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Ideate

Prof. James A. Landay
Computer Science Department
Stanford University

Autumn 2024
October 2, 2024

Music track: https://soundcloud.com/dansuneroquette?utm_source=clipboard&utm_medium=text&utm_campaign=social_sharing

Slides adapted from d.leadership Define + Ideate slides (https://dschool.stanford.edu/groups/dleadership/wiki/59f08/dleadership_2015.html)

Additional resources from bootcamp bootleg (https://hci.stanford.edu/courses/cs147/2021/wi/readings/bootcamp_bootleg.pdf)

Hall of Fame or Shame?



Sony Google TV Remote



Hall of Shame!



Sony Google TV Remote



Very complex

So large that it requires two hands

So many controls that you can't use in the dark (watching movie?)

Two navigation pads. When to use which?

But, it does have typing input...

Hall of Fame or Shame?



Apple TV Remote



Hall of Shame!



Apple TV Remote



Overly simple

Many things require navigating menus

Text entry is almost impossible

So small that it is easily lost

But, common tasks easy

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Outline

- Review Define: unpacking field data & POVs
- Ideate
- How Might We...?
- Brainstorming solutions
- Selecting good problems & solutions
- Team Break
- Experience prototyping

Point of View

WE MET . . .

(person you are inspired by)

WE WERE SURPRISED TO NOTICE. . .

(tension, contradiction, or surprise)

WE WONDER IF THIS MEANS. . .

(what did you infer? **need**—verb reflecting user needs)

IT WOULD BE GAME-CHANGING TO. . .

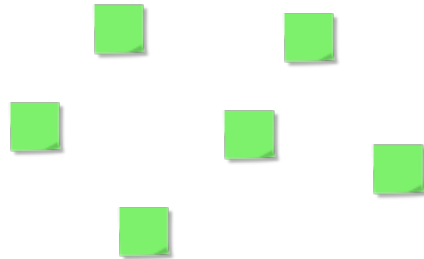
(Frame up an **inspired challenge** for your team.

NOT a reason for the need! Not a solution, but a **more informed problem**)

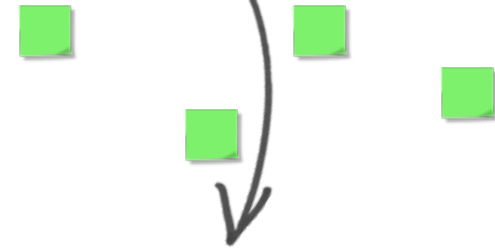
I wonder if this means . . .



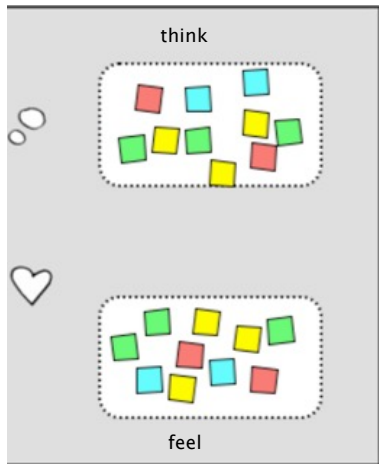
TENSIONS,
CONTRADICTIONS,
SURPRISES



NEED

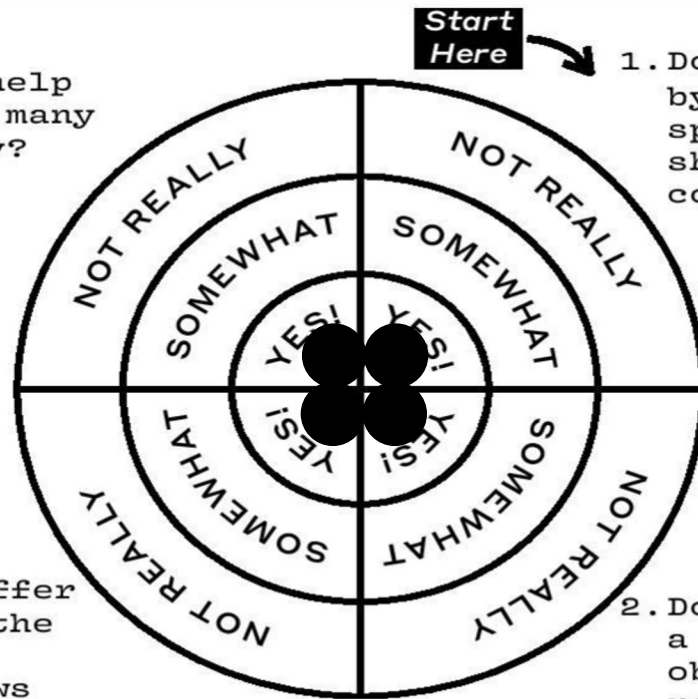


INSIGHTS



Truck Owner POVs

4. Does your frame help you generate many ideas immediately?



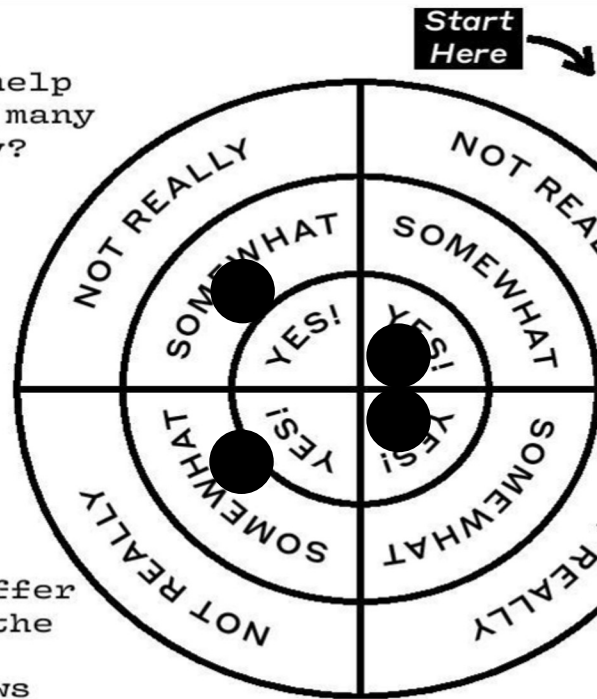
1. Does your frame start by focusing on one specific person and sharing relevant context?

3. Does your frame offer an insight about the person that is emotional and flows logically from your surprise?

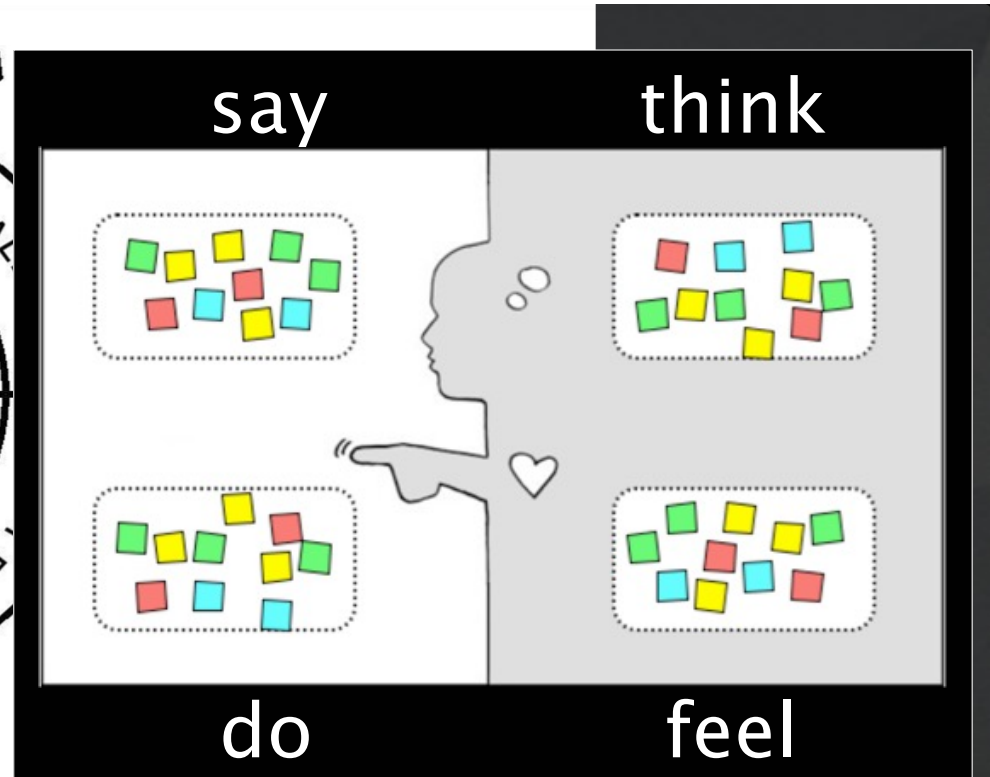
2. Does your frame present a truly surprising observation or quote related to a pain point?

