Experimentation & Prototyping

CS 247

today

Introductions

An Experiment

Experimentation & Prototyping

An Experiment

Pair up with another team and in groups of 6:

- read your instructions
- plan accordingly --10 minutes

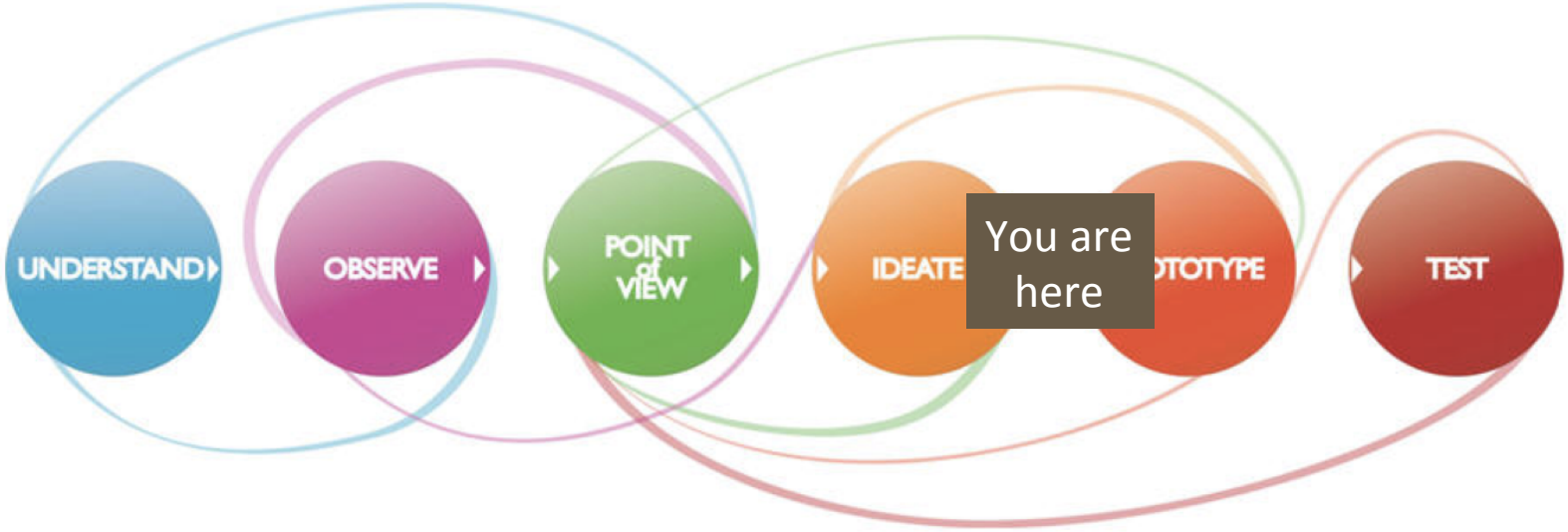
The cocktail party

- as a class, mingle and get to know each other

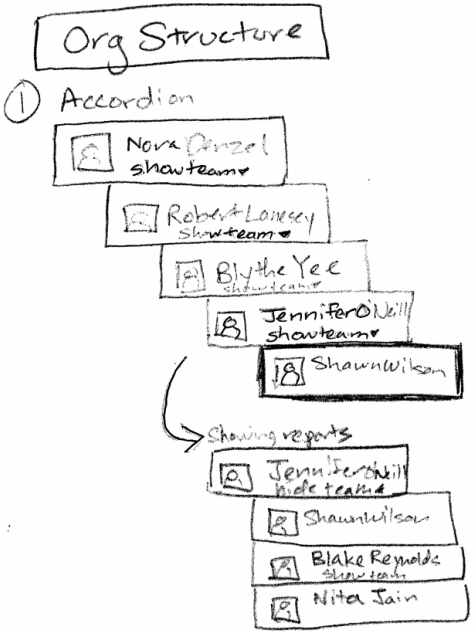
--10 minutes

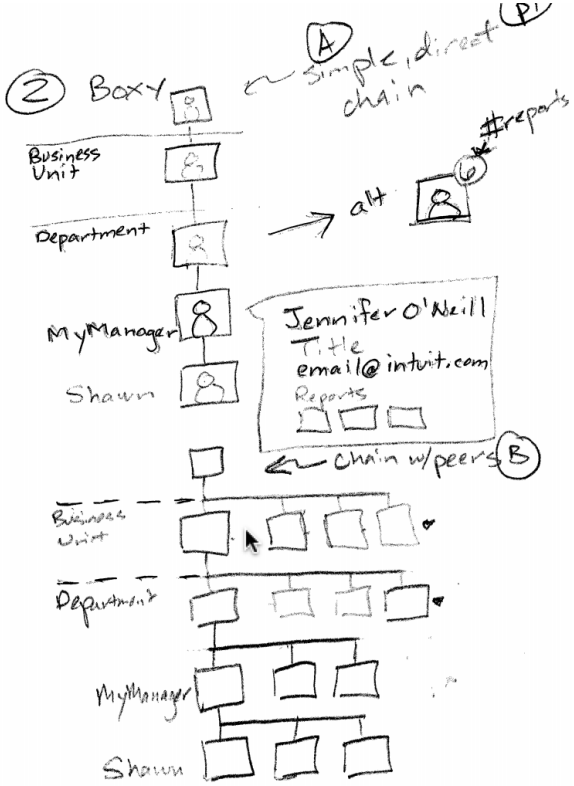
debrief

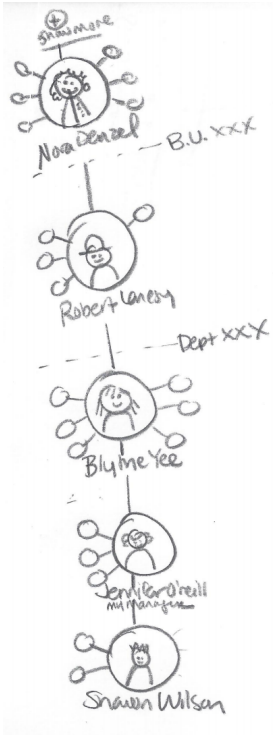
design thinking process



lots of reasons to prototype


Org Structure
1 Accordion
Nora Denzel
shawteam
Robert Lonsey
shawteam
Blythe Yee
shawteam
Jennifer O'Neill
shawteam
Shawn Wilson
Showing reports
Jennifer O'Neill
