



Design Thinking ML Bootcamp edition

Google

Haveeee you met me?

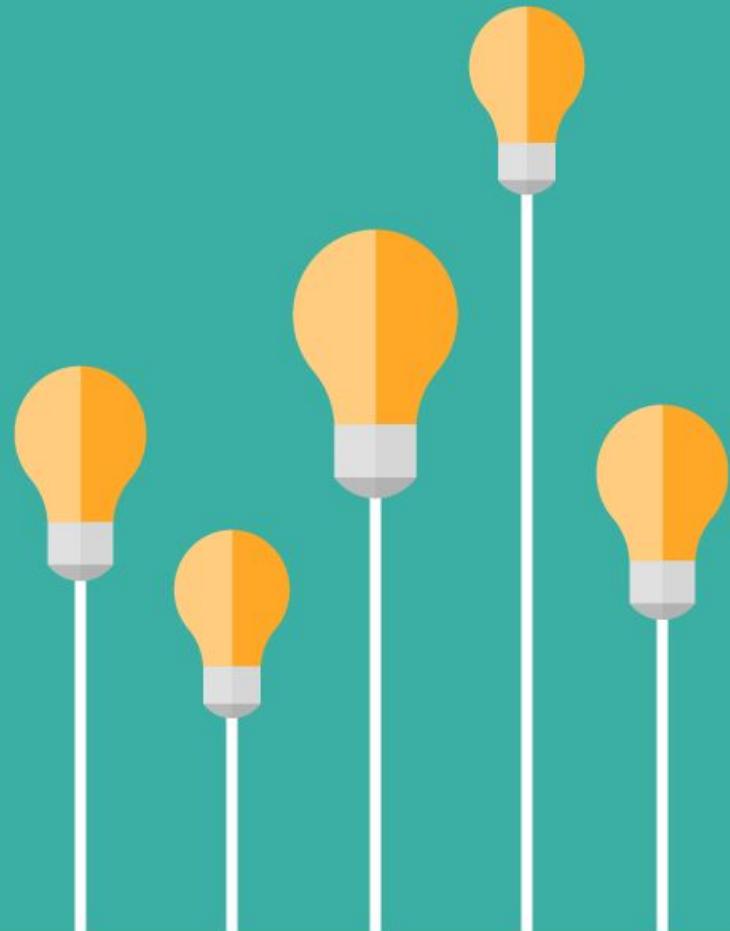
In the group, introduce yourself, where you're from, what you do and
1 fun fact.

Innovation



Where do you have
your **best ideas?**

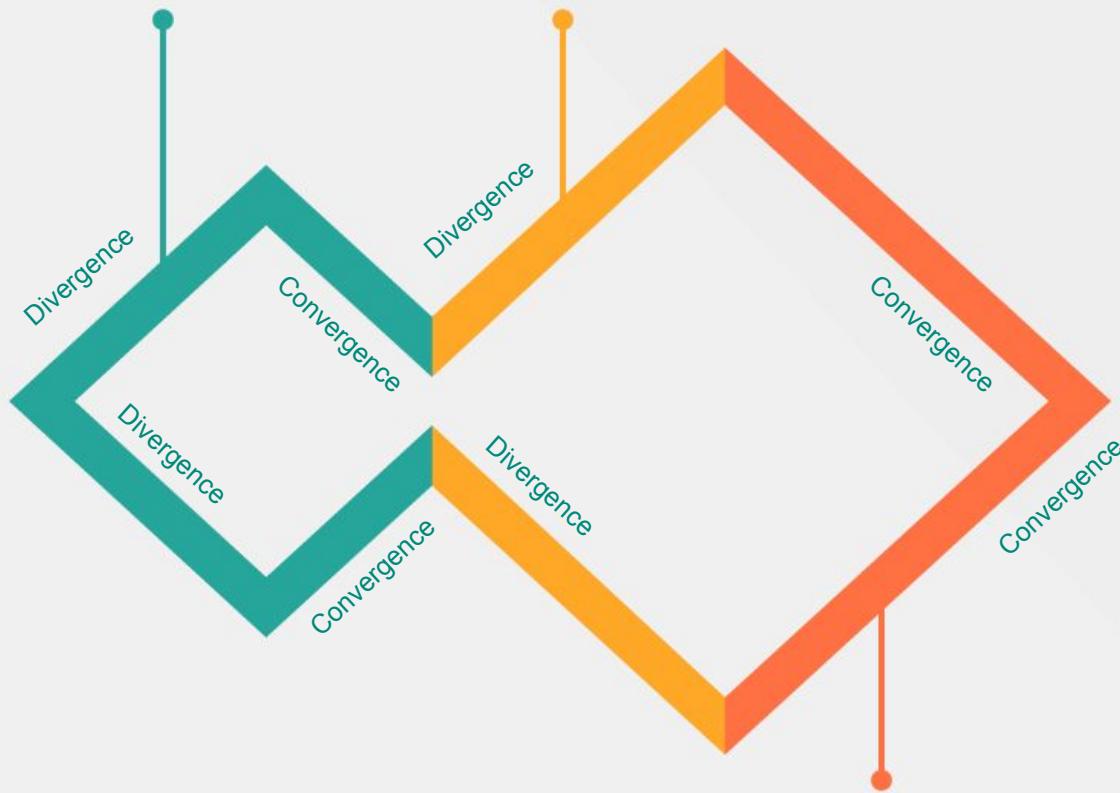
Innovation



It's not an event.
It's a mindset.

Focus on the user

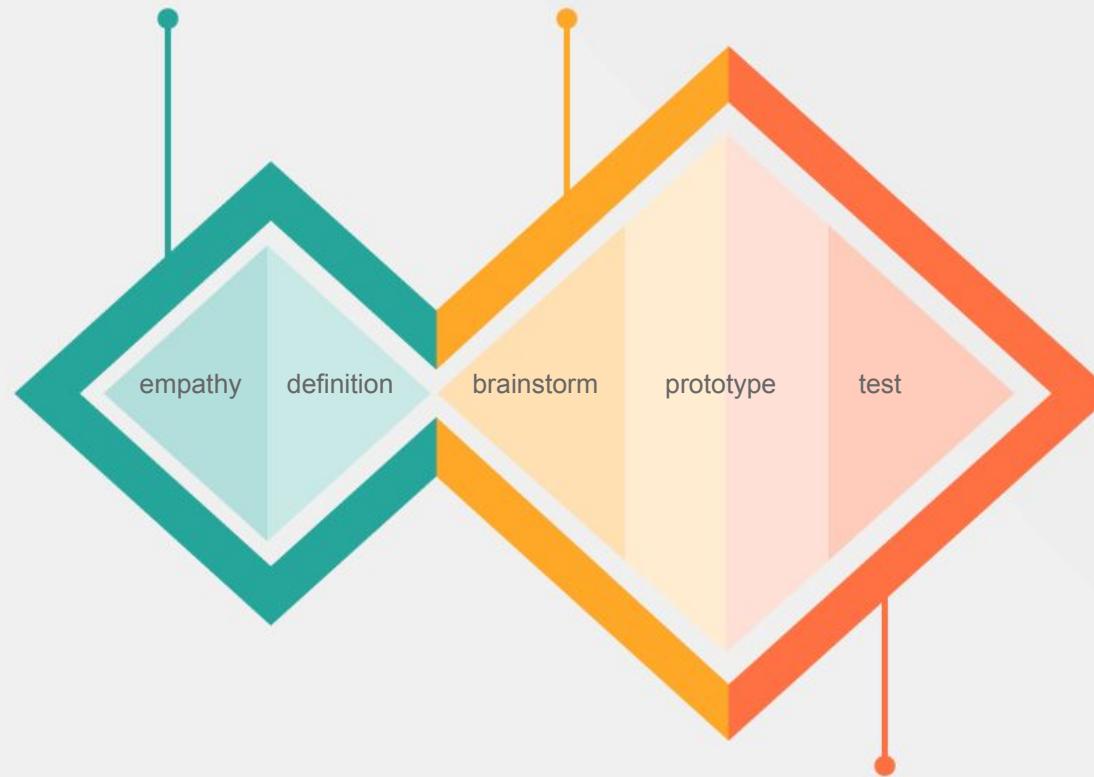
Think 10X



Be prototype driven (Don't be afraid to fail :))

Focus on the user

Think 10X

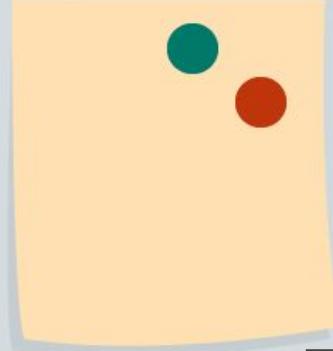
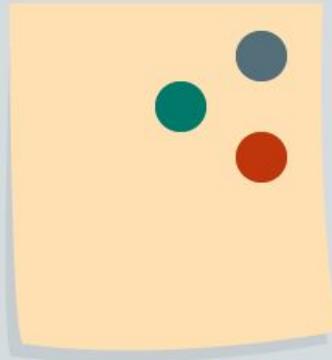
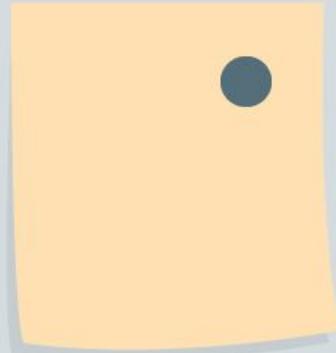
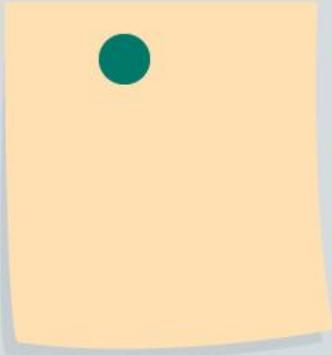


Be prototype driven

What is your Challenge?

E.g. Find ways to **detect fraudulent activities** using ML.

Pitch & Vote



Your Challenge:

Write the most voted challenge on the flip chart.