We met... a young female truck owner, with an ME background, who loves owning her truck & learning about it.
We were surprised to notice... she sometimes blindly trusts whatever the mechanics say so as to not reveal how little she knows about her vehicle.
We wonder if this means... she is trying *to protect her persona and confidence* as a truck owner.
It would be game changing to... provide a detailed and accessible way for her to learn about truck mechanics in a style that doesn't make her feel self-conscious.

4. Does your frame help you generate many ideas immediately?



3. Does your frame offer an insight about the person that is emotional and flows logically from your surprise?



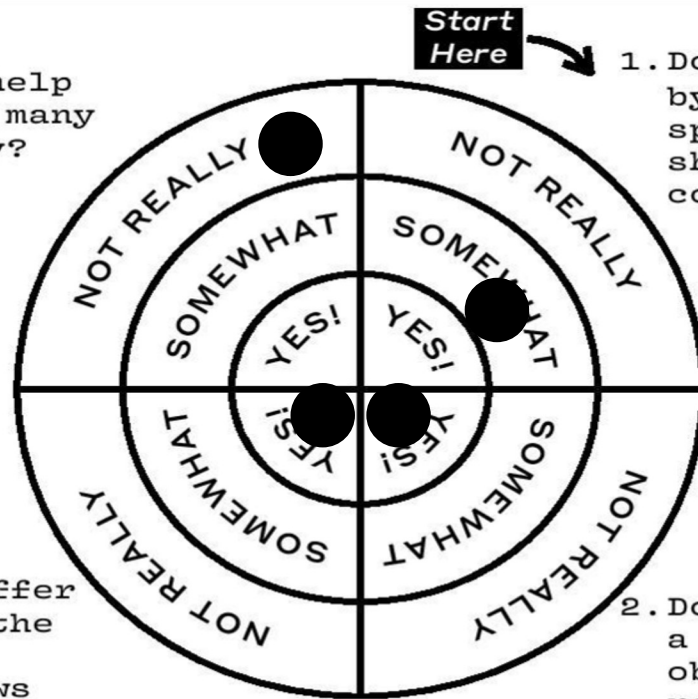
We met... a mechanical engineer who owns a truck that she really likes using and is interested in learning more about.

We were surprised to notice... she pretends to be already familiar with everything when she brings her truck in for repairs.

We wonder if this means... she wants to learn more about her truck.

It would be game-changing to... make it easier for truck enthusiasts (of differing levels of knowledge and understanding of mechanics) to learn about trucks and truck repairs.

4. Does your frame help you generate many ideas immediately?



1. Does your frame start by focusing on one specific person and sharing relevant context?

3. Does your frame offer an insight about the person that is emotional and flows logically from your surprise?

2. Does your frame present a truly surprising observation or quote related to a pain point?

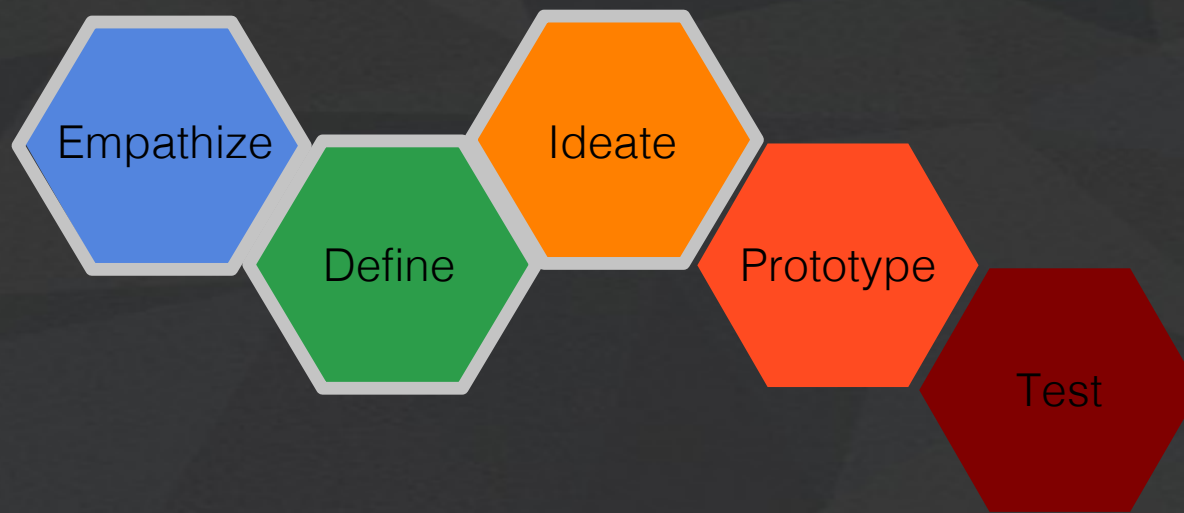
We met... a woman who drives a truck and is a mechanical engineer at Stanford.

We were surprised to notice that... she didn't feel confident making decisions about the upkeep of her truck when talking with mechanics.

We wonder if this means... she wants to overcome her fear that she'd be seen as inexperienced or out of place at the repair shop.

It would be game-changing if... we could provide a third-party resource that could advise her on her truck's maintenance, making her more confident in her decisions without having to worry about misaligned incentives (e.g., upselling mechanics).

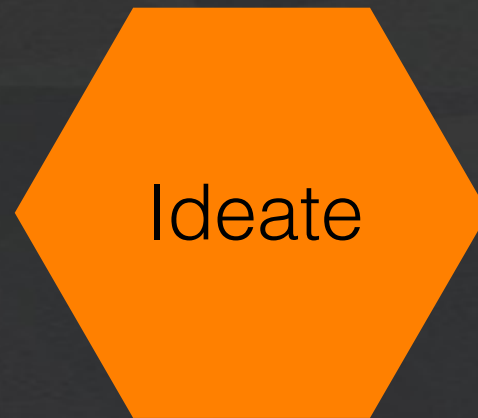
Design Thinking



Design Thinking



innovation
potential



Ideate

separate
generation &
evaluation

How do we start?



How do we start?



Might lets you defer judgment

helps people to create options *freely*

opens up *more possibilities*

Another POV Example



We met Janice, a harried mother of 3, rushing through the airport only to wait hours at the gate.

We were surprised to notice the many games she makes up to entertain her children.

We wonder if she is stressed that the kids will irritate fellow passengers if she's unable to distract them.

It would be game changing to bring the other passengers & the airport facilities into helping families have a better travel experience.

POV: We met Janice, a harried mother of 3, rushing through the airport only to wait hours at the gate. We were surprised at the many games she makes up to entertain her children. We wonder if she is stressed that the kids will irritate fellow passengers if she's unable to distract them. It would be game changing to bring the other passengers and the airport facilities into helping families have a better travel experience.

Break POV into pieces

HMW entertain kids? HMW slow a mom down?

Amp up the good/Remove the bad

HMW separate kids from fellow passengers?

Explore the opposite

HMW make the wait the most exciting part of the trip?