hide teams
Shawn Wilson
Blake Reynolds
Nita Jain


2 Boxy
A simple, direct chain
Business Unit
Department
MyManager
Shawn
#reports
alt
Jennifer O'Neill
Title
email@intuit.com
Reports
chain w/peers
B
Business Unit
Department
MyManager
Shawn


Shawmore
Nora Denzel
B.U. xxx
Robert Lonsey
Dept xxx
Blythe Yee
Jennifer O'neill
Shawn Wilson

explore

"This really is an innovative approach, but I'm afraid we can't consider it. It's never been done before."

convince

validate

what is today's class about?

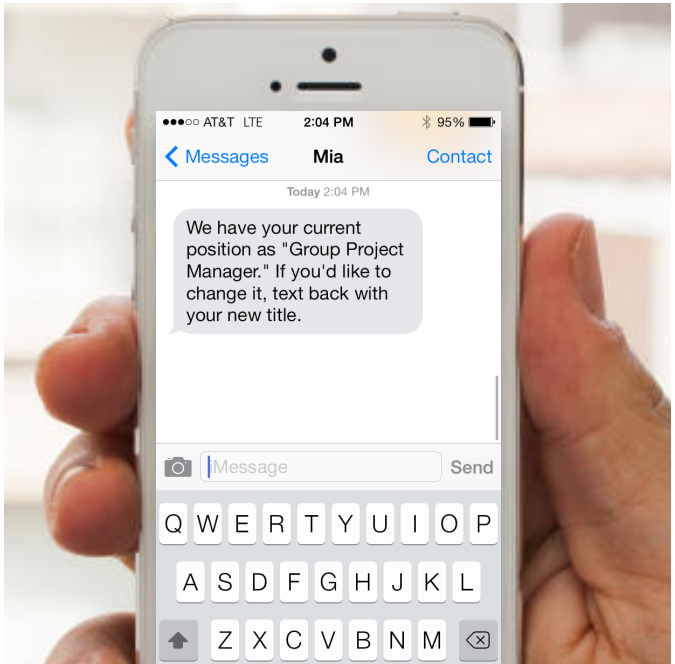
generating experiments/studies, using prototypes, to evoke behaviors that **validate** if our design meets users' needs

what is an experiment?

