

The Art of Rapid Prototyping

Building Useful Prototypes

Ben Salinas
@bensalinas

Involution Studios
@goinvo

Download these slides at tinyurl.com/PrototypeMore

Prototypes

“A prototype is an **early sample** or model built to **test a concept** or process or to act as a thing to be replicated or **learned from.**”

-Wikipedia

Rapid Prototypes

A “Just Good Enough”
representation of a design that
answers a specific question.

Rapid Prototypes

Mitigate Risk

Make Informed Decisions

Gather High-Fidelity Feedback

Four Principles

Know Your Goal

Use the Right Tools

Do Just Enough

Lather, Rinse, Repeat

Know Your Goal

Define what you are trying to test.

Razor sharp precision.

Use The Right Tools

Choose the tools with the least overhead to start and the most flexibility for iteration

Do Just Enough

Cut Corners Always

Ask “What value does this
add to my goal”

Lather, Rinse, Repeat

Throw It Away!

Lather, Rinse, Repeat

Goal of Prototype is
Improved Design

Different design

=

Different Code Architecture

Lather, Rinse, Repeat

Prototype Early,
Prototype Often

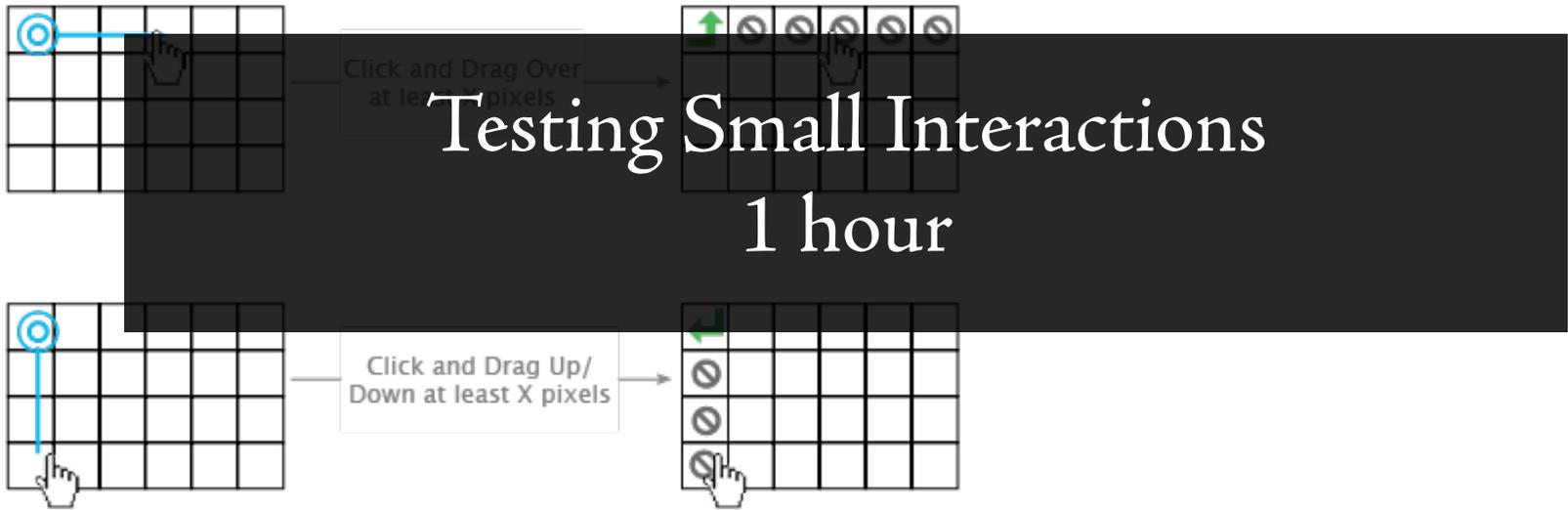
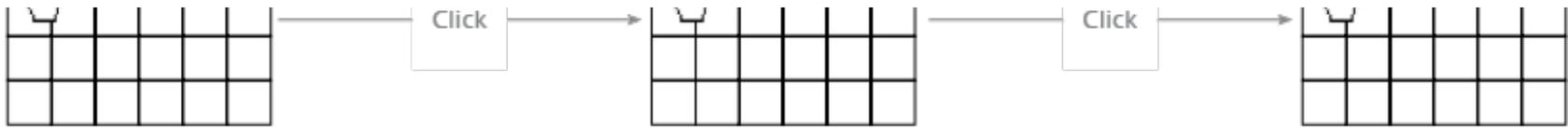
My Typical Tools

