

6.1040: Software Design

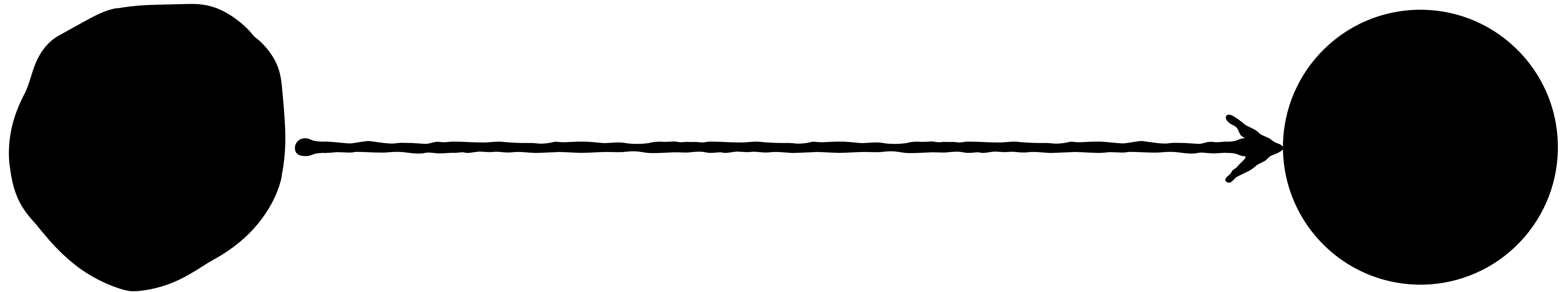
The Design Process:

Divergent Design

Based on material from Scott Klemmer, Steven Dow, and James Landay

Arvind Satyanarayan & Max Goldman

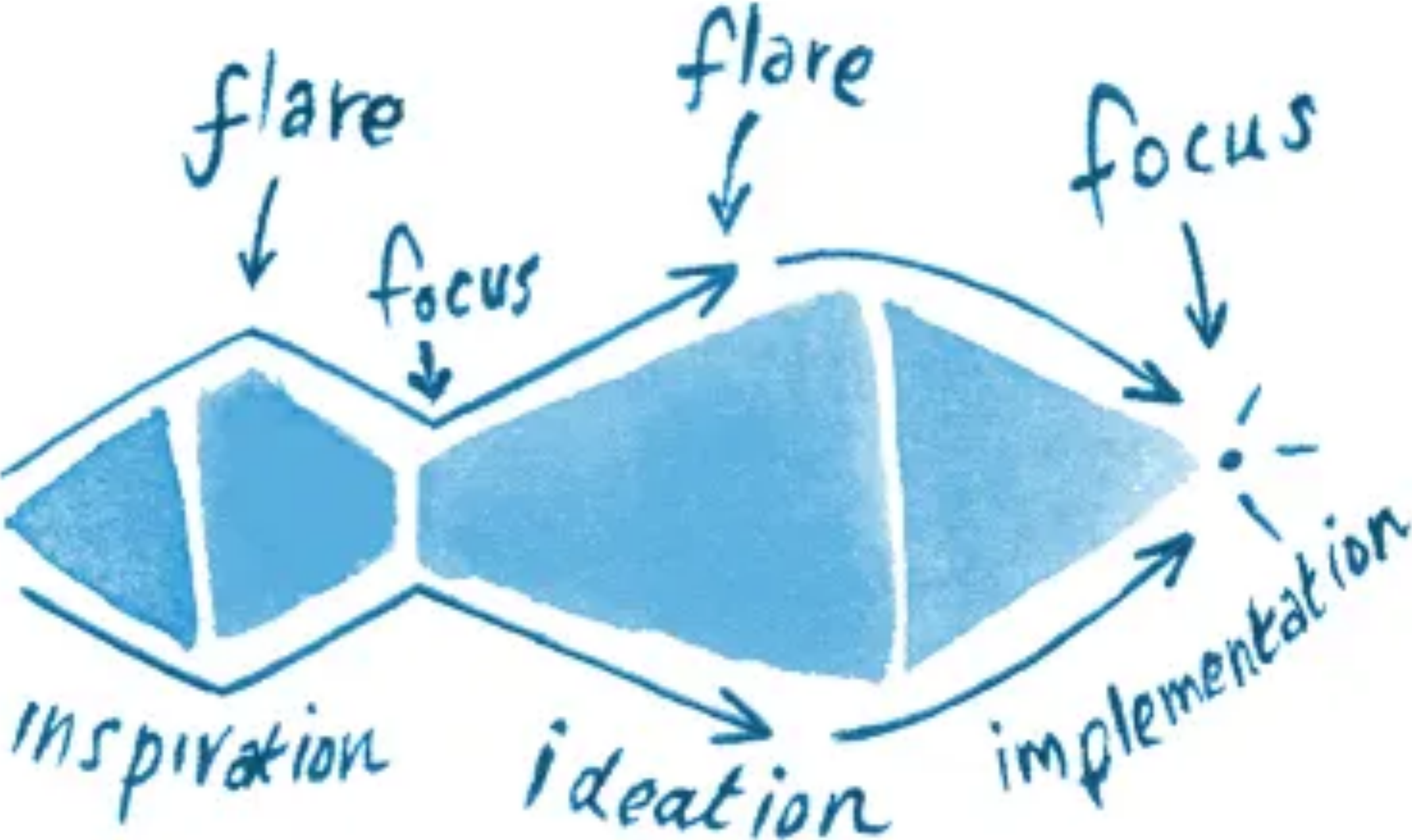
The Design Process?



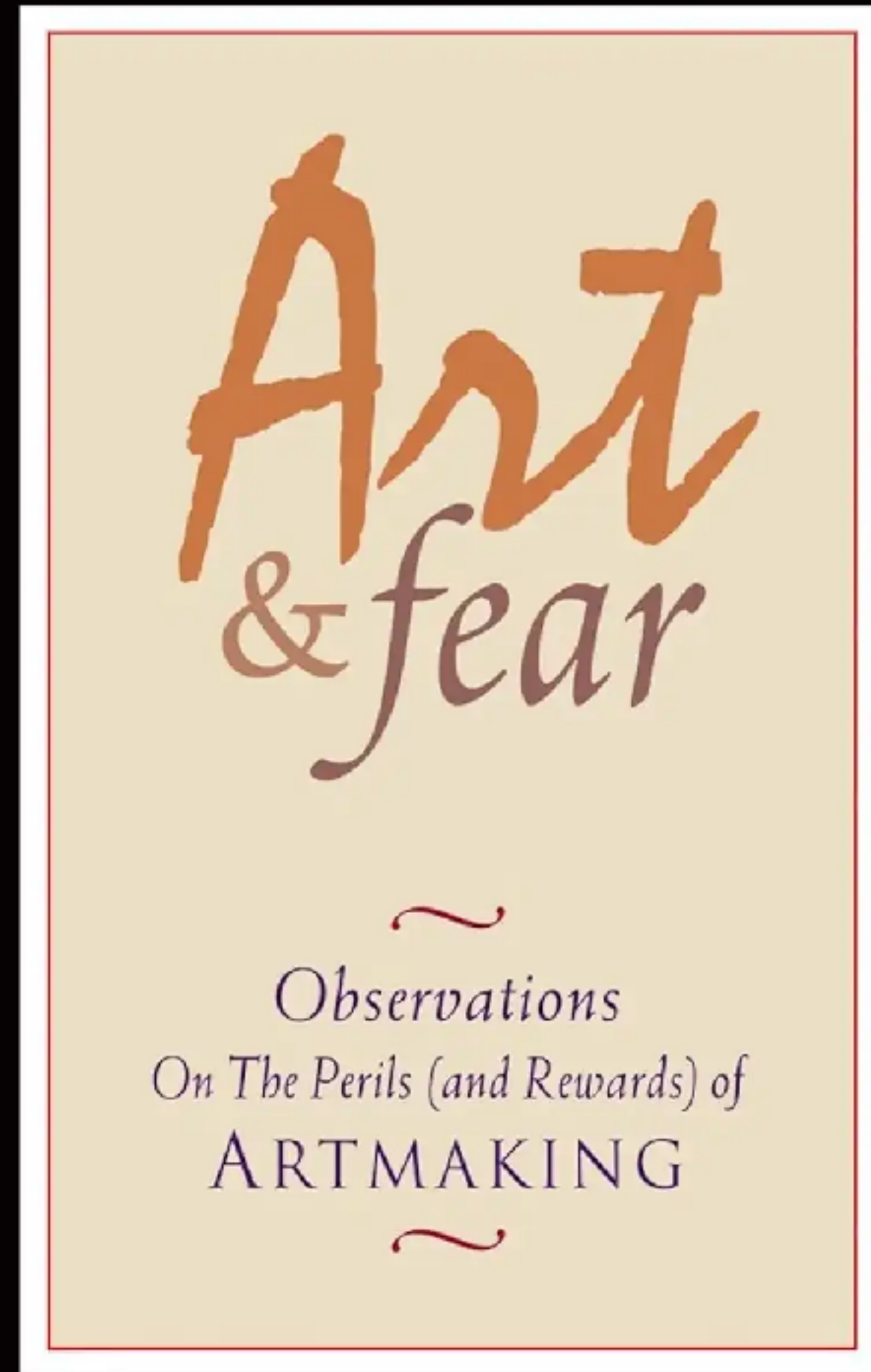
Identifying a Problem

The Solution

The Design Process



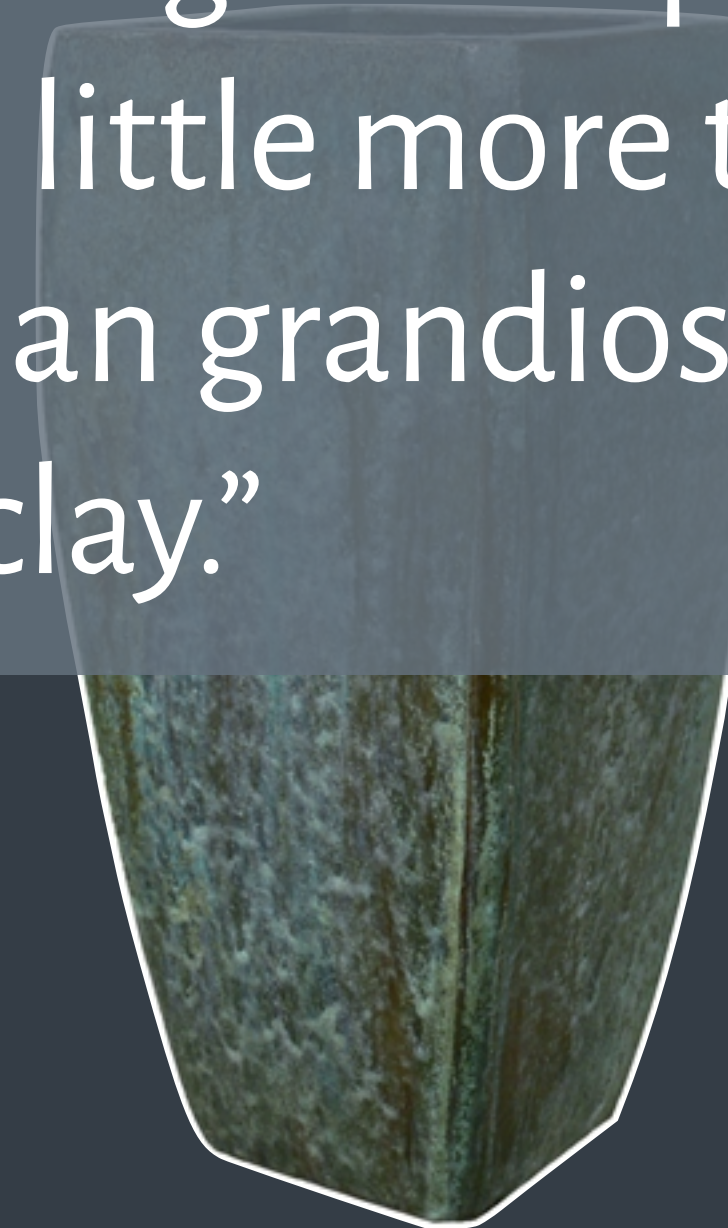
Quantity or Quality?



DAVID BAYLES & TED ORLAND

“while the “quantity” group was busily churning out piles of work—and learning from their mistakes—the “quality” group had sat theorizing about perfection, and in the end had little more to show for their efforts than grandiose theories and a pile of dead clay.”

Group 1
Group 2



Design & Functional Fixation

A **cognitive bias** that limits us to a set of ideas in ways that they are traditionally used or already familiar to us.



How do you fix and light a candle on a cork board wall such that the candle wax won't drip onto the table below?

To do so, you may only use the following along with the candle:

- a book of matches
- a box of thumbtacks

Design & Functional Fixation

A **cognitive bias** that limits us to a set of ideas in ways that they are traditionally used or already familiar to us.



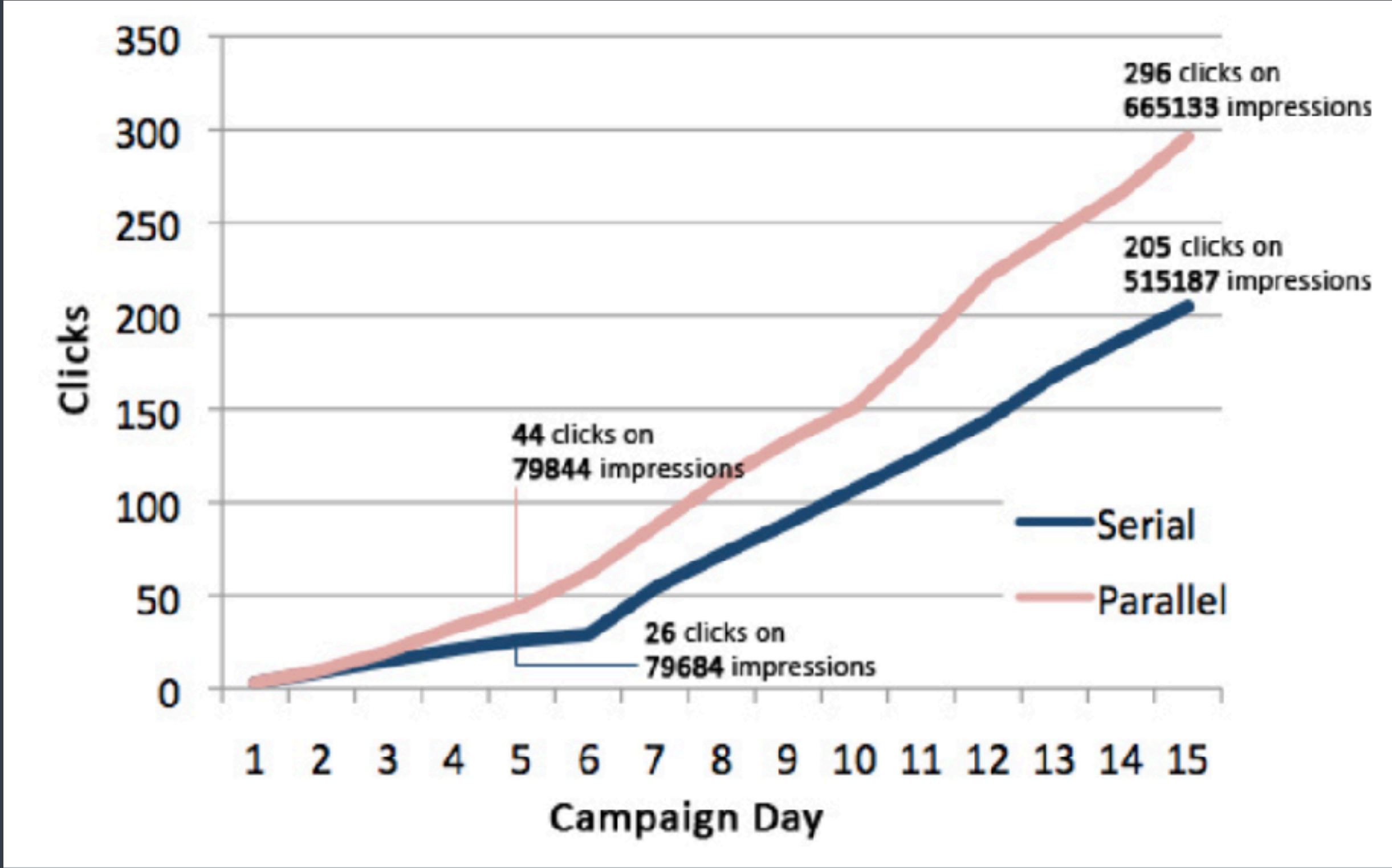
Quantity overcomes Fixation



Serial prototyping: participants received feedback after each design, and were instructed to improve/refine.

Parallel prototyping: participants created three prototypes first, then received feedback; winnowed down to two, more feedback.

Quantity overcomes Fixation



[Dow et al, 2010]

The Tabula Rasa (Blank Slate) Problem

Different event types (e.g.,
one-time, recurring, etc.)

Google calendar
integration

Overcoming the Blank Slate

1. Collaborative Brainstorming.

Pose “How *might* we?” questions.

High energy, and positive.

Build on the ideas of others until saturation. “Yes, and”

One conversation at a time, and stay on topic.

Be visual



Overcoming the Blank Slate

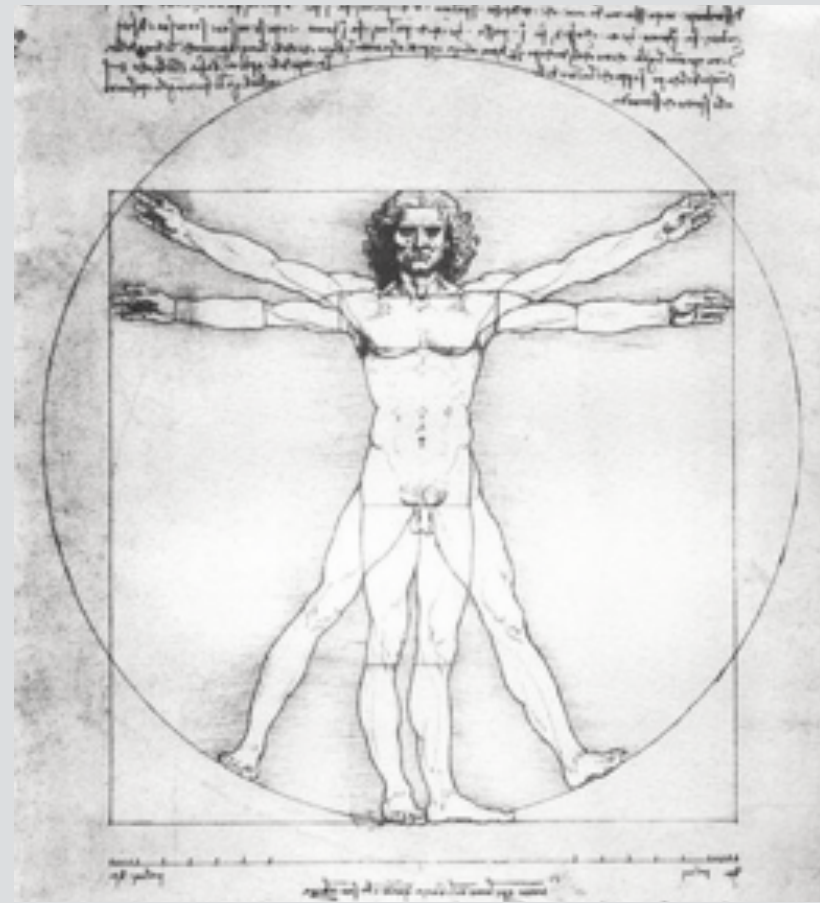
1. Collaborative Brainstorming.