A scientific procedure—a controlled empirical test of a hypothesis

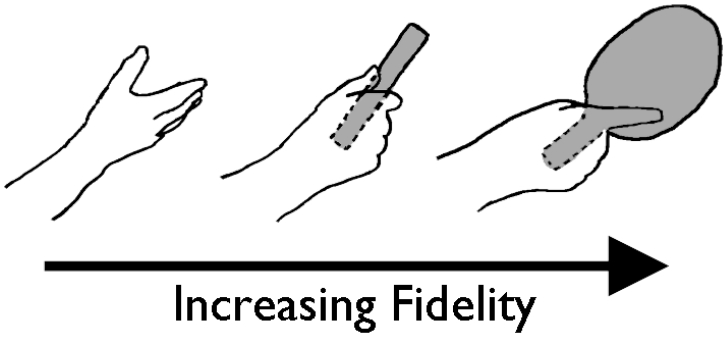
- Hypothesis:
  -A causes B
  -A is better, bigger, faster than B
  -A changes B more when we do X

- Requirements:
  - Variable that can be manipulated
  - Variable that can be measured
  - Random assignment to condition



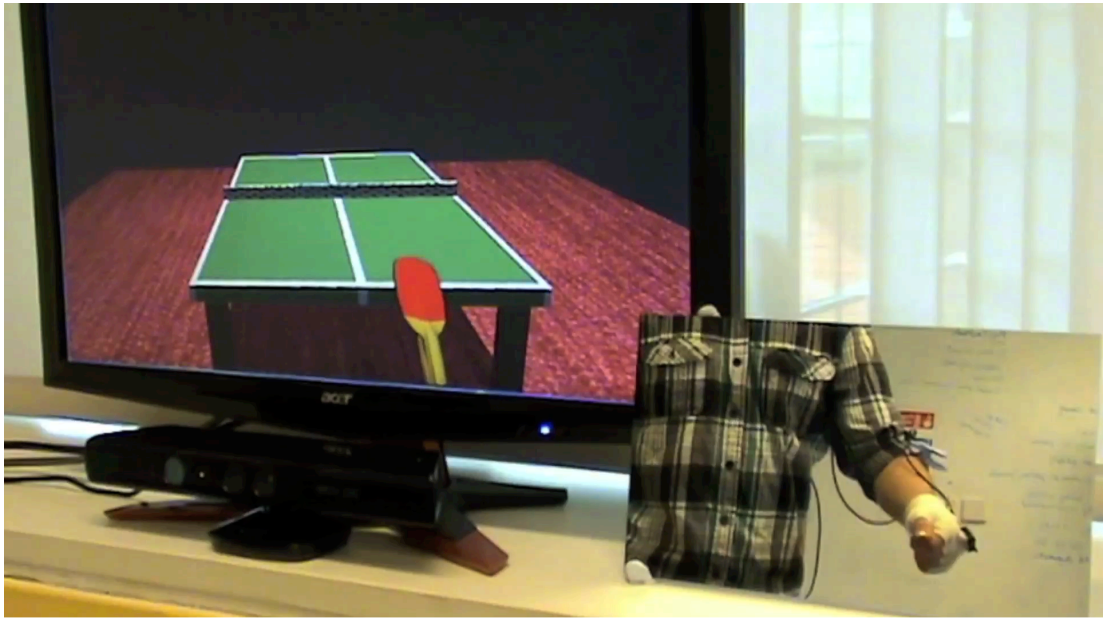
a well designed experiment

- Question: How does the presence of a (realistic) physical controller influence video game play and experience?
- Hypothesis: High prop fidelity will improve the experience.
- Manipulated Variable: Prop fidelity
- Measured Variables: wins, misses, preferences & opinions gathered in interview
- Sample: 18 right handed, non-technical subjects



a well designed experiment

Prototypes



if you don't learn anything else

before you create a prototype, first design an experiment, so that you prototype the right thing to answer your questions

what are experiments?

