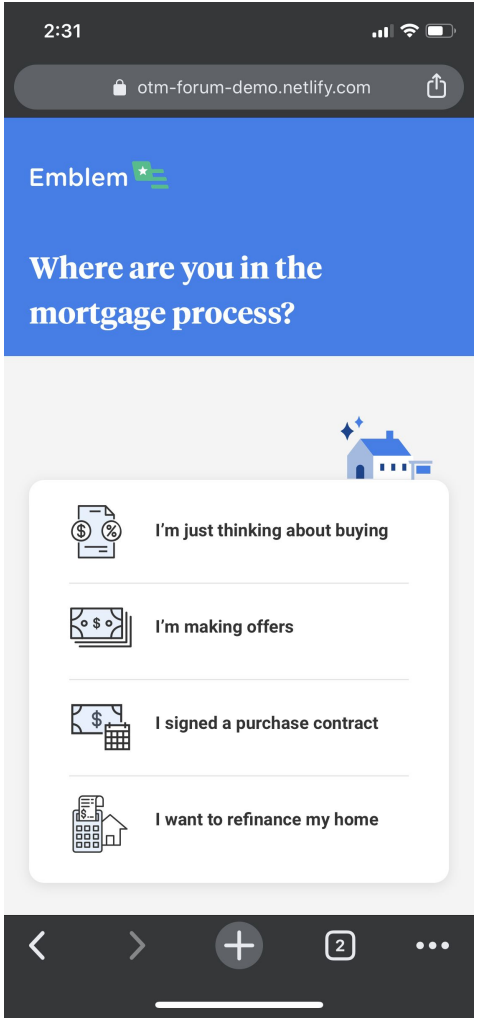
2:31
otm-forum-demo.netlify.com
Emblem
Where are you in the mortgage process?
I'm just thinking about buying
I'm making offers
I signed a purchase contract
I want to refinance my home
2

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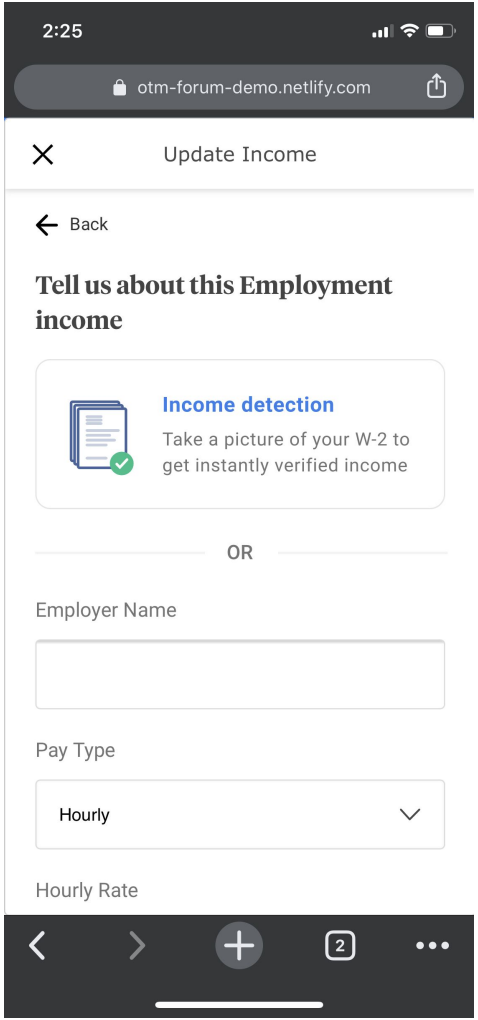

- **Logic**: *Take a pic* or *manual input*
  - Routing - different pages
  - Form validation
- **Inputs:** text boxes, buttons