Focus on the user

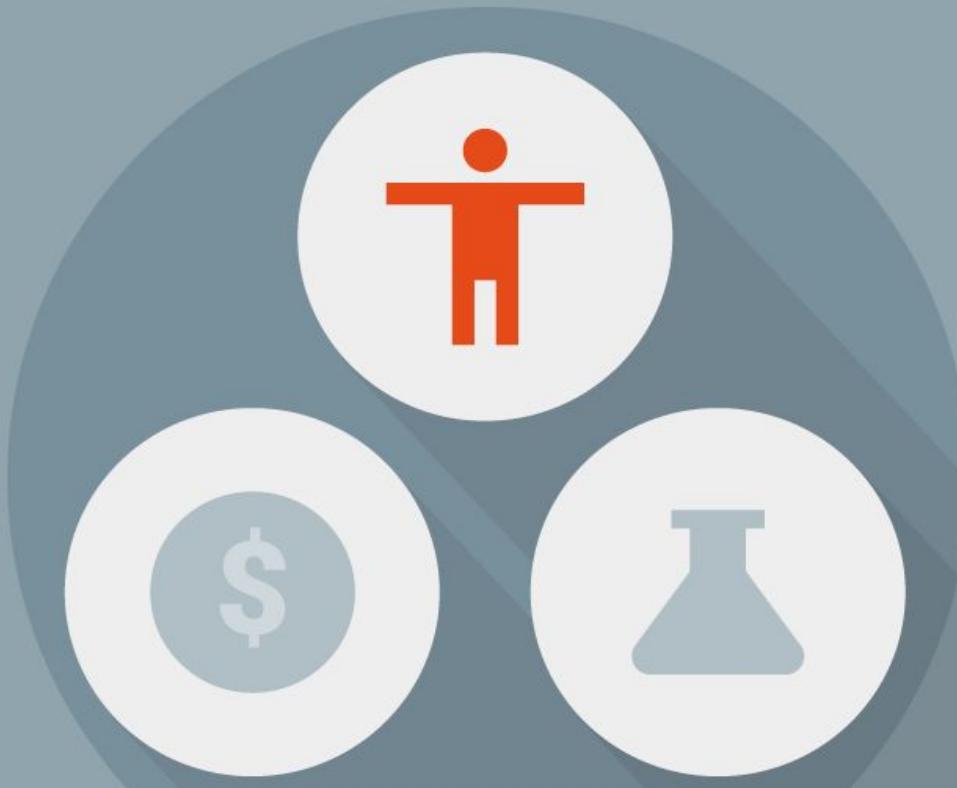
Focus on the User

*"There is no substitute for personally
watching and listening to real people"*

- Larry Page

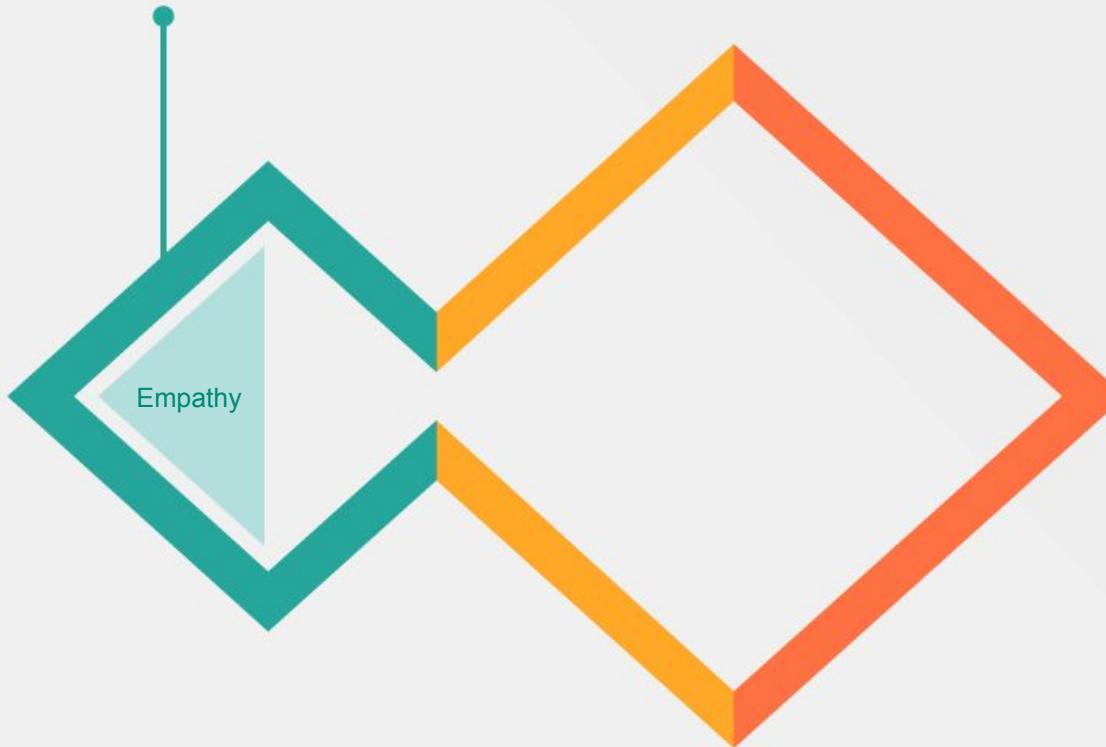


Focus on the User

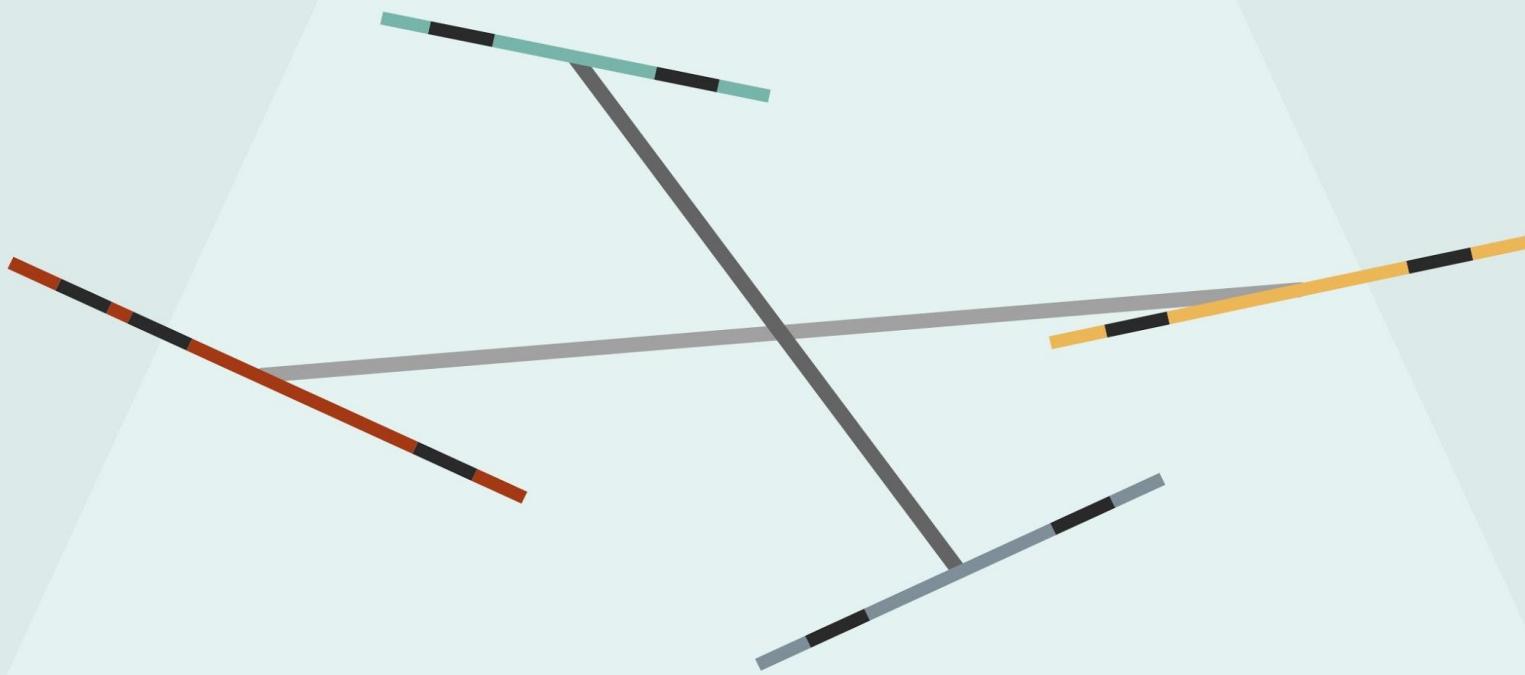


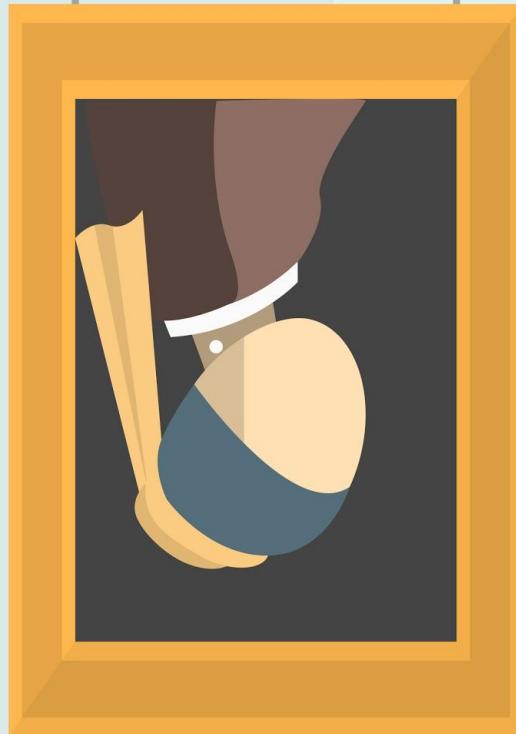
and all else follows.

Focus on the user



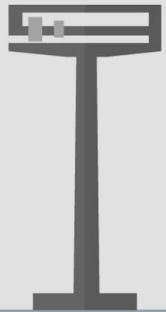






*Shifting your **perspective**
is better than being **smart***

- Astro Teller, Google[x]



Inspiration



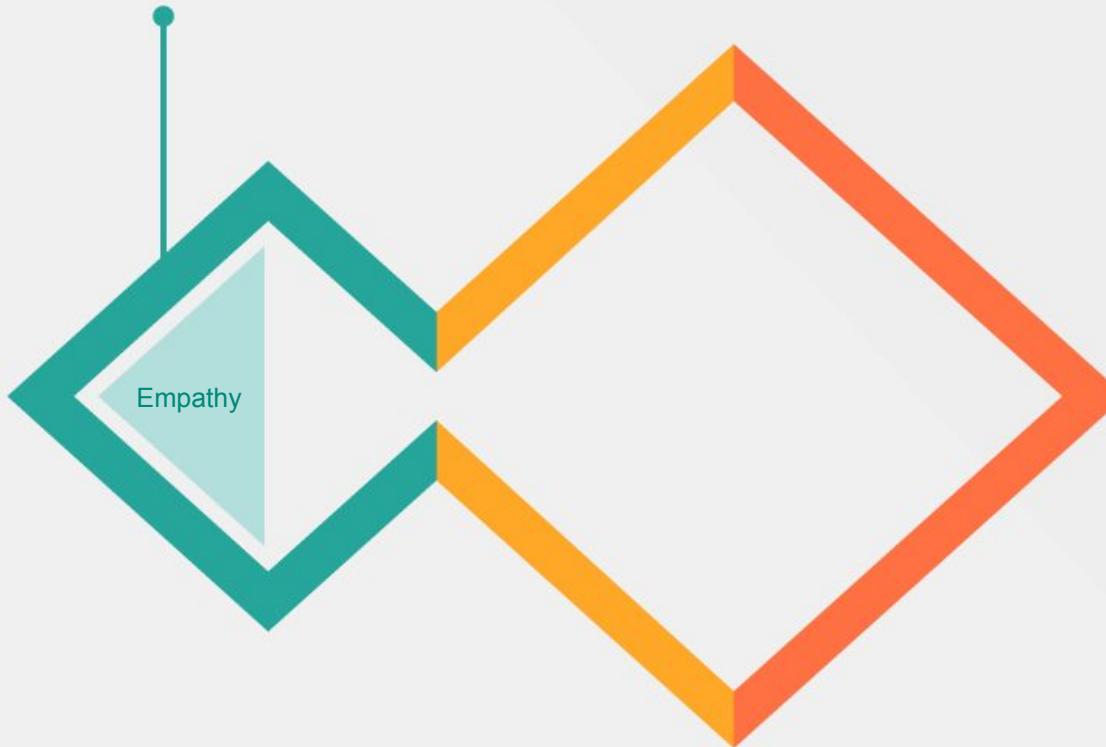
Inspiration





5 mins break

Focus on the user



Establishing Empathy

Your goal:

Connect to someone's stories, insights, emotions.



Let's do it!

Find partner, sit facing each other. Determine roles (Persons A & B).

Person A:

Speak for 3 minutes about **a key personal moment from past year**

If you run out of things to say, you can sit in silence

Person B:

Your job is to listen without speaking

If your mind wanders, bring it back and resume listening

(Later, we'll ask you to reflect back what you hear)

Go!



Reflect back

Person B:

Reflect back Person A's **key ideas** and **tone** (don't repeat every word)

Example:

What I heard you say is that you felt elated when you found out about your promotion...

Person A:

Offer feedback:

Did your partner capture the essence of what you shared?

What did your partner miss?



Switch Roles

Person B:

It's your turn to speak about **a key personal moment from the past year**

Person A:

Listen without interrupting

Go!



Reflect back

Person A:

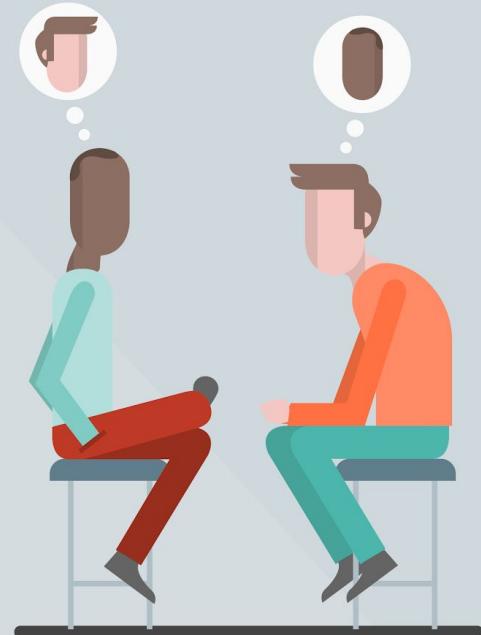
Reflect back Person B's **key ideas** and **tone**

Person B:

Offer feedback:

Did your partner capture the essence of what you shared?

What did your partner miss?



Takeaways

Empathy requires you **checking assumptions** and ideas at the door

Feedback helps you hone in on **speaker's reality**

Now let's **apply these techniques** to our project!



User Research

- Interviews
- Observation
- Immersion
- Online forums
- User Journeys
- Polls & surveys
- Website activity
- Social media
- Personas

Interviews

Interviews

Uncover needs of your users through

stories, emotions, and insights

Your goal is **not** to think up new ideas or find solutions

This prevents you from seeing their reality

Listen and ask for feedback (ie don't jump to conclusions)



Interviewer Tips

Seek stories

"Tell me about a time..."

Ask open-ended questions

"Walk me through..."

Encourage elaboration:

"Tell me more about"

"why, why, WHY?"