Which design is better?

INSIGHT TOP NAV HERE

Photos 14

Susan Hwong

Group Product Manager, QuickBooks Payroll
In Workday: Group Initiative Mananger

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Mobile Phone	415-555-5555
Location	Mountain View, building 7, floor 2, office 0709100

Org Structure
Manager: Prafulla Singhal
Direct Reports: 6

About Me
7 years at Intuit

Social Info
Last Yammer: 09/18

INSIGHT TOP NAV HERE

Photos 14

Susan Hwong

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susan_hwong@intuit.com

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Mobile Phone	415-555-5555
Fax	650-555-5555
Yammer	susan_hwong

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Time 3:48PM
Bldg 7
Floor 2
Office 0709100
Address v

At Intuit
6 years

Previous Intuit Roles
Senior Product Manager, QuickBooks Payroll (2006-2010)
Product Manager, QuickBooks (2002-2006)
more Intuit roles v

My LinkedIn Profile

About Me

What teams have you worked on at Intuit?

QuickBooks Payroll
QuickBooks
QuickBooks Online Edition

What are your skills and expertise?

Product Management | Go-to-market Strategy | Agile Methodologies | SaaS | Product Marketing | Analytics | Product Launch | Product Requirements | User Experience

What tools and technologies are you involved with or using?

[tool icons here]

What previous companies have you worked for?

eBay (2000-2002, Product Manager)