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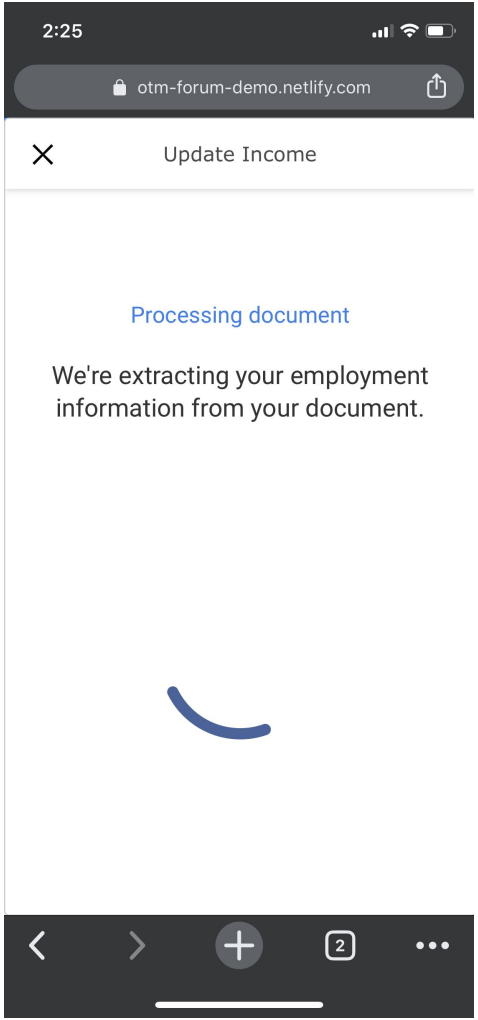

- **In page interaction:** loading state

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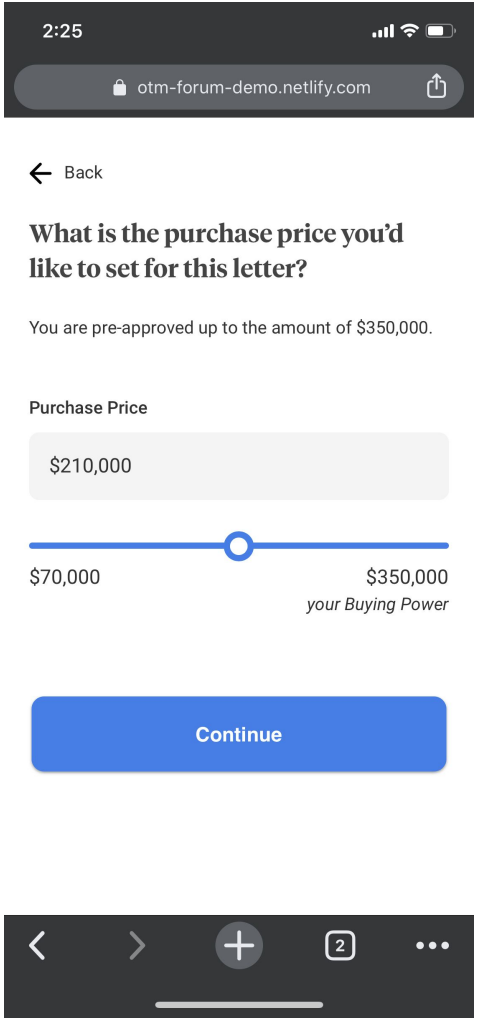

- **Inputs:** slider
- **Variables:** storing the purchase price
- **Data:** pass purchase price (to other screens)
- **Properties:** styling purchase price value

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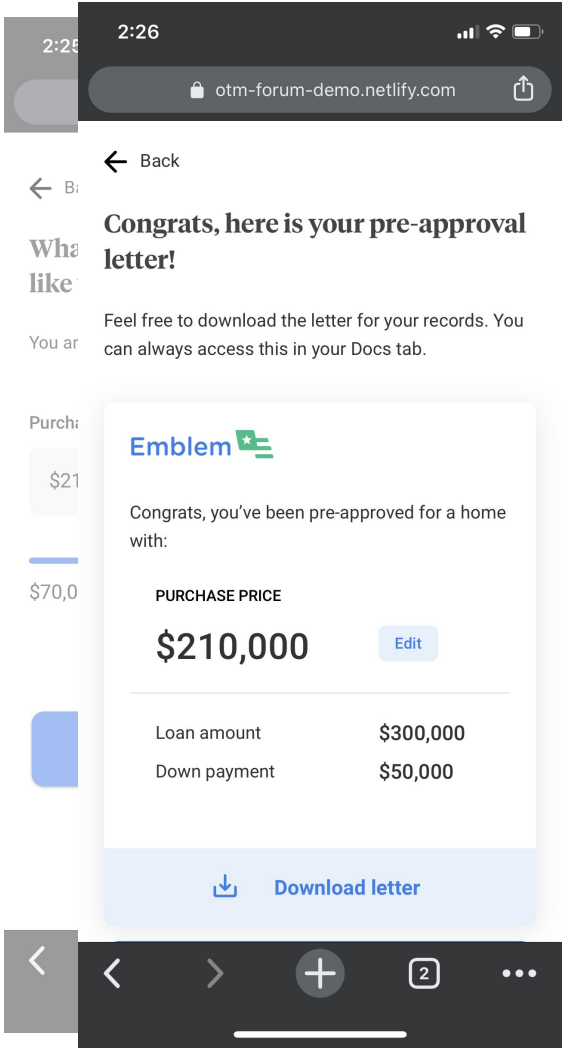