Question an assumption

HMW entirely remove the wait time at the airport?

https://hci.stanford.edu/courses/cs147/2024/au/readings/bootcamp_bootleg.pdf - page=29

POV: We met Janice, a harried mother of 3, rushing through the airport only to wait hours at the gate. We were surprised at the many games she makes up to entertain her children. We wonder if she is stressed that the kids will irritate fellow passengers if she's unable to distract them. It would be game changing to bring the other passengers and the airport facilities into helping families have a better travel experience.

Go after adjectives

HMW we make the rush refreshing instead of harrying?

Identify unexpected resources

HMW leverage free time of fellow passengers to share the load?

Create an analogy from need or context

HMW make the airport like a spa?

Change a status quo

HMW make playful, loud kids less annoying?

https://hci.stanford.edu/courses/cs147/2024/au/readings/bootcamp_bootleg.pdf - page=29



one conversation at a time

go for quantity

headline!

build on the ideas of others

encourage wild ideas

be visual

stay on topic

defer judgment

https://hci.stanford.edu/courses/cs147/2024/au/readings/bootcamp_bootleg.pdf - page=31

DO IT NOW:

Generate HMW statements for the airport mom POV!

POV: We met Janice, a harried mother of 3, rushing through the airport only to wait hours at the gate. We were surprised at the many games she makes up to entertain her children. We wonder if she does this so that they don't irritate frustrated fellow passengers. It would be game changing to bring the other passengers and the airport facilities into helping families have a better travel experience.

Break POV into pieces

HMW entertain kids? HMW slow a mom down?

Amp up the good/Remove the bad

HMW separate kids from fellow passengers?

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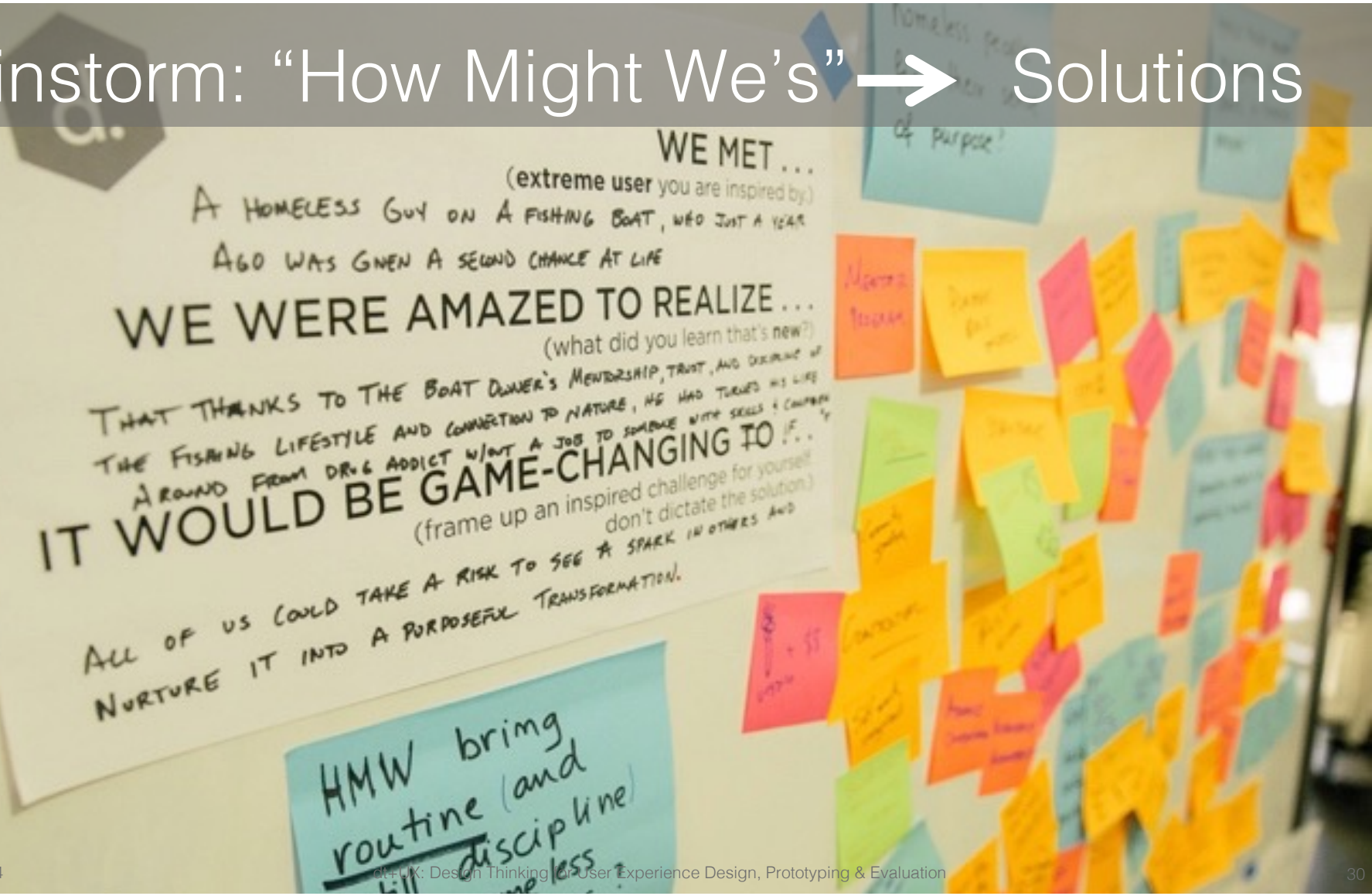
HMW make the airport like a spa?

Change a status quo

HMW make playful, loud kids less annoying?

POV: Harried Mother at Airport

Brainstorm: “How Might We’s” → Solutions



Constraints Can Energize

“How would you design it with the technology of 100 years ago?”

“What if we had to spend at least a million dollars?”

“Only ideas that would get you fired”

“All ideas must use magic.”

https://hci.stanford.edu/courses/cs147/2024/au/readings/bootcamp_bootleg.pdf - page=32



one conversation at a time

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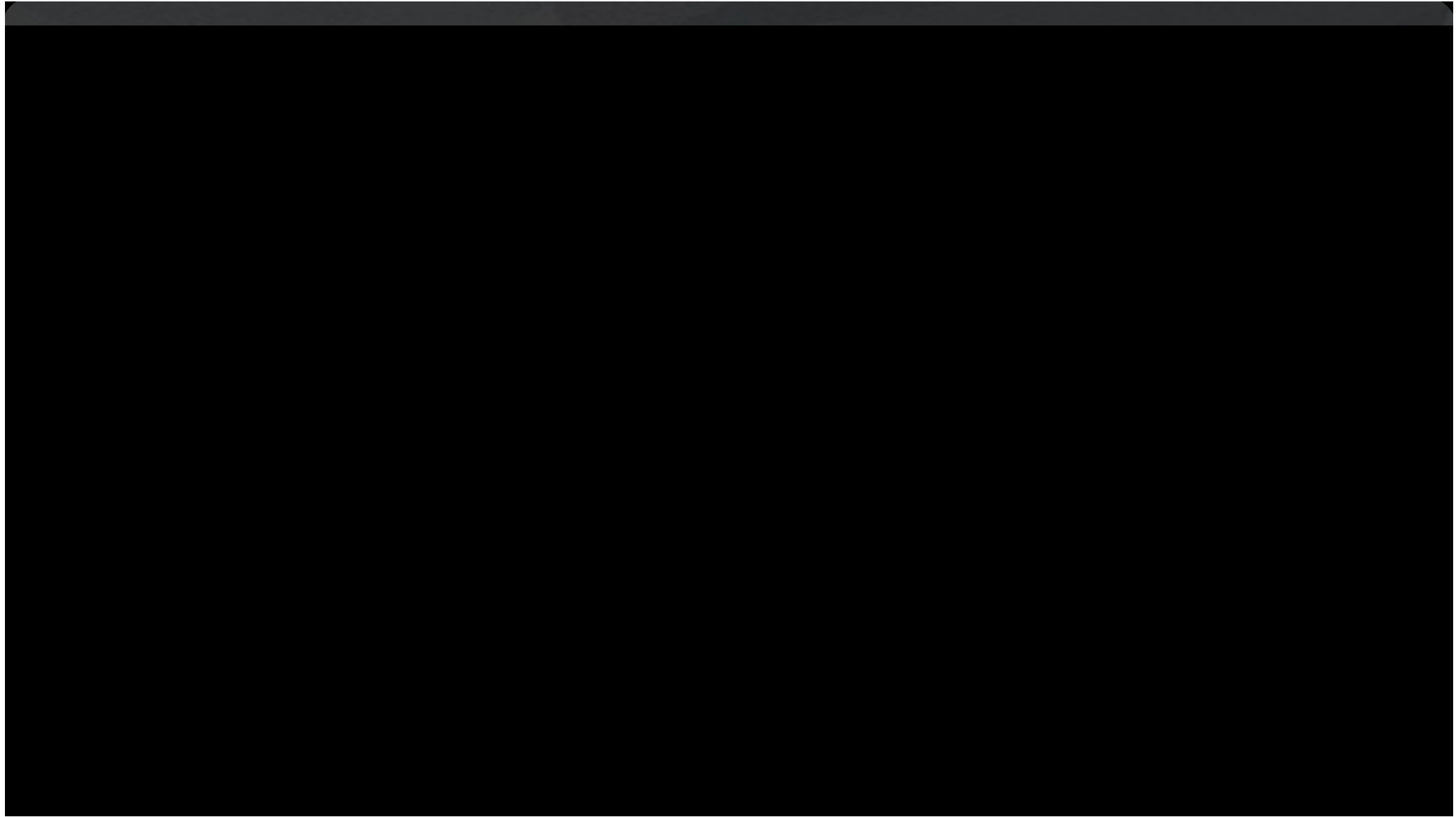
be visual