2. Look for inspiration

Across levels of design

Inside and outside the problem domain

levels of UX design



physical

color, size, layout,
type, touch, sound

eg: Fitts' Law, accessibility

concrete



linguistic

icons, labels, tooltips,
site structure

example: consistent icons



conceptual

semantics, actions,
data model, purpose

example: good mental model

abstract

Availabilities

Yes
 If need be
 No
 Pending

12 options < >

Order by

Date | [Most popular](#)

	MON	MON	MON	TUE	TUE	TUE	WED	WED
	15	15	15	16	16	16	17	17
	APR	APR	APR	APR	APR	APR	APR	APR
	10:00 AM - 11:00 AM	12:00 PM - 1:00 PM	2:00 PM - 3:00 PM	9:00 AM - 10:00 AM	11:00 AM - 12:00 PM	1:00 PM - 2:00 PM	12:00 PM - 1:00 PM	2:00 PM - 3:00 PM
	1h	1h	1h	1h	1h	1h	1h	1h
	✓ 2	✓ 2	✓ 1	✓ 2	✓ 1	✓ 2	✓ 2	✓ 2
Y You	✓	⊗	✕	✓	✕	✓	✓	✓
MT Meeting time Organizer	✓	✓	✓	✓	✓	✓	✓	✓

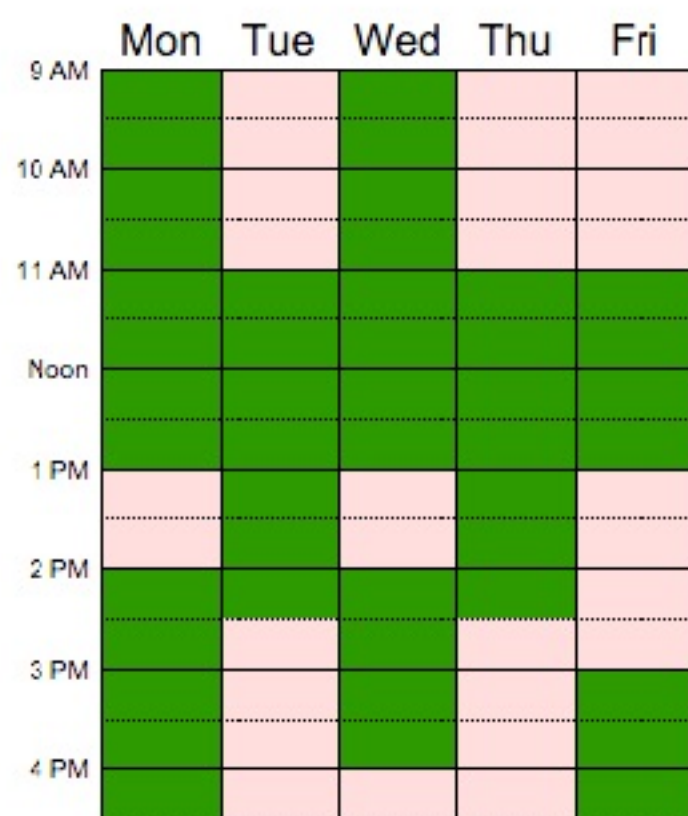
[About When2meet](#) [Plan a New Event](#)

UID group meetings

To invite people to this event, you can [email them](#), send them a [Facebook message](#), or just direct them to <http://when2meet.com/?4255886-gKf2L>

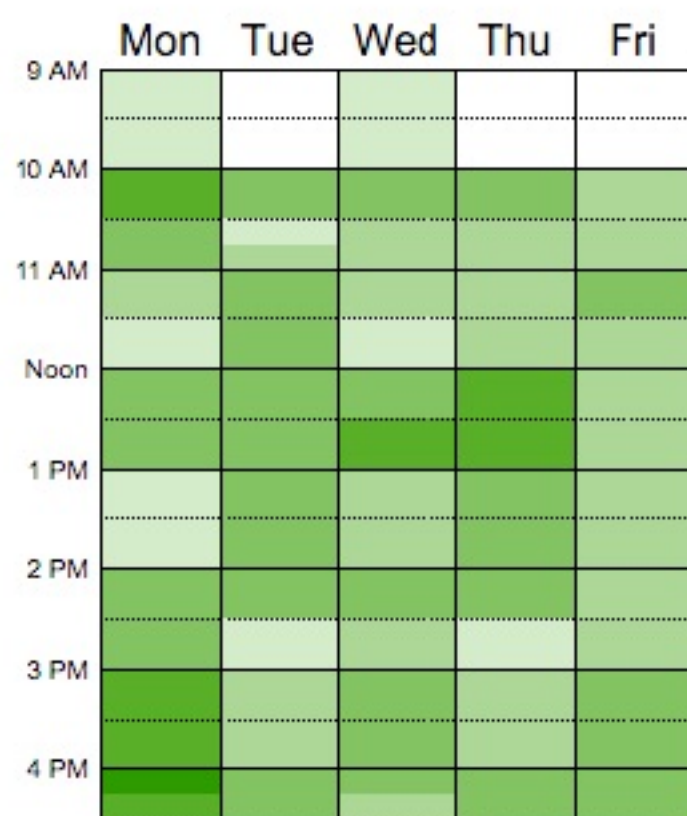
Elena Glassman's Availability

Unavailable Available
 Click and Drag to Toggle; Saved Immediately



Group's Availability

0/7 Available 5/7 Available
 Mouseover the Calendar to See Who Is Available



When is Good

English (United States) ▾

- best times
- OK times
- possible, but not ideal

Staff Meeting

	Mon	Tue	Wed	Thu	Fri
9:00 am	Light Green	Light Green	Light Green	Best Times	Light Green
9:30 am	Light Green	Light Green	Light Green	Best Times	Light Green
10:00 am	Light Green	Light Green	Light Green	Best Times	Light Green
10:30 am	Light Green	Light Green	Light Green	Best Times	Light Green
11:00 am	Light Green	Light Green	Light Green	Light Green	Light Green
11:30 am	Light Green	Light Green	Light Green	Light Green	Light Green
12:00 pm	Light Green	Light Green	Light Green	Light Green	Light Green
12:30 pm	Light Green	Light Green	Light Green	Light Green	Light Green
1:00 pm	Light Green	OK Times	Light Green	Light Green	Light Green
1:30 pm	Light Green	OK Times	Light Green	Light Green	Light Green
2:00 pm	Light Green	Best Times	OK Times	Light Green	Light Green
2:30 pm	Light Green	Best Times	Light Green	Light Green	Light Green
3:00 pm	Light Green	Best Times	Light Green	Light Green	Light Green
3:30 pm	Light Green	Best Times	Light Green	Light Green	Light Green
4:00 pm	Light Green	Best Times	Light Green	Light Green	Light Green
4:30 pm	Light Green	Best Times	Light Green	Light Green	Light Green

Options

- [send more invites](#)
- [add response](#)
- [edit event](#)
- [export to excel](#)

Responses

- [Asha](#)
- [Arvind](#)

Arvind ✕

Responded: 9/10/24 4:45 PM

US/Eastern

- [exclude this response](#)
- [permanently delete this response](#)
- [edit this response](#)
- [request update from respondent](#)

allow access to this page to anyone who knows the URL

United States, New York, New York City (GMT-4)

Availabilities

Yes If need be No Pending

12 options

Order by

Date | Most popular

	MON	MON	MON	TUE	TUE	TUE	WED	WED
	15	15	15	16	16	16	17	17
	APR	APR	APR	APR	APR	APR	APR	APR
	10:00 AM - 11:00 AM 1h	12:00 PM - 1:00 PM 1h	2:00 PM - 3:00 PM 1h	9:00 AM - 10:00 AM 1h	11:00 AM - 12:00 PM 1h	1:00 PM - 2:00 PM 1h	12:00 PM - 1:00 PM 1h	2:00 PM - 3:00 PM 1h
	✓ 2	✓ 2	✓ 1	✓ 2	✓ 1	✓ 2	✓ 2	✓ 2
Y You	✓	⊗	✗	✓	✗	✓	✓	✓
MT Meeting time Organizer	✓	✓	✓	✓	✓	✓	✓	✓

Conceptual Inspiration?

Allow respondents to customize their timezone.

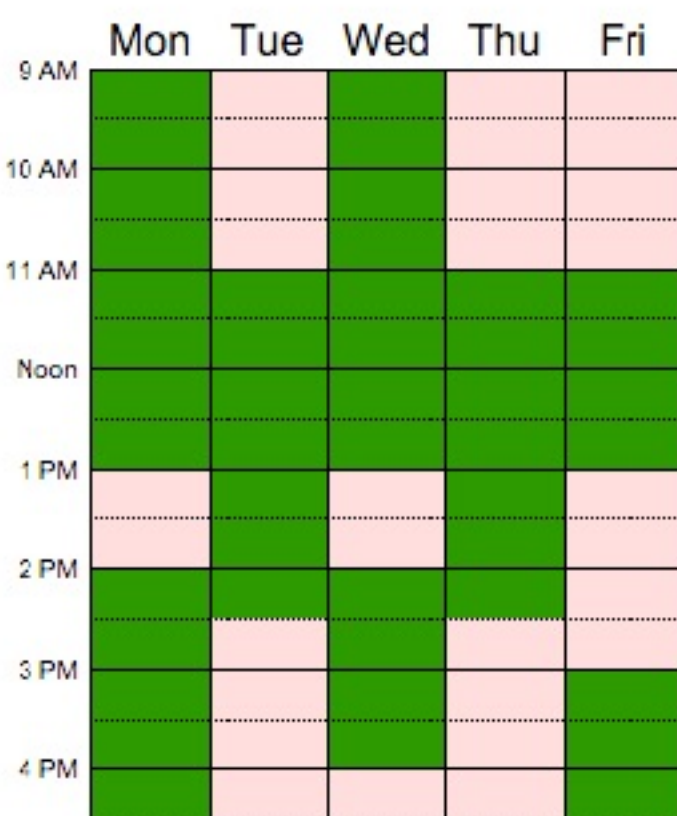
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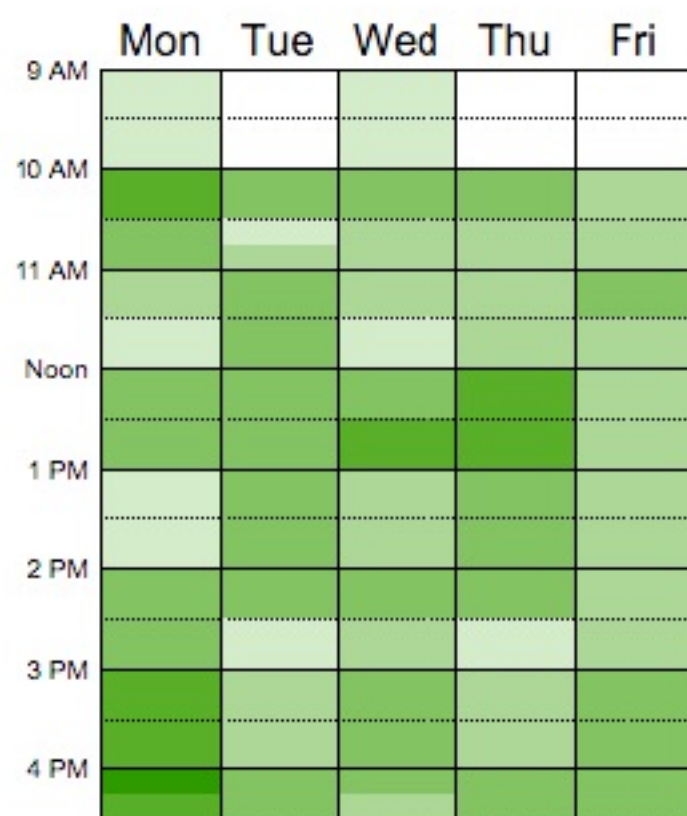
Elena Glassman's Availability

Unavailable Available
Click and Drag to Toggle; Saved Immediately



Group's Availability

0/7 Available 5/7 Available
Mouseover the Calendar to See Who Is Available



arvindsatya@mit.edu | [your account](#) | [logout](#) | [faq](#) | [what's new](#) | [pricing](#) | [enter results code](#) | [new event](#)

When is Good

English (United States)

- best times
- OK times
- possible, but not ideal

Staff Meeting

	Mon	Tue	Wed	Thu	Fri
9:00 am	possible	possible	possible	best	possible
9:30 am	possible	possible	possible	best	possible
10:00 am	possible	possible	possible	best	possible
10:30 am	possible	possible	possible	best	possible
11:00 am	possible	possible	possible	possible	possible
11:30 am	possible	possible	possible	possible	possible
12:00 pm	possible	possible	possible	possible	possible
12:30 pm	possible	possible	possible	possible	possible
1:00 pm	OK	OK	OK	possible	possible
1:30 pm	OK	OK	OK	possible	possible
2:00 pm	best	best	best	possible	possible
2:30 pm	possible	best	possible	possible	possible
3:00 pm	possible	best	possible	possible	possible
3:30 pm	possible	best	possible	possible	possible
4:00 pm	possible	best	possible	possible	possible
4:30 pm	possible	best	possible	possible	possible

Options

- [send more invites](#)
- [add response](#)
- [edit event](#)
- [export to excel](#)

Responses

- [Asha](#)
- [Arvind](#)

Arvind

Responded: 9/10/24 4:45 PM

US/Eastern

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- [edit this response](#)
- [request update from respondent](#)

allow access to this page to anyone who knows the URL

United States, New York, New York City (GMT-4)

Availabilities

Yes
 If need be
 No
 Pending

12 options < >

Order by
Date | **Most popular**

	MON	MON	MON	TUE	TUE	TUE	WED	WED
Date	15	15	15	16	16	16	17	17
	APR	APR	APR	APR	APR	APR	APR	APR
Time	10:00 AM - 11:00 AM	12:00 PM - 1:00 PM	2:00 PM - 3:00 PM	9:00 AM - 10:00 AM	11:00 AM - 12:00 PM	1:00 PM - 2:00 PM	12:00 PM - 1:00 PM	2:00 PM - 3:00 PM
Duration	1h	1h	1h	1h	1h	1h	1h	1h
Count	✓ 2	✓ 2	✓ 1	✓ 2	✓ 1	✓ 2	✓ 2	✓ 2
You	✓	⊗	✗	✓	✗	✓	✓	✓
Meeting time Organizer	✓	✓	✓	✓	✓	✓	✓	✓

Conceptual Inspiration?

Allow respondents to customize their timezone.
 Allow respondents to specify more than binary availability.

About When2meet Plan a New Event

UID group meetings

To invite people to this event, you can [email them](#), send them a [Facebook message](#), or just direct them to <http://when2meet.com/?4255886-gKf2L>

Elena Glassman's Availability

Unavailable Available

Click and Drag to Toggle; Saved Immediately

	Mon	Tue	Wed	Thu	Fri
9 AM	Available	Unavailable	Available	Unavailable	Unavailable
10 AM	Available	Unavailable	Available	Unavailable	Unavailable
11 AM	Available	Available	Available	Available	Available
Noon	Available	Available	Available	Available	Available
1 PM	Unavailable	Available	Unavailable	Unavailable	Unavailable
2 PM	Available	Available	Available	Available	Unavailable
3 PM	Available	Unavailable	Available	Unavailable	Available
4 PM	Available	Unavailable	Unavailable	Available	Available

Group's Availability

0/7 Available 5/7 Available

Mouseover the Calendar to See Who Is Available

	Mon	Tue	Wed	Thu	Fri
9 AM	Light Green	Light Green	Light Green	Light Green	Light Green
10 AM	Light Green	Light Green	Light Green	Light Green	Light Green
11 AM	Light Green	Light Green	Light Green	Light Green	Light Green
Noon	Light Green	Light Green	Light Green	Light Green	Light Green
1 PM	Light Green	Light Green	Light Green	Light Green	Light Green
2 PM	Light Green	Light Green	Light Green	Light Green	Light Green
3 PM	Light Green	Light Green	Light Green	Light Green	Light Green
4 PM	Light Green	Light Green	Light Green	Light Green	Light Green

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English (United States) ▾

When is Good

best times
 OK times
 possible, but not ideal

Options

[send more invites](#)
[add response](#)
[edit event](#)
[export to excel](#)

Responses

[Asha](#)
[Arvind](#)

Arvind ✕

Responded: 9/10/24 4:45 PM

US/Eastern

- [exclude this response](#)
- [permanently delete this response](#)
- [edit this response](#)
- [request update from respondent](#)

allow access to this page to anyone who knows the URL

Staff Meeting

	Mon	Tue	Wed	Thu	Fri
9:00 am	Light Green	Light Green	Light Green	Best Times	Light Green
9:30 am	Light Green	Light Green	Light Green	Best Times	Light Green
10:00 am	Light Green	Light Green	Light Green	Best Times	Light Green
10:30 am	Light Green	Light Green	Light Green	Best Times	Light Green
11:00 am	Light Green	Light Green	Light Green	Light Green	Light Green
11:30 am	Light Green	Light Green	Light Green	Light Green	Light Green
12:00 pm	Light Green	Light Green	Light Green	Light Green	Light Green
12:30 pm	Light Green	Light Green	Light Green	Light Green	Light Green
1:00 pm	Light Green	OK Times	Light Green	Light Green	Light Green
1:30 pm	Light Green	OK Times	Light Green	Light Green	Light Green
2:00 pm	Light Green	Best Times	OK Times	Light Green	Light Green
2:30 pm	Light Green	Best Times	Light Green	Light Green	Light Green
3:00 pm	Light Green	Best Times	Light Green	Light Green	Light Green
3:30 pm	Light Green	Best Times	Light Green	Light Green	Light Green
4:00 pm	Light Green	Best Times	Light Green	Light Green	Light Green
4:30 pm	Light Green	Best Times	Light Green	Light Green	Light Green

Availabilities

Yes
 If need be
 No
 Pending

12 options < >

Order by

Date | [Most popular](#)

	MON	MON	MON	TUE	TUE	TUE	WED	WED
	15	15	15	16	16	16	17	17
	APR	APR	APR	APR	APR	APR	APR	APR
	10:00 AM - 11:00 AM	12:00 PM - 1:00 PM	2:00 PM - 3:00 PM	9:00 AM - 10:00 AM	11:00 AM - 12:00 PM	1:00 PM - 2:00 PM	12:00 PM - 1:00 PM	2:00 PM - 3:00 PM
	1h	1h	1h	1h	1h	1h	1h	1h
	✓ 2	✓ 2	✓ 1	✓ 2	✓ 1	✓ 2	✓ 2	✓ 2
Y You	✓	⊗	✗	✓	✗	✓	✓	✓
MT Meeting time Organizer	✓	✓	✓	✓	✓	✓	✓	✓

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Elena Glassman's Availability

Unavailable Available
 Click and Drag to Toggle; Saved Immediately

	Mon	Tue	Wed	Thu	Fri
9 AM	Available	Unavailable	Available	Unavailable	Unavailable
10 AM	Available	Unavailable	Available	Unavailable	Unavailable
11 AM	Available	Available	Available	Available	Available
Noon	Available	Available	Available	Available	Available
1 PM	Unavailable	Available	Unavailable	Unavailable	Unavailable
2 PM	Available	Available	Available	Available	Available
3 PM	Available	Unavailable	Available	Unavailable	Available
4 PM	Available	Unavailable	Unavailable	Unavailable	Available

Group's Availability

0/7 Available 5/7 Available
 Mouseover the Calendar to See Who Is Available

	Mon	Tue	Wed	Thu	Fri
9 AM	Light Green	Light Green	Light Green	Light Green	Light Green
10 AM	Light Green	Light Green	Light Green	Light Green	Light Green
11 AM	Light Green	Light Green	Light Green	Light Green	Light Green
Noon	Light Green	Light Green	Light Green	Light Green	Light Green
1 PM	Light Green	Light Green	Light Green	Light Green	Light Green
2 PM	Light Green	Light Green	Light Green	Light Green	Light Green
3 PM	Light Green	Light Green	Light Green	Light Green	Light Green
4 PM	Light Green	Light Green	Light Green	Light Green	Light Green

Conceptual Inspiration?

- Allow respondents to customize their timezone.
- Allow respondents to specify more than binary availability.
- Give administrators flexibility over respondent answers.

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English (United States) ▾

When is Good

best times
 OK times
 possible, but not ideal

Staff Meeting

	Mon	Tue	Wed	Thu	Fri
9:00 am	OK	OK	OK	Best	OK
9:30 am	OK	OK	OK	Best	OK
10:00 am	OK	OK	OK	Best	OK
10:30 am	OK	OK	OK	Best	OK
11:00 am	OK	OK	OK	OK	OK
11:30 am	OK	OK	OK	OK	OK
12:00 pm	OK	OK	OK	OK	OK
12:30 pm	OK	OK	OK	OK	OK
1:00 pm	OK	Best	OK	OK	OK
1:30 pm	OK	Best	OK	OK	OK
2:00 pm	Best	Best	Best	OK	OK
2:30 pm	OK	Best	OK	OK	OK
3:00 pm	OK	Best	OK	OK	OK
3:30 pm	OK	Best	OK	OK	OK
4:00 pm	OK	Best	OK	OK	OK
4:30 pm	OK	Best	OK	OK	OK

Options

[send more invites](#)
[add response](#)
[edit event](#)
[export to excel](#)

Responses

[Asha](#)
[Arvind](#)

Arvind

Response for 10/24/44

US/Eastern

- [exclude this response](#)
- [permanently delete this response](#)
- [edit this response](#)
- [request update from respondent](#)

allow access to this page to anyone who knows the URL

Availabilities

Yes
 If need be
 No
 Pending

12 options < >

Order by

Date | [Most popular](#)

	MON	MON	MON	TUE	TUE	TUE	WED	WED
	15	15	15	16	16	16	17	17
	APR	APR	APR	APR	APR	APR	APR	APR
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	1h	1h	1h	1h	1h	1h	1h	1h
	✓ 2	✓ 2	✓ 1	✓ 2	✓ 1	✓ 2	✓ 2	✓ 2
Y You	✓	⊗	✗	✓	✗	✓	✓	✓
MT Meeting time Organizer	✓	✓	✓	✓	✓	✓	✓	✓

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10 AM	Available	Unavailable	Available	Unavailable	Unavailable
11 AM	Available	Available	Available	Available	Available
Noon	Available	Available	Available	Available	Available
1 PM	Unavailable	Available	Unavailable	Unavailable	Unavailable
2 PM	Available	Available	Available	Available	Unavailable
3 PM	Available	Unavailable	Available	Unavailable	Available
4 PM	Available	Unavailable	Unavailable	Unavailable	Available

Group's Availability

0/7 Available 5/7 Available
 Mouseover the Calendar to See Who Is Available

	Mon	Tue	Wed	Thu	Fri
9 AM	Light Green	Light Green	Light Green	Light Green	Light Green
10 AM	Light Green	Light Green	Light Green	Light Green	Light Green
11 AM	Light Green	Light Green	Light Green	Light Green	Light Green
Noon	Light Green	Light Green	Light Green	Light Green	Light Green
1 PM	Light Green	Light Green	Light Green	Light Green	Light Green
2 PM	Light Green	Light Green	Light Green	Light Green	Light Green
3 PM	Light Green	Light Green	Light Green	Light Green	Light Green
4 PM	Light Green	Light Green	Light Green	Light Green	Light Green

Conceptual Inspiration?

What is the purpose? Elicit availability for specific time slots (Doodle) or general availability (When2Meet, WhenIsGood)?