HTML5 for Layout

Javascript for Interaction

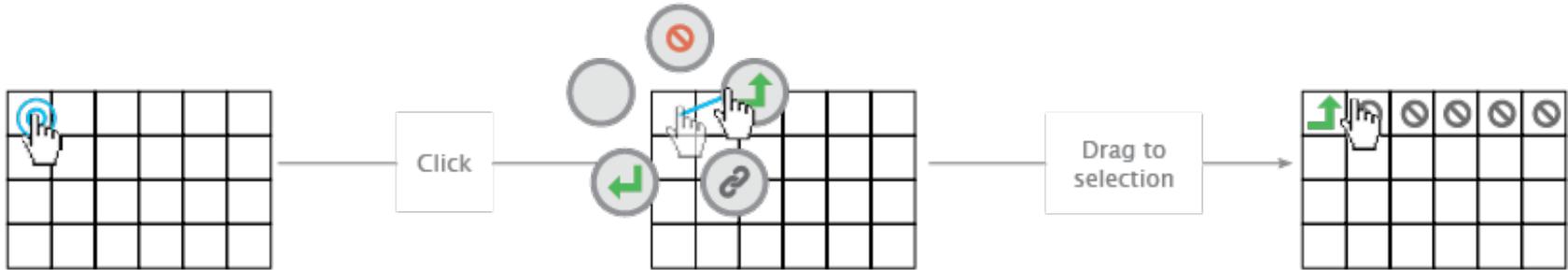
CSS3 for Basic Styling

Static images for anything complex



Testing Small Interactions 1 hour

8 TABLE INTERACTION - CLICK AND SELECT



Slow breathing animation to make the drag interaction more discoverable

Goal

Is it an awkward interaction in a desktop?

Answer

No.

What's Good

Quick access to tools

Long click is discoverable

What's Bad

Obtrusive if the interaction is triggered by accident

Know Your Goal

Is it an awkward interaction in a desktop?

Use the Right Tools

Basic HTML/JS/CSS

Images for anything complex

Do Just Enough

No focus on styling or context

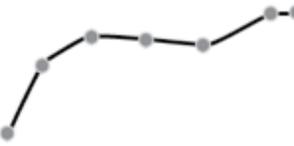
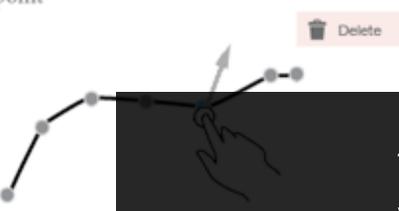
Lather, Rinse, Repeat

Tested alternative interactions

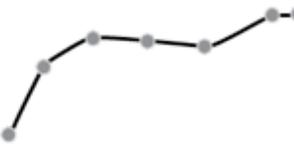
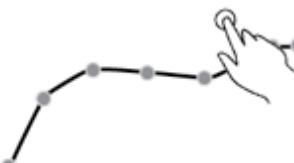
Profile Creation and Editing on Touch Devices

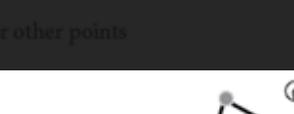
Drawing and Editing a Profile

- 1 Draw a profile with your finger

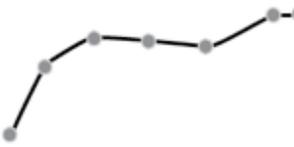
- 2 On release, profile is "simplified"

- 3 Drag a point

- 4 Feedback on where the point was and where it will be on release.


Adding a point

- 1 Begin with simplified profile.

- 2 Tap at new point location.

- 3 New Point is created

- 4 Tap near other points


Adding a series of points

- 1 Begin with simplified profile.

 - 2 Drag new portion of curve

 - 3 Points along x axis are replaced

- This one definitely needs to be prototyped. It could be really powerful but could also be really weird.

Prototyping Curve Drawing
3 hours

Goal

Is it weird to edit curves in a different way than I drew?

Answer

Not really.

What's Good

The simplification of curves makes it much easier to edit.

Drawing with my finger is fun.

What's Bad

When I click near a point, I want it to be replaced.

The “trash” area needs to be wide and central.

Know Your Goal

Is it weird to edit curves in a different way than I drew?

Use the Right Tools

HTML/JS/CSS. Not native Objective C.