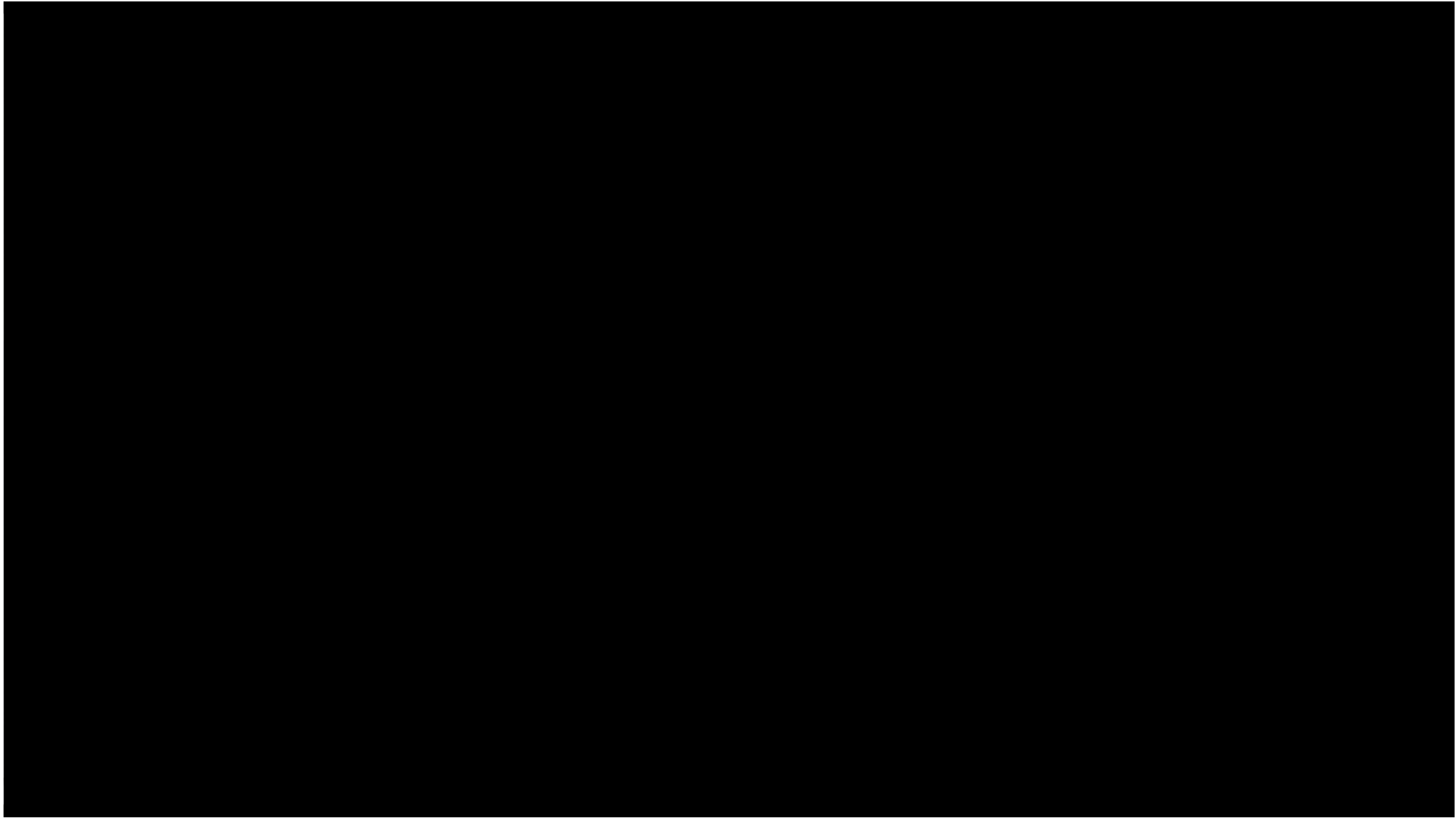
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Brainstorming Demo: two brainstormings





Selecting a Good Problem, HMW, or Solution Idea

- Frequency
 - want something that occurs often
- Density
 - lots of people experience it
- Pain
 - more than a small annoyance
- Interested
 - your team is motivated to work on this problem
- Could this be harmful to individuals & communities? (is it ethical?)



* see Manu Kumar's blog post on this topic: <http://www.k9ventures.com/blog/2015/02/10/finding-problem-worth-solving/>

Downselecting Ideas

- Celebrate success of brainstorm, take a break, vote!
- Option 1: Heat map voting
 - everyone starts with unlimited number of votes (small dots – stickers or pen)
 - then everyone gets 3 final votes on absolute favorites (large dots) and 1 bonus dark horse
- Option 2: Category voting
 - each person gets specific # of votes (i.e., 5)
 - specific categories
 - most feasible idea, craziest idea, best long shot, my favorite but improbable, short term solution, etc.
- Option 3: Each person picks 3 favorites



<https://medium.com/product-design-foodora/how-to-solve-a-problem-and-make-decision-in-a-big-team-without-getting-mad-9a37f9d5e100>

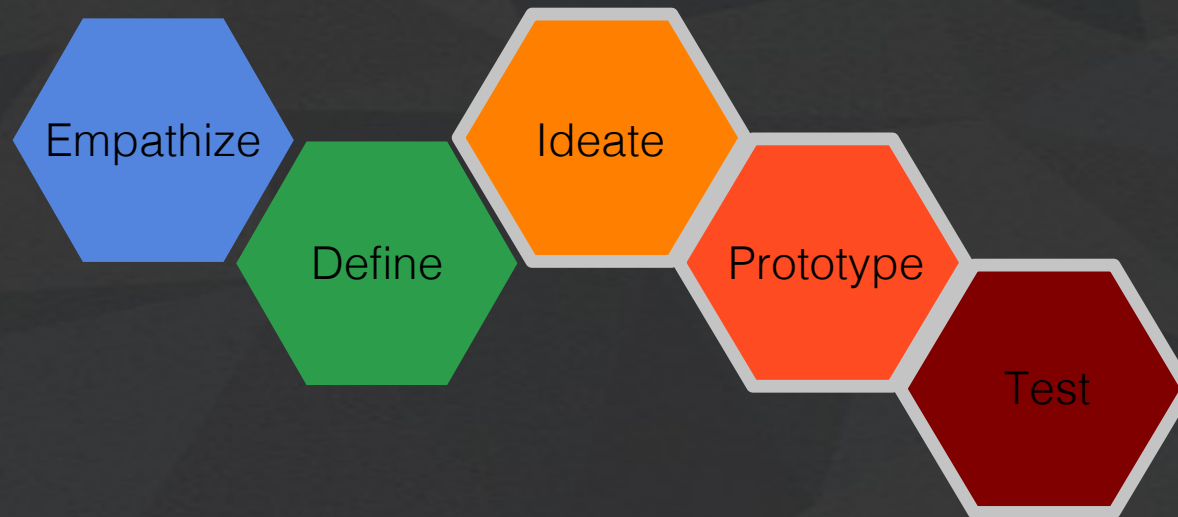
Administrivia

?