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English (United States) ▼

When is Good

best times (Bright Green)

OK times (Dark Green)

possible, but not ideal (Light Green)

Staff Meeting

Mon	Tue	Wed	Thu	Fri
9:00 am	9:00 am	9:00 am	9:00 am	9:00 am
9:30 am	9:30 am	9:30 am	9:30 am	9:30 am
10:00 am	10:00 am	10:00 am	10:00 am	10:00 am
10:30 am	10:30 am	10:30 am	10:30 am	10:30 am
11:00 am	11:00 am	11:00 am	11:00 am	11:00 am
11:30 am	11:30 am	11:30 am	11:30 am	11:30 am
12:00 pm	12:00 pm	12:00 pm	12:00 pm	12:00 pm
12:30 pm	12:30 pm	12:30 pm	12:30 pm	12:30 pm
1:00 pm	1:00 pm	1:00 pm	1:00 pm	1:00 pm
1:30 pm	1:30 pm	1:30 pm	1:30 pm	1:30 pm
2:00 pm	2:00 pm	2:00 pm	2:00 pm	2:00 pm
2:30 pm	2:30 pm	2:30 pm	2:30 pm	2:30 pm
3:00 pm	3:00 pm	3:00 pm	3:00 pm	3:00 pm
3:30 pm	3:30 pm	3:30 pm	3:30 pm	3:30 pm
4:00 pm	4:00 pm	4:00 pm	4:00 pm	4:00 pm
4:30 pm	4:30 pm	4:30 pm	4:30 pm	4:30 pm

Options

[send more invites](#)
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[edit event](#)
[export to excel](#)

Responses

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[Arvind](#)

Arvind

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allow access to this page to anyone who knows the URL

Availabilities

Yes
 If need be
 No
 Pending

12 options < >

Order by

Date | [Most popular](#)

	MON	MON	MON	TUE	TUE	TUE	WED	WED
	15	15	15	16	16	16	17	17
	APR	APR	APR	APR	APR	APR	APR	APR
	10:00 AM - 11:00 AM	12:00 PM - 1:00 PM	2:00 PM - 3:00 PM	9:00 AM - 10:00 AM	11:00 AM - 12:00 PM	1:00 PM - 2:00 PM	12:00 PM - 1:00 PM	2:00 PM - 3:00 PM
	1h	1h	1h	1h	1h	1h	1h	1h
	✓ 2	✓ 2	✓ 1	✓ 2	✓ 1	✓ 2	✓ 2	✓ 2
Y You	✓	⊗	✗	✓	✗	✓	✓	✓
MT Meeting time Organizer	✓	✓	✓	✓	✓	✓	✓	✓

Linguistic Inspiration?

How to visualize responses and tradeoffs?

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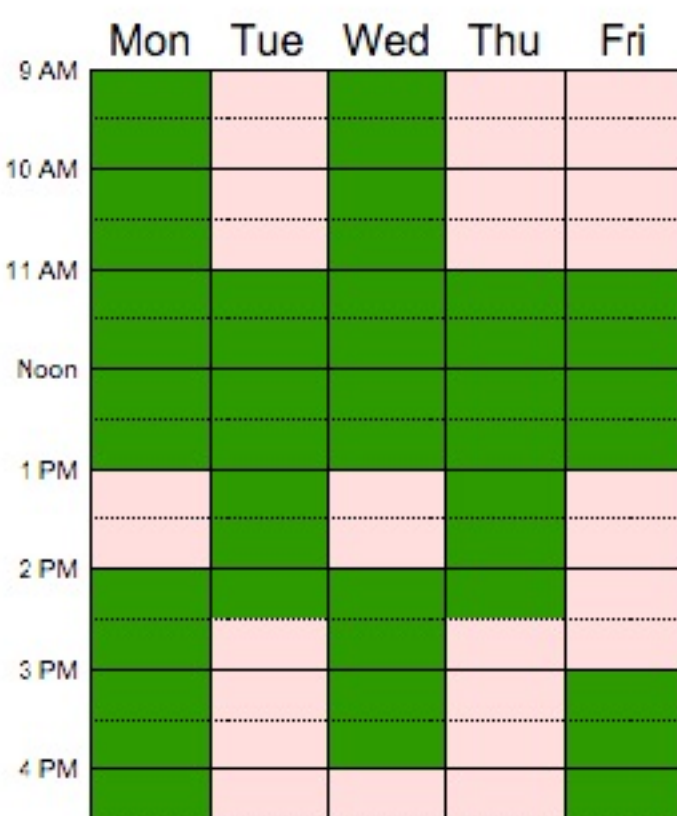
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Elena Glassman's Availability

Unavailable
 Available
 Available

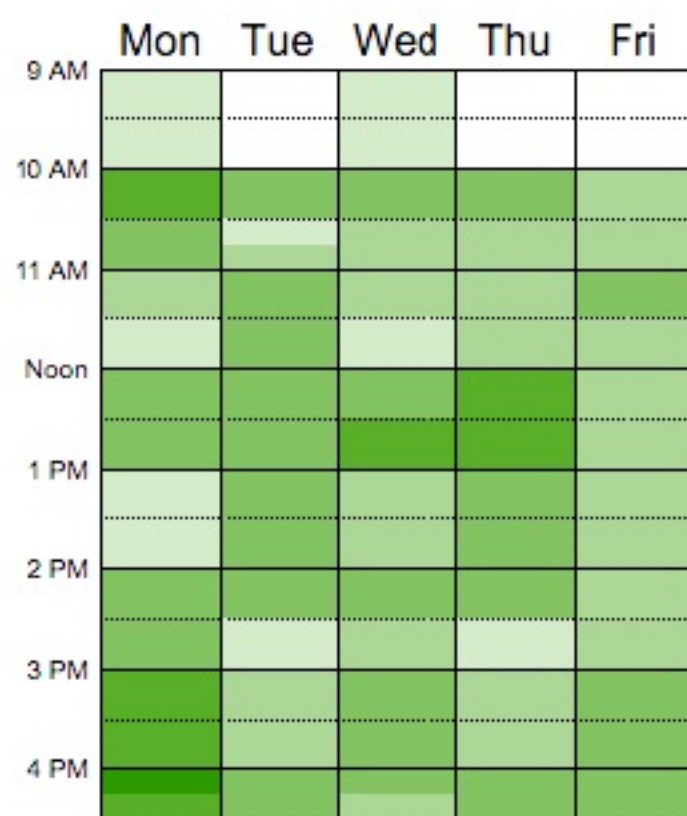
Click and Drag to Toggle; Saved Immediately



Group's Availability

0/7 Available
 5/7 Available

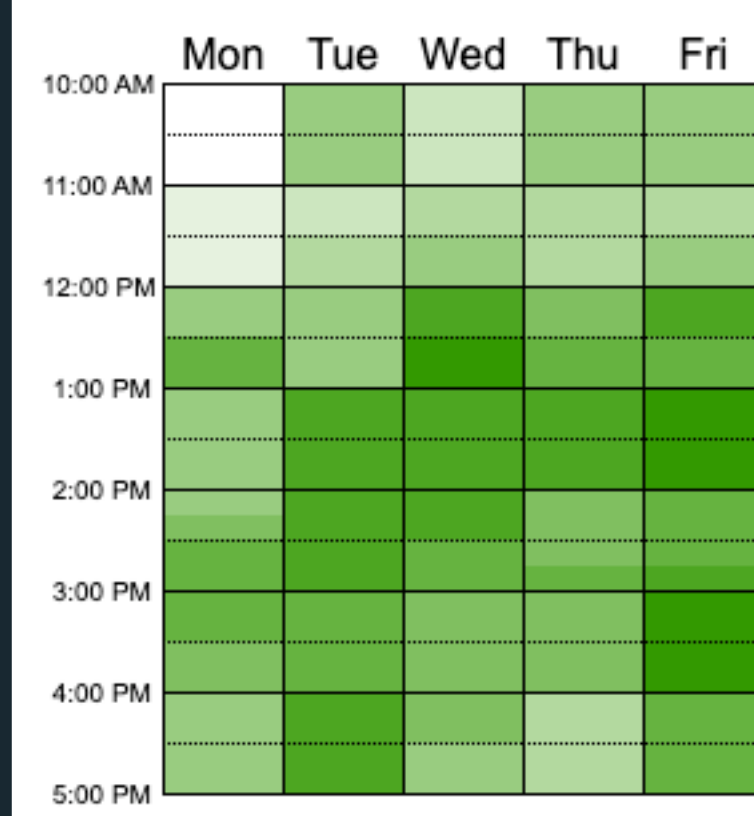
Click and Drag to Toggle; Saved Immediately



Group's Availability

6/16 Available
 14/16 Available

Click and Drag to Toggle; Saved Immediately



When is Good

English (United States) ▾

- best times
- OK times
- possible, but not ideal

Staff Meeting

	Mon	Tue	Wed	Thu	Fri
9:00 am	possible	possible	possible	best	possible
9:30 am	possible	possible	possible	best	possible
10:00 am	possible	possible	possible	best	possible
10:30 am	possible	possible	possible	best	possible
11:00 am	possible	possible	possible	possible	possible
11:30 am	possible	possible	possible	possible	possible
12:00 pm	possible	possible	possible	possible	possible
12:30 pm	possible	possible	possible	possible	possible
1:00 pm	possible	OK	possible	possible	possible
1:30 pm	possible	OK	possible	possible	possible
2:00 pm	possible	best	possible	possible	possible
2:30 pm	possible	best	possible	possible	possible
3:00 pm	possible	best	possible	possible	possible
3:30 pm	possible	best	possible	possible	possible
4:00 pm	possible	best	possible	possible	possible
4:30 pm	possible	best	possible	possible	possible

Options

response
 independent

United States, New York, New York City (GMT-4)

Availabilities

Yes
 If need be
 No
 Pending

12 options < >

Order by
Date | **Most popular**

	MON	MON	MON	TUE	TUE	TUE	WED	WED
Date	15	15	15	16	16	16	17	17
	APR	APR	APR	APR	APR	APR	APR	APR
Time	10:00 AM - 11:00 AM	12:00 PM - 1:00 PM	2:00 PM - 3:00 PM	9:00 AM - 10:00 AM	11:00 AM - 12:00 PM	1:00 PM - 2:00 PM	12:00 PM - 1:00 PM	2:00 PM - 3:00 PM
Duration	1h	1h	1h	1h	1h	1h	1h	1h
Count	✓ 2	✓ 2	✓ 1	✓ 2	✓ 1	✓ 2	✓ 2	✓ 2
You	✓	⊗	✗	✓	✗	✓	✓	✓
Meeting time Organizer	✓	✓	✓	✓	✓	✓	✓	✓

Linguistic Inspiration?

How to visualize responses and tradeoffs?
Use of color to indicate availability?

About When2meet Plan a New Event

UID group meetings

To invite people to this event, you can [email them](#), send them a [Facebook message](#), or just direct them to <http://when2meet.com/?4255886-gKf2L>

Elena Glassman's Availability

Unavailable Available

Click and Drag to Toggle; Saved Immediately

Group's Availability

0/7 Available 5/7 Available

Mouseover the Calendar to See Who Is Available

	Mon	Tue	Wed	Thu	Fri
9 AM	█	█	█	█	█
10 AM	█	█	█	█	█
11 AM	█	█	█	█	█
Noon	█	█	█	█	█
1 PM	█	█	█	█	█
2 PM	█	█	█	█	█
3 PM	█	█	█	█	█
4 PM	█	█	█	█	█

arvindsatya@mit.edu | [your account](#) | [logout](#) | [faq](#) | [what's new](#) | [pricing](#) | [enter results code](#) | [new event](#)

English (United States) ▾

When is Good

best times
 OK times
 possible, but not ideal

Options

[send more invites](#)
[add response](#)
[edit event](#)
[export to excel](#)

Responses

[Asha](#)
[Arvind](#)

Arvind ✕

Responded: 9/10/24 4:45 PM

US/Eastern

- [exclude this response](#)
- [permanently delete this response](#)
- [edit this response](#)
- [request update from respondent](#)

allow access to this page to anyone who knows the URL

Staff Meeting

	Mon	Tue	Wed	Thu	Fri
9:00 am	█	█	█	█	█
9:30 am	█	█	█	█	█
10:00 am	█	█	█	█	█
10:30 am	█	█	█	█	█
11:00 am	█	█	█	█	█
11:30 am	█	█	█	█	█
12:00 pm	█	█	█	█	█
12:30 pm	█	█	█	█	█
1:00 pm	█	█	█	█	█
1:30 pm	█	█	█	█	█
2:00 pm	█	█	█	█	█
2:30 pm	█	█	█	█	█
3:00 pm	█	█	█	█	█
3:30 pm	█	█	█	█	█
4:00 pm	█	█	█	█	█
4:30 pm	█	█	█	█	█

Availabilities

Yes
 If need be
 No
 Pending

12 options < >

Order by

Date | [Most popular](#)

	MON	MON	MON	TUE	TUE	TUE	WED	WED
	15	15	15	16	16	16	17	17
	APR	APR	APR	APR	APR	APR	APR	APR
	10:00 AM - 11:00 AM	12:00 PM - 1:00 PM	2:00 PM - 3:00 PM	9:00 AM - 10:00 AM	11:00 AM - 12:00 PM	1:00 PM - 2:00 PM	12:00 PM - 1:00 PM	2:00 PM - 3:00 PM
	1h	1h	1h	1h	1h	1h	1h	1h
	✓ 2	✓ 2	✓ 1	✓ 2	✓ 1	✓ 2	✓ 2	✓ 2
Y You	✓	⊗	✗	✓	✗	✓	✓	✓
MT Meeting time Organizer	✓	✓	✓	✓	✓	✓	✓	✓

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Noon	Available	Available	Available	Available	Available
1 PM	Unavailable	Available	Unavailable	Unavailable	Unavailable
2 PM	Available	Available	Available	Available	Unavailable
3 PM	Available	Unavailable	Available	Unavailable	Available
4 PM	Available	Unavailable	Unavailable	Available	Available

Group's Availability

0/7 Available 5/7 Available
 Mouseover the Calendar to See Who Is Available

	Mon	Tue	Wed	Thu	Fri
9 AM	Light Green	Light Green	Light Green	Light Green	Light Green
10 AM	Light Green	Light Green	Light Green	Light Green	Light Green
11 AM	Light Green	Light Green	Light Green	Light Green	Light Green
Noon	Light Green	Light Green	Light Green	Light Green	Light Green
1 PM	Light Green	Light Green	Light Green	Light Green	Light Green
2 PM	Light Green	Light Green	Light Green	Light Green	Light Green
3 PM	Light Green	Light Green	Light Green	Light Green	Light Green
4 PM	Light Green	Light Green	Light Green	Light Green	Light Green

Physical Inspiration?

Checkboxes vs. Drag?
 Size of drag target?

[arvindsatya@mit.edu](#) | [your account](#) | [logout](#) | [faq](#) | [what's new](#) | [pricing](#) | [enter results code](#) | [new event](#)

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English (United States)

■ best times
■ OK times
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10:30 am	Light Green	Light Green	Light Green	Light Green	Light Green
11:00 am	Light Green	Light Green	Light Green	Light Green	Light Green
11:30 am	Light Green	Light Green	Light Green	Light Green	Light Green
12:00 pm	Light Green	Light Green	Light Green	Light Green	Light Green
12:30 pm	Light Green	Light Green	Light Green	Light Green	Light Green
1:00 pm	Light Green	Light Green	Light Green	Light Green	Light Green
1:30 pm	Light Green	Light Green	Light Green	Light Green	Light Green
2:00 pm	Light Green	Light Green	Light Green	Light Green	Light Green
2:30 pm	Light Green	Light Green	Light Green	Light Green	Light Green
3:00 pm	Light Green	Light Green	Light Green	Light Green	Light Green
3:30 pm	Light Green	Light Green	Light Green	Light Green	Light Green
4:00 pm	Light Green	Light Green	Light Green	Light Green	Light Green
4:30 pm	Light Green	Light Green	Light Green	Light Green	Light Green

Options

[send more invites](#)
[add response](#)
[edit event](#)
[export to excel](#)

Responses

[Asha](#)
[Arvind](#)

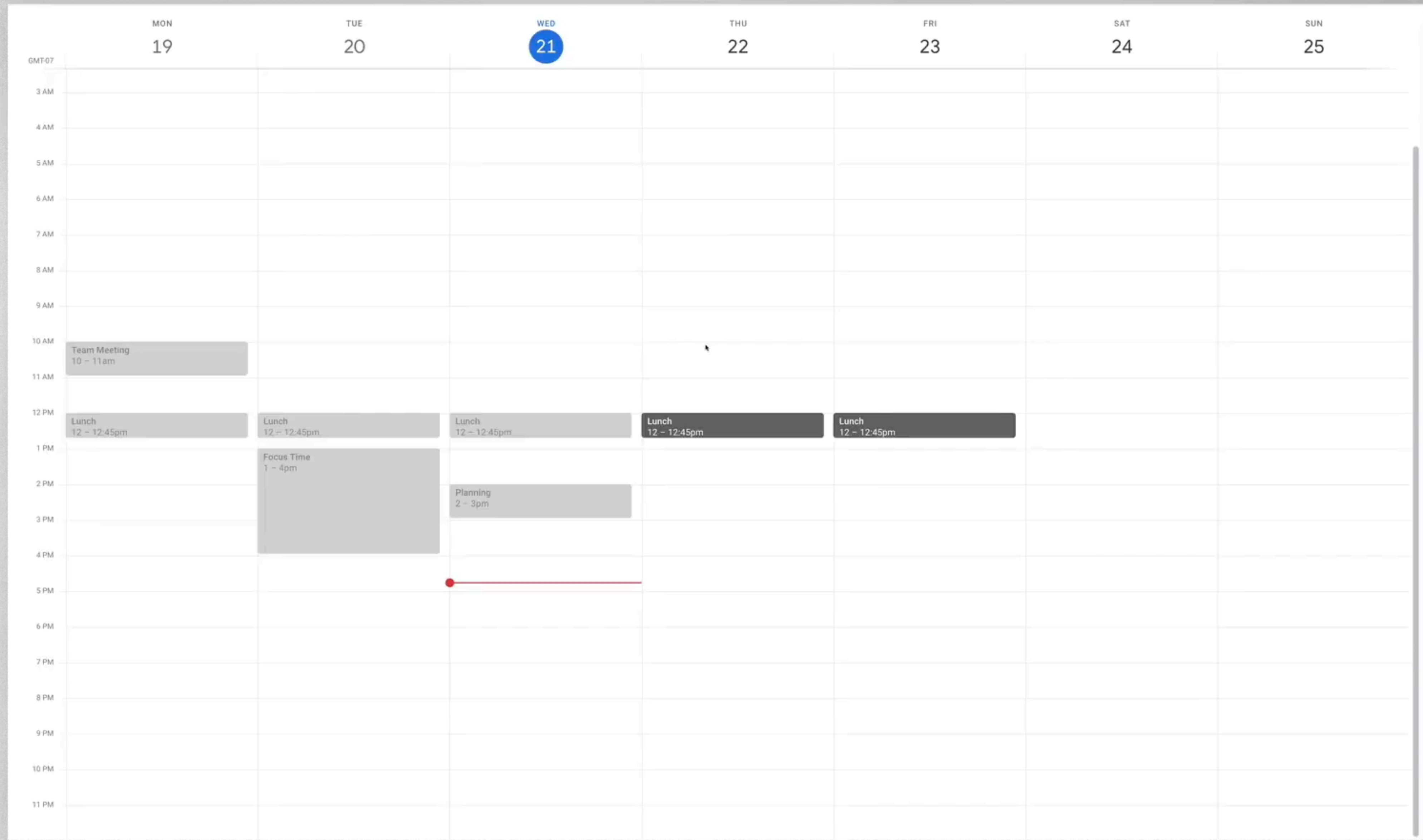
Arvind

Responded: 9/10/24 4:45 PM

US/Eastern

- [exclude this response](#)
- [permanently delete this response](#)
- [edit this response](#)
- [request update from respondent](#)

allow access to this page to anyone who knows the URL



Calendar (Google Calendar)

Overcoming the Blank Slate

1. Collaborative Brainstorming.

2. Look for inspiration

Across levels of design

Inside and outside the problem domain

Overcoming the Blank Slate

1. Collaborative Brainstorming.

2. Look for inspiration

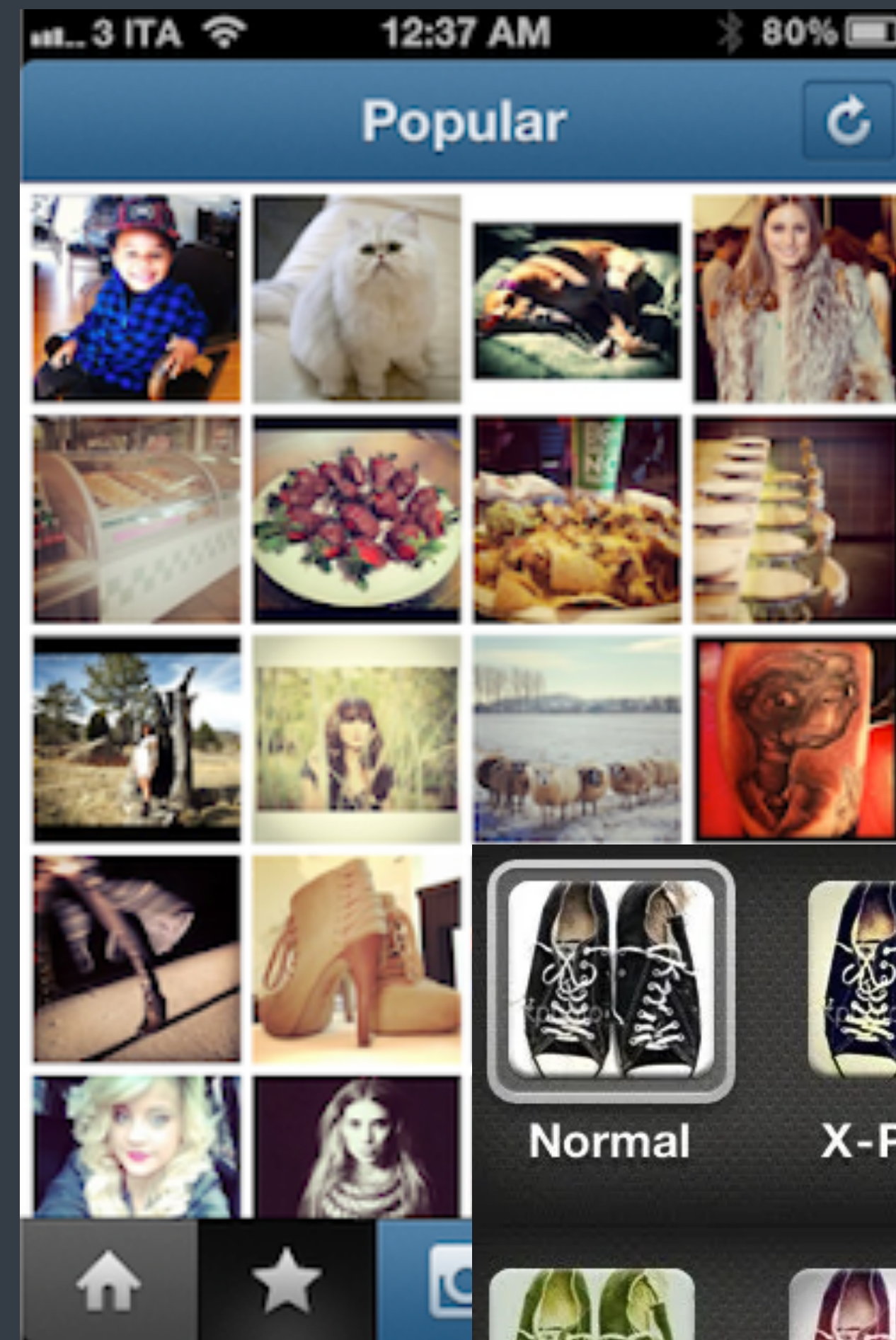
3. Apply a constraint

Very difficult to start by designing something for “everyone”—leads to a generic design that doesn't add value

Impose some new structure to the problem to focus the design process



[Rahul Bansal]



[Lydia Venn]

[Kate Imbach]



Nashville

Gotham

1977

Lord Kelvin



Online Booking System for all service based industries

Simply define your services and providers, display their availability, and you will have clients both old and new making bookings 24/7.