Encourage Elaboration



First grade was **AMAZING**, except for **BALLET**. But my second grade teacher and I **NEVER GOT ALONG**.

Sample Questions



QUESTIONS

- / Walk me through your last moving experience.
- / Tell me about the most positive job relocation you've ever had.
What made it so positive?
- / If you had magic wand and could change one thing about the moving experience, what would you change?

AVOID (stay out of solution-land):

- / Do you think it'd be better if we had robot movers?
- / You mentioned worrying about your valuables getting stolen. What about hidden cameras?

Roles

Assign

Interviewer: 1 team member

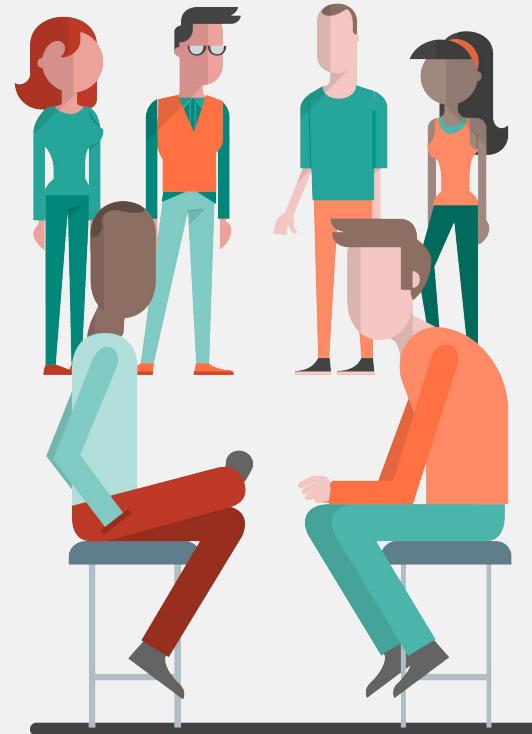
Interviewee: 1 team member

Observers: remaining members of team

As **Observers**, your job is to:

Record missed opportunities for elaboration

Interesting insights



Question Prep

Interviewer and Observer:

Prepare some questions for your interview

(You will likely deviate from the list)

Interviewee:

Sit tight



10 mins

Interviewer Tips

Seek stories

"Tell me about a time..."

Ask open-ended questions

"Walk me through..."

Encourage elaboration:

"Tell me more about"

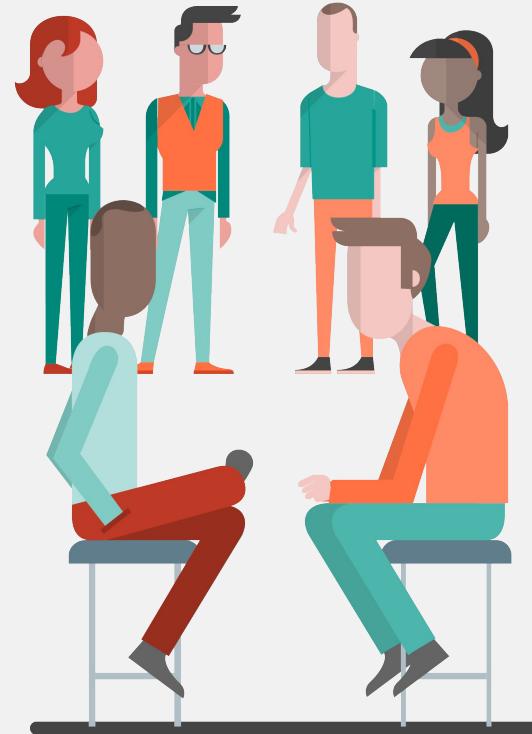
"why, why, WHY?"



Interview Time

Go!

10 mins



Debrief

How did that go?

Observers:

Any opportunities for elaboration that were missed?

Did the interviewer stay out of solution-land?

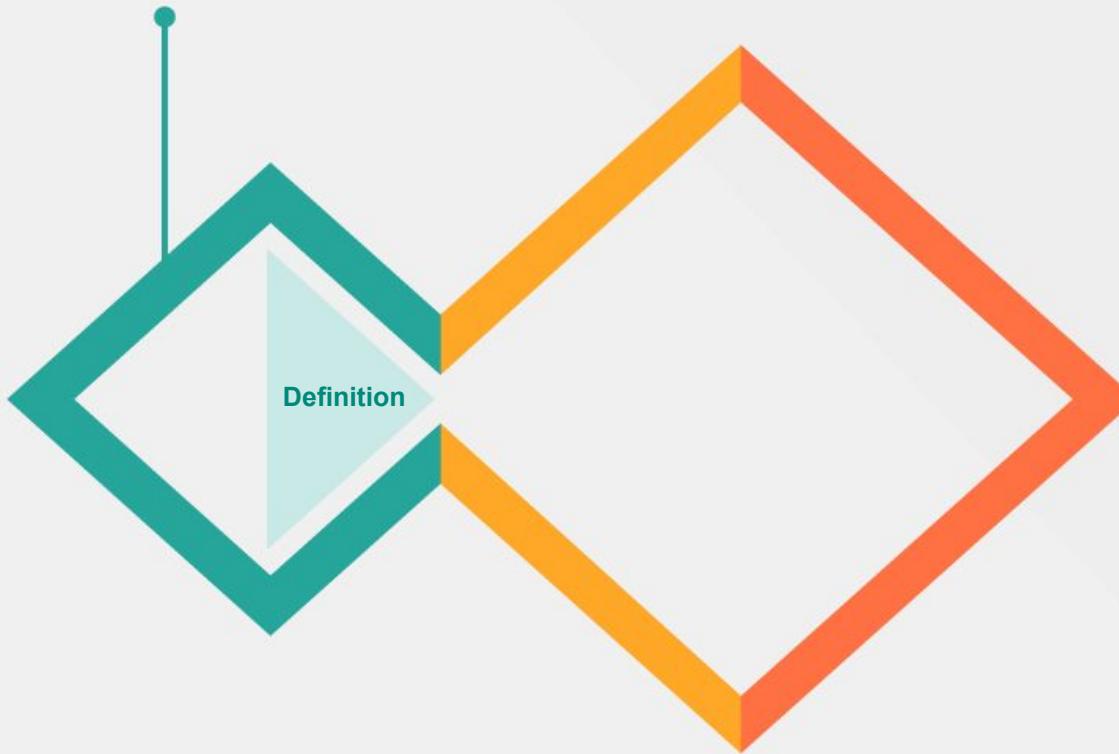
Observers:

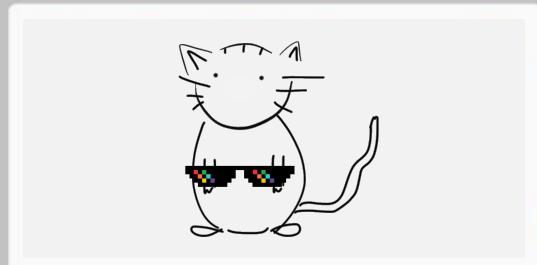
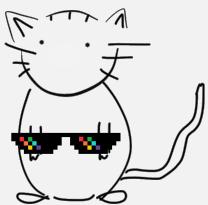
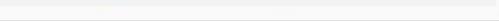
What'd you notice?

What interviewing tips were helpful?

5 mins

Focus on the user





Facts

Objective

I heard...

Inferences

Subjective

Maybe this
means...

5 mins



Point of View

= User + need + insight

User = Be specific

Need = Use verbs

Insights = Observation + interpretation



Point of View

= User + need + insight

"Jose is a busy manager who wants to eat healthier but doesn't want to feel like he's on a diet."

great details!

verbs - excellent!

interesting insight!

User = Be specific

Need = Use verbs

Insights = Observation + interpretation



Point of View

= User + need + insight

"Jose needs more healthy menu options to have a better eating experience at Google."

This is a noun. Use verbs only.

who's Jose?

where's the insight?

User = Be specific

Need = Use verbs

Insights = Observation + interpretation

Point of View = User + Need + Insight

_____ is a _____

Name

user characteristics

who needs (a way to) _____

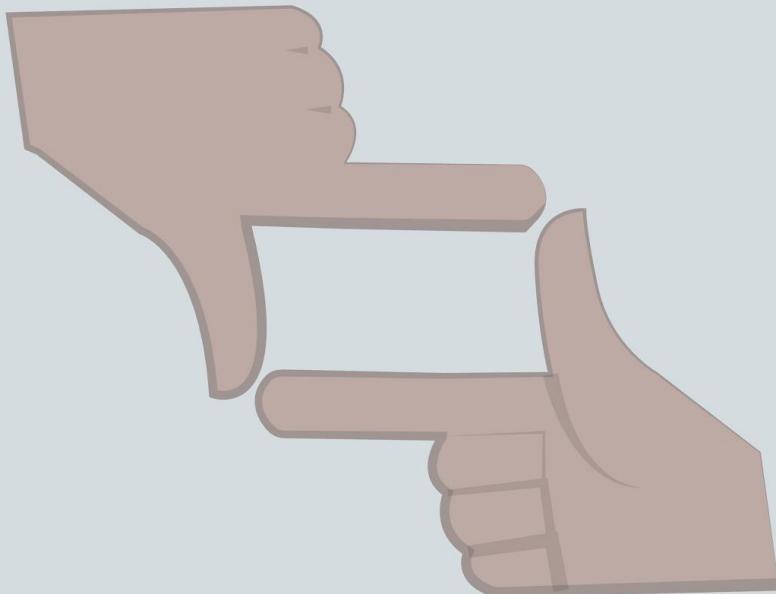
user's need

because (they value) _____

Insight (Observation + interpretation)

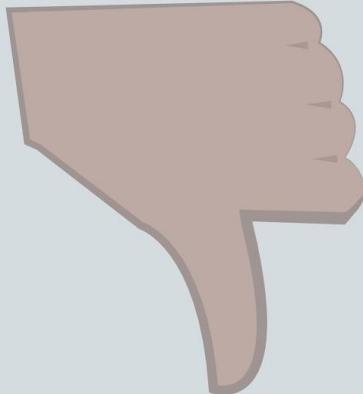
Sally is a **busy account manager** who needs a way to **help her merchants** because she values in **providing top quality eCommerce platform as a service that has low fraud cases.**

Framing a Problem



Describe **goals**,
not solutions

Framing a Problem



This is too narrow and focused on solution.



How might we create a ML model that predicts the probability of a customer being a fraud?

How might we identify fraud case more easily?



eek! Too general!

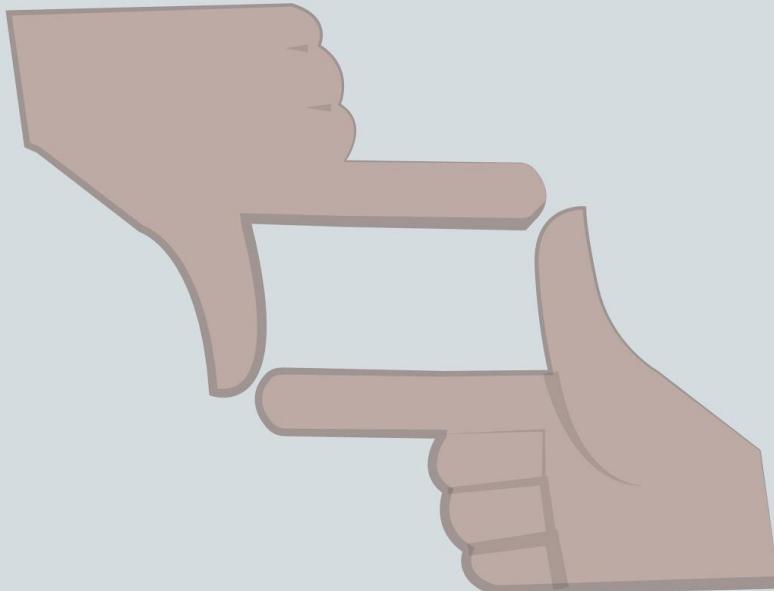
Framing a Problem

How might we [action] [what] for [whom] in order to [change something]?

How might we identify a pattern in purchase return activities for merchants who sell goods on our eCommerce platform in order to win their trust to list more products?