Organization

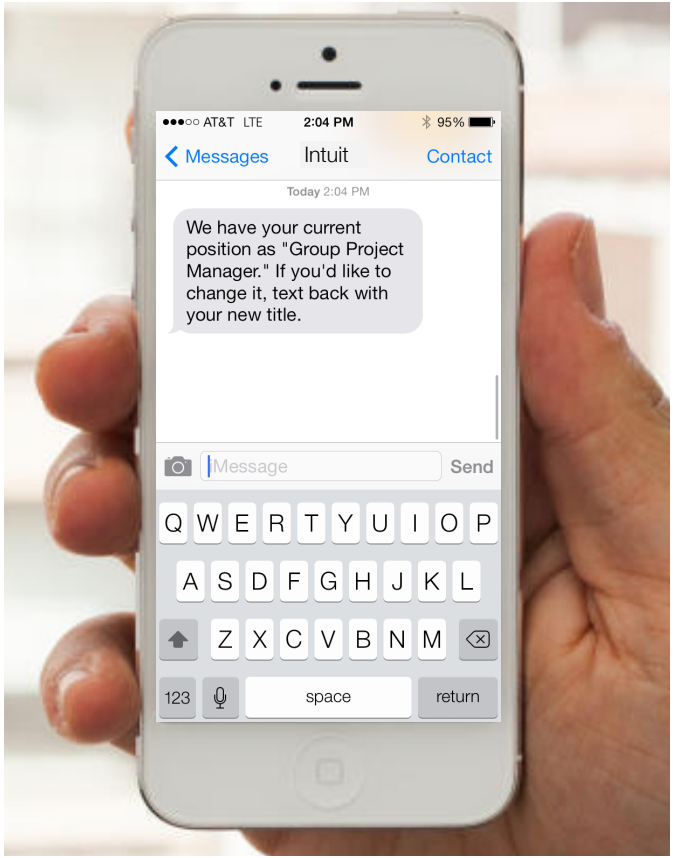
My Team

My Department
QuickBooks Pro and Premiere
My Business Unit
QuickBooks

Org Structure

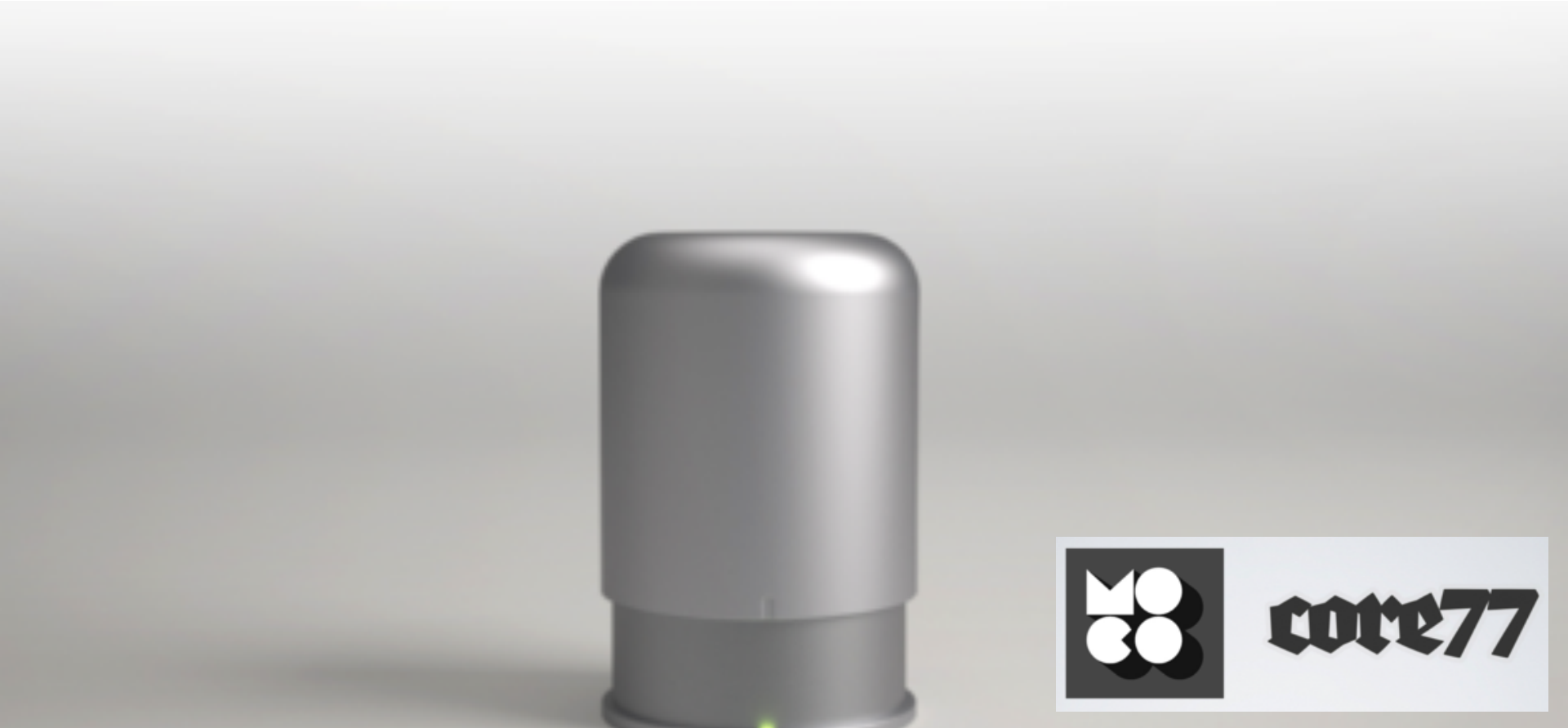
org structure goes here

Will people update their profile?