Team Break (20 min)

- Work on
 - starting slides for Thur/Fri studio presentation
 - needfinding unpacking
 - plans for more interviews
- CAs will go around & give you feedback

Design Thinking



to think



PROTOTYPE

to learn

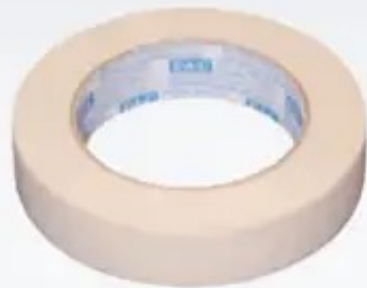
THE MARSHMALLOW CHALLENGE

TEST YOUR ASSUMPTIONS

In 18 minutes, build the tallest free-standing structure out of 20 sticks of spaghetti, 3 feet of tape, 3 feet of string, and one marshmallow. The marshmallow must be on top.



20 sticks of spaghetti



+ one yard tape



+ one yard string



+ one marshmallow

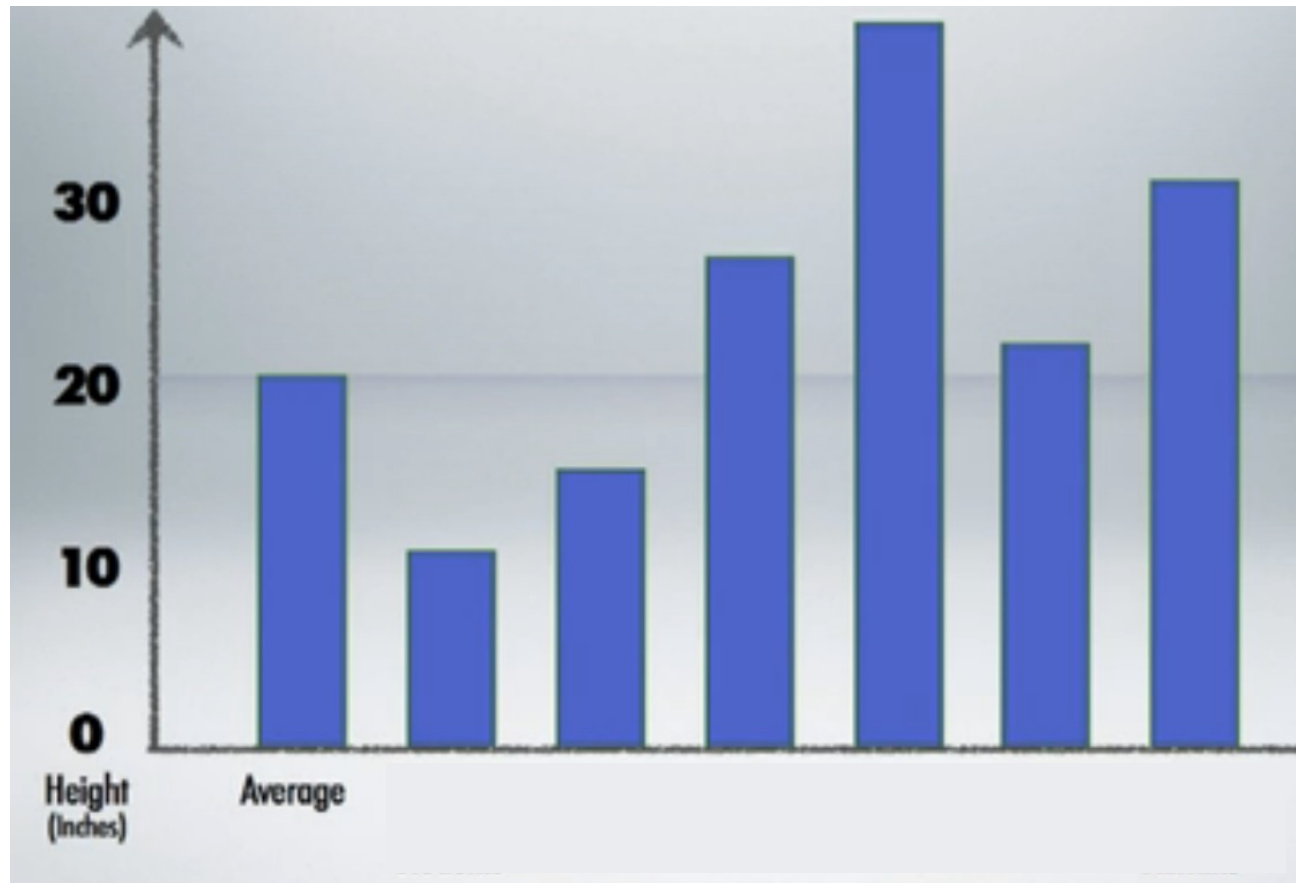