Framing a Problem



Use the **POVs** to generate 2-3
How Might We statements

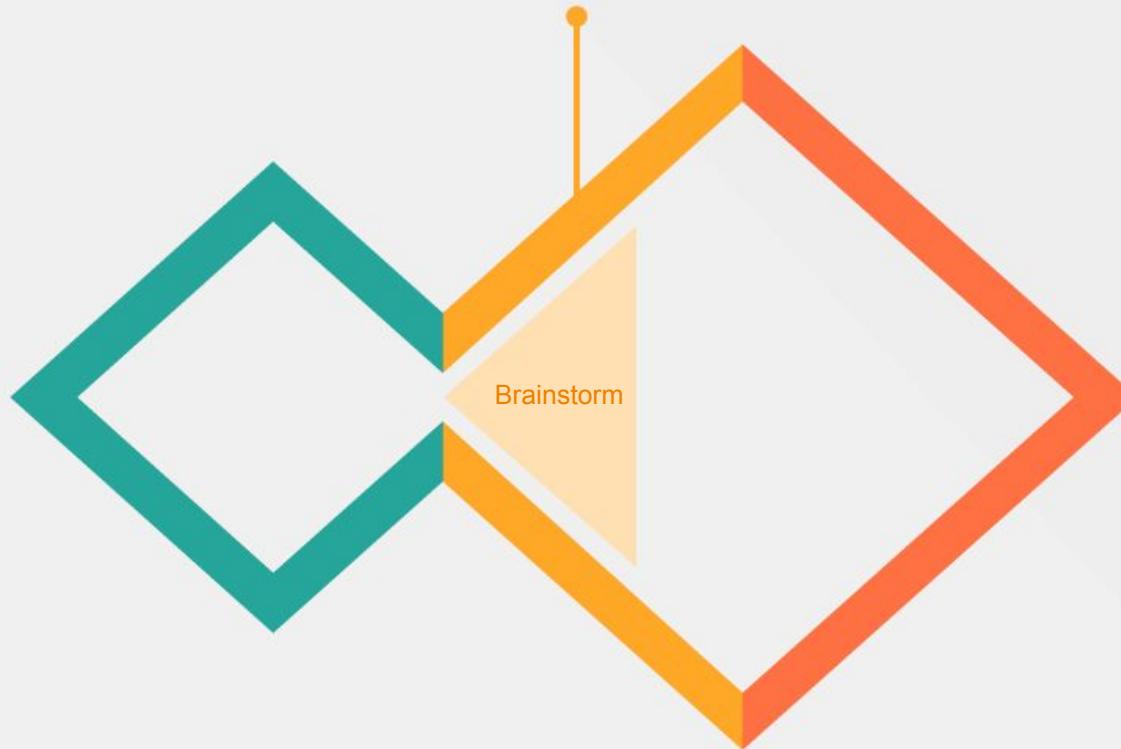
(Describe goals, not solutions)

5 mins break

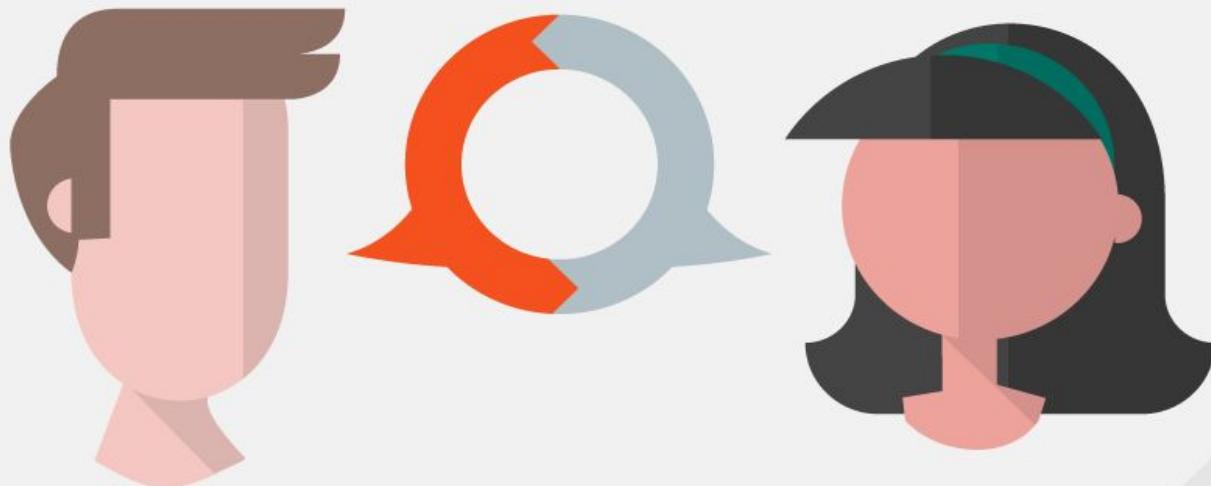


Think 10X

Think 10X



“Yes, and” > “No, but”



Build on the
ideas of others.

Quantity > Quality



The best way to have
a great idea is to have
lots of ideas.

Write Headlines

Encouraging news

The Mad Experiment

last, progress

Welcome to Public Financial Management

"Now the leader?"

Hope for the Finding the keys to

Save the Planet. Top of the Marketing World

Opportunities in Economic and Financial Markets

Free in this world

< 6 words

No need to have all the details yet

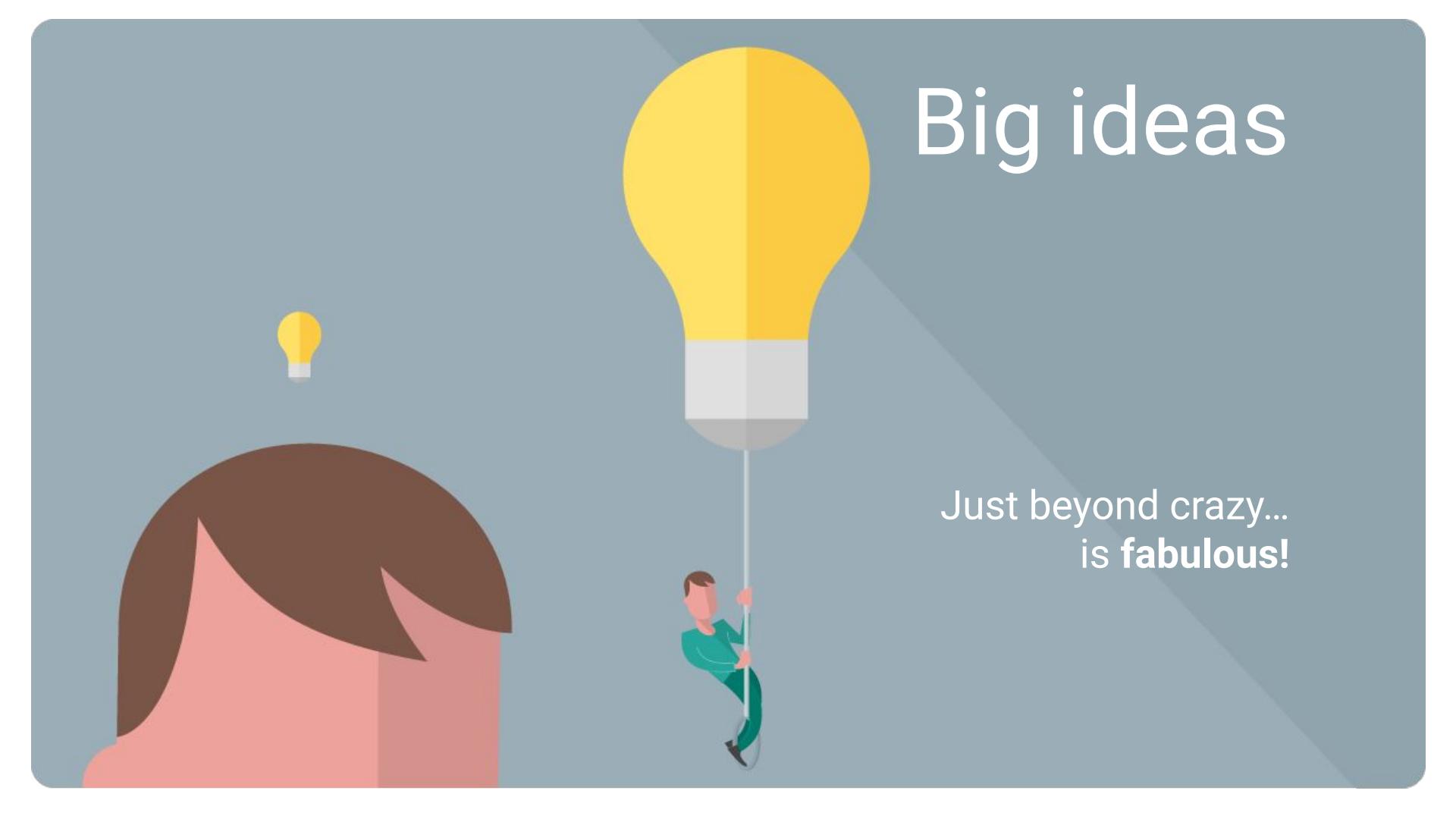
Visual > Text



>



Hard to
miscommunicate
with a **picture**.

A stylized illustration on a grey background. On the left, a person's head is shown from the side, colored in a gradient of pink and orange. A small yellow lightbulb is positioned above the head. To the right, a large yellow lightbulb is suspended by a thin vertical line. A man in a green shirt and dark pants is climbing the line, holding onto it with both hands. The lightbulb has a grey base and a yellow upper half.

Big ideas

Just beyond crazy...
is **fabulous!**

No Judgment

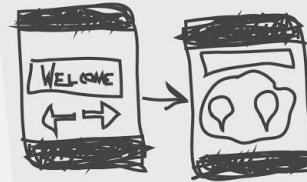
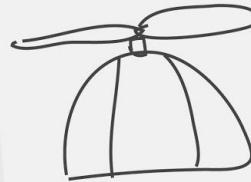
- Excellent
- Very Good
- Good
- Average
- Poor

Judge all you want
afterwards.

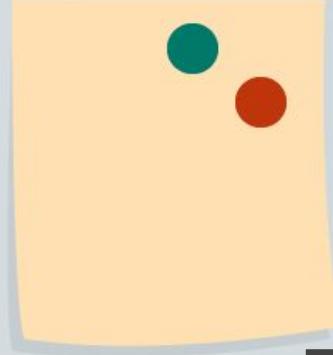
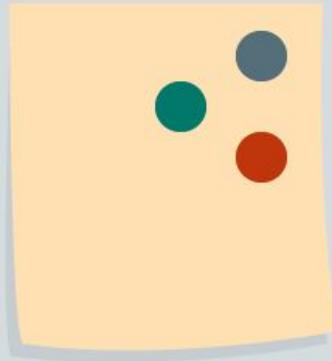
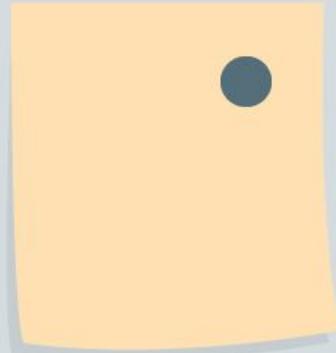
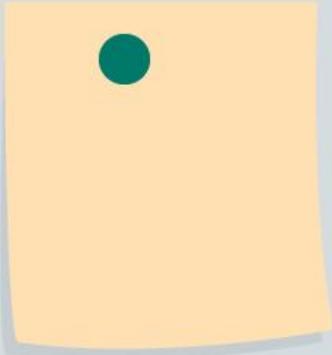
Brainstorm: Guidelines



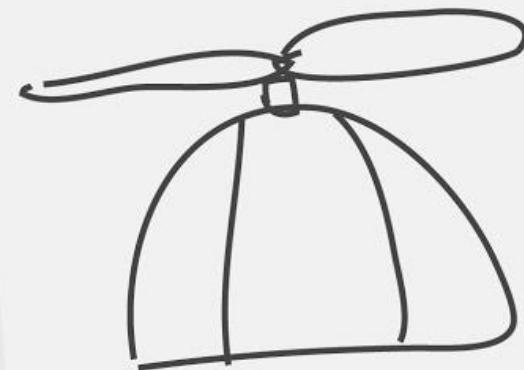
Individual Brainstorming



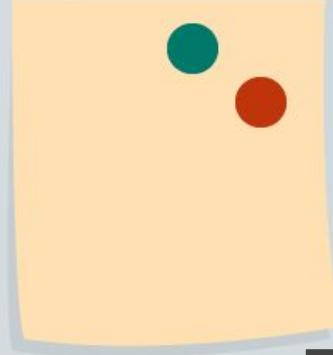
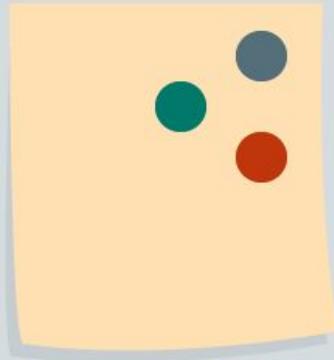
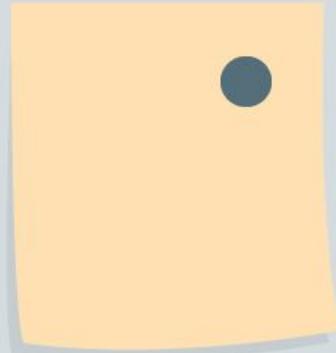
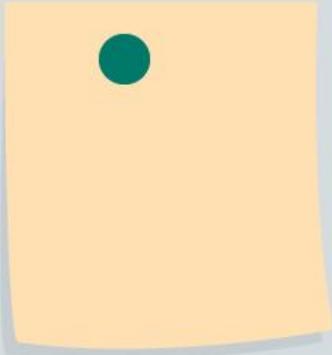
Pitch & Vote