Get a Free Account

Get Inspired

No credit card needed



You can now use stripe for payment processing in USA! (we also offer m...)

Search

Find your feature here

Popular

Booking website

Business enhancements

Booking related

Functional

Look and Feel

Statistics & Analytics

Security & Data protection

Accept Payments

Notifications

Integrations

Payment integrations

Admin & Client Apps

Popular

FREE TRIAL



Intake forms

Gather required information from clients upon booking.

Popular

FREE TRIAL



Reserve with Google

Integration with Google Business and Reserve with...

Popular

FREE TRIAL



Facebook & Instagram bookings

Integrate booking functionality into your Facebook or...

Popular

FREE TRIAL



Coupons & gift cards

Issue gift cards & coupons to your customers.

Popular

FREE TRIAL



Membership

Sell member subscriptions and limit access to certain service...

Popular

FREE TRIAL



Packages

Offer bundled services and products in packages.

Popular

FREE TRIAL



Online Payment

Set prices and accept and track online and offline payments.

Popular

FREE TRIAL



Accept Deposits

Take upfront payments for your services, and incentivise the...

Popular

FREE TRIAL



Service categories

Make it easier to navigate by separatin



Live Help

Overcoming the Blank Slate

1. Collaborative Brainstorming.

2. Look for inspiration

3. Apply a constraint

Very difficult to start by designing something for “everyone”—leads to a generic design that doesn't add value

Impose some new structure to the problem to focus the design process

Overcoming the Blank Slate

1. Collaborative Brainstorming.

2. Look for inspiration

3. Apply a constraint

4. Sketch

Don't have to be an artist. **Not** about creating something that looks good/high fidelity.

Quick, inexpensive, disposable way of generating, evaluating, and sharing an idea.

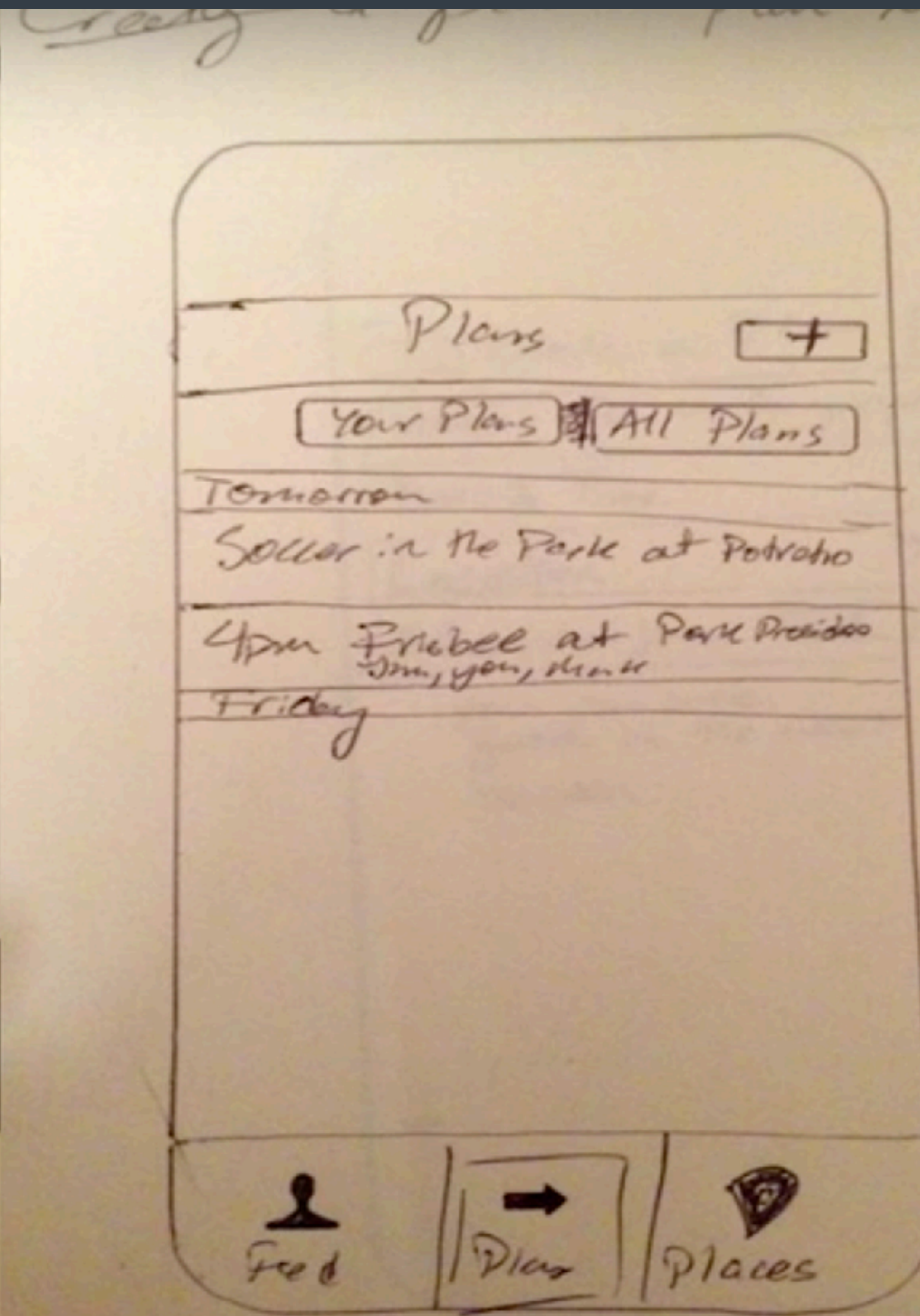
Communicate the “essence” of the idea.



WHEN WE
ABSTRACT AN IMAGE
THROUGH *CARTOONING*,
WE'RE NOT SO MUCH
ELIMINATING DETAILS
AS WE ARE *FOCUSING*
ON *SPECIFIC*
DETAILS.

BY *STRIPPING*
DOWN AN IMAGE
TO ITS ESSENTIAL
"MEANING", AN ARTIST
CAN *AMPLIFY* THAT
MEANING IN A WAY
THAT REALISTIC
ART *CAN'T*.

[Scott McCloud, *Understanding Comics*]



Early Instagram sketches

Courtesy of Mike Krieger

Activity!

In **1 minute**, sketch as many ways to visualize these two numbers as possible:

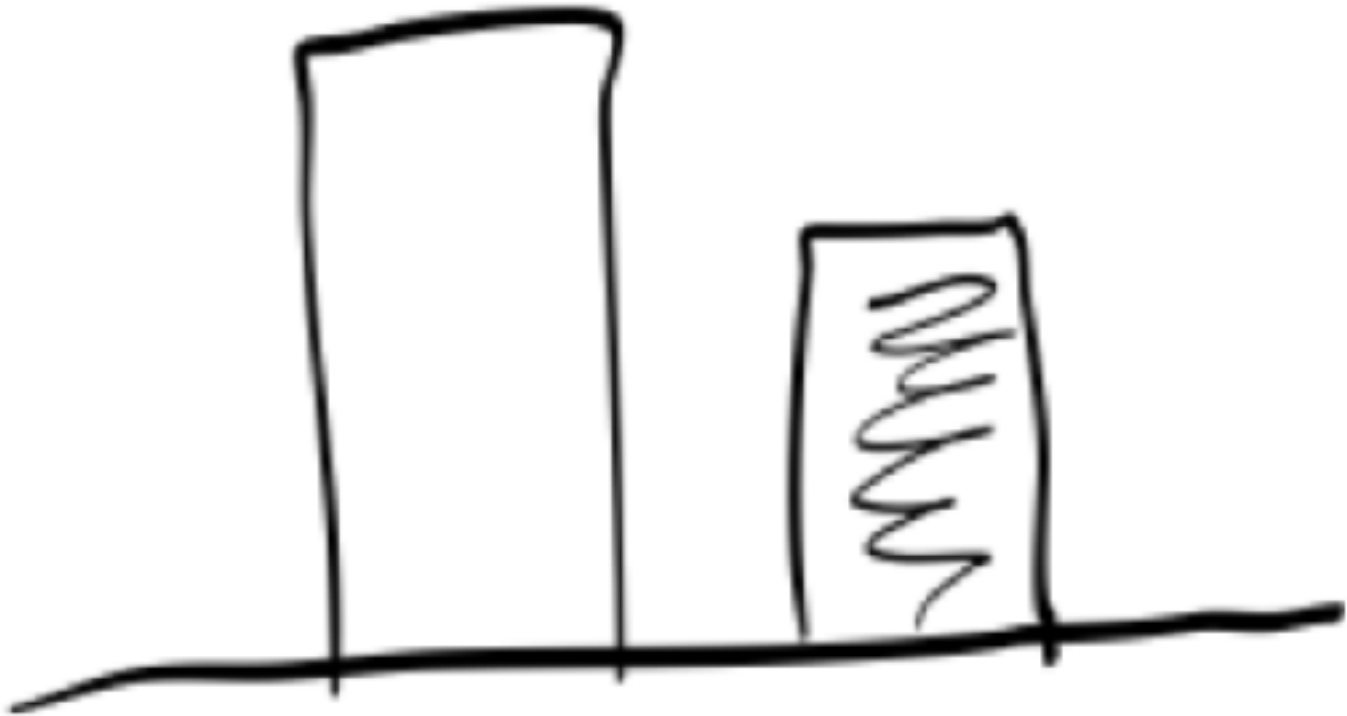
75 37

Most Likely Results? Design Fixation!

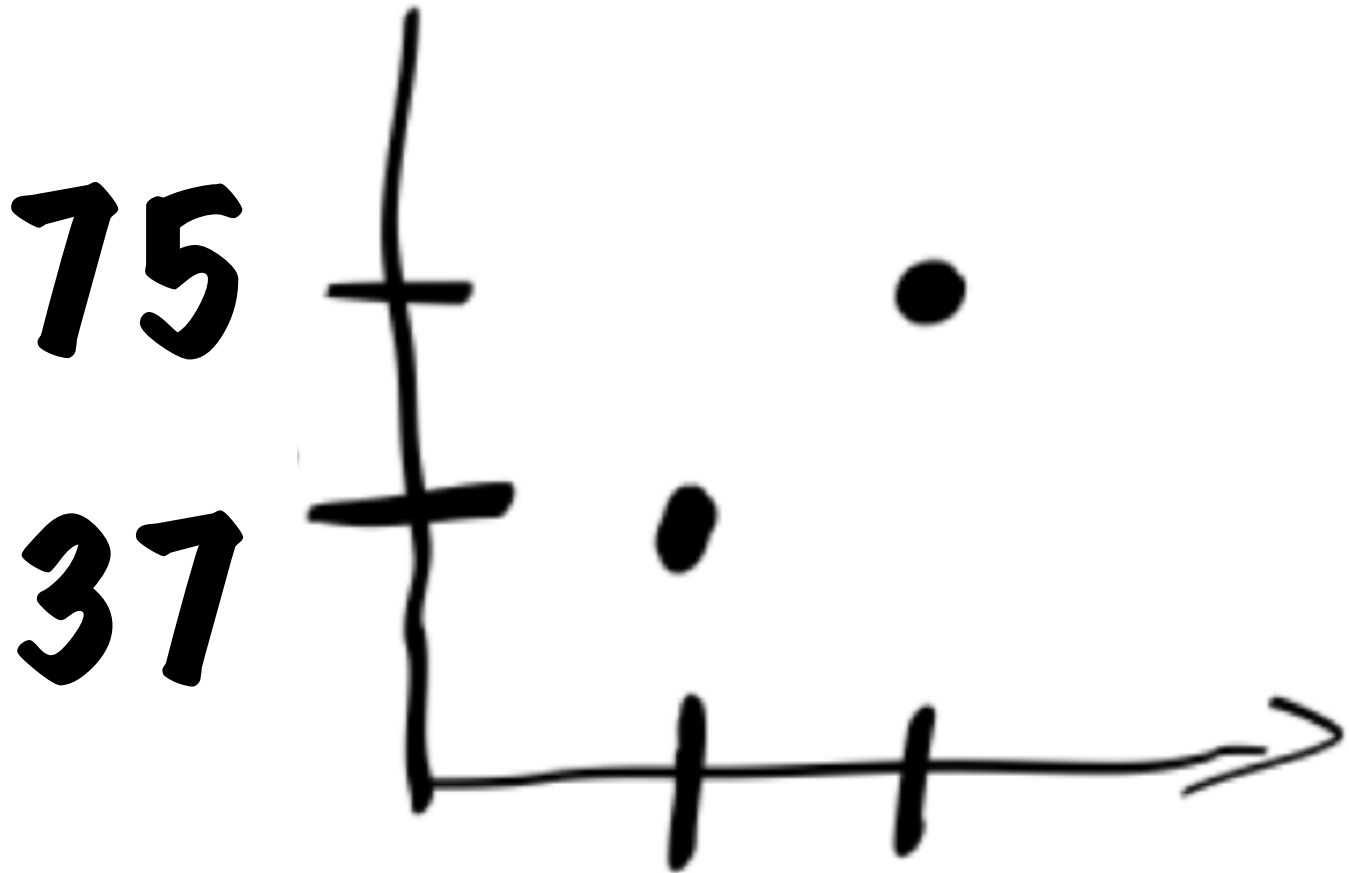
Pie Charts



Bar Charts



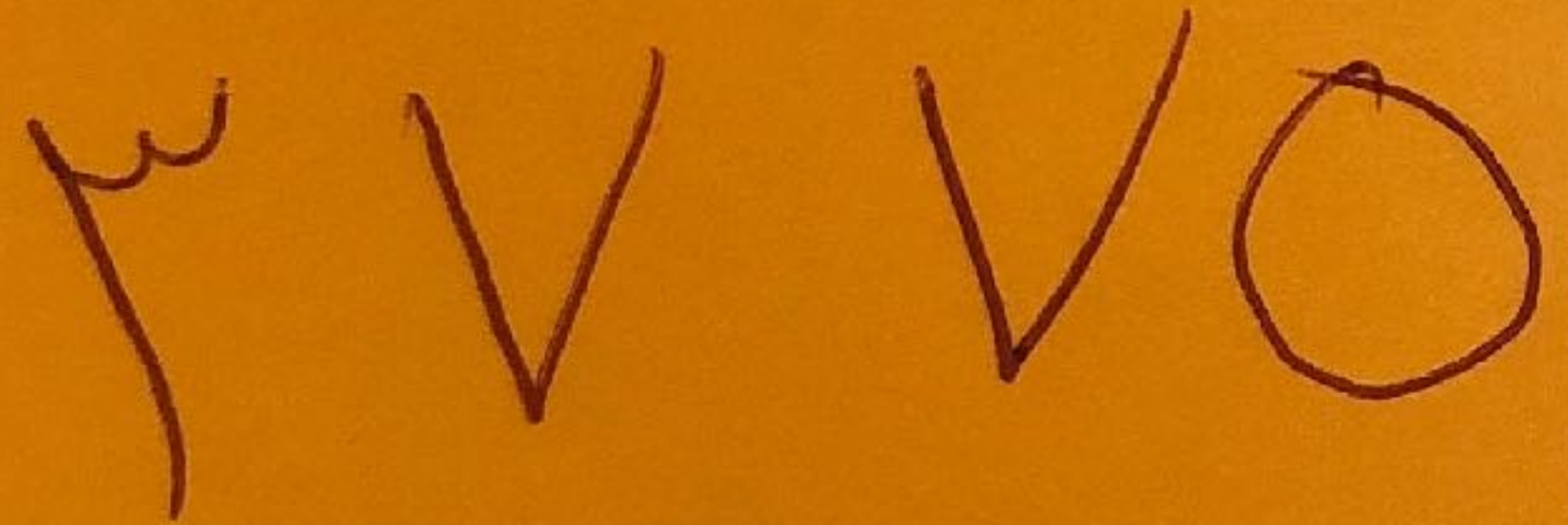
Scatterplot



Numbers

75
37

Overcome Fixation with Examples (Linguistic Variants)



Handwritten examples of linguistic variants of the letter 'v' on a yellow sticky note. From left to right, the variants are: a cursive 'v' with a small loop at the top, a simple 'v' with a small hook at the top, a 'v' with a small hook at the top and a small loop at the bottom, and a circular 'v' shape.

Overcome Fixation with Examples

(Linguistic Variants)



Overcome Fixation with Examples

(Linguistic Variants)

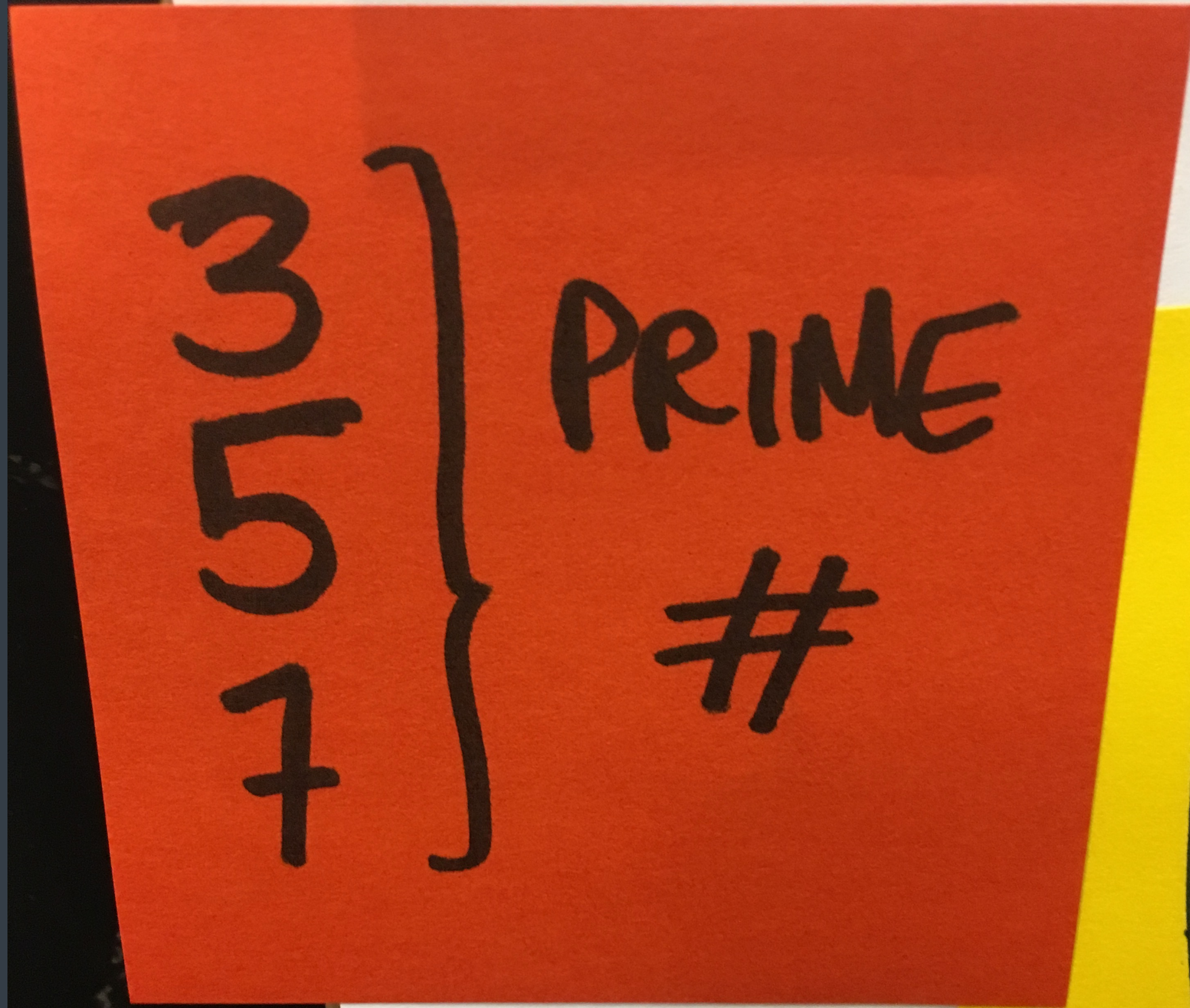
Stick figures arranged in a grid, illustrating linguistic variants. The figures are drawn in black ink on a white background. The grid consists of 7 rows and 10 columns. The figures are drawn in a way that shows different ways of representing the same concept, such as a person or a stick figure. The figures are drawn in a way that shows different ways of representing the same concept, such as a person or a stick figure.