THE MARSHMALLOW CHALLENGE

TEST YOUR ASSUMPTIONS



THE MARSHMALLOW CHALLENGE

TEST YOUR ASSUMPTIONS



THE MARSHMALLOW CHALLENGE

TEST YOUR ASSUMPTIONS



0

Orient

Plan

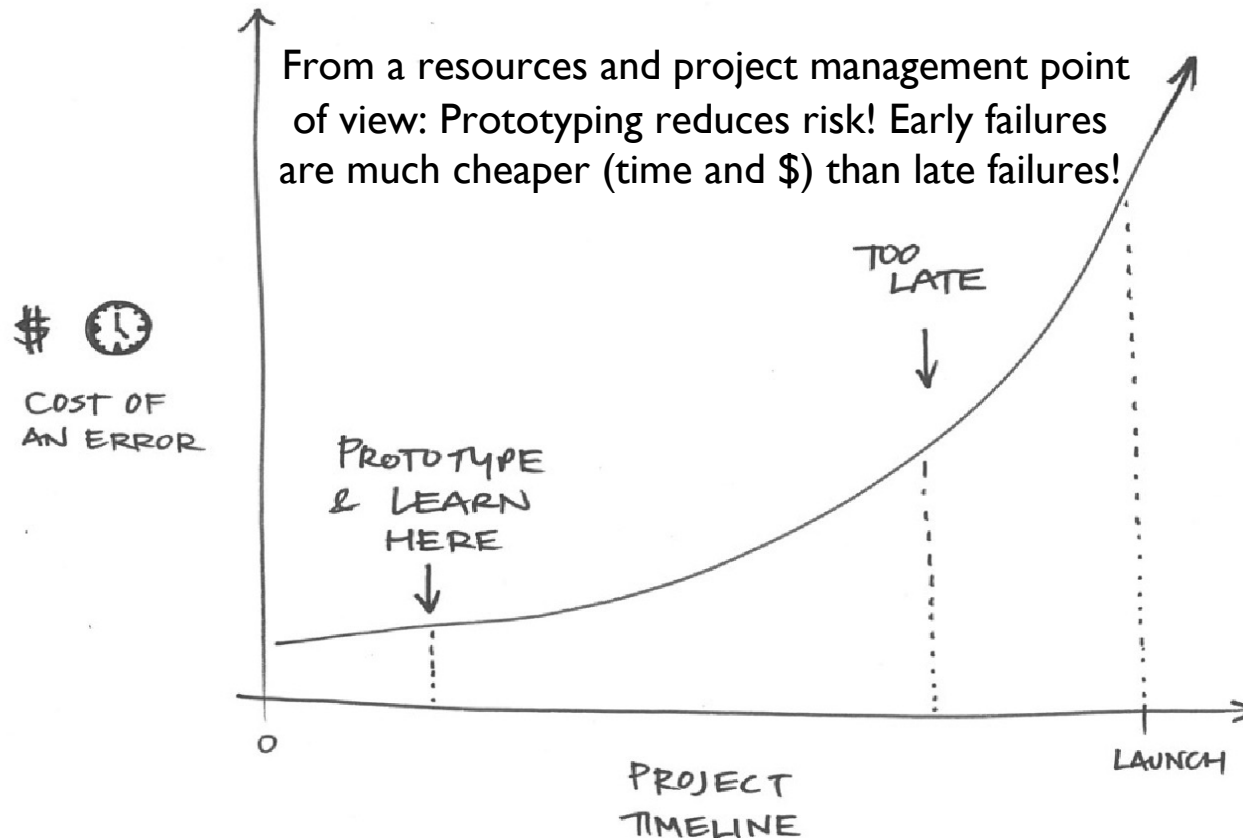
Build

Oh-Oh!

18
Minutes

THE MARSHMALLOW CHALLENGE

TEST YOUR ASSUMPTIONS



prototype: how?

the bakery

The grill

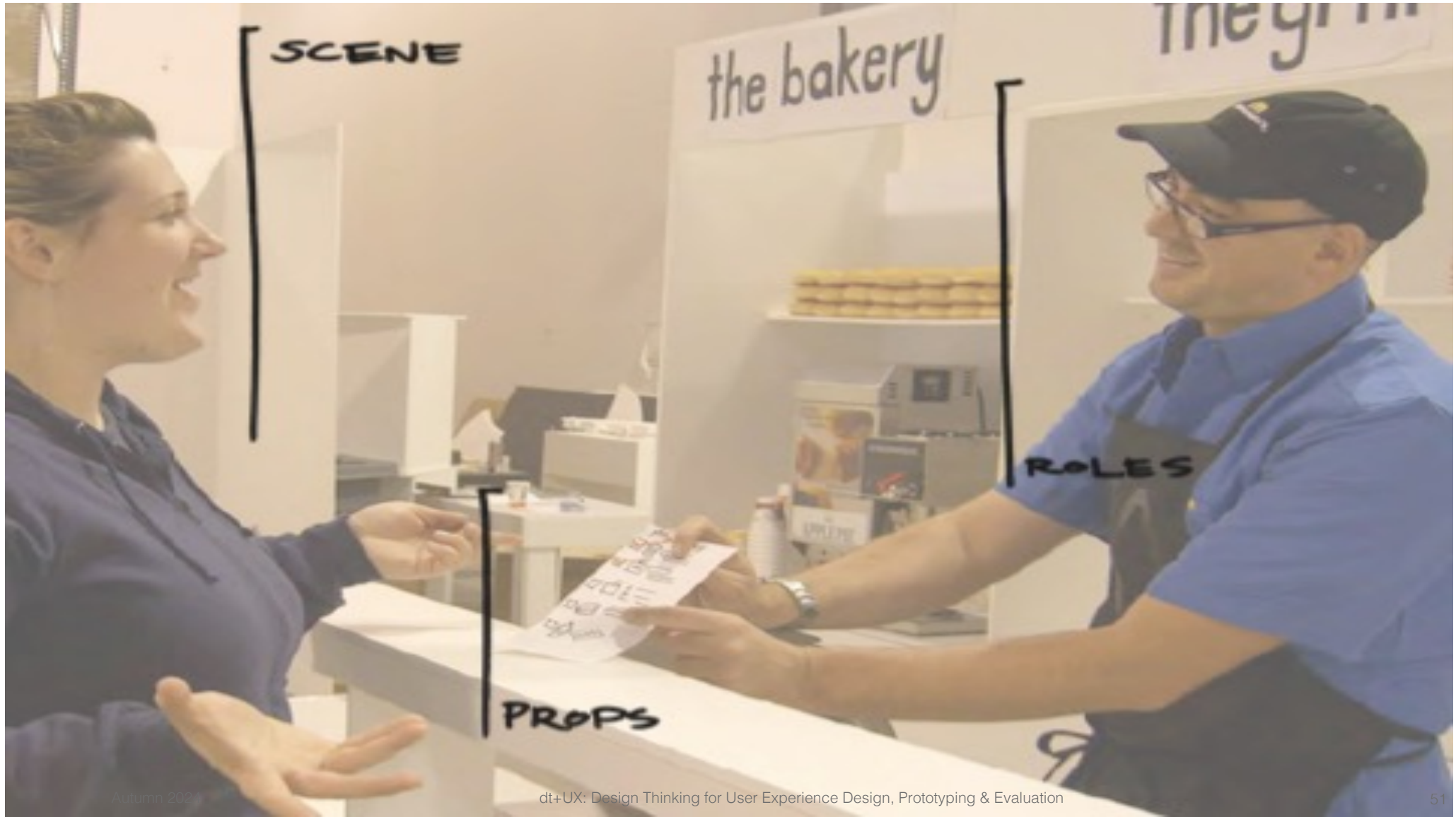
EXPERIENCE PROTOTYPE

prototype: **how?**

the bakery

The grill





what new
information do you
have about the
user's **need**?



TEST

what new
information do you
have about how your
solution addresses
the need? Are your
assumptions correct?