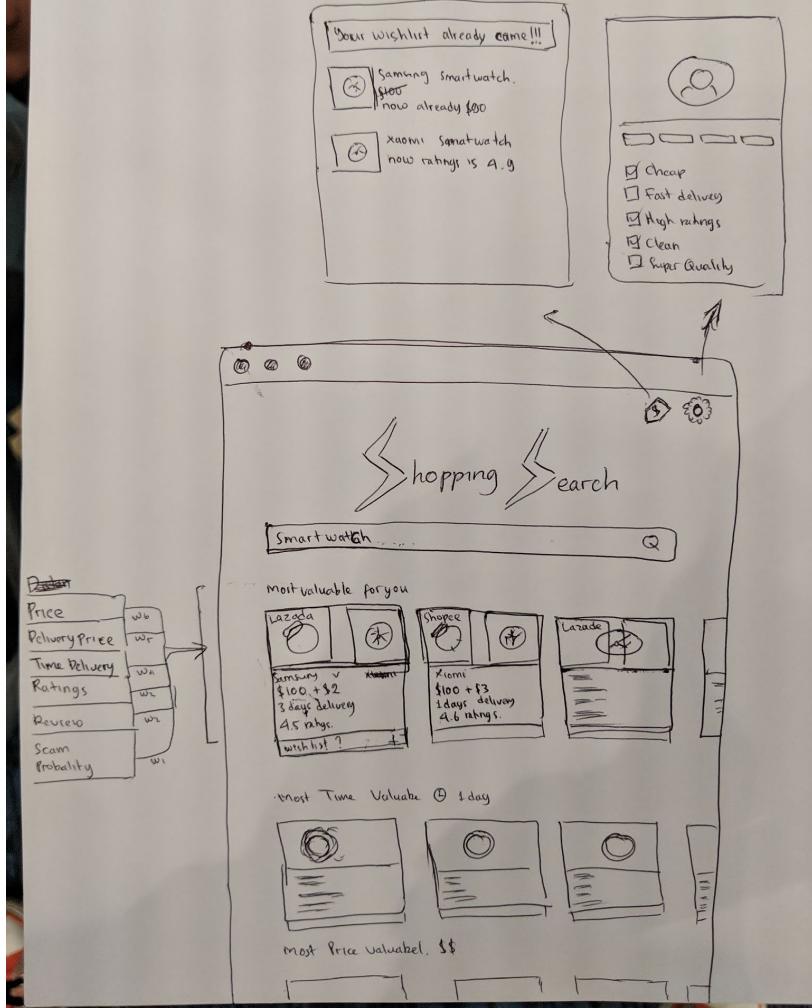
Individual Brainstorming



Pitch & Vote



Presentation



Design Thinking

ML Bootcamp edition

Google



Would you like to
go beyond traditional
brainstorming?

Wondering how to make
brainstorming over VC
more effective?

Need a creative jolt
or new insights?



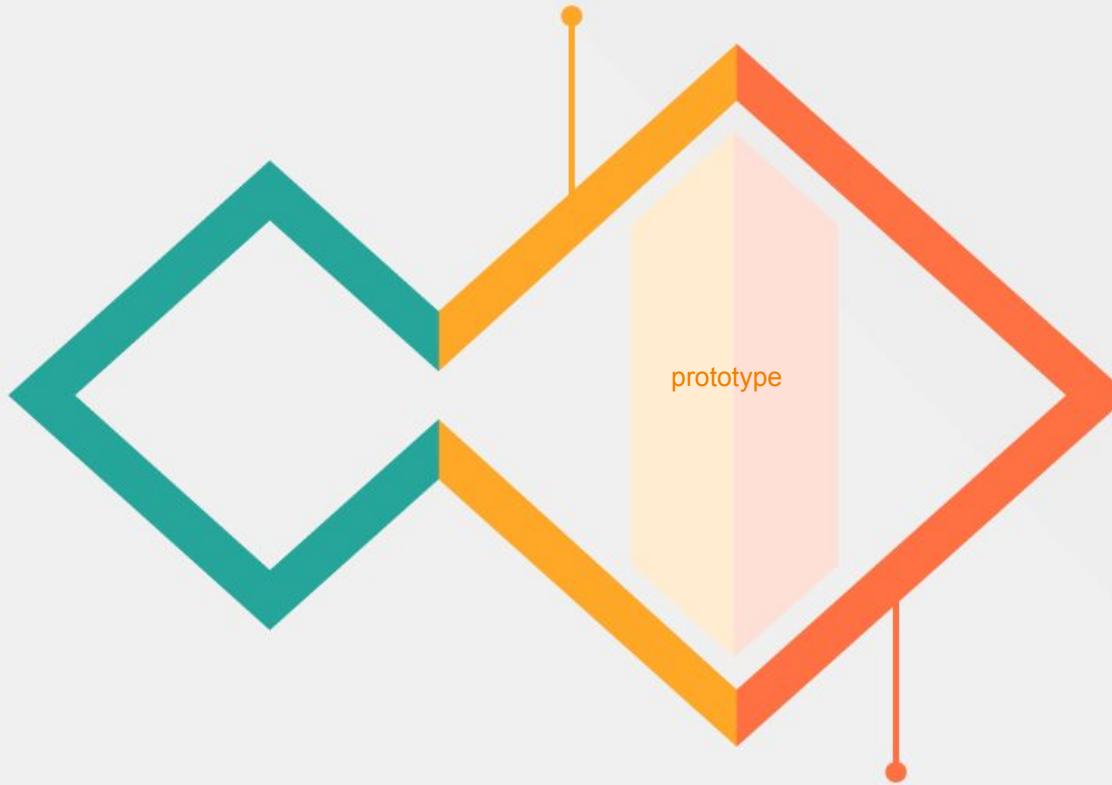
Find the right brainstorming techniques for you: **go/brainstorm**

Stop here



Be prototype-driven

Think 10X



Be prototype driven

Plan

Challenge: Your challenge is to find ways to encourage teenagers to be interested in STEM (Science, Technology, Engineering and Math).

160 students divide to 12 teams = 5 students / team

Invite other Googlers / GDGs / GBGs to co facilitate

Talk about all 5 steps.

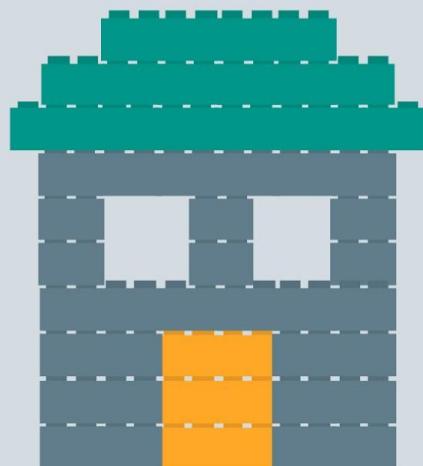
Bok to lead phase 1 (slides 1-33)

Marcus to lead phase 2 (slides 34-46)

Yohan to lead phase 3 (slides 47-60)

Facilitator: Amu, Charlotte, Vaibhavi, Naveen, Jen, Alyssa, Laura, Ibnu, Dennis

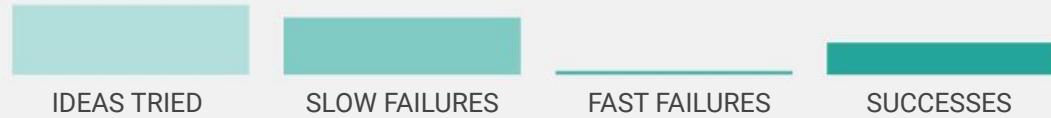
What's a prototype?



An early version of an idea built to:
out assumptions
answer questions

The prototyping effect

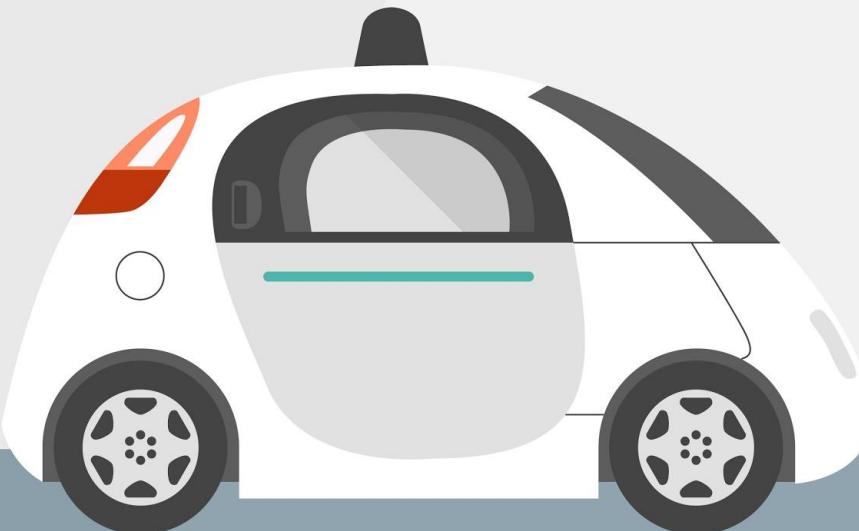
Without prototyping



With prototyping



Outing assumptions



Assumption: People want driver-assisted vehicles

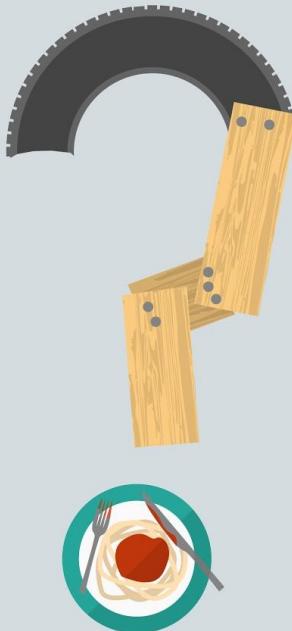
Questions prototypes ask

DO PEOPLE WANT IT?

Would people use this thing?

Would people buy this thing?

Would people prefer this thing over that other thing?



HOW SHOULD IT WORK?

Can people do this thing we want them to do?

How will this interaction feel?

Do people understand where to click?

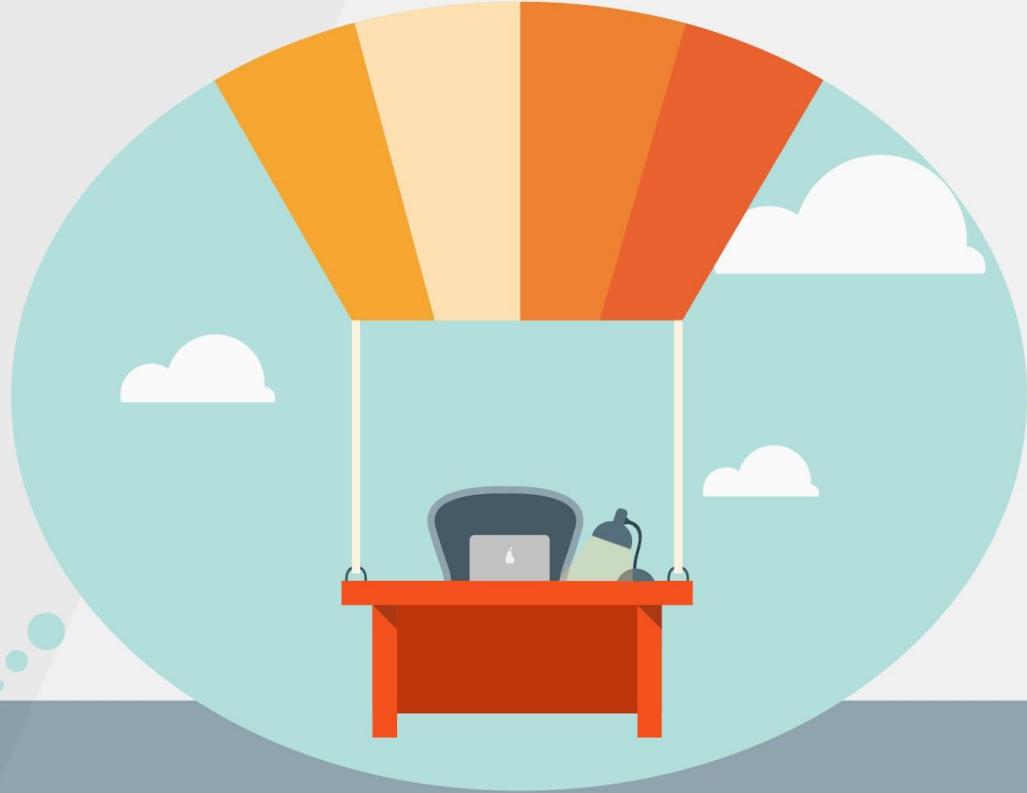
How to prototype

FAKE IT

or

MAKE IT

(small, quick, partially)



Suppose...