Adapted an example from PaperJS library

Do Just Enough

No focus on styling or context

Lather, Rinse, Repeat

Built v2 completely from scratch

CL > boston > boston/camb/brook > housing

[help] [post]

[all boston](#) [boston/camb/brook](#) [northwest/merrimack](#) [metro west](#) [north shore](#) [south shore](#)

housing

search for: in: [all housing](#) Search title entire post

rent: min max [0+ BR](#) cats dogs has image

[list view](#) [pic view](#) [grid view](#) [map view](#)

[[housing forum](#)] [[fair housing](#)] [[EFF](#)] [[avoiding scams](#)]
[[personal safety](#)] [[CL {tv}](#)] [[blog](#)]

Wed Jun 26

Liked Disliked Waiting on You All Reviewed

Avail 8/1...Marlborough St Penthouse, Laundry in Unit, Storage - \$2795 / 1br - (Back Bay - Boston) [pic](#) [map](#) [apts broker fee](#)

YOU Eric CENTRAL AIR. 2 BATHS. FIRE PLACE. nex to RT-60, Rt-16. JUL 1. 1/2 FEE - \$2400 / 4br - [img](#) [apts broker fee](#)

Eric Hug 2 Bed split with 3 large rooms in palace rd avail 9/1 - \$3150 / 2br - (Fenway,Boston,Simmons, Berklee, Mcphs) [apts broker fee](#)

2 Bd, 2 Bath, Avail Now, Carpet, Parking For Rent - \$4242 / 2br - (Cambridge - Kendall Square) [img](#) [apts broker fee](#)

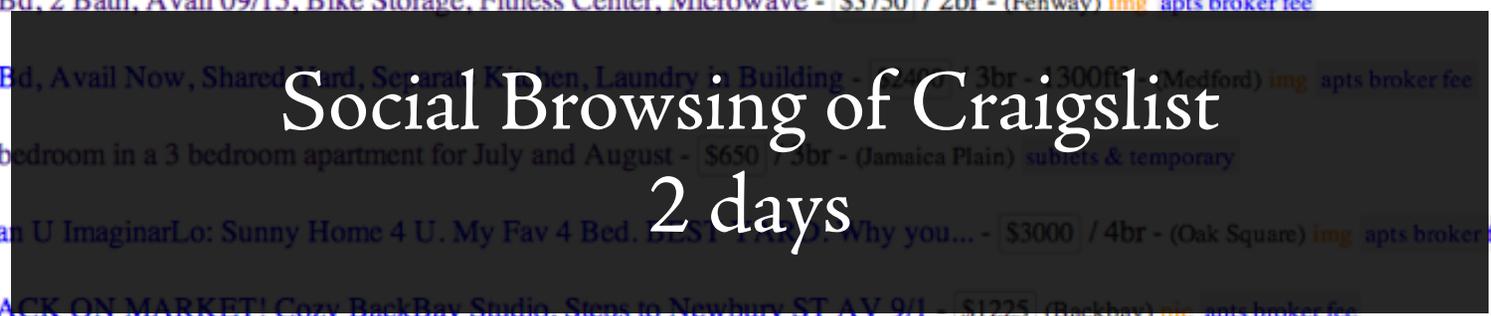
Eric 2 Bd, 2 Bath, Avail 09/15, Bike Storage, Fitness Center, Microwave - \$3750 / 2br - (Fenway) [img](#) [apts broker fee](#)

3 Bd, Avail Now, Shared Yard, Separate Kitchen, Laundry in Building - \$4900 / 3br - (Medford) [img](#) [apts broker fee](#)

Eric 1 bedroom in a 3 bedroom apartment for July and August - \$650 / 1br - (Jamaica Plain) [sublets & temporary](#)

Can U ImaginarLo: Sunny Home 4 U. My Fav 4 Bed. BEST VALUE Why you... - \$3000 / 4br - (Oak Square) [img](#) [apts broker fee](#)

BACK ON MARKET! Cozy BackBay Studio, Steps to Newbury ST AV 9/1 - \$1225 (Backbay) [pic](#) [apts broker fee](#)



Goal

Does Social Craigslist browsing simplify the apartment hunting process?

Answer

Kind of, but not unless I control Craigslist.

What's Good

Data curation lets me quickly identify what's important

What's Bad

Data curation is not visible after ~1 hour

Need complete control of the process to go forward

Know Your Goal

Does Social Craigslist browsing simplify the apartment hunting process?

Use the Right Tools

Chrome Extension

Sinatra (instead of Rails)

Bootstrap for styles

Do Just Enough

Most basic set of functionality

Lather, Rinse, Repeat

Take only insights.

Brewing Coffee





Hot Water

Coffee

Scale



Brew Recipe
28g Coffee
340 ml Water
2:30 Pour



Brew Recipe

28g Coffee

340 ml Water
2:30 Pour

Shouldn't this
be a flow rate?

Proof of Concept Prototype - 2 Days



Goal

Does real time flow rate feedback help a barista?

Answer

Yes.