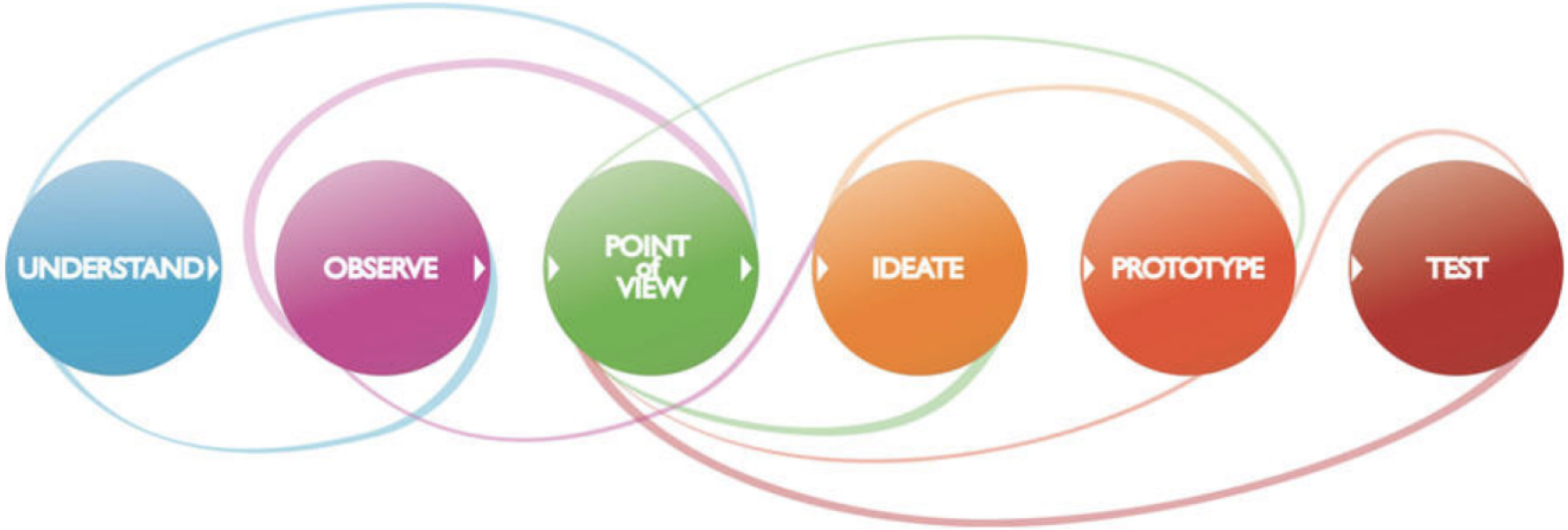
Will people wait longer for delivery?

Are people interested in this concept?

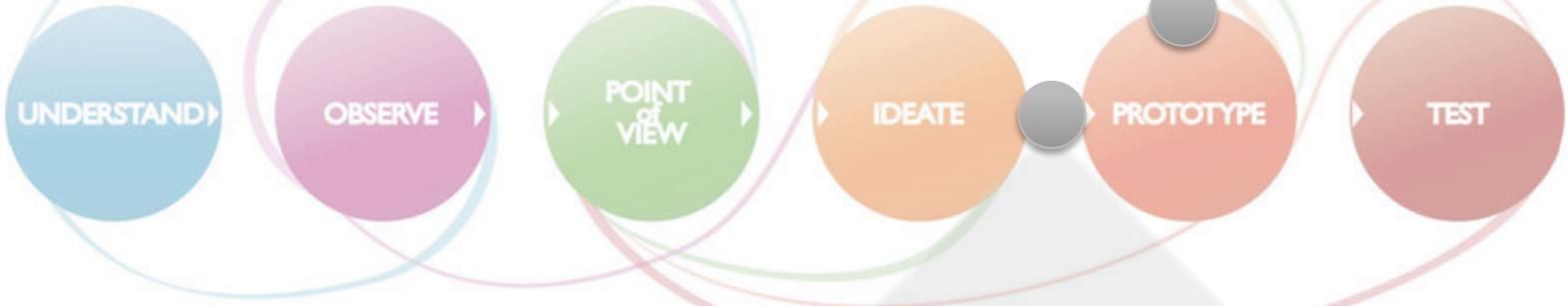


Are students credible assistants?

design thinking process



design thinking process



Use the **prototype** to:

- Create an experience that **evokes** the desired behaviors
- **Evaluate** your hypotheses

Before you move into prototyping, **make plan:**

- What **questions** do you have about the effectiveness of the ideas?
- What is your **working hypothesis** about what will happen?
- What kinds of **observations** would validate your hypothesis?
- What **prototype(s)** do you need to create for these observations?

how to create an experiment

1. generate questions

Ideas often have built in assumptions about what we think people will do

What are the crucial questions or assumptions that could make or break the success of this design?

example questions

- Are people interested? Would they care about this?
- Will they use this given all other choices/demands available?
- Does it meet the need you designed for?
- Does it have the desired (and not undesired) effects?
- Can people find/use it?
- Which design is better?

1. generate questions

you do it

Based on your current ideas, think through either the assumptions underlying your concepts and/or critical questions that, if answered, would give you more confidence in your idea

Write 4-6 critical questions (15 min)

Example:

Would people be interested in using video to talk to their dogs and give them treats?