FAKE IT

*Do people like working in
high up places?*



FAKE IT

*Do people like working in
high up places?*



MAKE IT
(small, quick, partially)

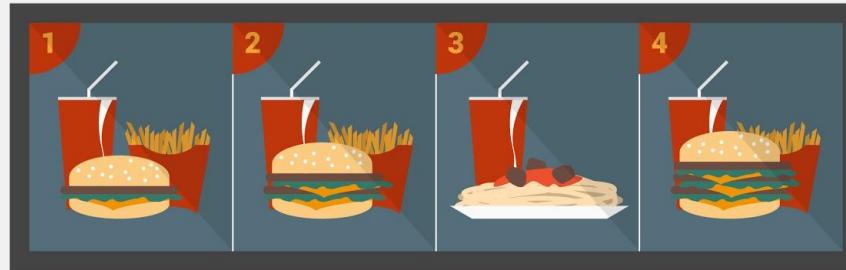
*How much helium does it
take to lift a person?*

FAKE IT



*Will people use a device
that fits in a shirt pocket?*

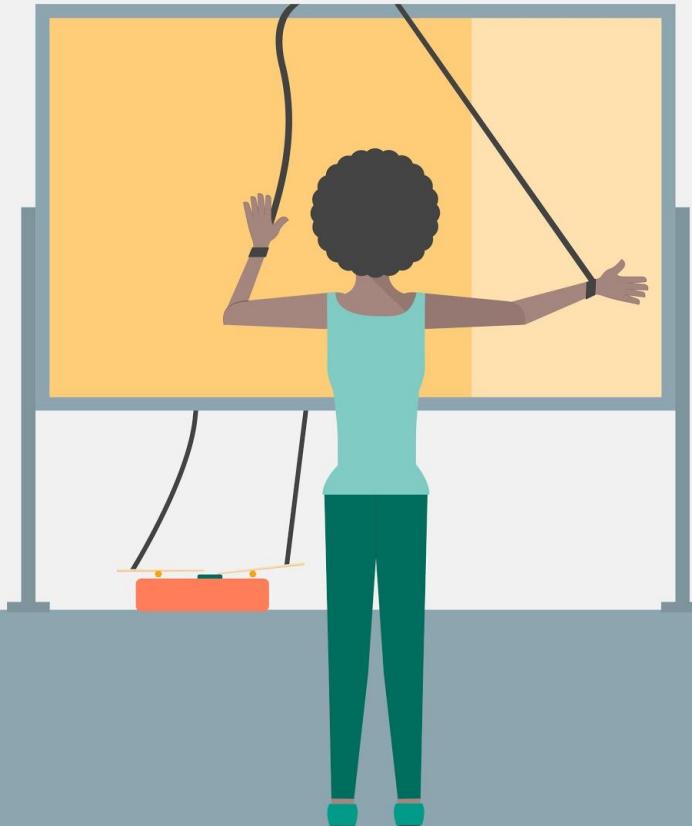
FAKE IT



Will people order McSpaghetti?



Will people buy new electronics if we payed them for their old ones?

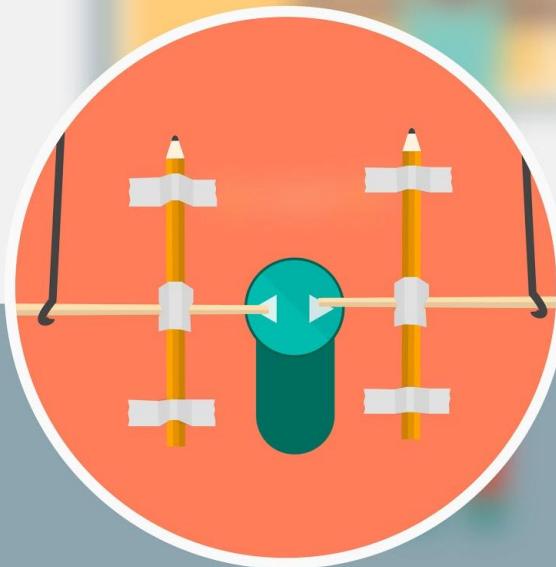


MAKE IT
(small, quick, partially)

*Will people use hand gestures
to navigate software?*

MAKE IT

(small, quick, partially)



*Will people use hand
gestures to navigate
software?*

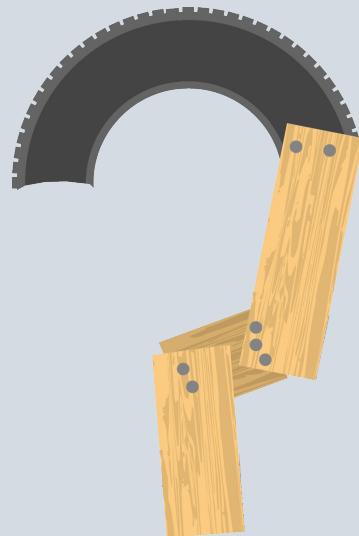
How would you prototype...

Job rotation program so people can learn about peers' roles
Would people sign up for a rotational program?

New candidate to join team
How collaboratively would this person work on the team?

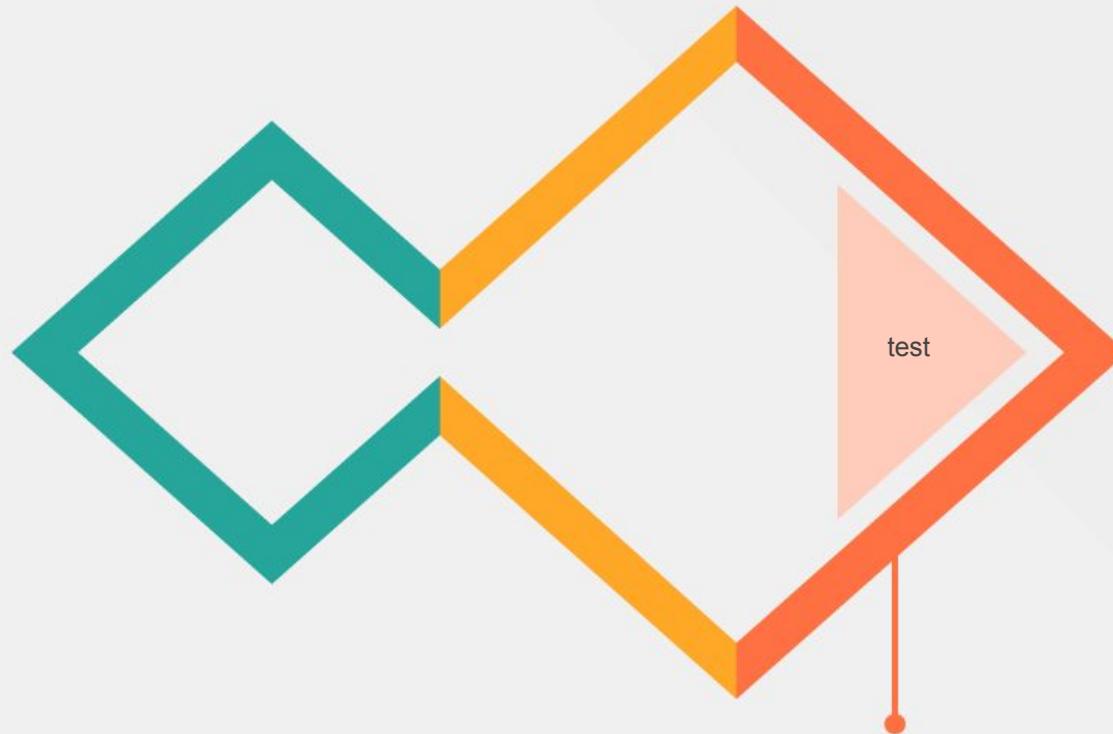
Food delivery app
How quickly do people need their food delivered?

Your turn



What **questions** do you want to answer with your prototype?

Create a **prototype** that will help you answer a few of your core questions



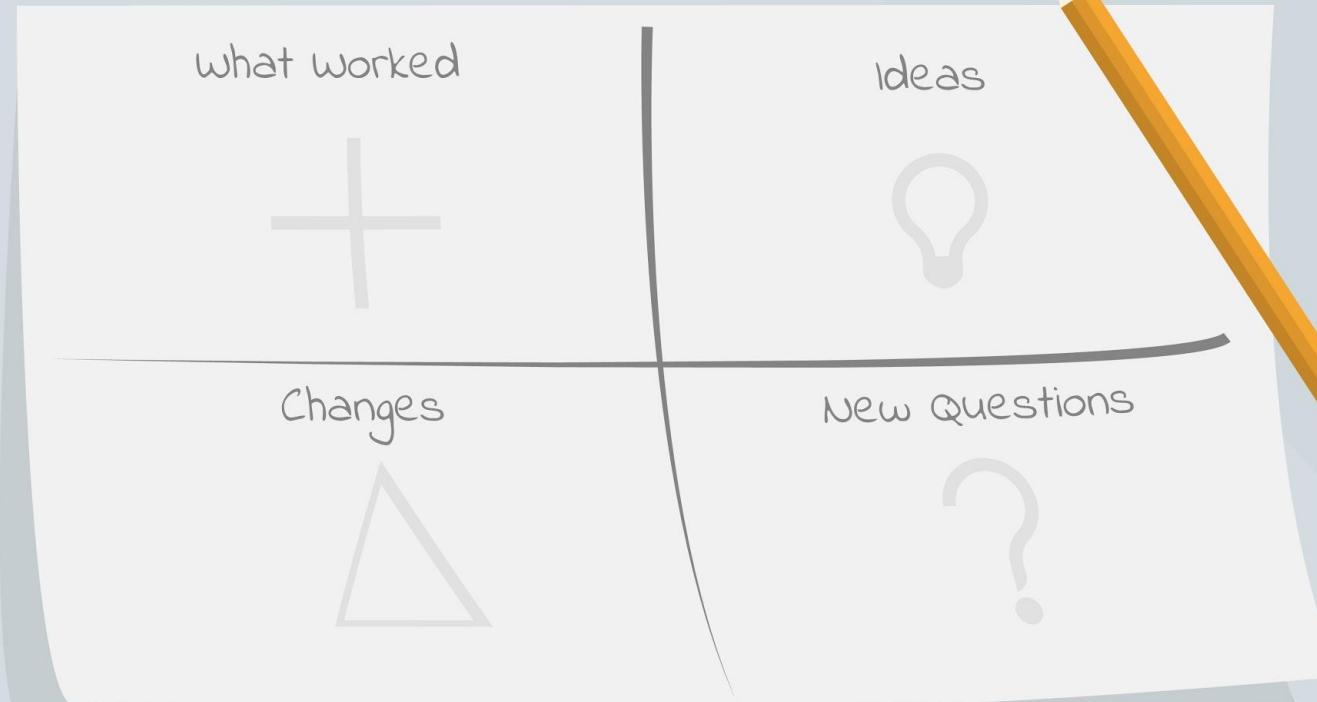
Be prototype driven

Find your **USER**

and test your prototype.