Stick figures arranged in a grid, illustrating linguistic variants. The figures are drawn in red ink on a white background. The grid consists of 5 rows and 10 columns. The figures are drawn in a way that shows different ways of representing the same concept, such as a person or a stick figure. The figures are drawn in a way that shows different ways of representing the same concept, such as a person or a stick figure.

[Examples from Jon Schwabish.]

Overcome Fixation with Examples

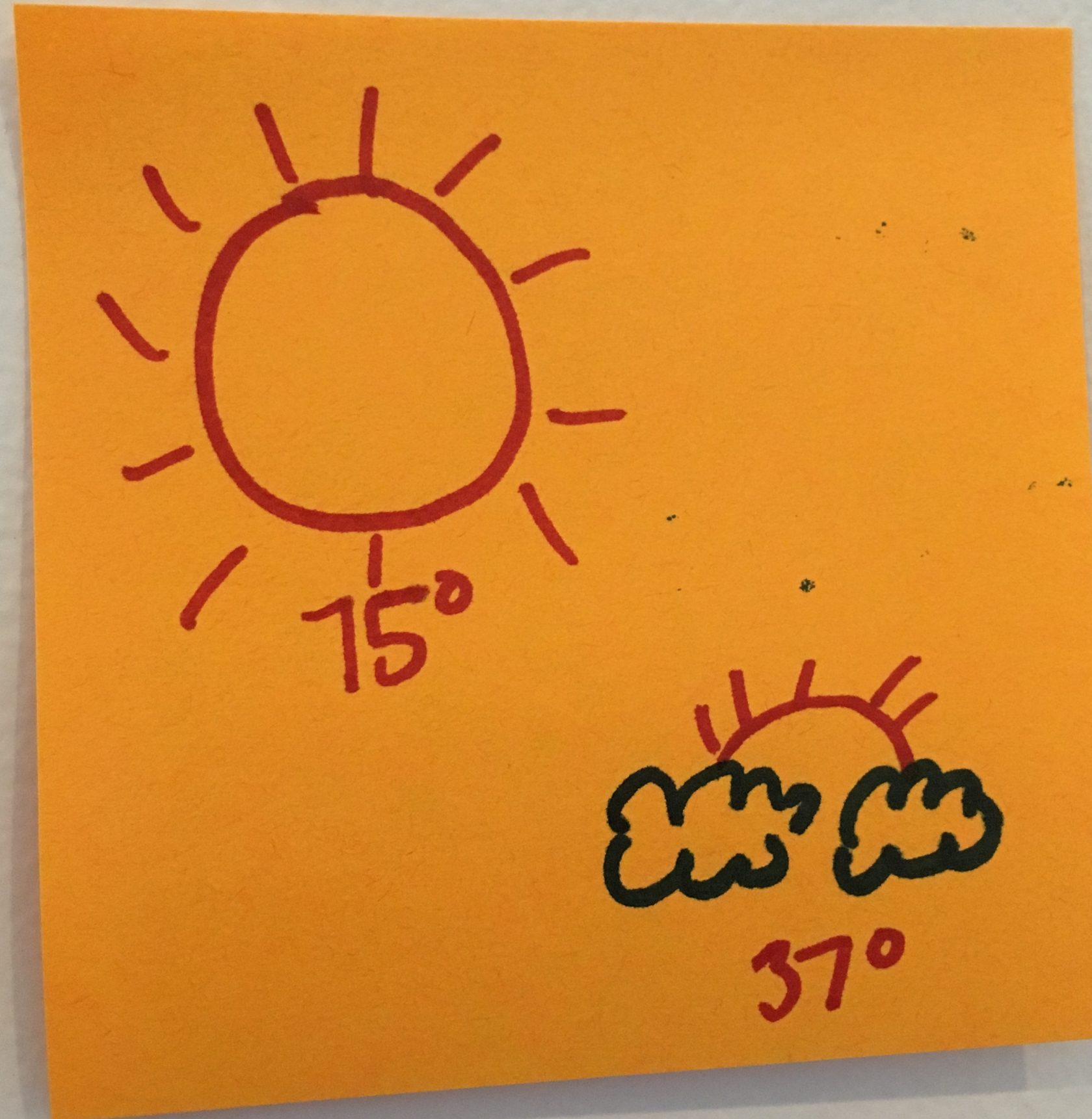
(Conceptual Variants)



[Examples from Jon Schwabish.]

Overcome Fixation with Examples

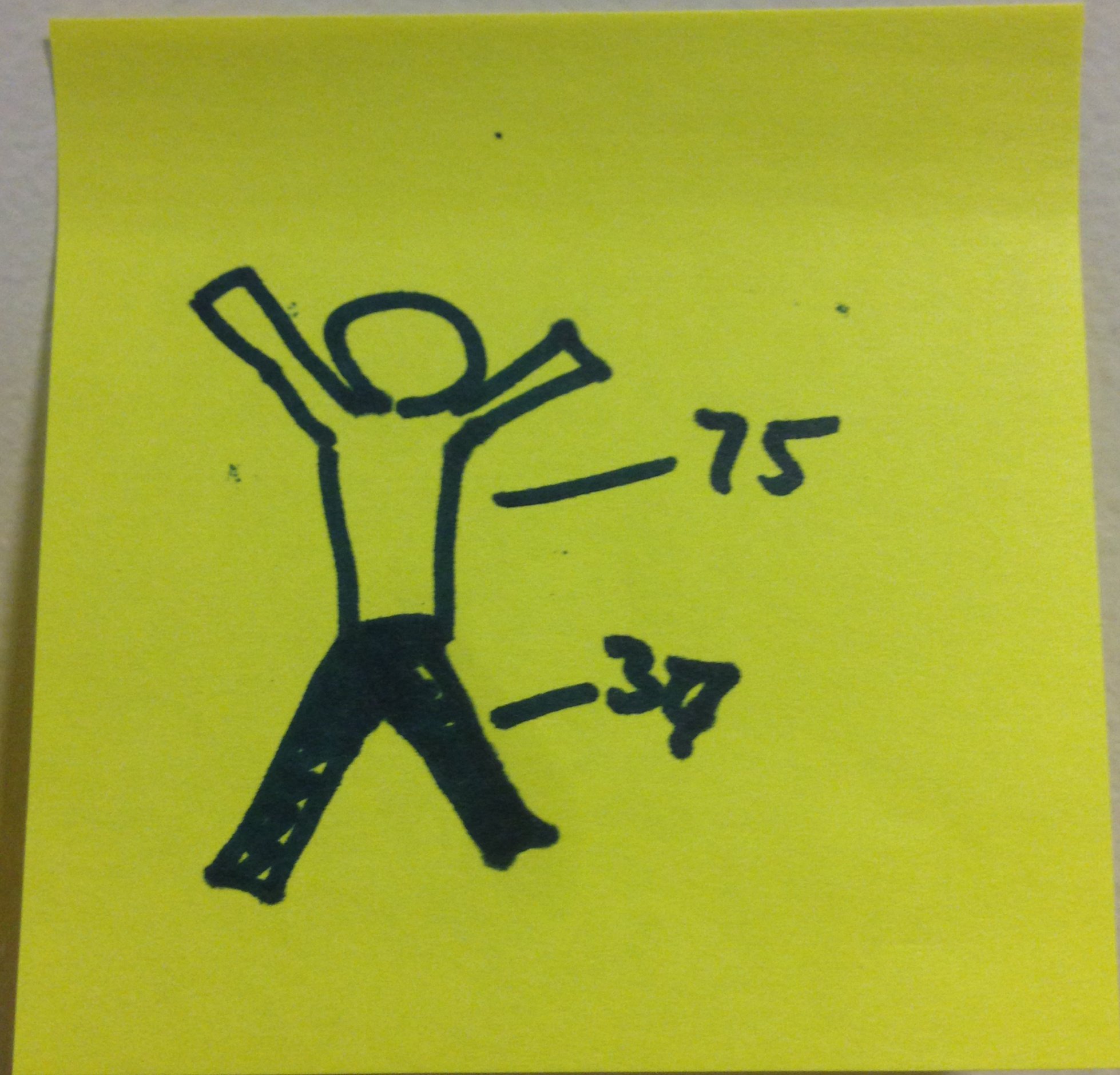
(Conceptual Variants)



[Examples from Jon Schwabish.]

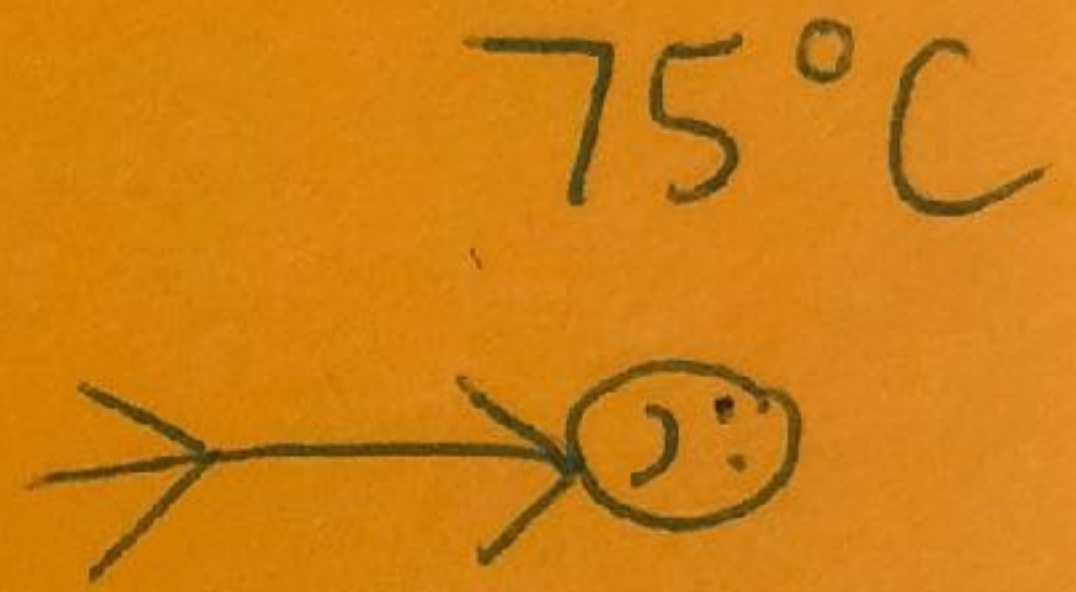
Overcome Fixation with Examples

(Conceptual Variants)

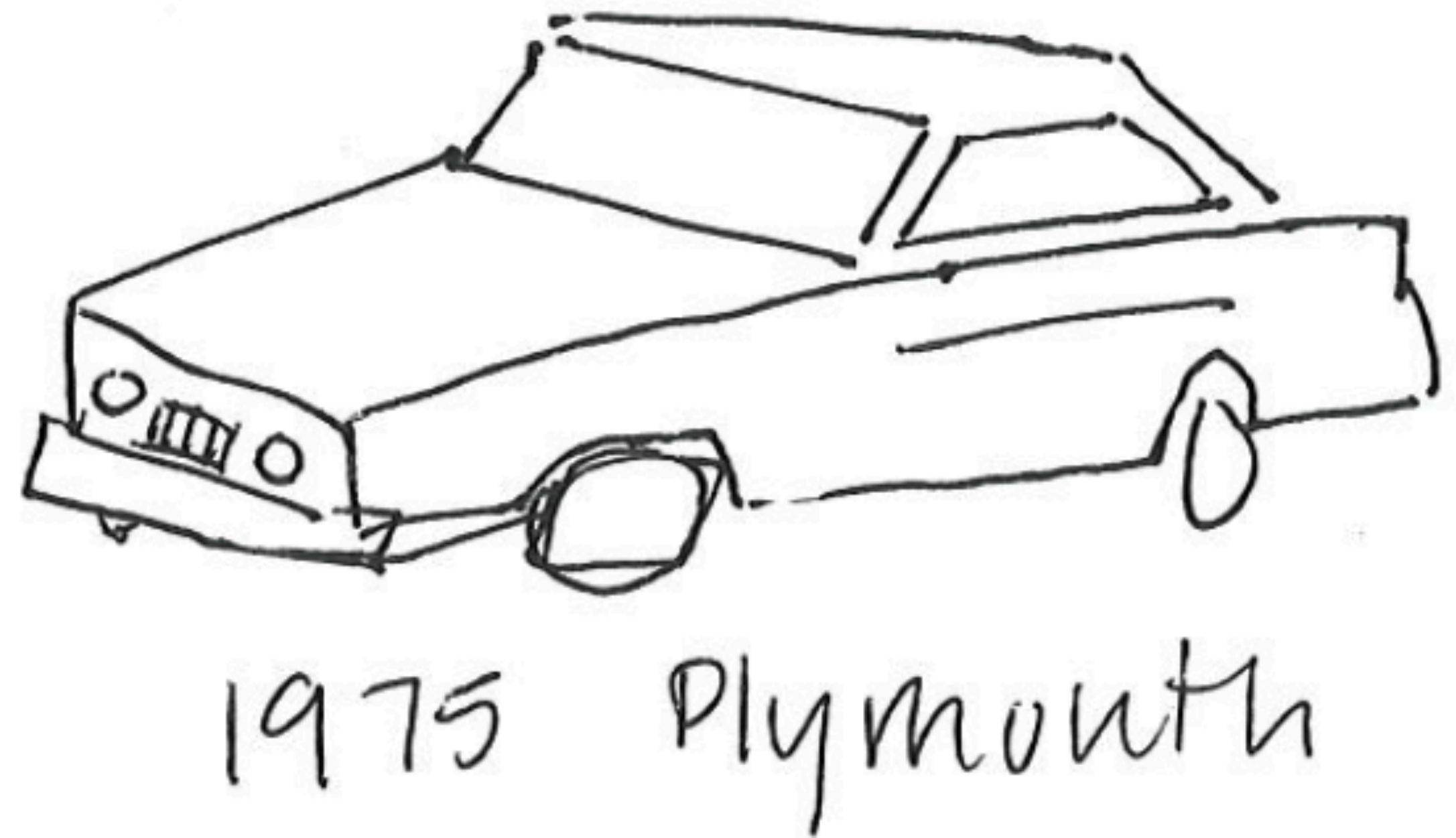
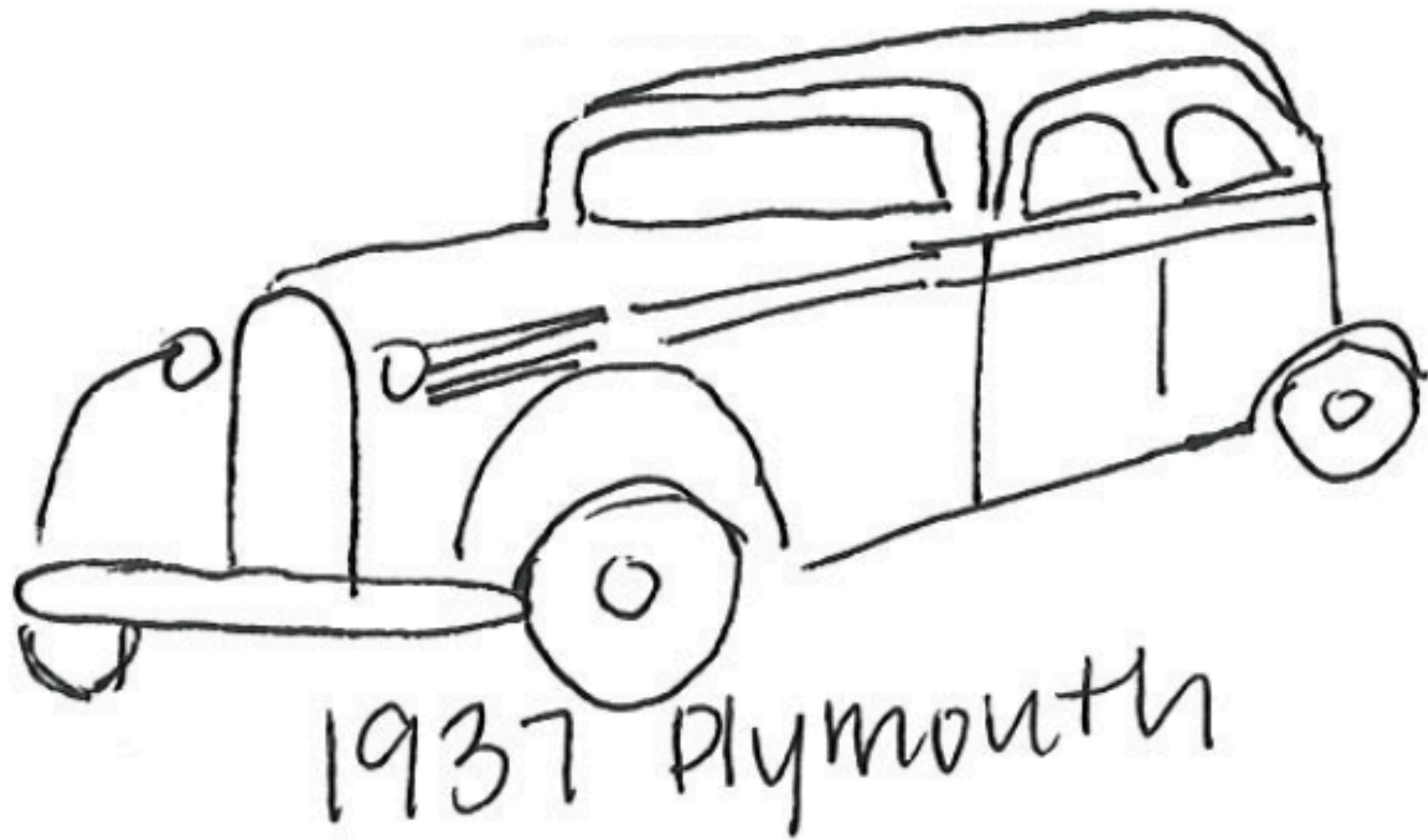


[Examples from Jon Schwabish.]