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Attribute/type	description	use cases
Inputs	inputs help everything come together	native inputs: select, text, radio
Events	listen for user events, then respond to those events accordingly	not just clicks: tilt, hover, etc
Properties	access and manipulate the values of element properties	Color, font, style, position, text values.
Logic	checks if certain conditions have been met so you can show the correct experience based on the user input	form validation, routing, element states
Variables	they store data	default values, data between pages, user data
Operators	math operations	calculate values, respond to user input
Strings	text manipulation	Formatting, comparing values
Data	real datasets bring prototypes to real life	scaling prototypes, manipulating data
Devices	responsive design and targeting multiple devices can help	self explanatory :)

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How fidelity impacts *User Testing*

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“It’s not about the prototype, it’s about the experience that you are testing.”

If a user knows that this is a prototype, it might create bias.

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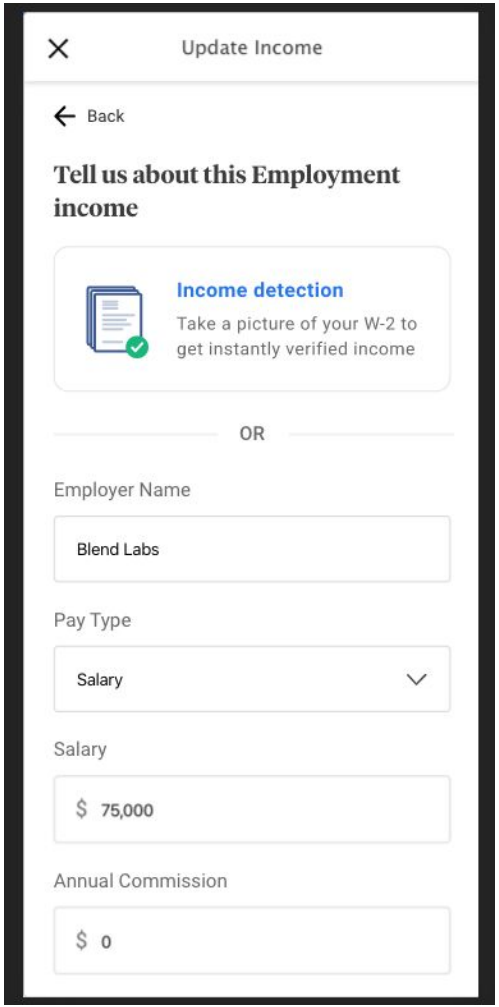
How fidelity impacts USER TESTING

Pre-filled data

Why is this not ideal?

- content will become irrelevant to users
- loss of engagement
- “click to continue” fatigue
- lose out on usability and interaction issues

this one right here



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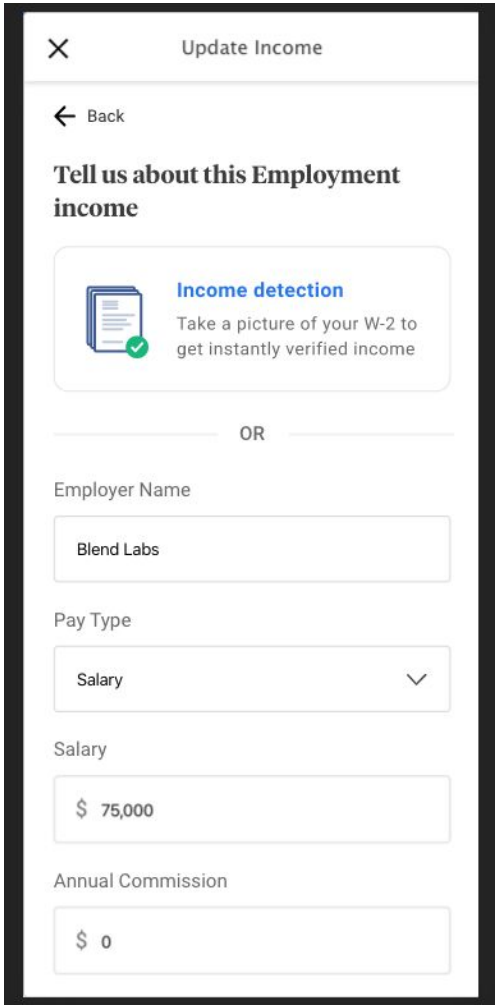
How fidelity impacts USER TESTING