FLARE

INSIGHTS

POV

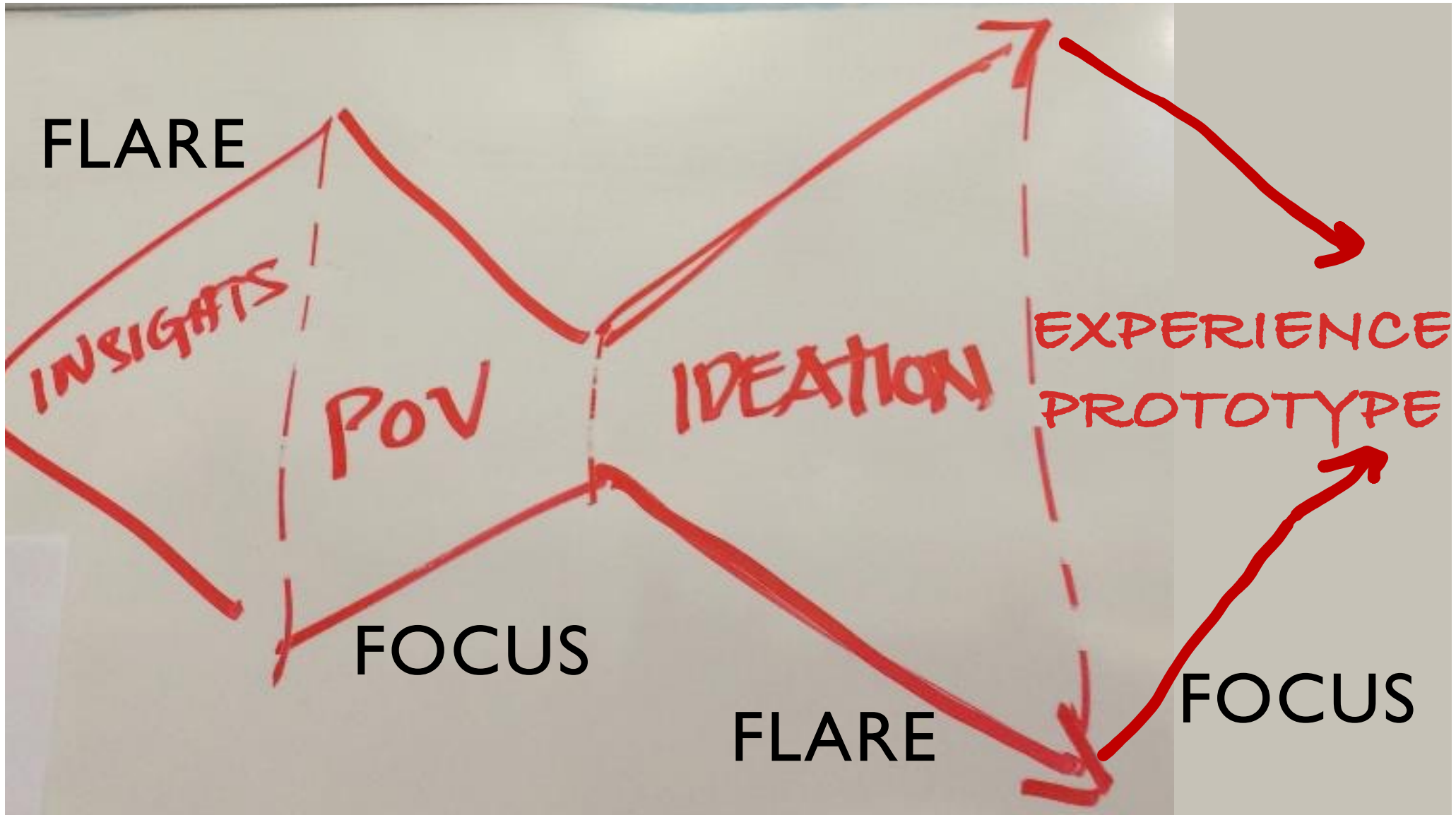
IDEATION

EXPERIENCE
PROTOTYPE

FOCUS

FLARE

FOCUS



WE MET:

Sandy +
Christine
Globe-trotting golden canaries

AMAZED to realize:

They hated "canned"
treatment, but are willing to lose
control to get a refined,
unique experience.

GAME CHANGING TO:

Have services for all (incl. non-guests)
that will give them confidence
to hand over control!

WE MET:

Globe-trotting golden girls

AMAZED TO REALIZE:

They hate "canned" treatment, but are willing to trade control for a more authentic, surprising experience.

GAME CHANGING TO:

Trust us to delight them beyond the Hyatt walls.

How might we help guests turn the unfamiliar to familiar instantly?
✓✓✓

HMW:
Create an Adventure that changes based off participant direction?
✓✓

HMW
How might we? Create kiosks on the travel path?

HOW MIGHT WE? ALLOW PEOPLE TO TELL US THE TYPES OF EXPERIENCES THEY LIKE, BUT HAVE US CREATE GOOD ONES THAT ARE SURPRISES?

How Might we Help people start small and end big [learn to lose control] ???

Align in flow with your points

ADD SYMBOLS TO THE ENVIRONMENT THAT THEY CAN

App with Control Loop

KEEP STUFF TO OTHER STOPS

CONTROL HISTORY

Travel History

KEEP STUFF TO OTHER STOPS

PROBABIL POSITION

ADJUST AS YOU GO

KEEP STUFF TO OTHER STOPS

CIA STR Mission

SPY MISSIONS

team brainstorm of story arcs

HOW MUCH TIME I HAVE 2 spend

Icons are busy thing

TRANSLATE SYMBOLS

NOTICE WHICH STAGE THEY LIKED TO ADAPT

SECRET BUBBLE

COMPARE MICROWAVE vs. Microwave from a trip

Customer + needs

TOP FROM MOM

MON AS TOURGUIDE

RELEASED IN ENVELOPE

TAPS DESTROYS STAFF

TRAVEL PROFILE

TIE A TO GET THE FEELING

Send guide to Mom's kitchen

VERSION MOM (YOUR GUIDE)

CRITICAL (CULTURAL) REQUIREMENTS

DIVERGE + RECONVERGE

REAR WHAT PEOPLE LOVE

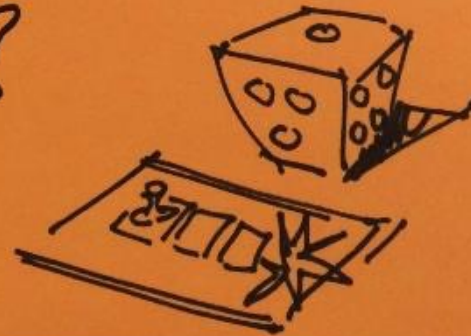
CONVINCE MOM

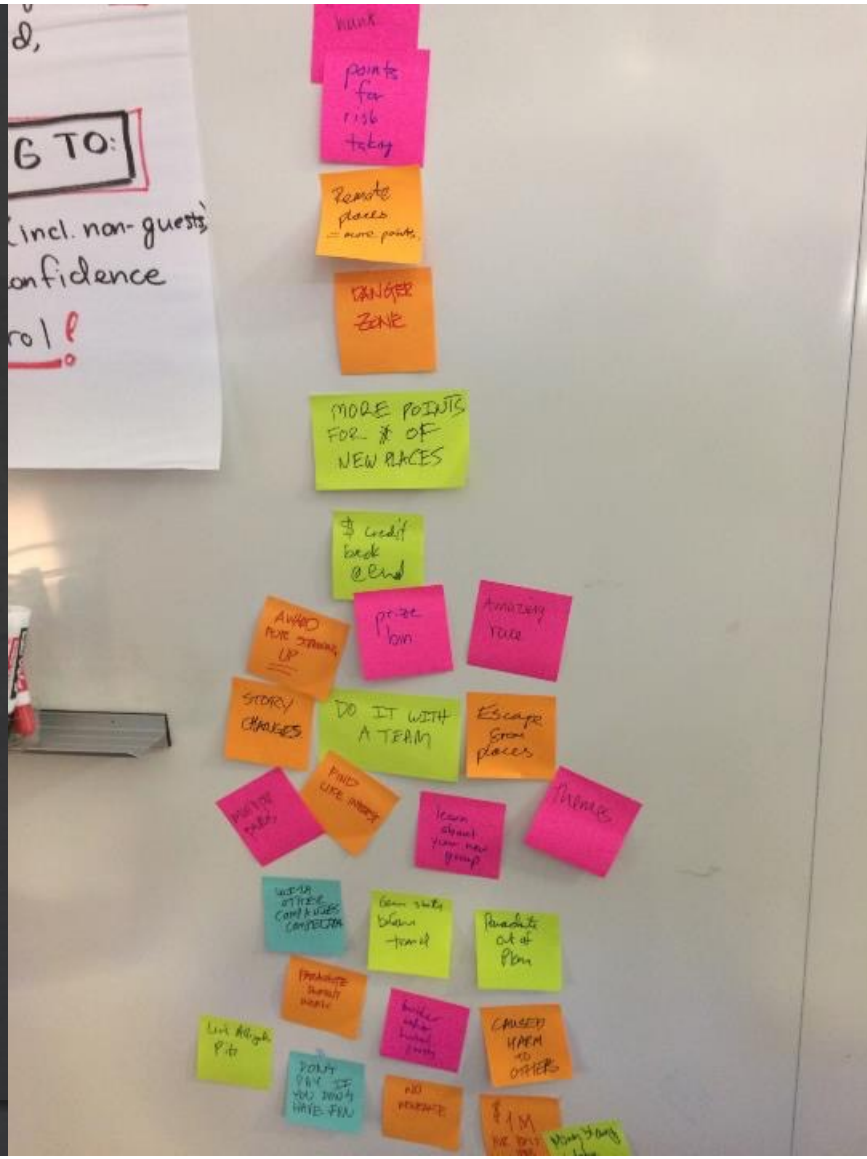
MOM

HMW

HOW MIGHT WE?

"GAMIFY" THE TRANSITION
OF CONTROL?







How might we help guests turn the unfamiliar to familiar instantly?

How? Create an Adventure that changes based off participant direction?