Overcome Fixation with Examples (Conceptual Variants)

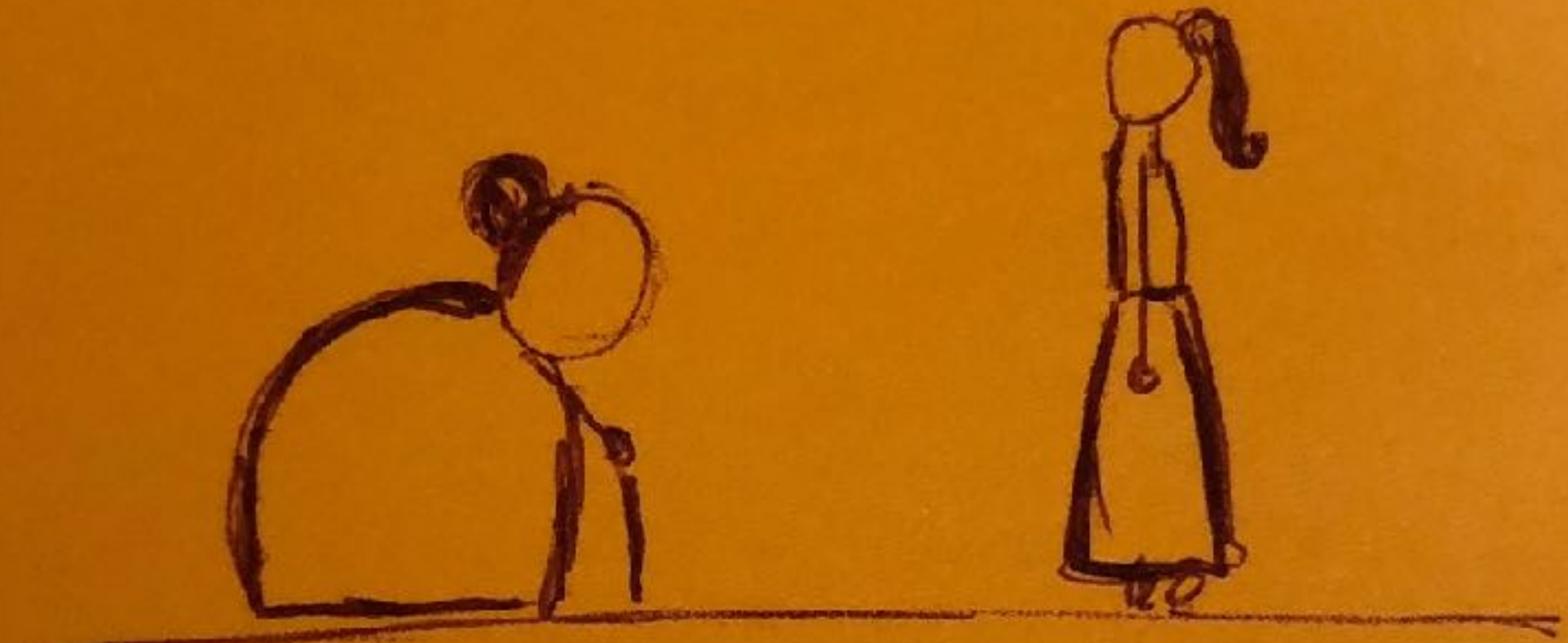


Overcome Fixation with Examples (Conceptual Variants)



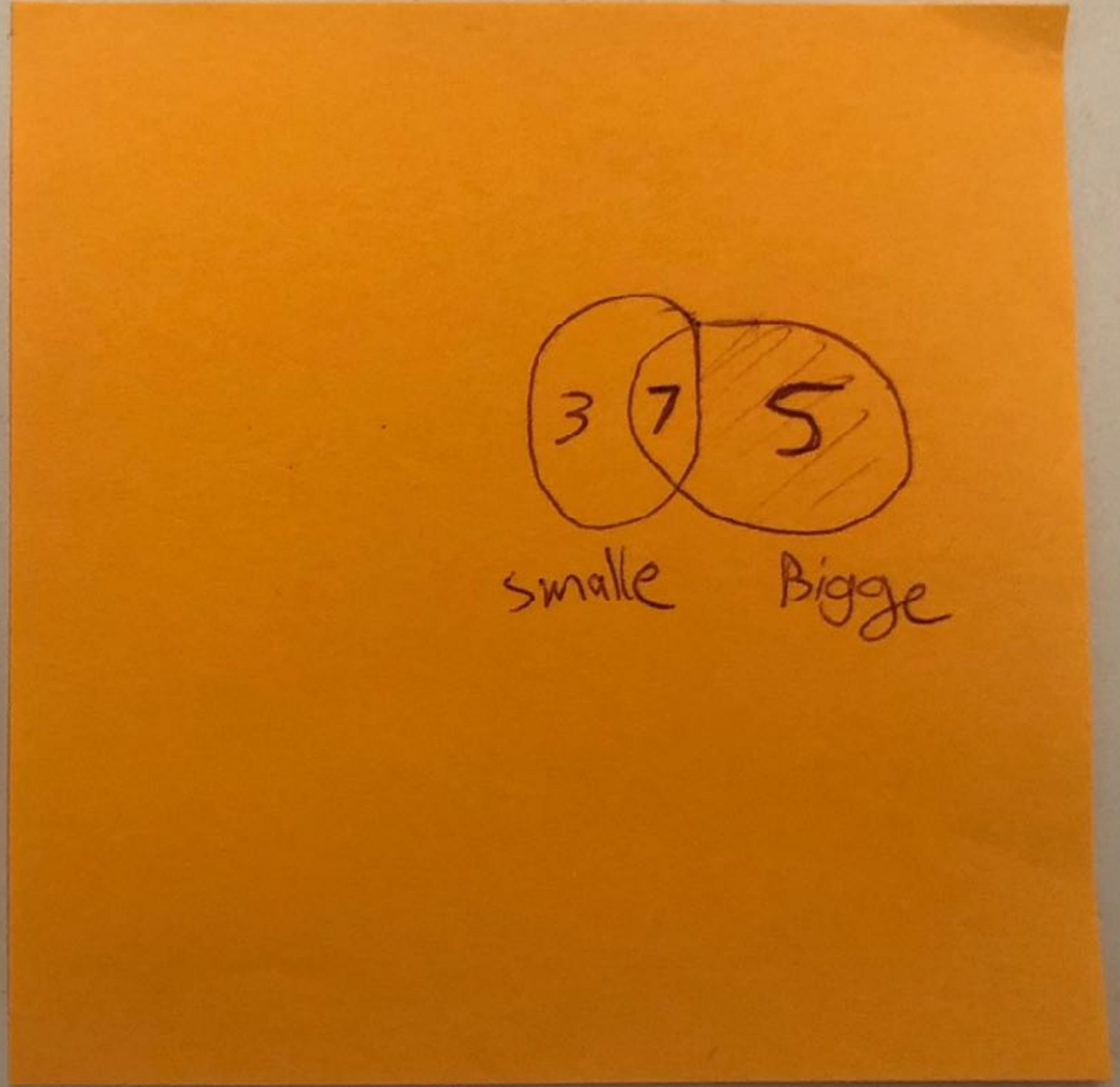
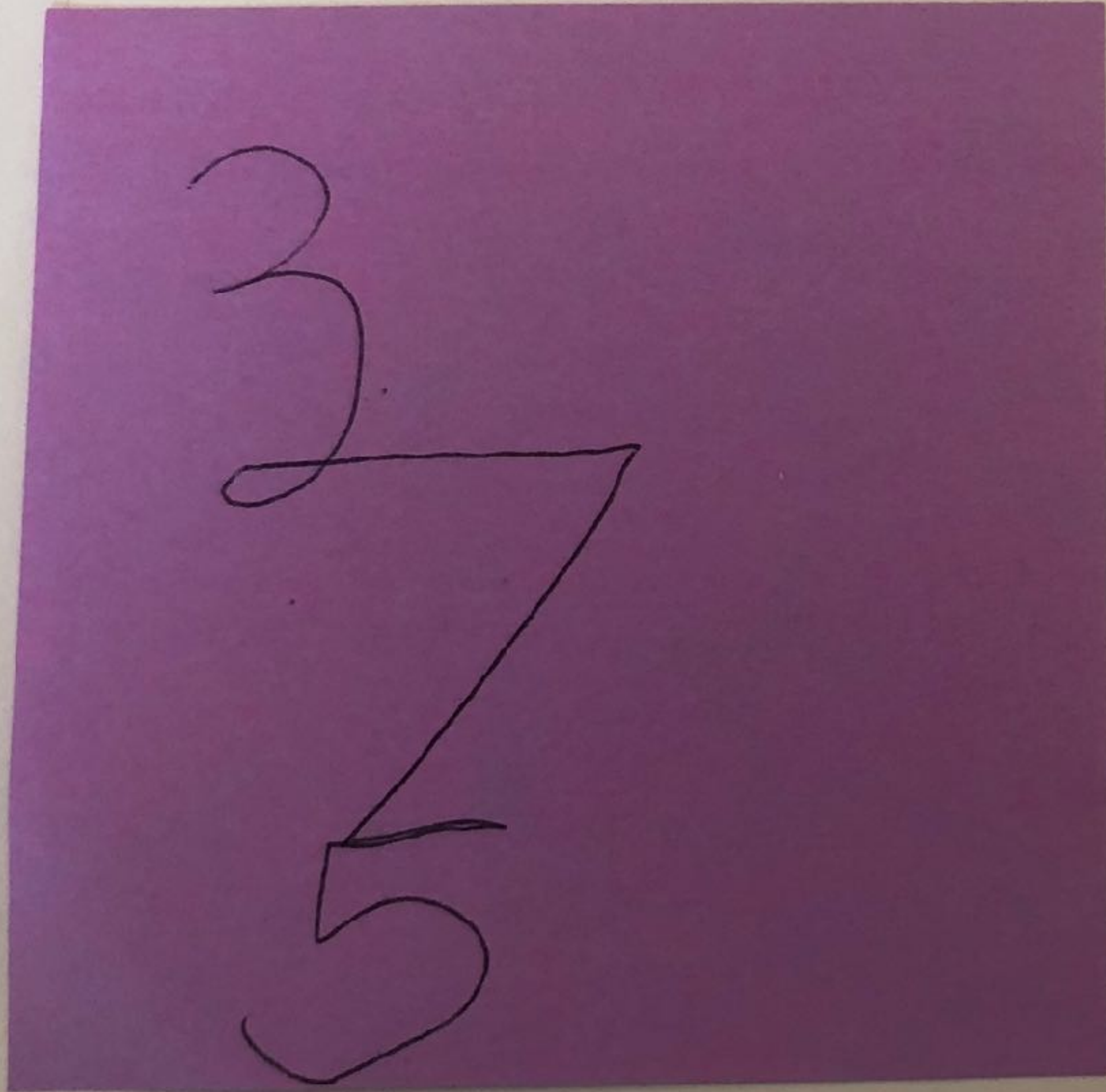
[Examples from Jon Schwabish.]

Overcome Fixation with Examples (Conceptual Variants)



75

37



Overcome Fixation with Constraints



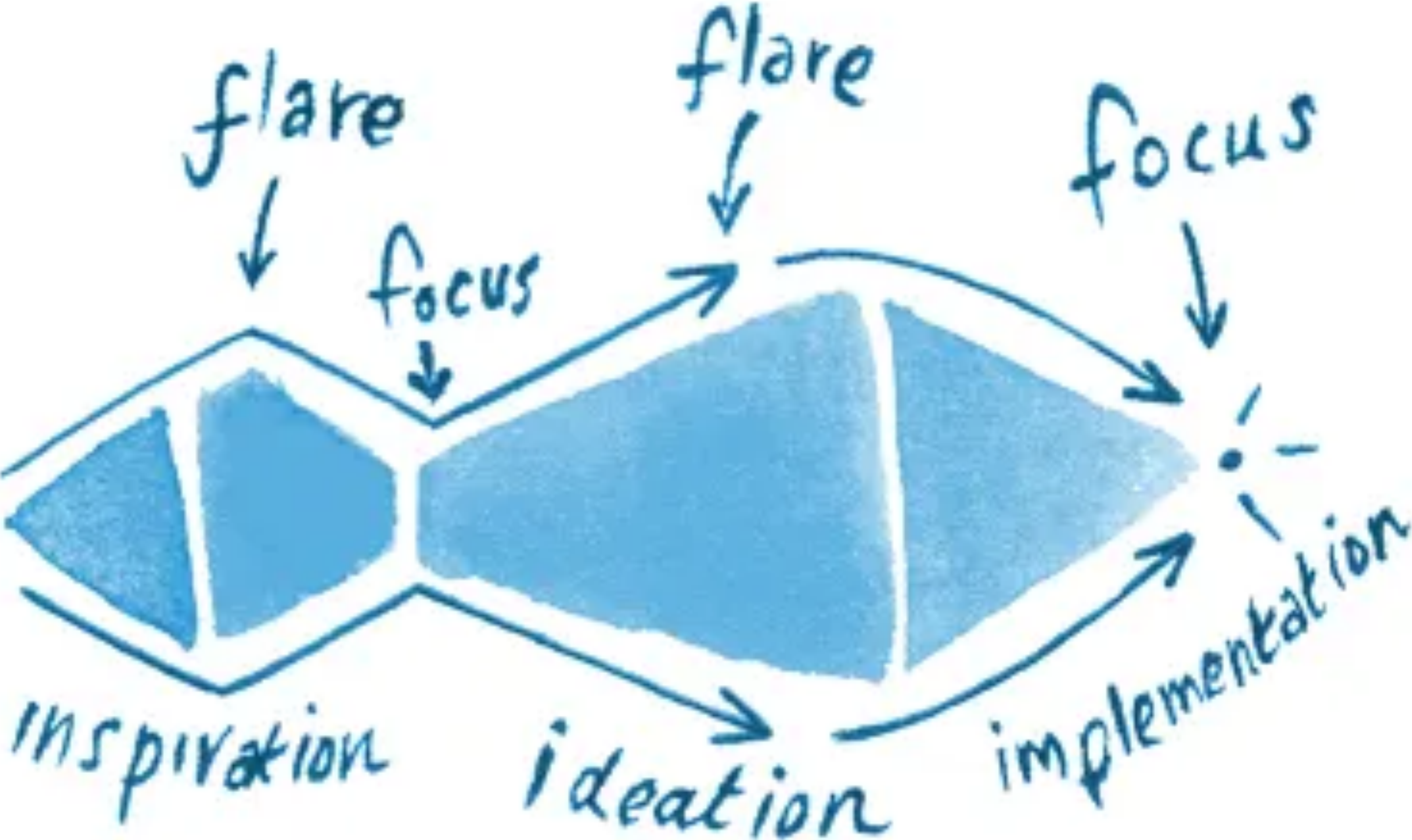
Activity!

In **3 minutes**, sketch as many **new visualizations** as possible that are different from your previous ideas. If you're stuck, introduce a constraint -- e.g., one line, only black/white, only round objects, etc.

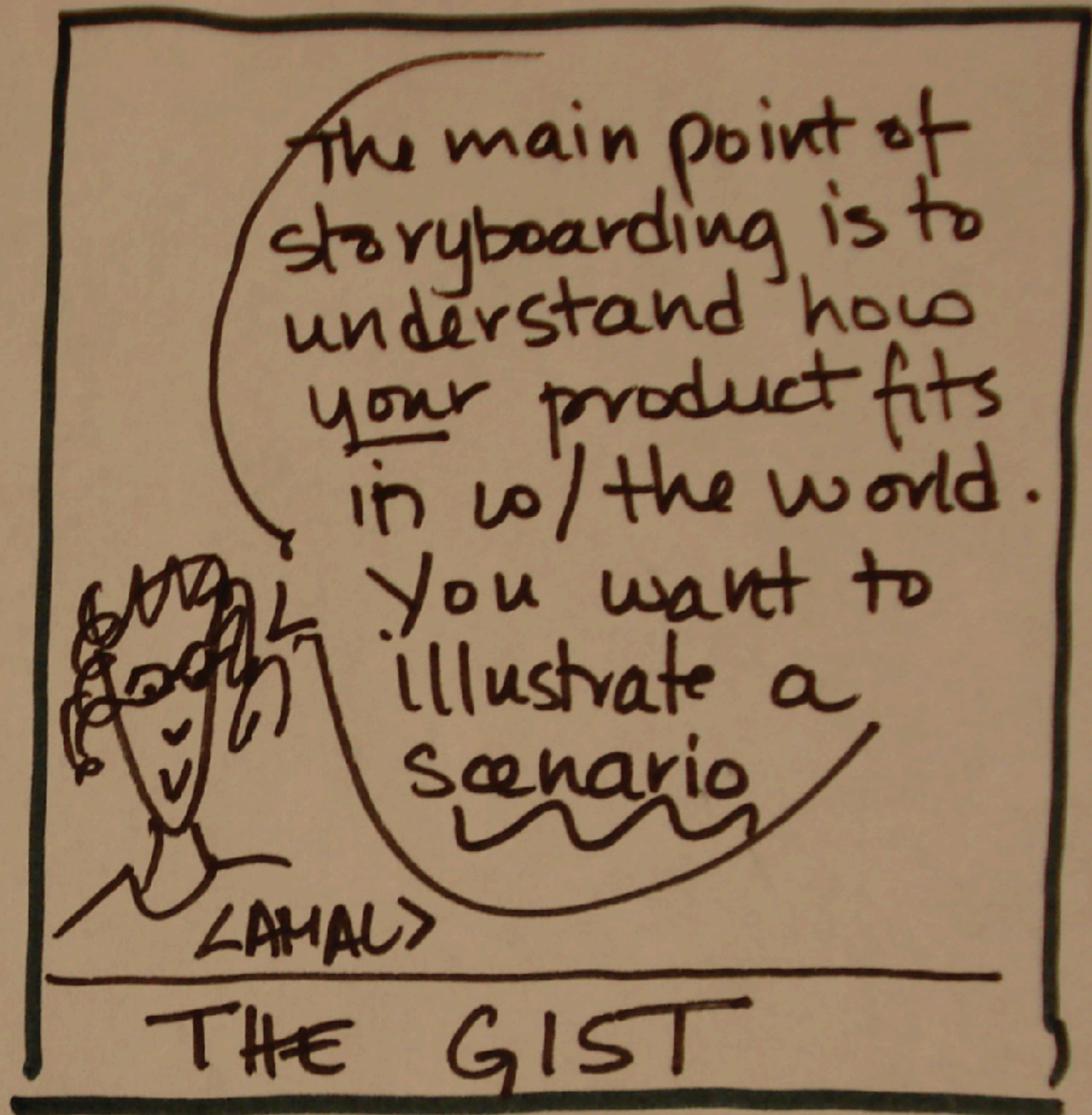
75 37

Take photos of your sketches and **upload to Discourse**

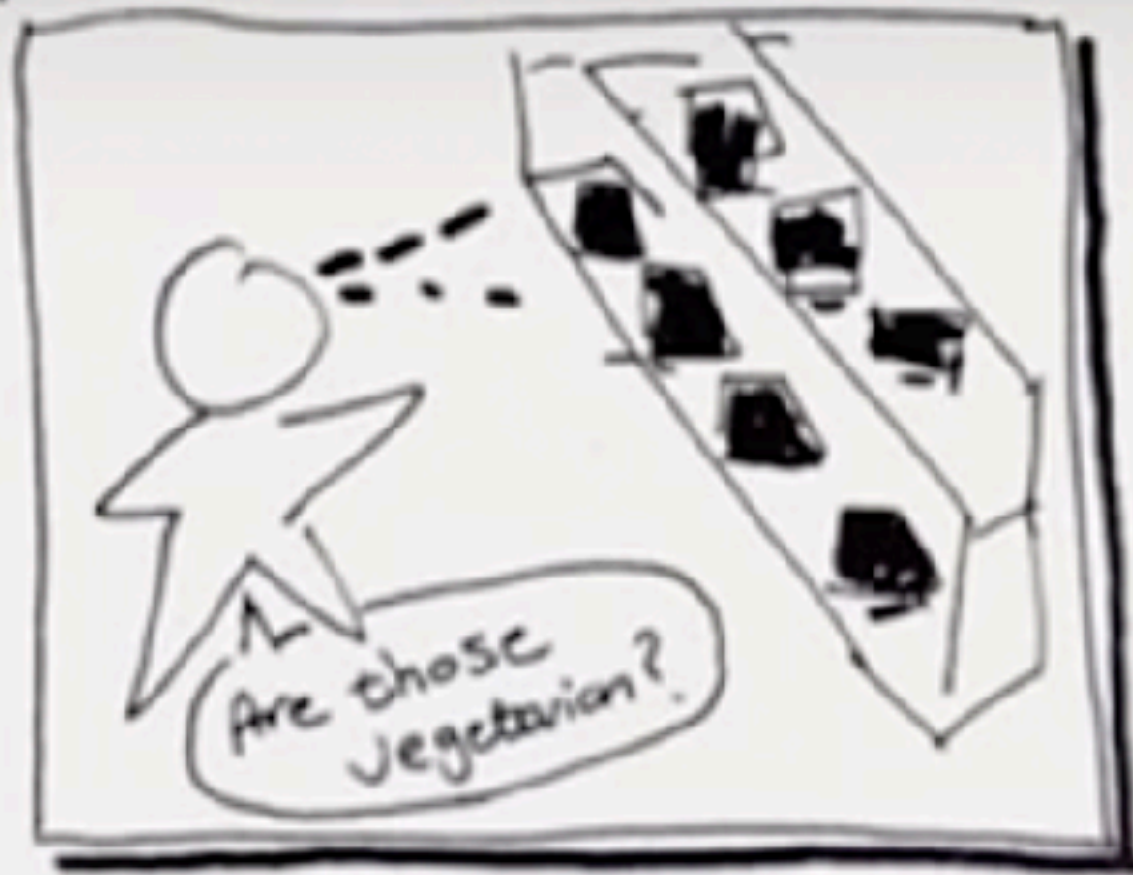
The Design Process



Storyboards



#1



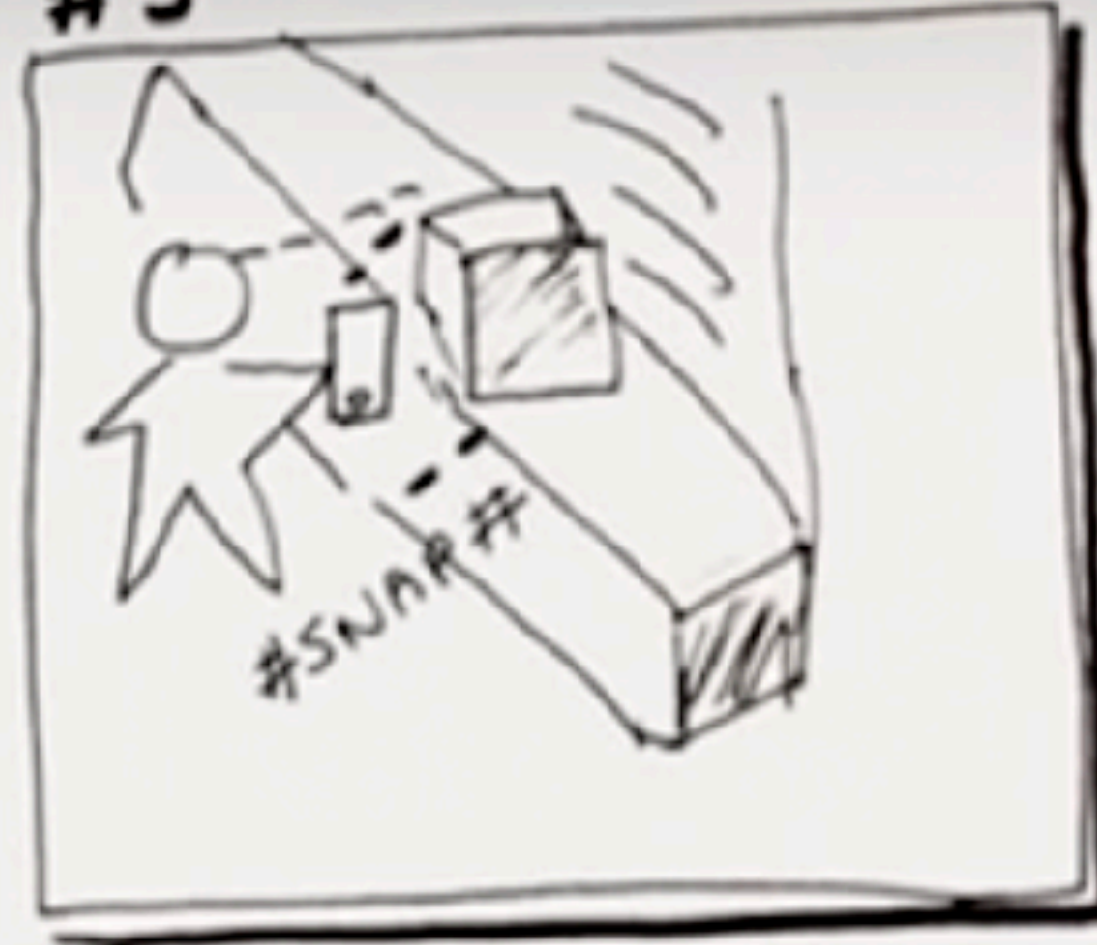
JOHN IS IN A GROCERY STORE. HE WONDERS IF THE FOOD IS VEGETARIAN?