Preselected options

Give the user a choice! FREEDOM!

- presents an unmeaningful scenario to a user
- creates bias - “This was just suggested by the system”
- *think: dropdowns, radios, etc.*

this one right here



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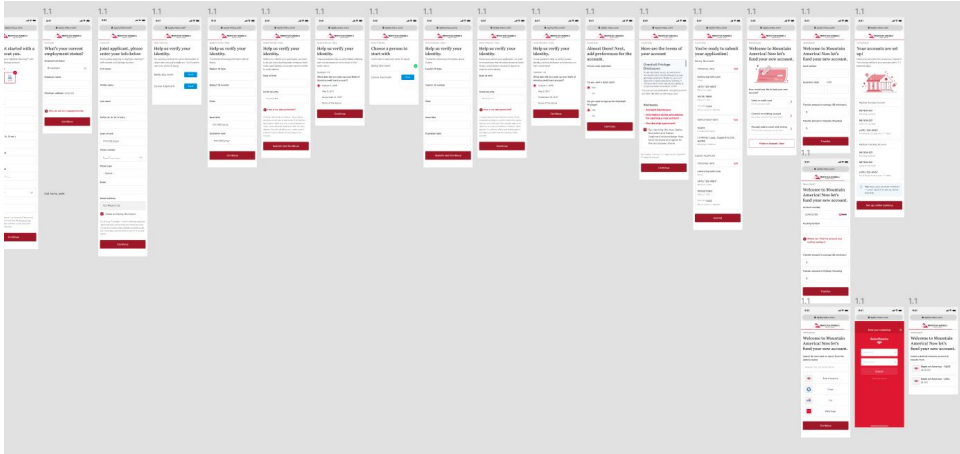
Directed routes

Click to Continue

- unnatural behavior - forced to use sequenced routes directed by the PD
- users are forced to click on certain fields
- creates bias - “I did not want to do this action, but the system took me here”
- instead, give flexibility - it can help uncover insights like what fields people use or how they start a page.



The flow only goes forward

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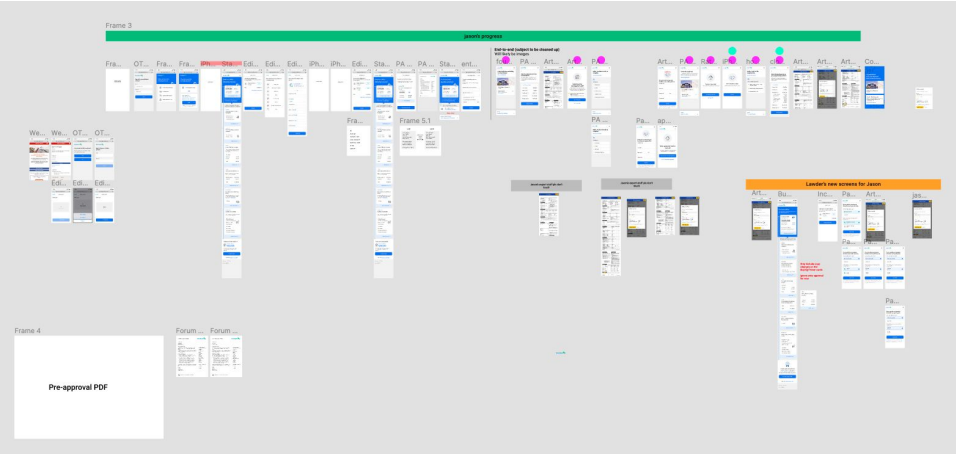
Artboard management

Too many screens...