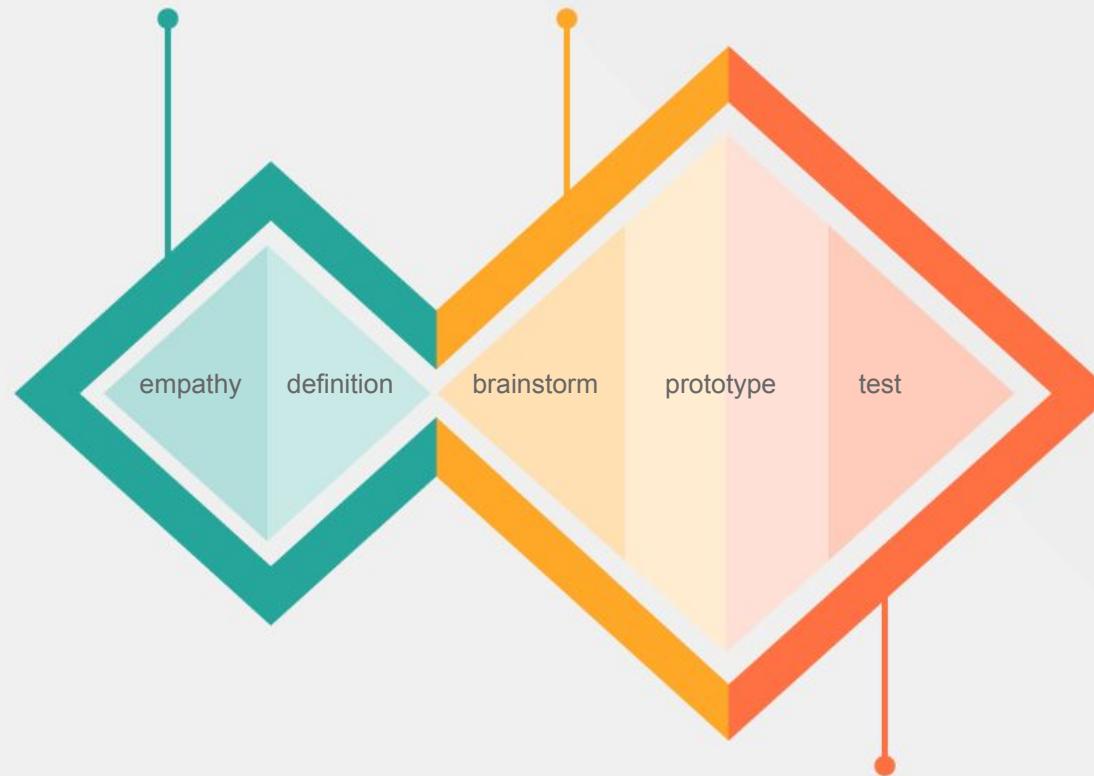
TESTING = EMPATHY

Track the feedback



Focus on the user

Think 10X

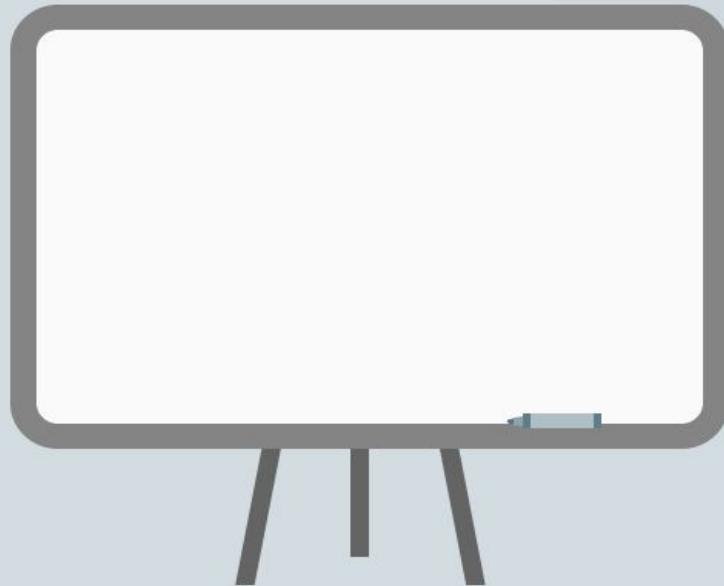


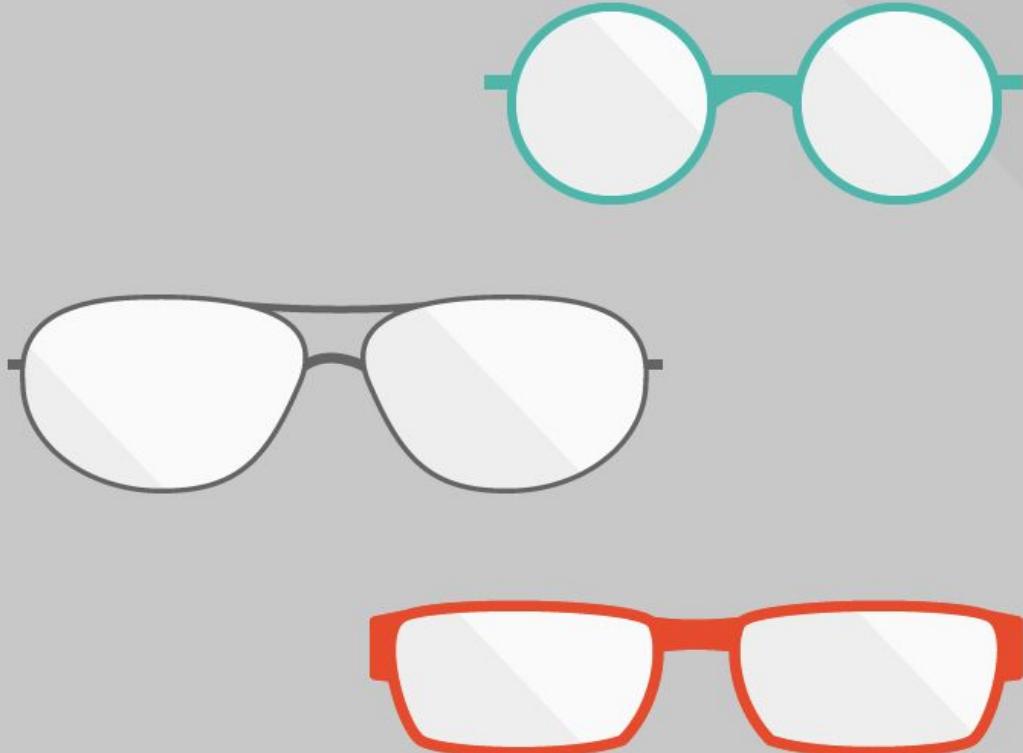
Be prototype driven

Focus on human values



Bias Towards Action





Change

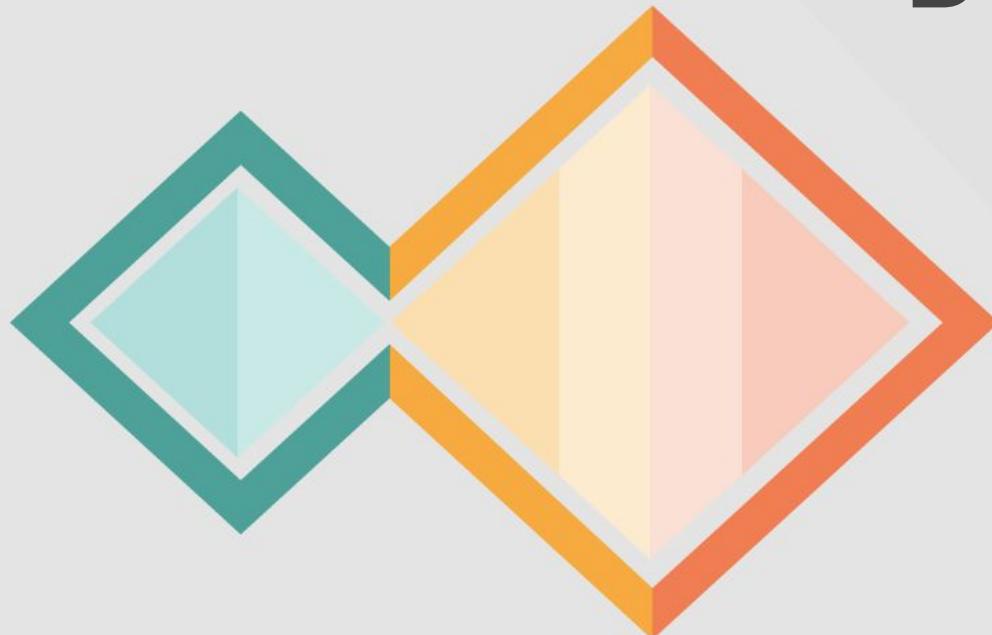
Your Perspective.

Get Experimental

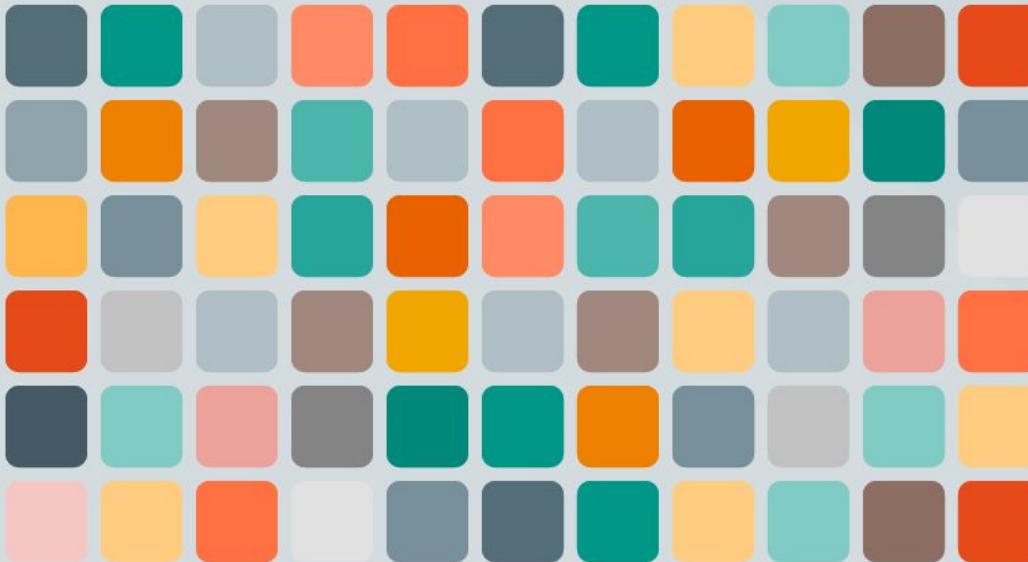


And **Experiential**.

Be Mindful



Of Process.



Show,

Don't **tell**.

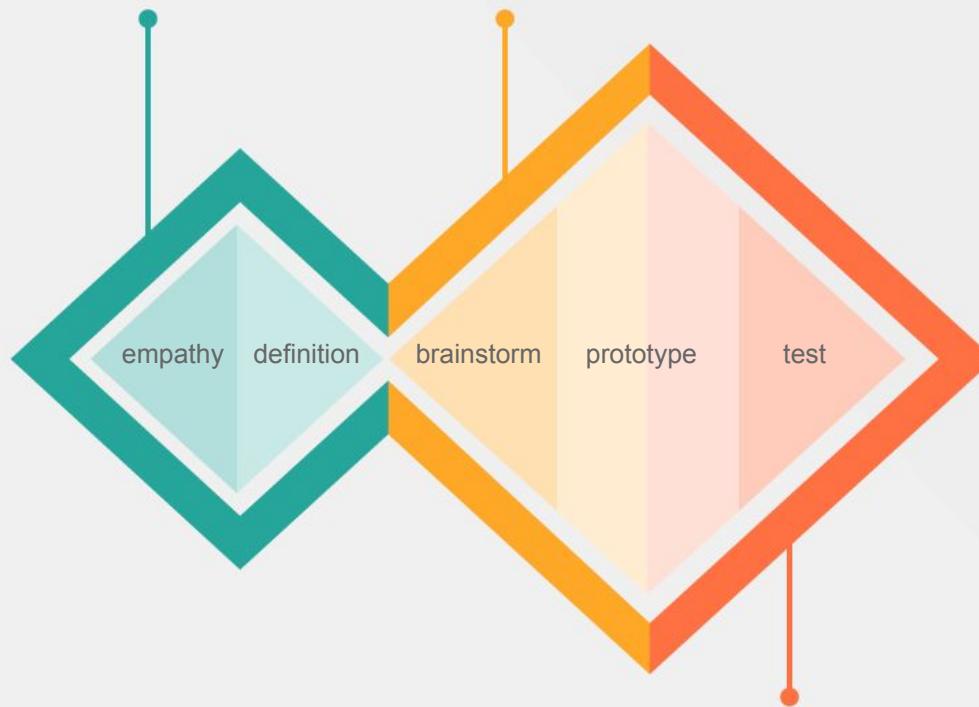
Collaborate



Across **boundaries.**

I liked...

I wish...



What if...?

WHAT

Network of Googlers who teach courses,
mentor 1:1, or design learning programs

WHO

Any Googler who contributes to learning
by spending time outside their core role

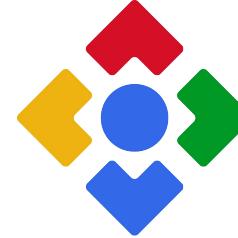
HOW

Check out **go/LearntoTeach** and **go/g2g**



Googlers to Googlers
teach • share • learn

go/innovation-learning
go/innovationguru
Follow us on G+



Grow
BETA

[go/iamhere](#)

go/Grow Your Way and find...

- Learning resources
- Job opportunities
- Personalized recommendations

Want to get involved and share your expertise? [go/g2g](#)



Appendix

Innovation



Where do you have
your **best ideas?**

Inspiration

How might we...get more people to choose the stairs by making it fun to do?



Inspiration

In the field, Wearable Intelligence provides operators and engineers with an enterprise-grade, secure, hands-free wearable platform to improve day-to-day workflow, safety, and compliance.