What's Good
Form Factor

What's Bad
Data Quality
Data Presentation

Data Viz Prototype - 2 Weeks



Goal

Does workflow with graph + recording profiles fit the workflow?

Answer

Yes.

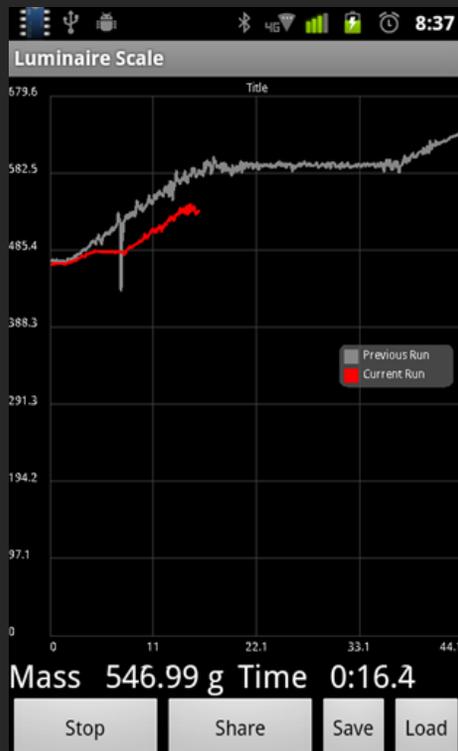
What's Good

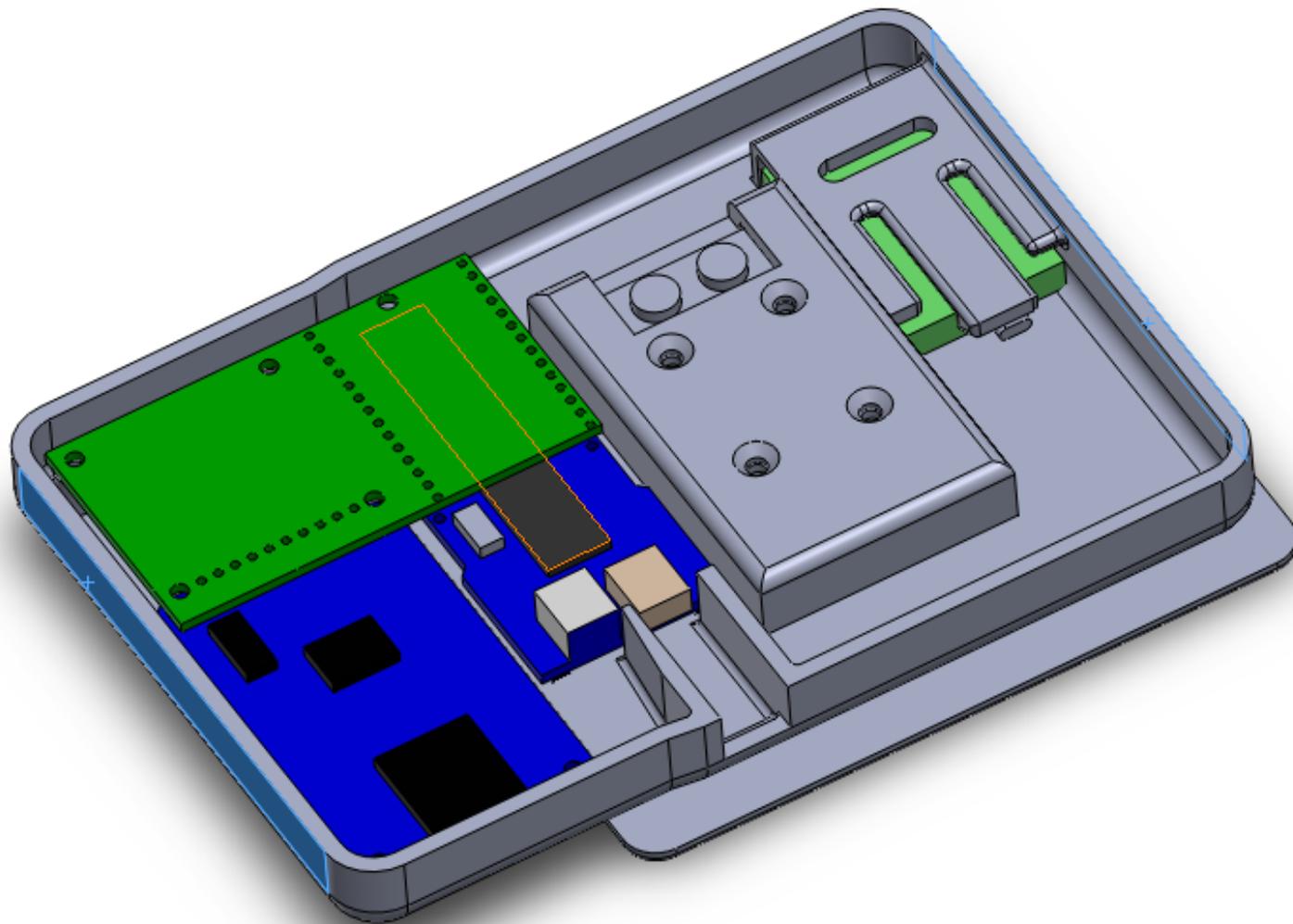
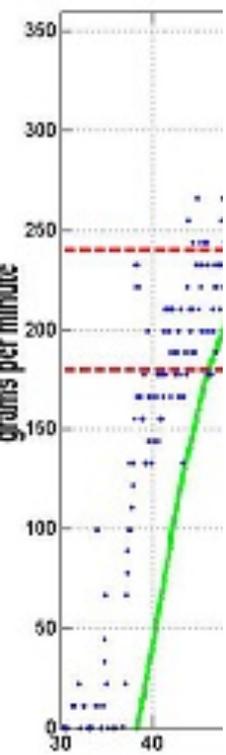
Data Presentation