- hard to swap screens, iterate, or pivot with the flow
- adaptability & extensibility is limited
- if you find yourself asking the following questions:
  - how would you do ____?
  - what would you do?
  - what do you think would happen?
  - imagine if…



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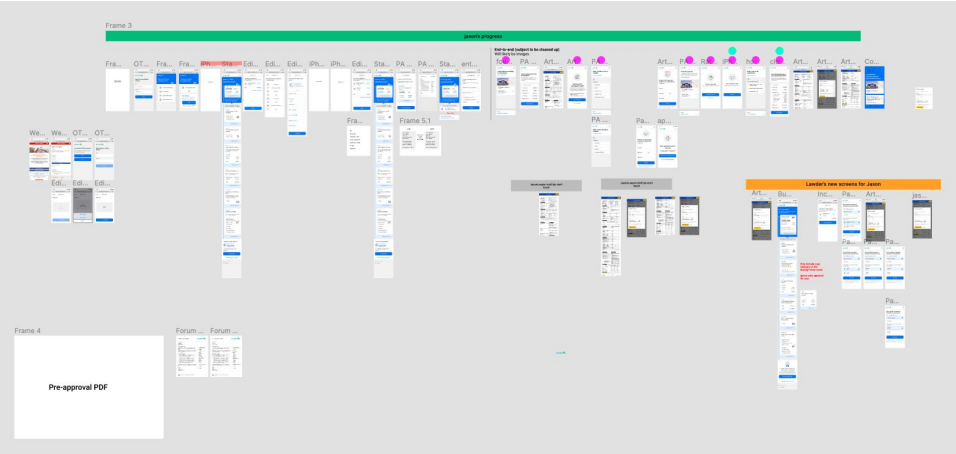
- if you find yourself asking the following questions:
  - how would you do ____?
  - what would you do?
  - what do you think would happen?
  - imagine if…
- 👆 ***these questions are RED FLAGS that mean your prototype is not at the right functional fidelity!!!!!!***



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Throwaway vs evolutionary prototypes

Which one?

- **Evolutionary** → code, reusable, build on top of existing stuff
- **Throwaway** → mainly from design tools;
- designers need to know when to throw away / abandon the prototype and create a new one!

Design tools might give you control towards html/js/css but it can be very limiting @framer @figma

ProtoPie

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Case study / Retrospective: One-Tap Auth & Pre-fill

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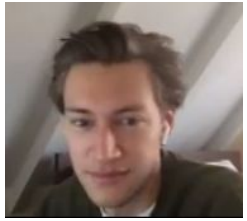
Meet the team

Mike Iseri
Product Designer



Tyler Schuppert
Product Designer

Ray Lin
Researcher

Jason Chen
Design technologist

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One-tap research questions

1. **Authentication** *Does defaulting FaceID or 1-time passcode impact the borrower experience?*

2. **Prefill*** *Does transparency impact the borrower's trust in the borrower experience?*

*The prefill test was not run due to priorities shifting

Prototypes produced

1. **Authentication**
   - *1-time passcode*
   - *FaceID*
   - *Control (standard email login)*

2. **Prefill***
   - *No copy to explain pre-fill*
   - *Additional copy to explain pre-fill **after** pull*
   - *Additional copy to explain pre-fill **before** pull*
   - *Control (fill out manually)*

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**The prefill test was not run due to priorities shifting*

Considerations

Prototypes for Authentication

🤔 Considerations	🛠️ Functional Fidelity	👀 Visual Fidelity
Realness → 🛠️ functional fidelity *high functional fidelity was necessary in order for the prototypes to feel as close to the real experience as possible* **Realness → 👀 visual fidelity** *high visual fidelity was necessary in order for the prototypes to look as close to the real experience as possible*	**Events** • needed to trigger an SMS notification for recieving the passcode **Logic** • animations and timing to trigger/advance to different screens → FaceID advancing to next screen	• input fields, buttons, etc needed to match the real product • FaceID had to look somewhat real, no placeholders • SMS text needed to represent an iPhone notification so that it would be recognizable.