Information they need, when they need it



Create a Game



Mediterranean themed
Create 15-sec pitch

Facts

Objective

What did they **SAY?**

Inferences

Subjective

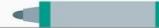
What were they **THINKING?**

What did they **DO?**

How were they **FEELING?**



User	Needs	Insights
Busy	Eat healthy	Doesn't like the <u>feeling</u> of being on a diet
Marketing manager	Have more energy for kids	Eating with others is how he connects
Dad of 2		



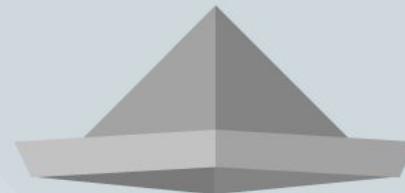
5 Thinking Hats



Optimist



Idea Generator



True Pessimist

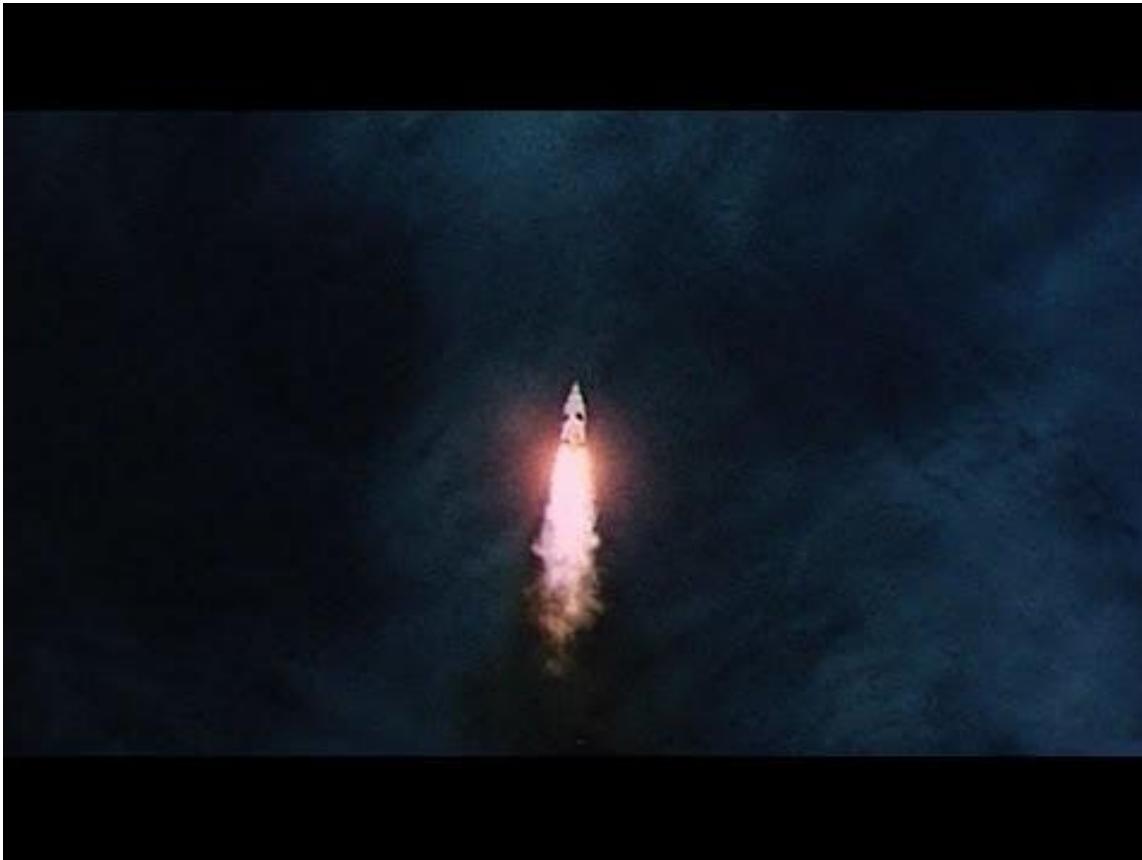


Technical feasibility



User Advocate

Solve for $\langle x \rangle$



Selection of Master slides

Title

Subtitle

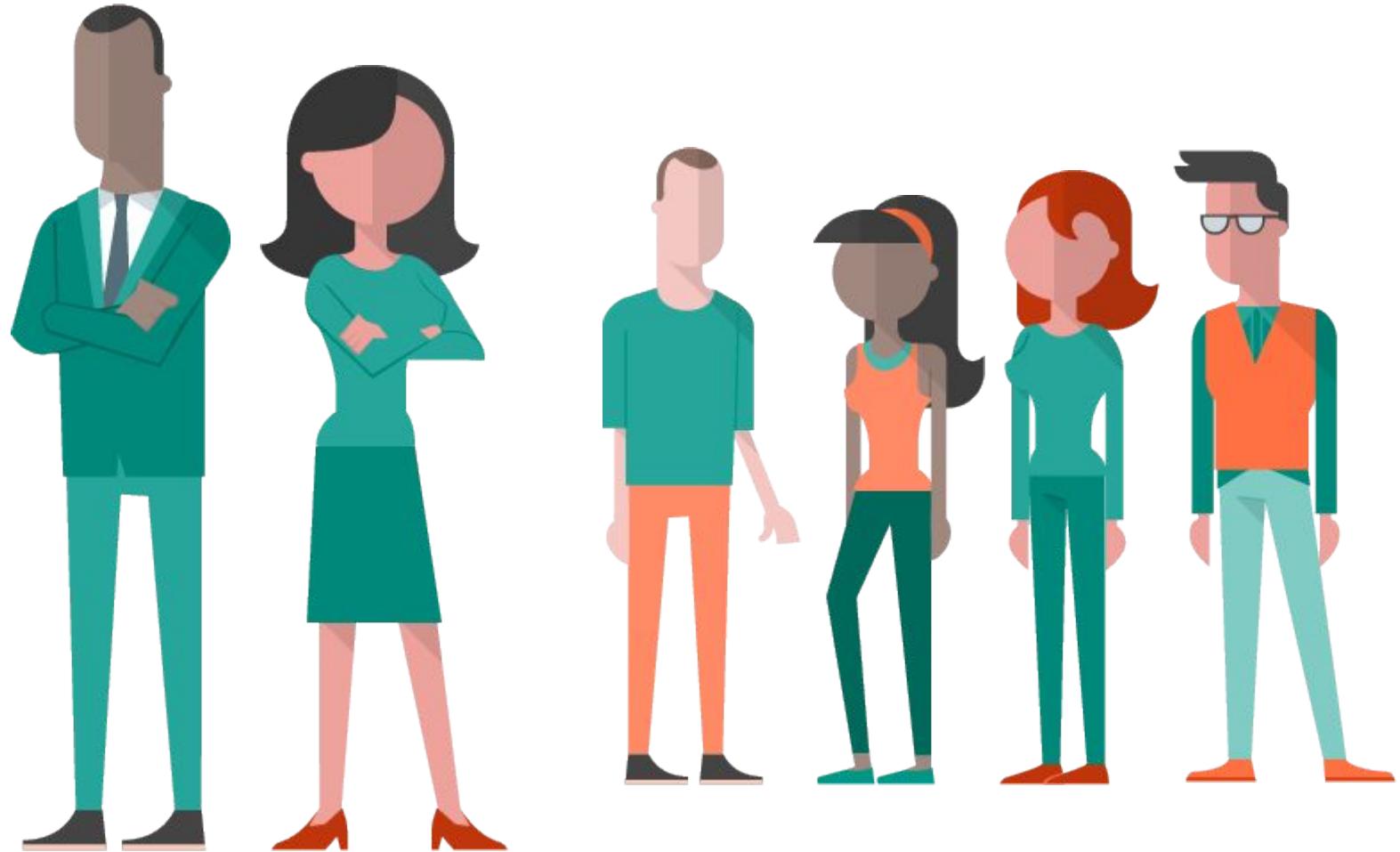


Title

Subtitle

Title

Subtitle



Sample Title

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Suspendisse vel elementum nulla. Fusce eget efficitur augue, **et tincidunt urna**. Quisque
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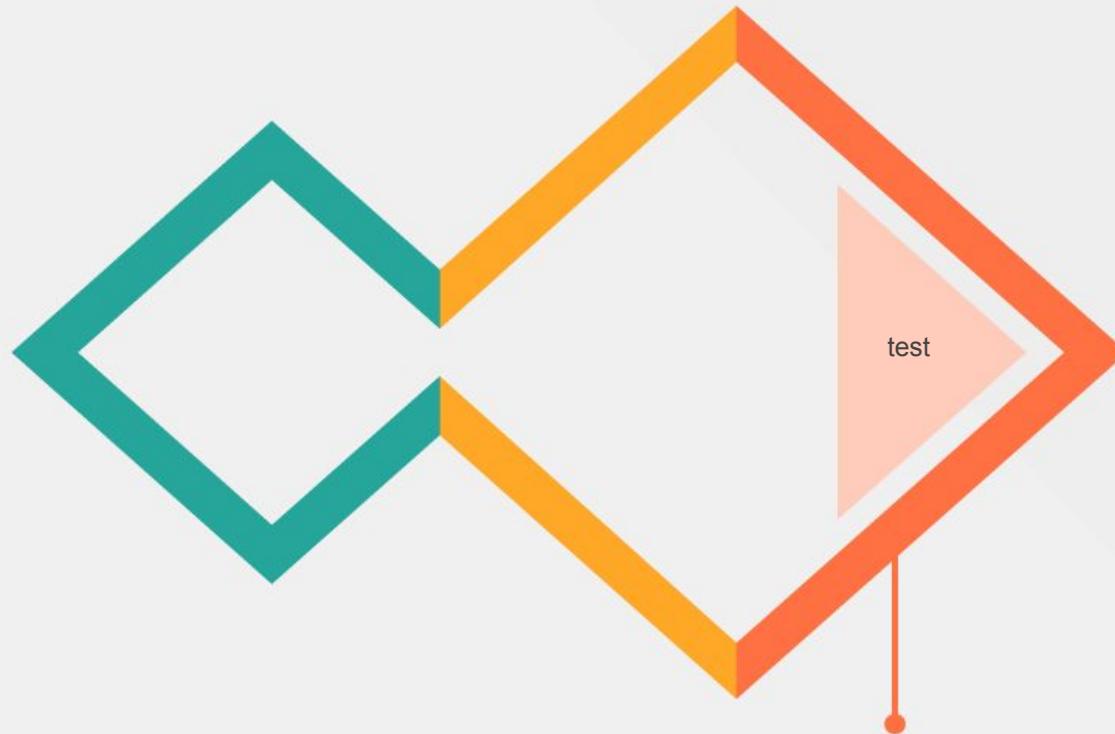
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Be prototype driven

Measuring success



How will you know if your prototype is successful?

Determine your metrics before you test

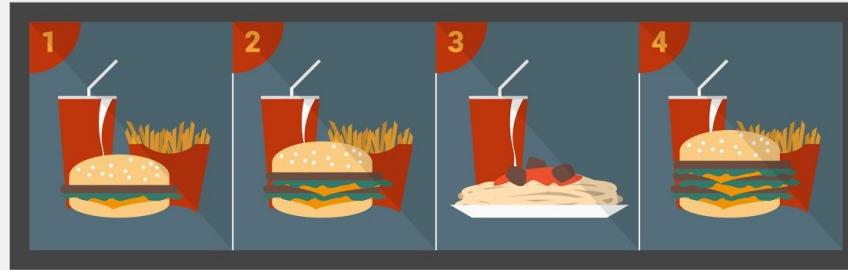
FAKE IT



QUESTION:
*Will people use a device that fits in
a shirt pocket?*

SUCCESS:
*After 2 weeks,
users pull it out 3 times daily*

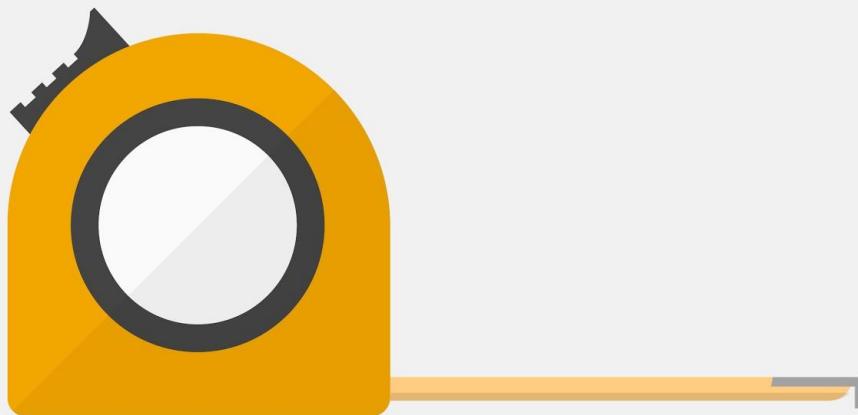
FAKE IT



QUESTION:
Will people order McSpaghetti?

SUCCESS:
Moderate: 50-100 orders
Wild: 100+ orders

Measuring success



*Create metrics for
your prototype*

Find your **USER**

and test your prototype.

TESTING = EMPATHY

Track the feedback