High Resolution Graphs

What's Bad

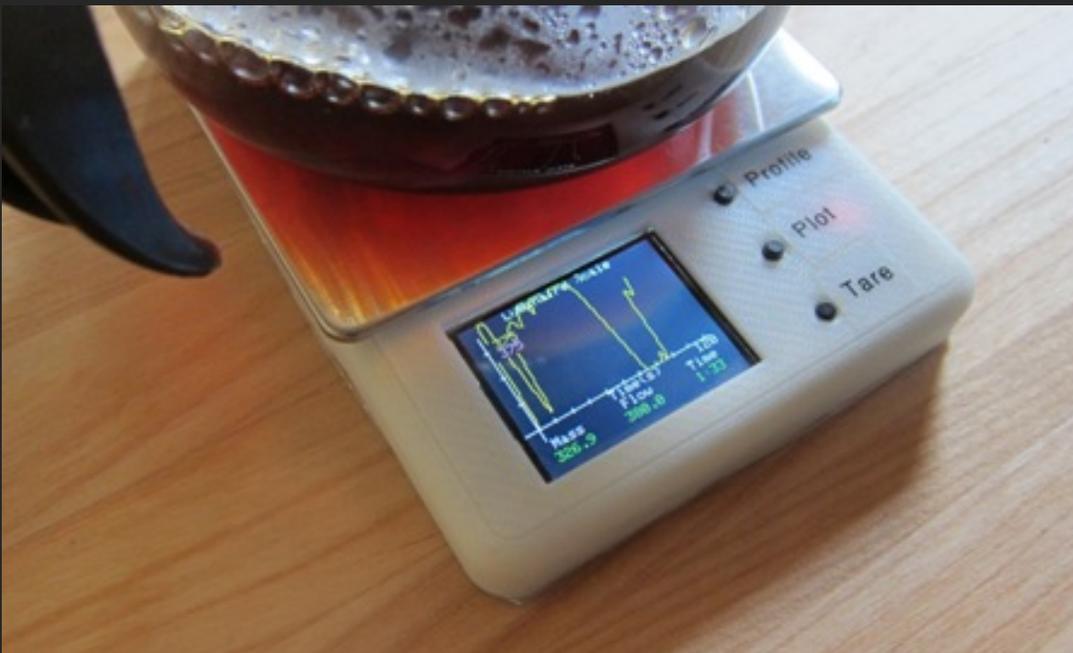
Data Quality





the

More Complete Prototype - 2 Months



Goal

Does this fit into a coffee shop workflow?

What's Good

Compact Form Factor

Dedicated Device

Battery Powered

What's Bad

No Profile Editing

Small Screen

With Prototypes



3 Months Total

Without Prototypes

Timeline >6 Months

Resulting Product Would Be Worse

Four Principles

Know Your Goal

Use the Right Tools

Do Just Enough

Lather, Rinse, Repeat

Why Use Rapid Prototypes

High Fidelity Feedback

Some decisions can't be made without experiencing the design.

Make the right decisions at the right time.

Mitigate Risk

Your Design Will Live in Code

If you wait until the build phase, it
will be too late to fix.

Complete The Design

You will make design decisions
while prototyping

You want to be around to
make them

Questions/Comments:

ben@goinvo.com

Thanks to:

Eric Benoit, Juhan Sonin, Involution Studios

Download slides at tinyurl.com/PrototypeMore