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Considerations

Prototypes for Pre-fill

🤔 Considerations	🛠️ Functional Fidelity	✍️ Content Fidelity
Testing copy → ✍️ content fidelity *multiple prototypes had different versions of copy to see what was more effective* **Relevancy → 🛠️ functional fidelity** *high functional fidelity was necessary in order to show relevant and applicable data towards users based on their inputs for effective responses*	**Inputs** • text inputs were used to collect data • data was passed to different screens • text manipulation was used to concatenate strings **Variables** • to store the data → user inputs their info and prototype stores it **Logic** • animations and timing to trigger/advance to different screens → loading state finishes and advances to next screen	• thoughtful copy to communicate and be transparent to user in certain areas

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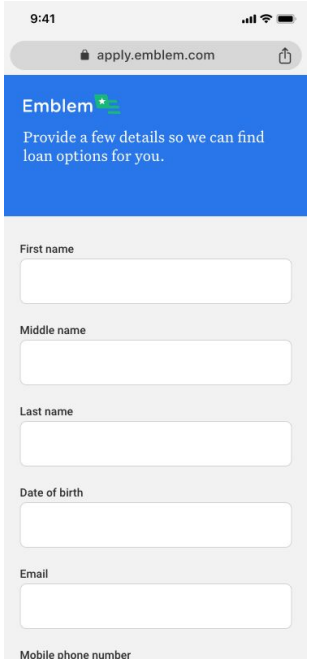
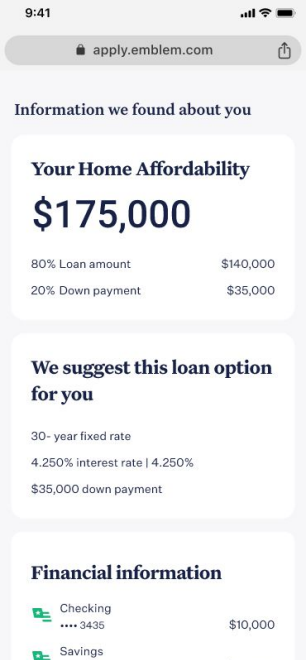
ProtoPie

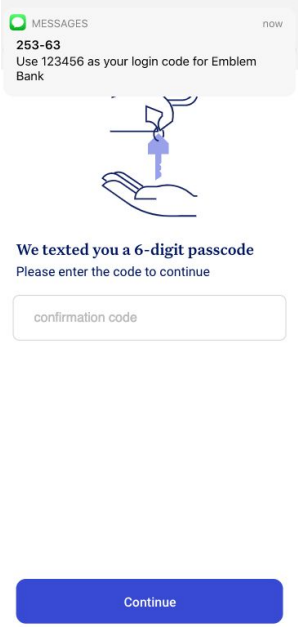
Text inputs!



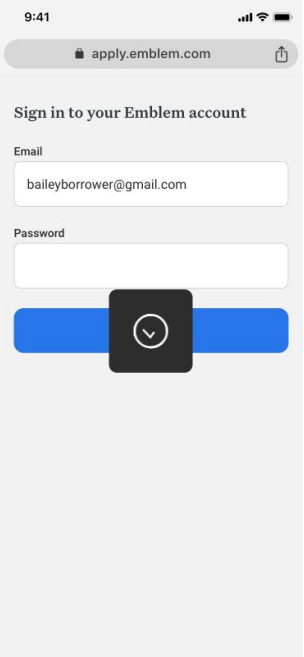
Storing variables!



Animations!



Lottie integration!



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Closing remarks

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In short

- In addition to visual fidelity, we must **consider functional fidelity**
  - UI design goes deeper than the surface (visual look and feel) - it's more than visual design.
- It's about the **experience**, not about the tool or the prototype.
- Balance the **opportunity** to learn vs. **cost** to learn
- Prototype **in-page interactions**

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Resources

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Resource links

Paper Doc

https://paper.dropbox.com/doc/Prototyping-with-Functional-Fidelity-in-Mind-notes--AwBfMFvyy_LKtDx0L6xkOTQ7AQ-Idfw9guFDw9DJz7SGyKJi

1-Tap Auth report

https://paper.dropbox.com/doc/bxYPx9oPIOnaeZBckqp1K

1-Tap Pre-fill test plan

https://paper.dropbox.com/doc/o4fgudrvXOnCJKAtg3jjk

Nielsen Norman Webinar

https://www.crowdcast.io/e/prototyping-functional-fidelity

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Special thanks

Annie Wang [d.tech/ops]

Michael Iseri [PD]

Tyler Schuppert [PD]

Ray Lin [research]

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Go forth and present

Thank you

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