Would dogs notice a video of their owner?

report out

2. create hypothesis

based on the questions, we can generate “working hypotheses” about the way we think people will behave

- people will respond more to a than b
- at least x% of people will do this behavior
- people will use this at least x number of times

2. create hypothesis

you do it

for your top 2 questions, generate 2-3 hypotheses about how people will behave (10 minutes)

Example:

Half of people who use this product will check in on their dog at least 2 times per day

report out

3. design experiment

based on your questions & hypothesis, generate ideas for an experiment that might answer your question

this is where you start thinking about your prototype

facilitated vs. self-contained experiments

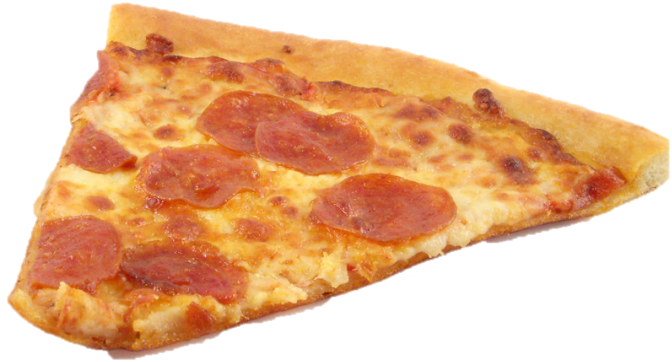
self-contained

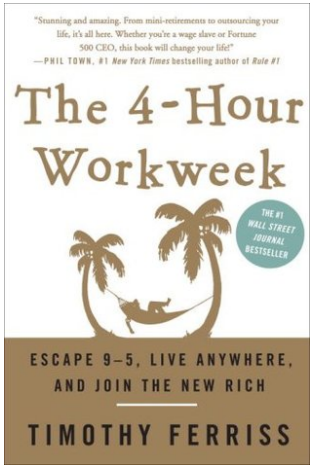
CL > SF bay area > san francisco > all jobs > admin/office jobs

contact prohibited [?] Posted: 12 days ago

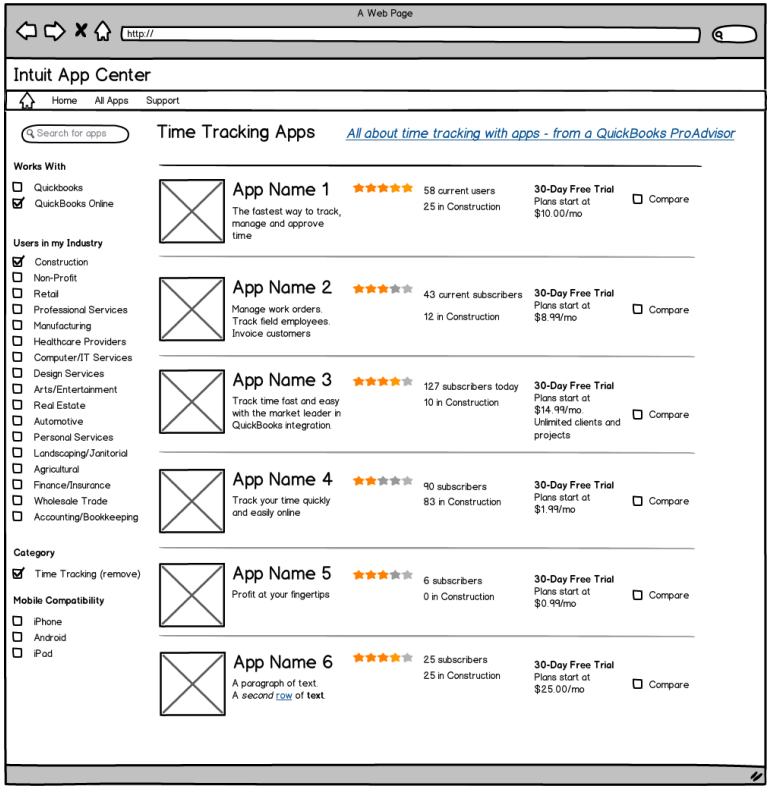
Small Business / Personal Assistant (lower pac hts)