#2



JOHN HOLDS AND LOOKS AT THE FOOD. THE LABEL DOESN'T STATE IF IT'S VEGETARIAN! NO!

#3



JOHN TAKES A PHOTO USING AN APP ON HIS PHONE. HIS PHOTO 'G' OF THE FOOD ITEM.

#4



SUCCESS! THE APP HAS CONFIRMED THE ITEM IS VEGETARIAN! HE CAN ALSO SEE THIS HAS BEEN VERIFIED BY TWO OF THE COMMUNITY! YES!

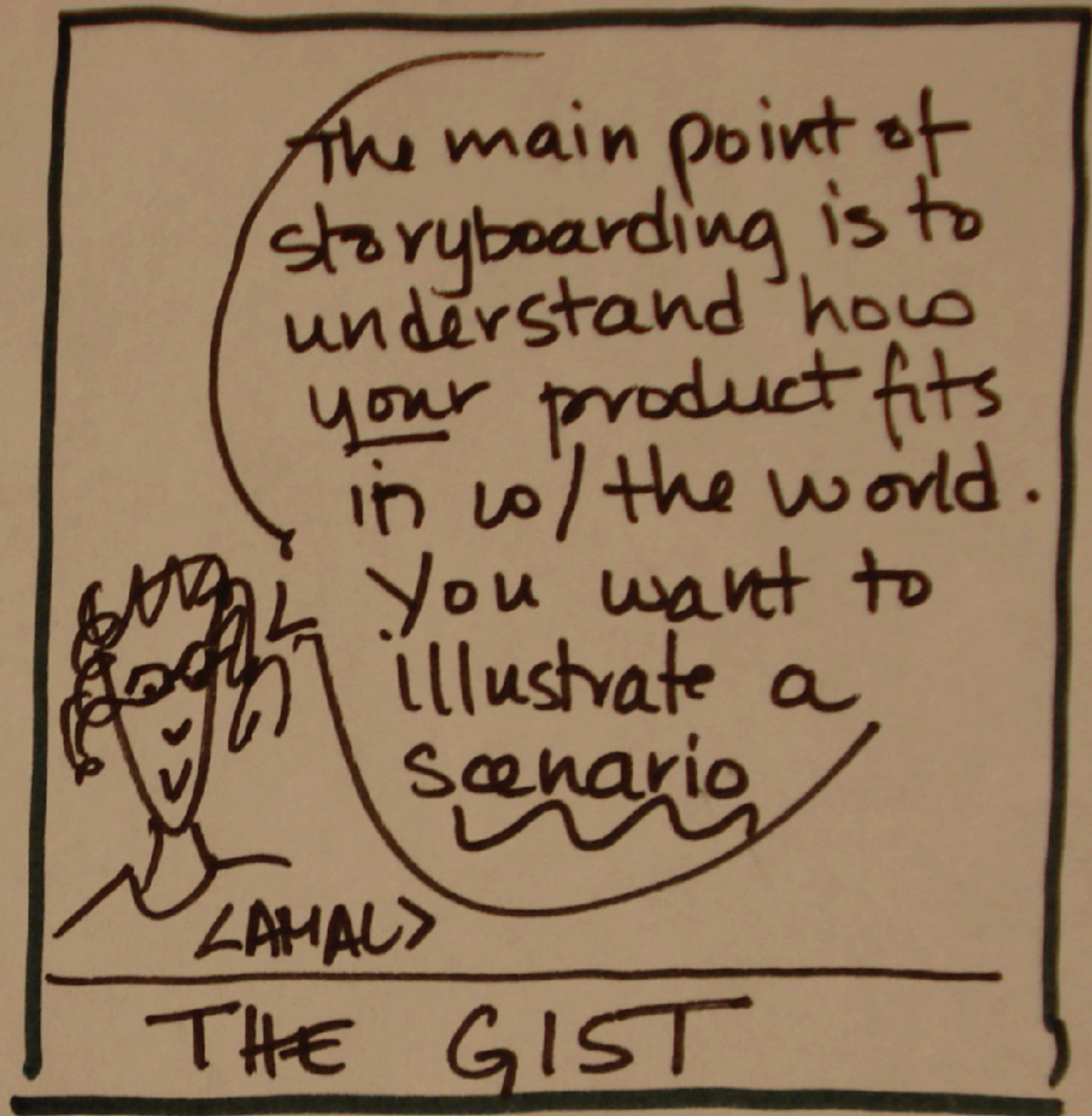
#5



JOHN IS HAPPY! HE WAS ABLE TO BUY THE VEGETARIAN FOOD ITEM. HE SMILES AS HE WALKS AWAY FROM THE SHOP!

STORY BOARD #1

Storyboards
=
Setting
+
Sequence
+
Satisfaction



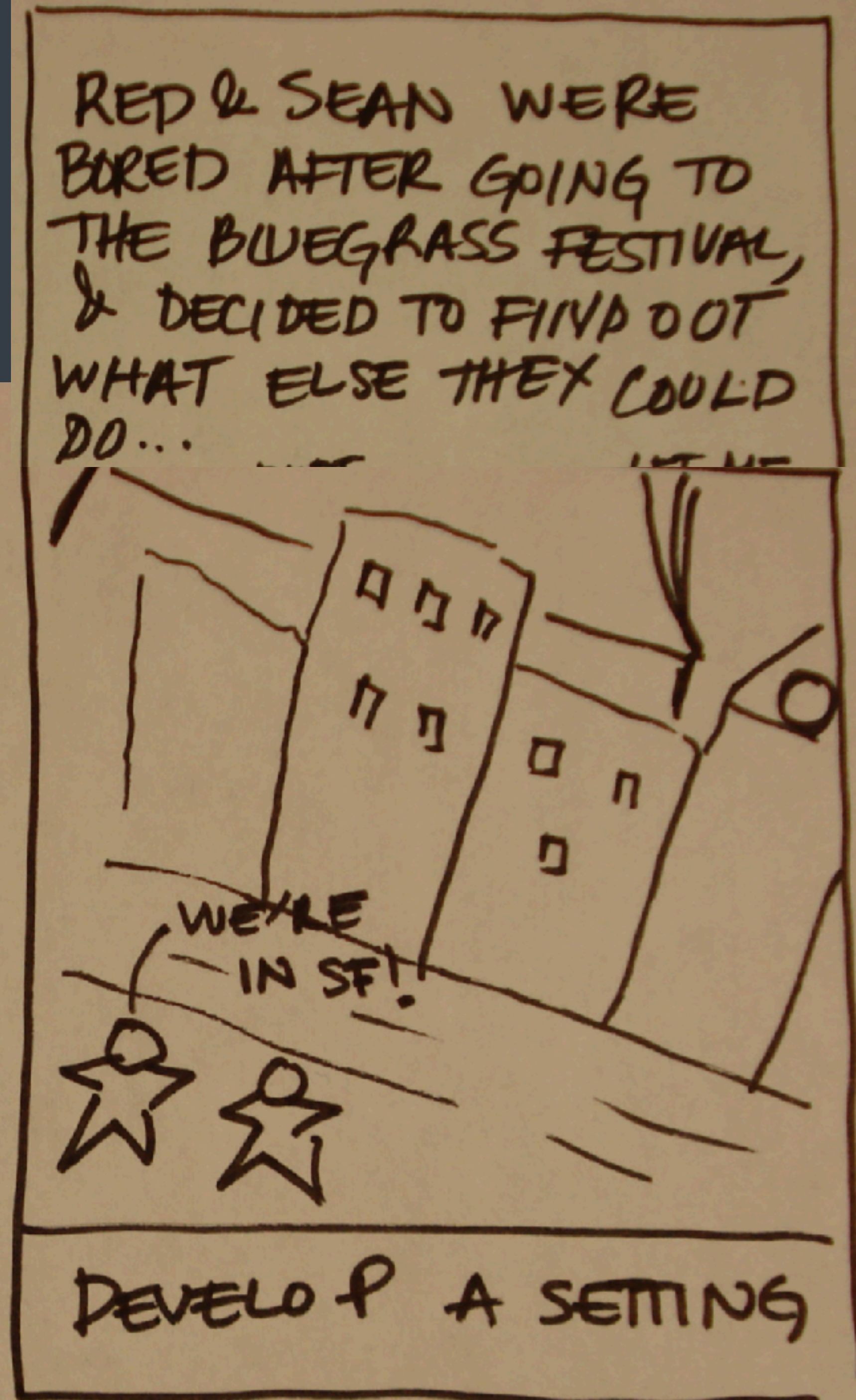
Setting

Who are the people involved?

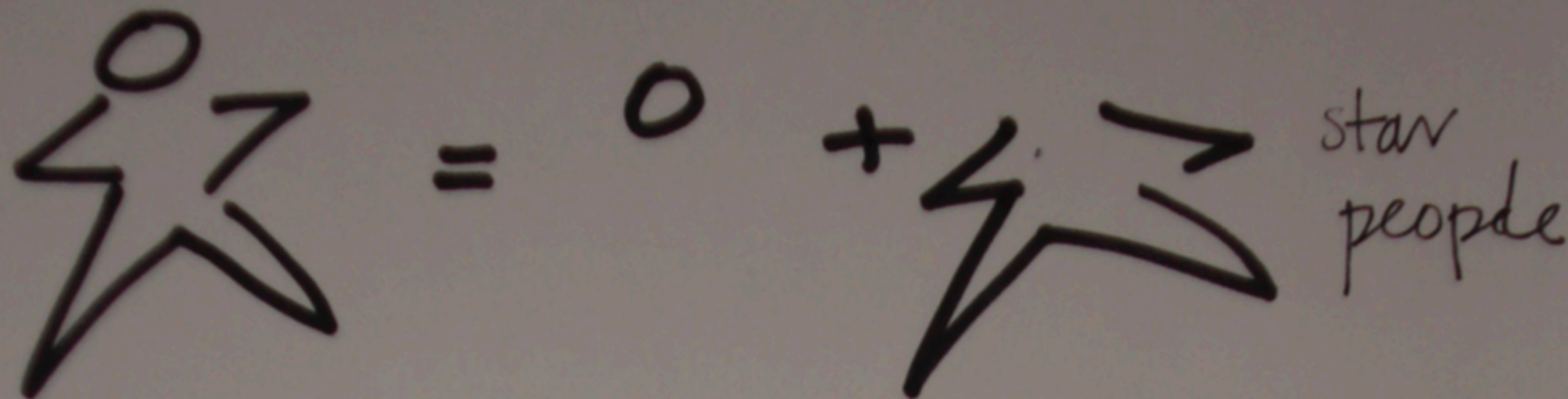
What is the environment they're in?

What are their goals?

What is the task they're trying to accomplish?



Storyboards are *not* about making pretty pictures.

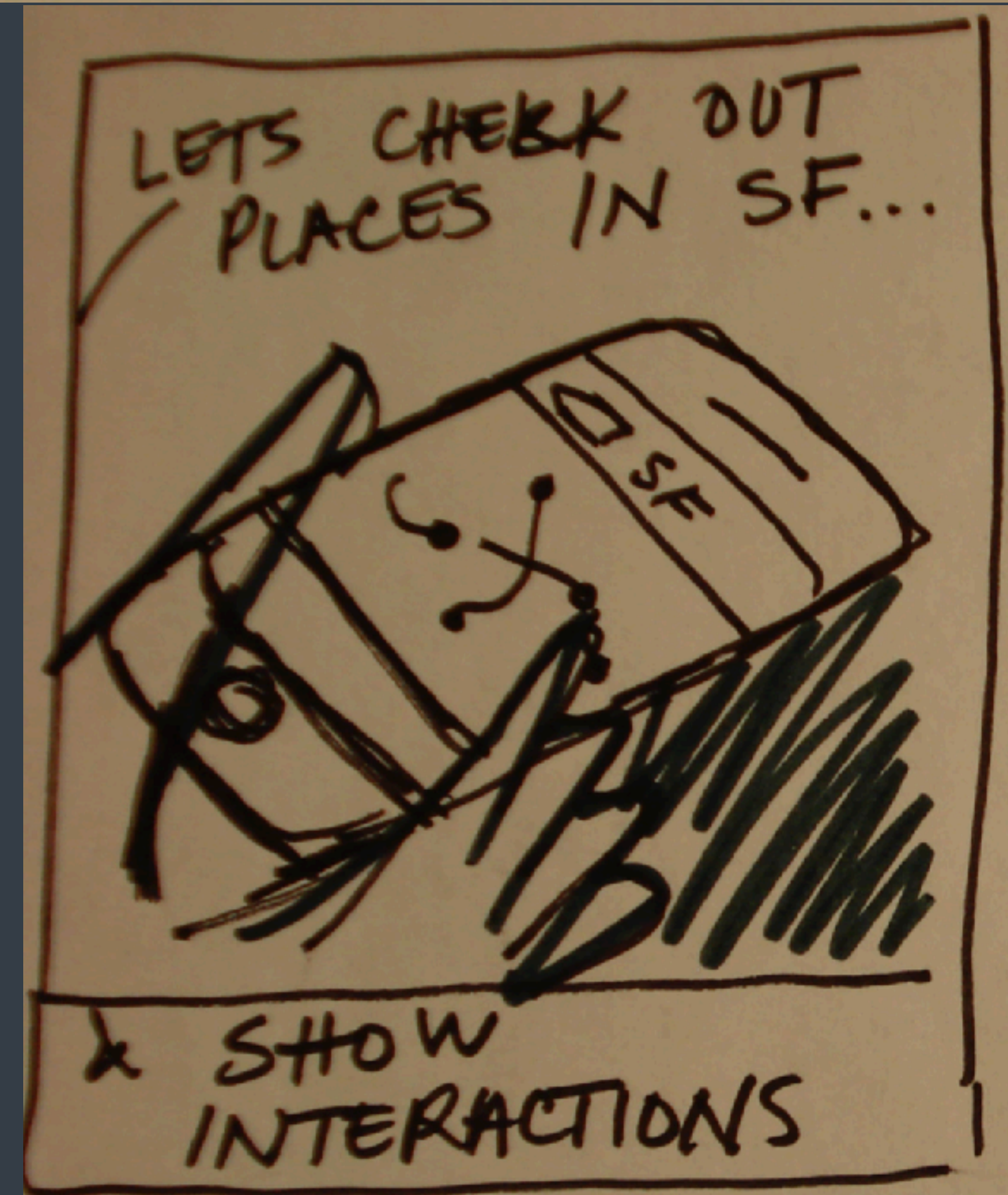
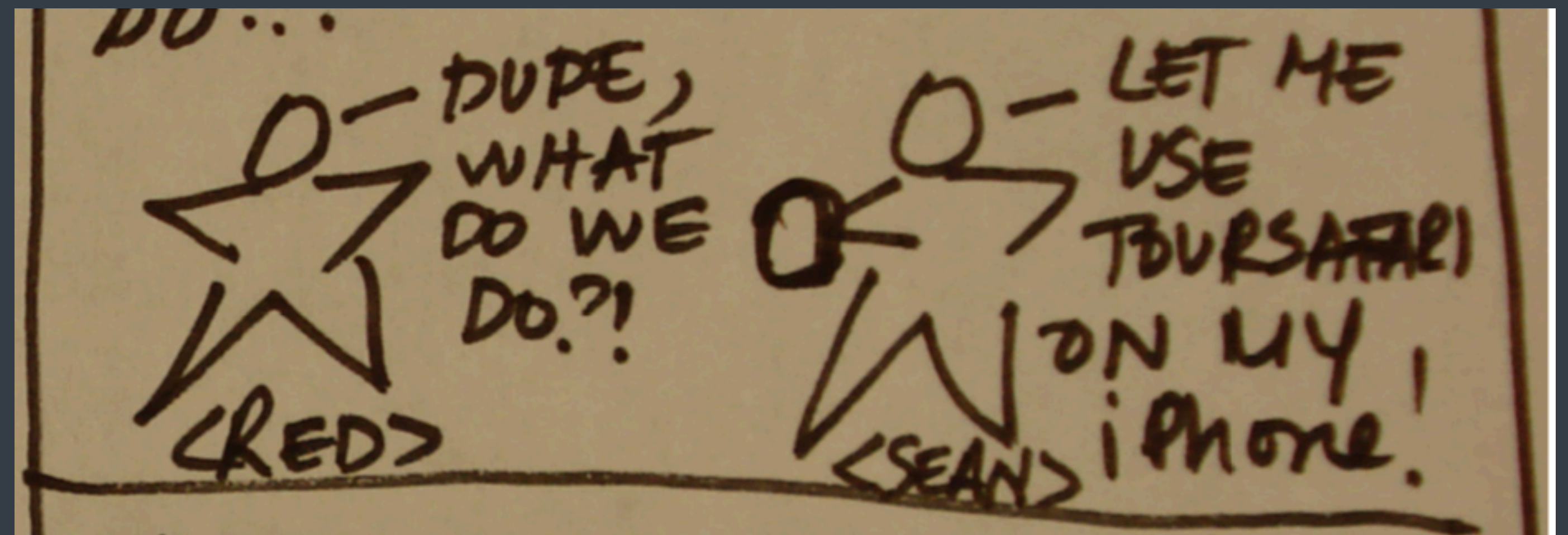


Sequence

What leads someone to use the app?

What steps are involved?

What task is being illustrated?