How? How might we help guests turn the unfamiliar to familiar instantly?

How might we allow people to tell us the way they experience things? Have a great idea?

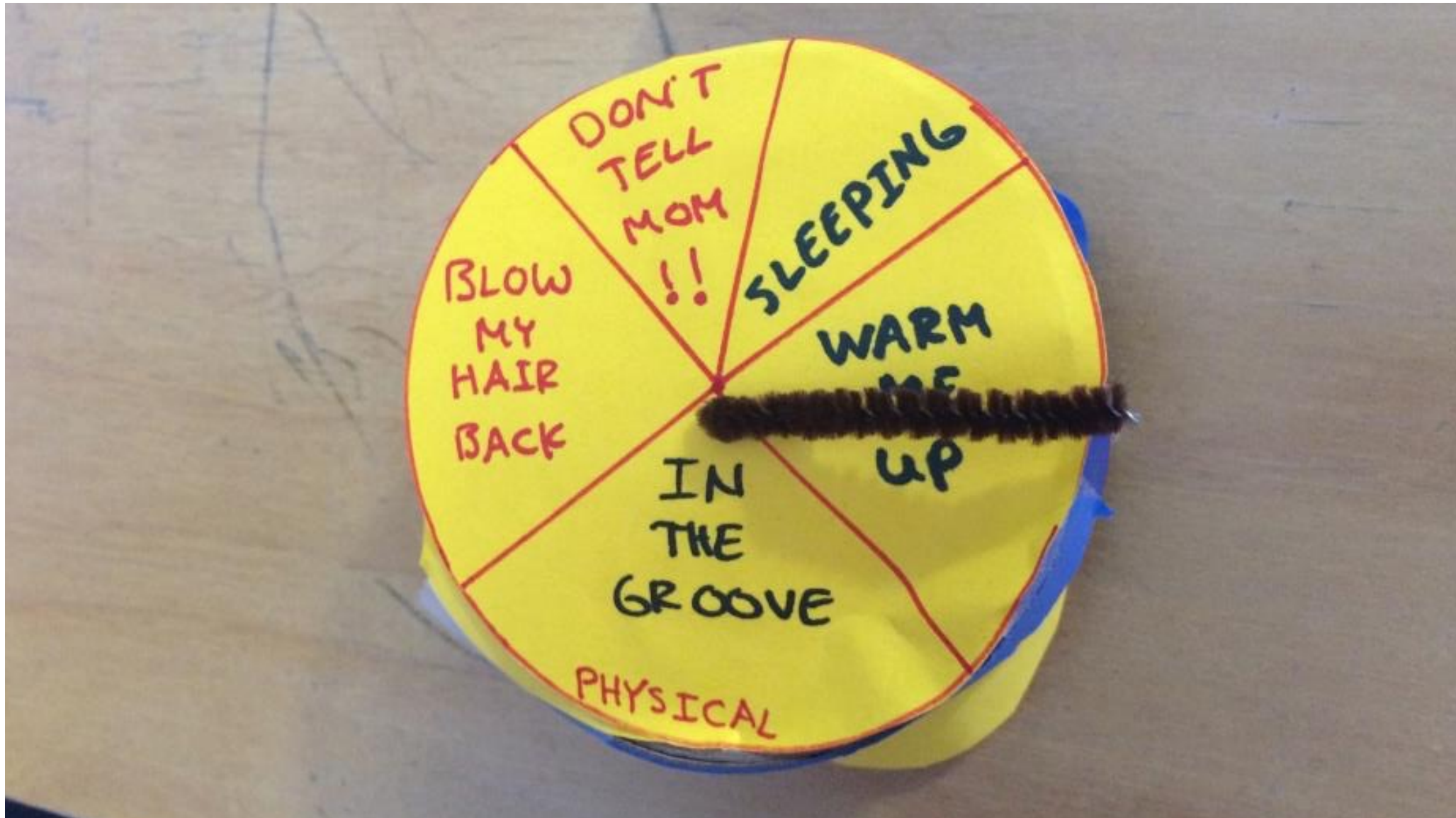
How might we help people share small and big ideas in low energy?

INTENTION ON CRITERIA
to succeed
to delight our user
through it...

Feedback form with sections for 'How might we?' and 'How might we?' with checkboxes and text input fields.

A large collection of colorful sticky notes (yellow, orange, pink, blue, green) scattered across the whiteboard, containing various handwritten ideas and notes related to the main questions.





DON'T
TELL
MOM
!!

SLEEPING

WARM
ME
UP

BLOW
MY
HAIR
BACK

IN
THE
GROOVE

PHYSICAL



Creating an Experience Prototype

- Analyze the assumptions your solution is making
- How do you know they are true?
- Test with an experience prototype

IMPROVISING TOOL

How to improvise to bring an experience to life

SET THE SCENE

Imagine yourselves in a specific location.

("Okay, we are at the _____ . . .")

DEFINE ROLES AND START PLAYING THEM

Just jump into what makes sense.

("I'm the _____ person and you are _____ . . .")

IMPROVISE TO DISCOVER

Build on each other's ideas and keep the scene alive.

Try out ideas by playing through them.

SCENE-PROPS-ROLES TOOL

SCENE
of the experience

how do you make where
you are feel like the
“real” setting/context?

PROPS
in the experience

what are the rough
versions of the physical
things?

ROLES
involved in experience

what are the roles of those
“creating” the experience?
who are “receiving”
the experience?
(save these roles for testers)

Assumptions



Experience Prototypes

Verify our assumptions



Remember Janice in the airport from earlier...



We met... Janice, a harried mother of 3, rushing through the airport only to wait hours at the gate.



We were surprised to notice... she makes up many games to entertain her children during the wait.



We wonder if this means... she is stressed that they will irritate fellow passengers if she's unable to distract them.



It would be game-changing... to bring the other passengers and the airport facilities into helping families have a better travel experience.

How might we...

make the wait the most *exciting* part of the trip?





So we came up with a bunch of solutions



Our Solution

An app that leads kids on a scavenger hunt adventure around the airport.

ASSUMPTION #1

Parents and kids are willing to move a lot during a long wait.

ASSUMPTION #2

Kids are interested in adventuring in unfamiliar places.



Experience Prototypes

Let's test our assumptions!

- ✓ particular concerns
- ~~✗ the entire solution / idea~~

EXPERIENCE PROTOTYPE EXAMPLE

Assumption #1: Parents and kids are willing to move a lot during a long wait.





EXPERIENCE PROTOTYPE EXAMPLE

Assumption #2: Kids are interested in adventuring in unfamiliar places.

Do It Now

Come up with an **assumption** and **experience prototypes** to test this assumption

Solution

An app that leads kids on a scavenger hunt adventure around the airport.

Parallel Experience Prototyping Goal

Prototype to **test an assumption**

Prototype should usually be a **piece of an idea** rather than a complete solution

Think of it as a **needfinding** technique

Do **not** make a low-fi prototype

Experience Prototypes Tutorial by Previous Head TA Kristina Inouye (23 min)

<https://www.youtube.com/watch?v=QAWQleGon0k>

Summary

Ideation let's us use brainstorming to *separate* idea generation from idea evaluation.

“How might we’s” let us brainstorm solutions to a more specific set of problems.

Experience prototyping allows us to try many ideas quickly, test assumptions & learn more about the problem & solution space (*prototype to learn*).

Next Time

- Monday
 - Concept Videos
- Studio
 - Present your initial needfinding results & work in studio on initial Point of Views
- Watch/Read
 - [video prototypes from prior courses](#) (they are on the resources page)
 - [Ways to Create Ecosystems](#) (5:43), Sharon Vosmek, Astia
 - [Experience Prototypes Tutorial](#) by Former Head TA Kristina Inouye
 - Optional Watch: [Ways of Working](#) (5:50), Sue Siegel, GE
 - Optional Read: [Design critiques at Figma](#) by Noah Levin

Exit Ticket



<https://bit.ly/cs147-2024au-exit-ticket-2-314>