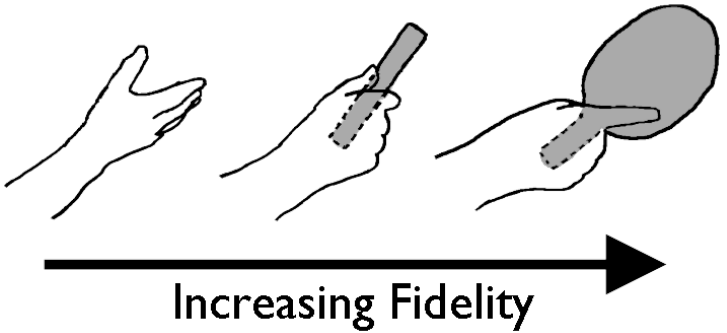
Entrepreneur looking for a Personal Assistant to help maintain and grow current fitness business while assisting with future ventures. This is a great position if you are a highly motivated, detail oriented person with strong common sense. Great experience for anyone with hopes and dreams of one day starting their own business!





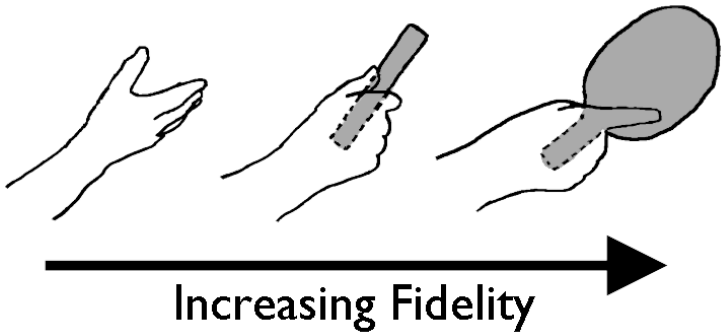
facilitated





	self-contained	facilitated
experimenter's role	experimenter sets up experience but does not interact with the subject as an experimenter (can be a confederate)	experimenter directly interacts with user to facilitate experience
scenario reality	subject is convinced scenario is real	subject is asked to imagine scenario is real
measurement flexibility	outcome is typically measured by planned, objective measurements	in addition to planned measurements, experimenter can probe to understand behavior

self-contained AND facilitated



ping pong study

3. design experiment

you do it

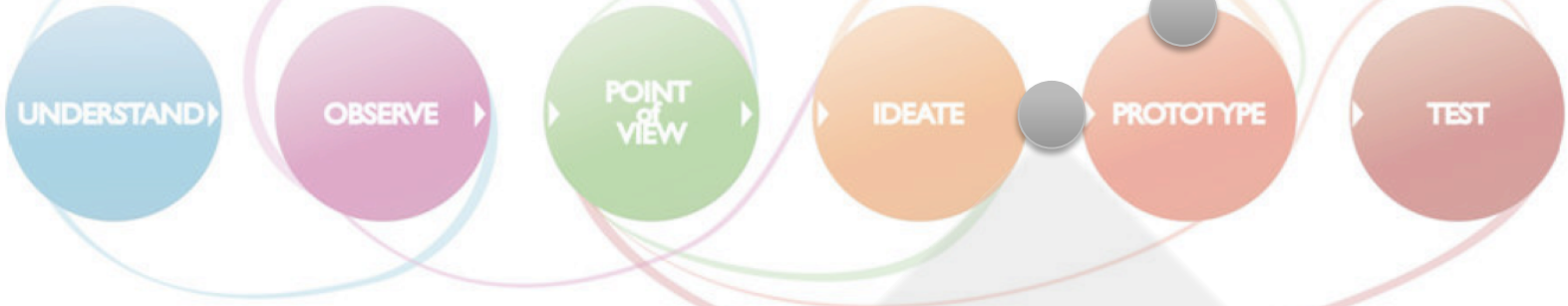
- choose a question/hypothesis pair – 3 min
- divergent discussion on ways to test that hypothesis, e.g. situations that would evoke those choices, experimental design – 8 min
- choose one of these as the basis for your experiment and discuss how to prototype it – 5 min

one last thing

survey ≠ experiment

people are notoriously bad at predicting (and remembering) their own behaviors

design thinking process



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wrap up