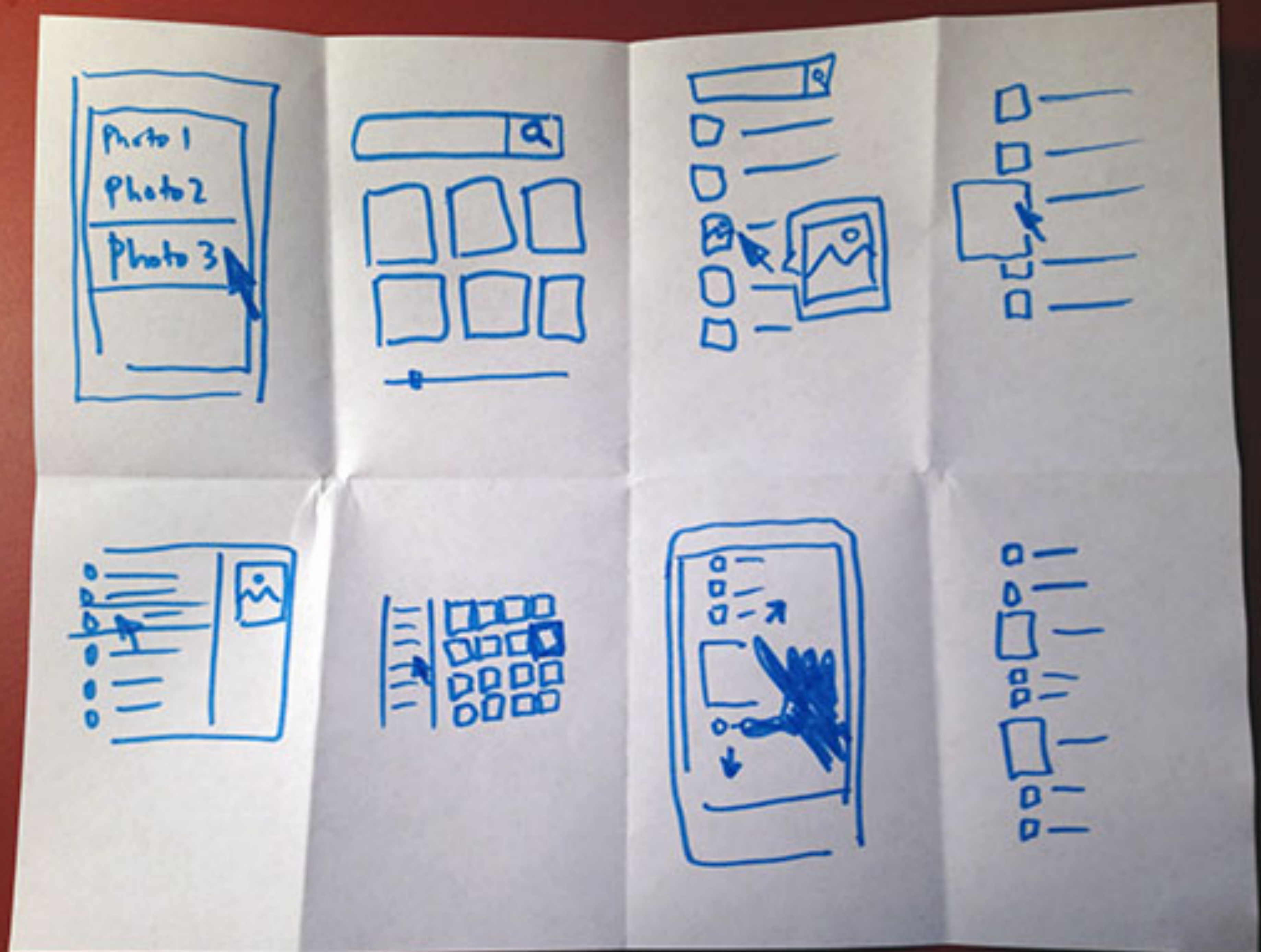


Sequence

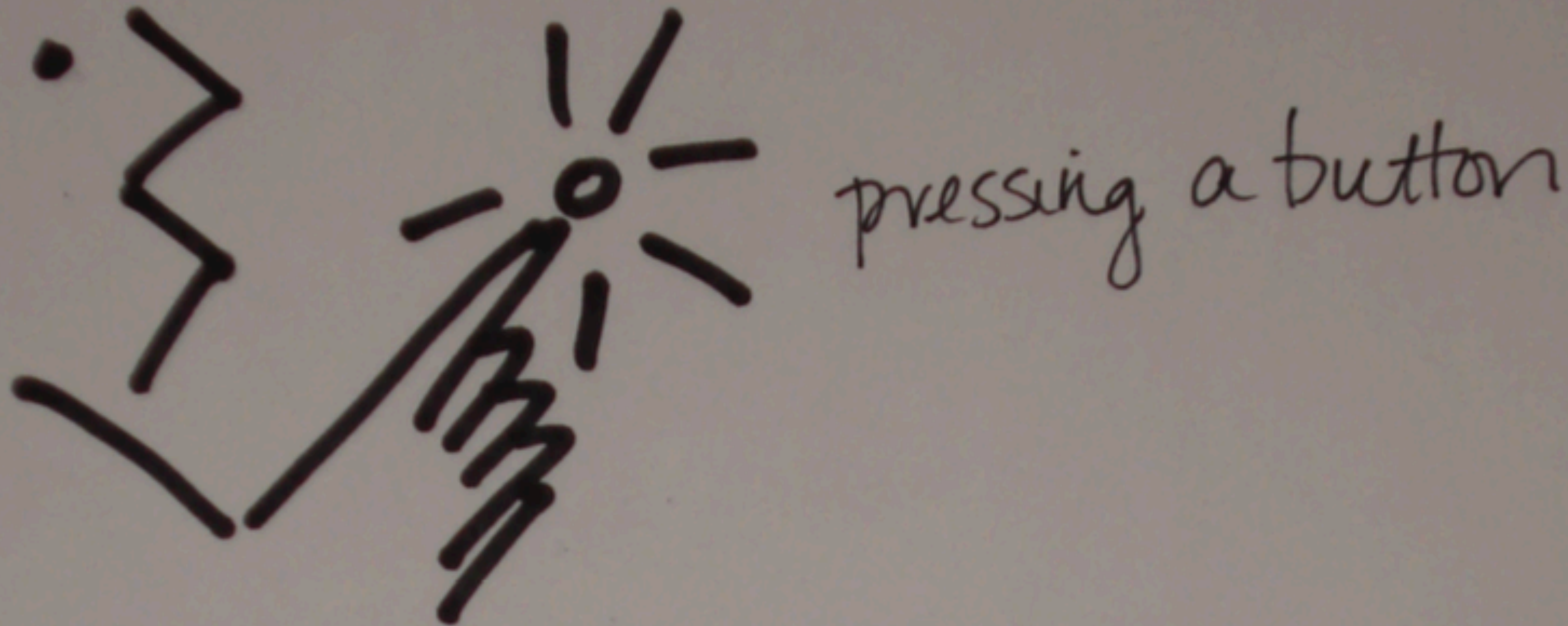
Capture a very high-level flow through the UI.

Only communicate the key UI elements.

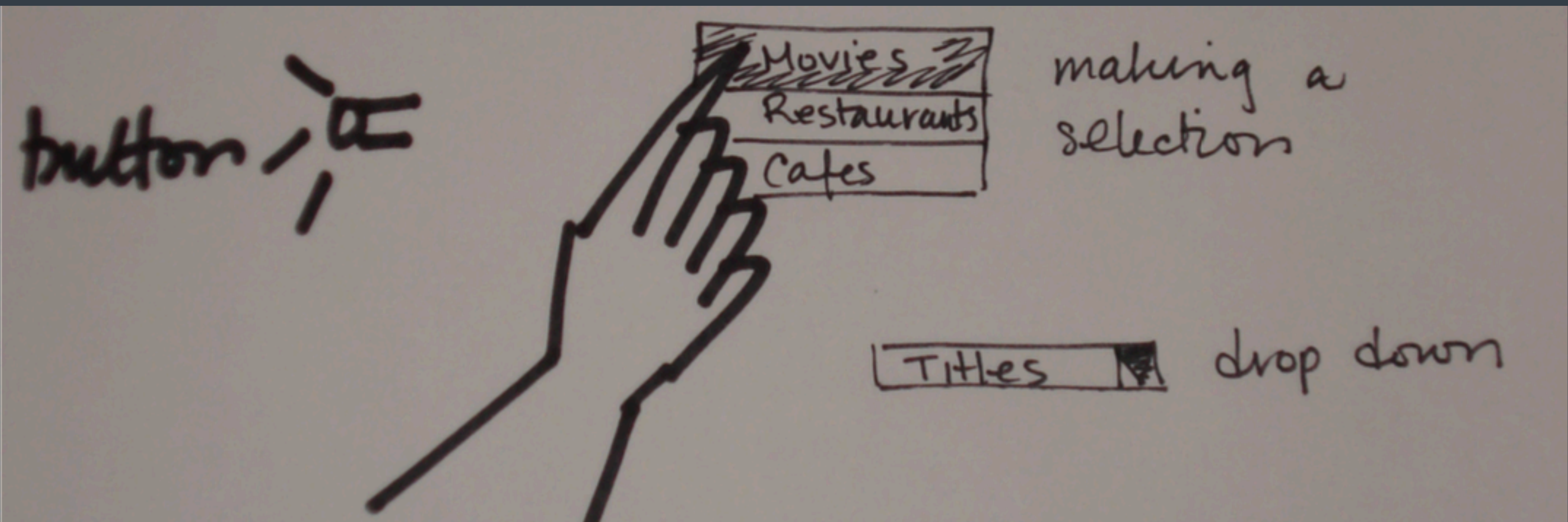
Don't get caught up in the details.



Storyboards are *not* about making pretty pictures.



Storyboards are *not* about making pretty pictures.

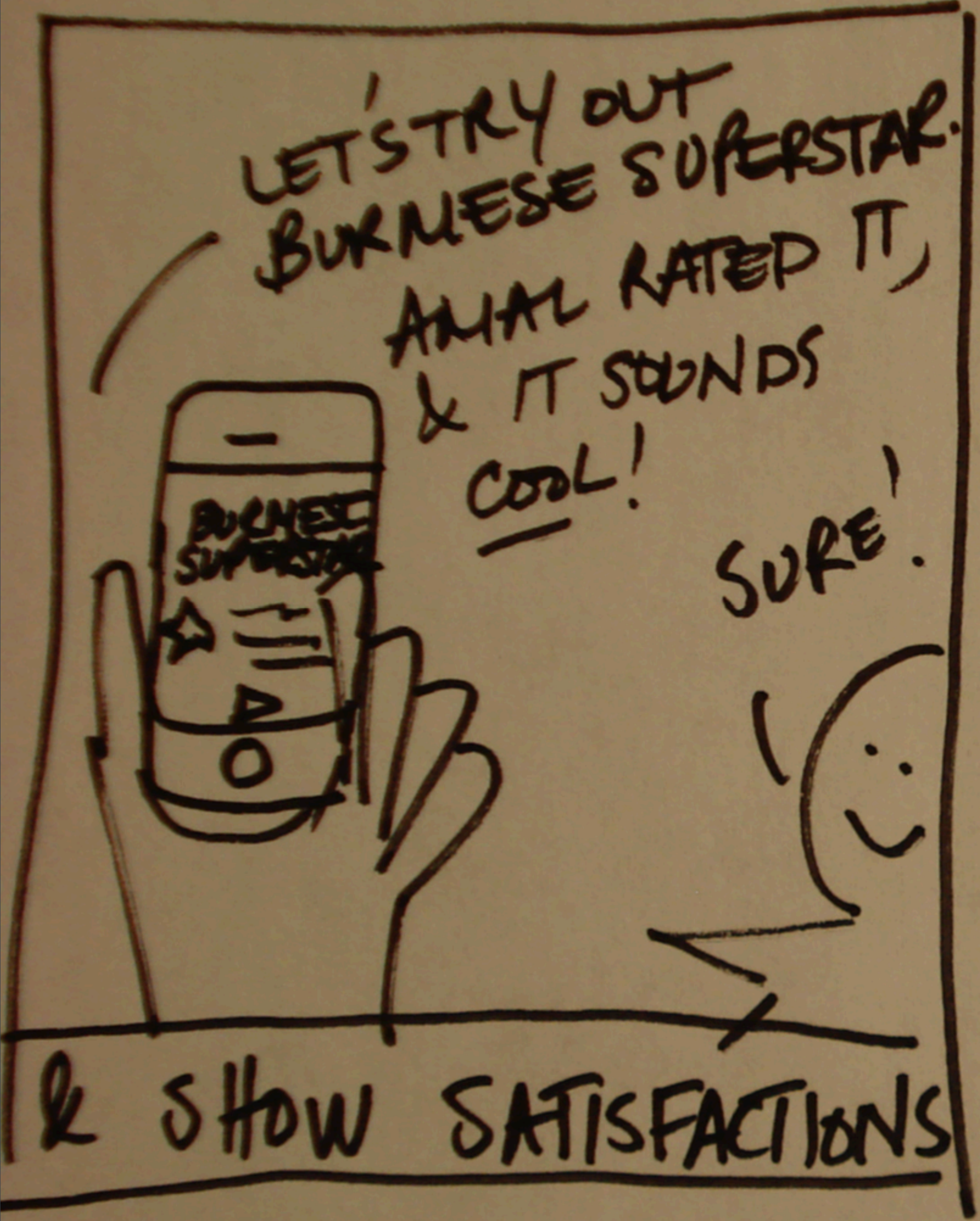


Storyboards are *not* about making pretty pictures.



Satisfaction

- What's the end result?
- What does it enable people to do?
- How does it tie back to people's motivation/setting?
- What need are you satisfying?

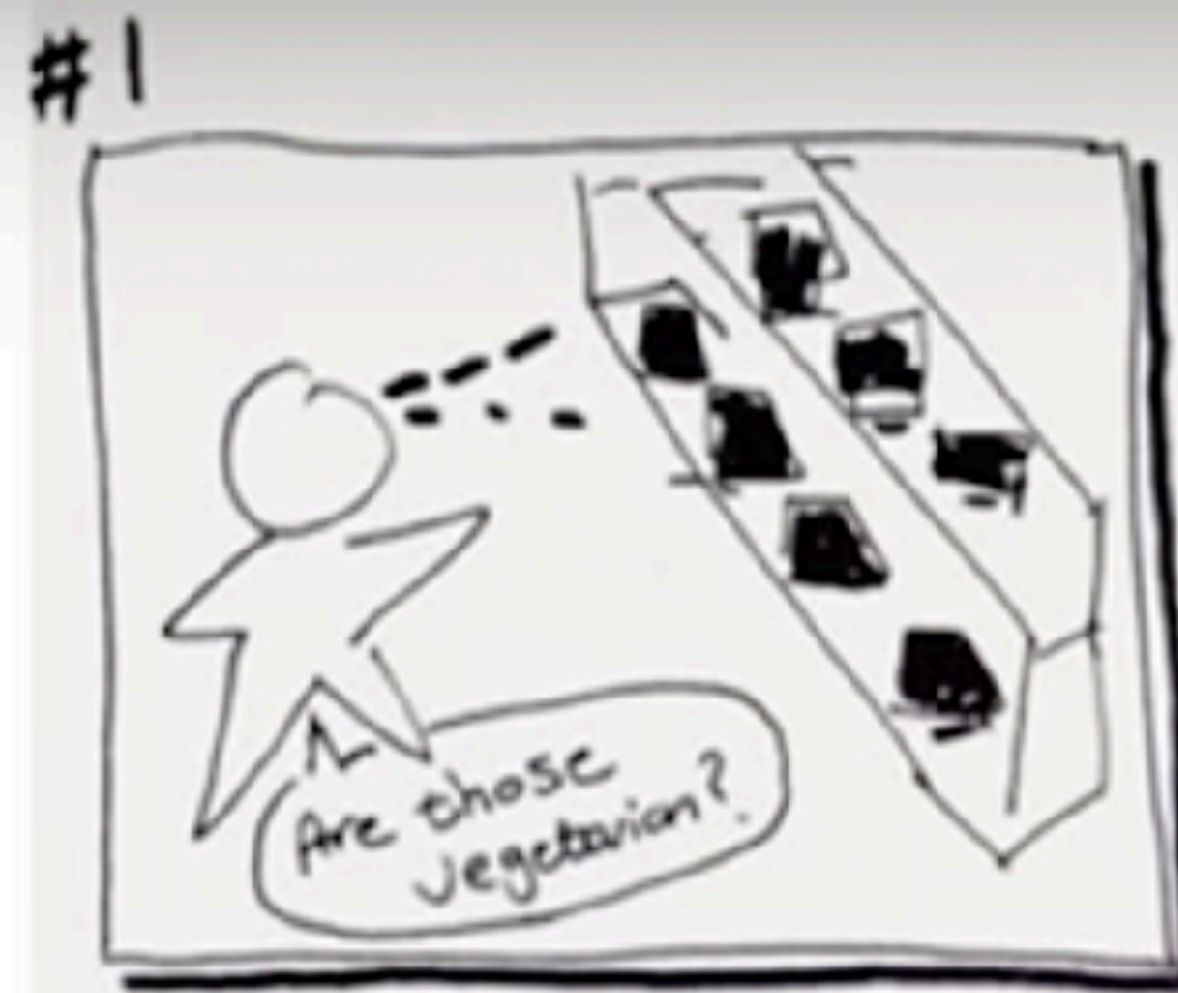


From Amal Dar Aziz, <http://d.ucsd.edu/story/>

Activity!

Pick one of the features you'd brainstormed for your scheduling app, and storyboard it out.

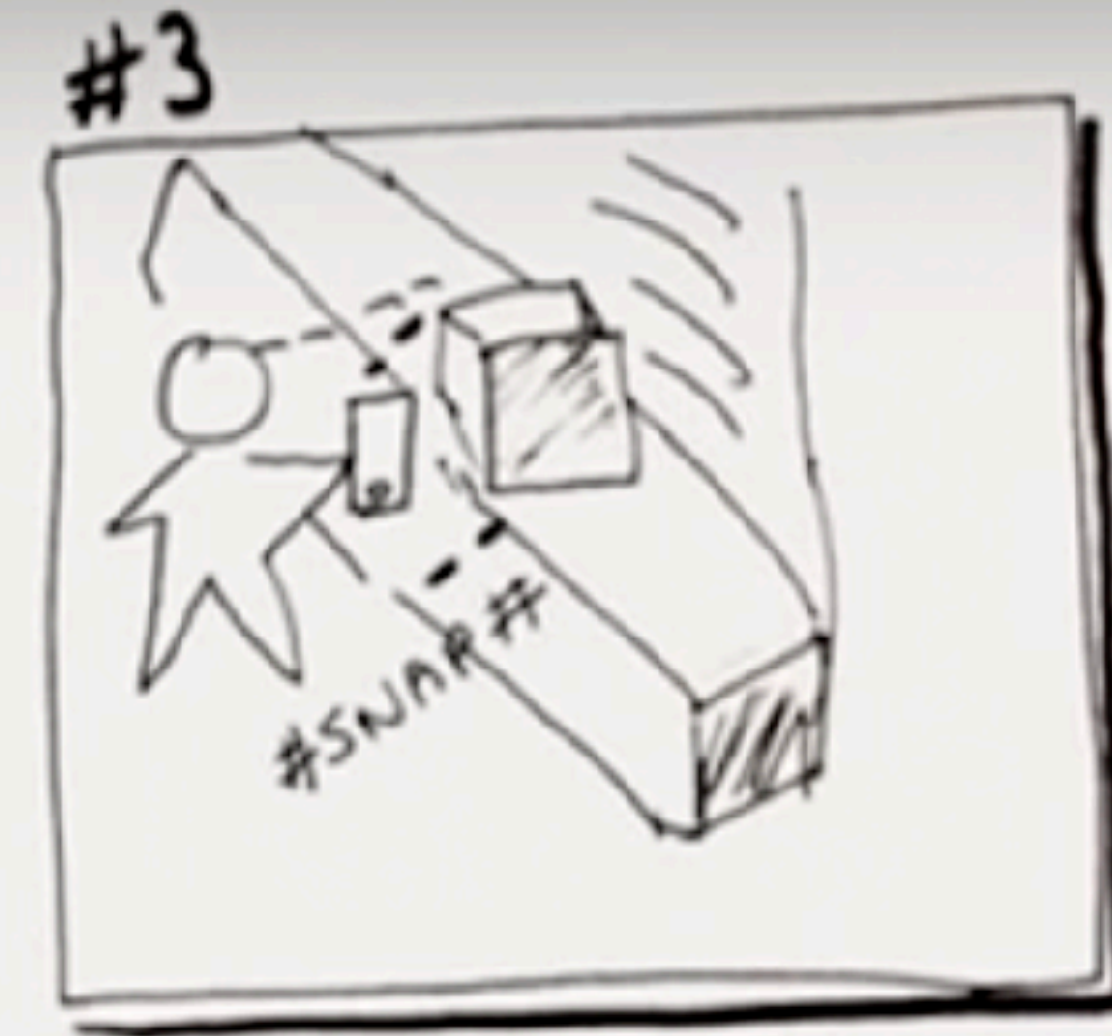
Storyboard =
Setting +
Sequence +
Satisfaction



JOHN IS IN A GROCERY STORE. HE WONDERS IF THE FOOD IS VEGETARIAN?



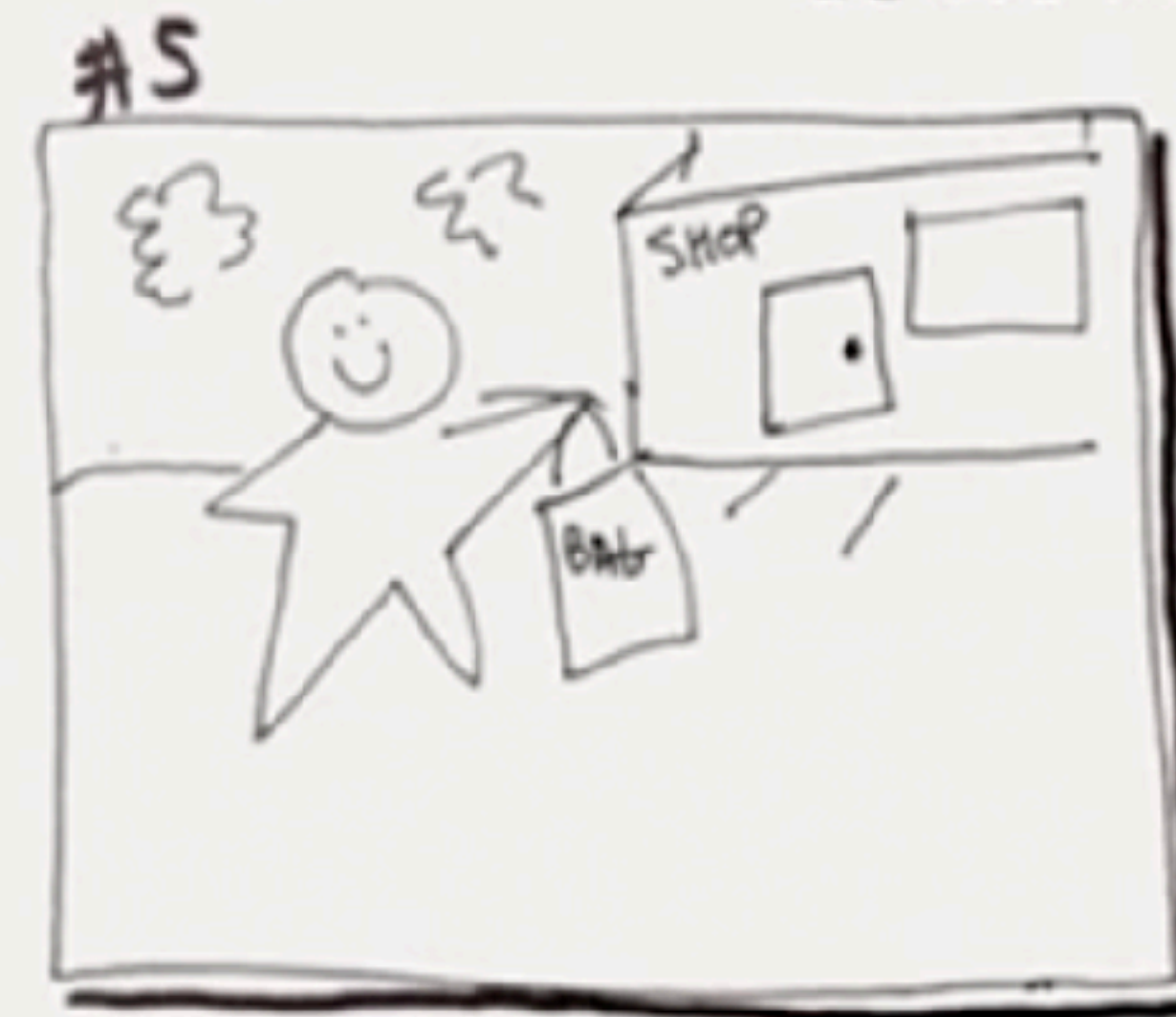
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