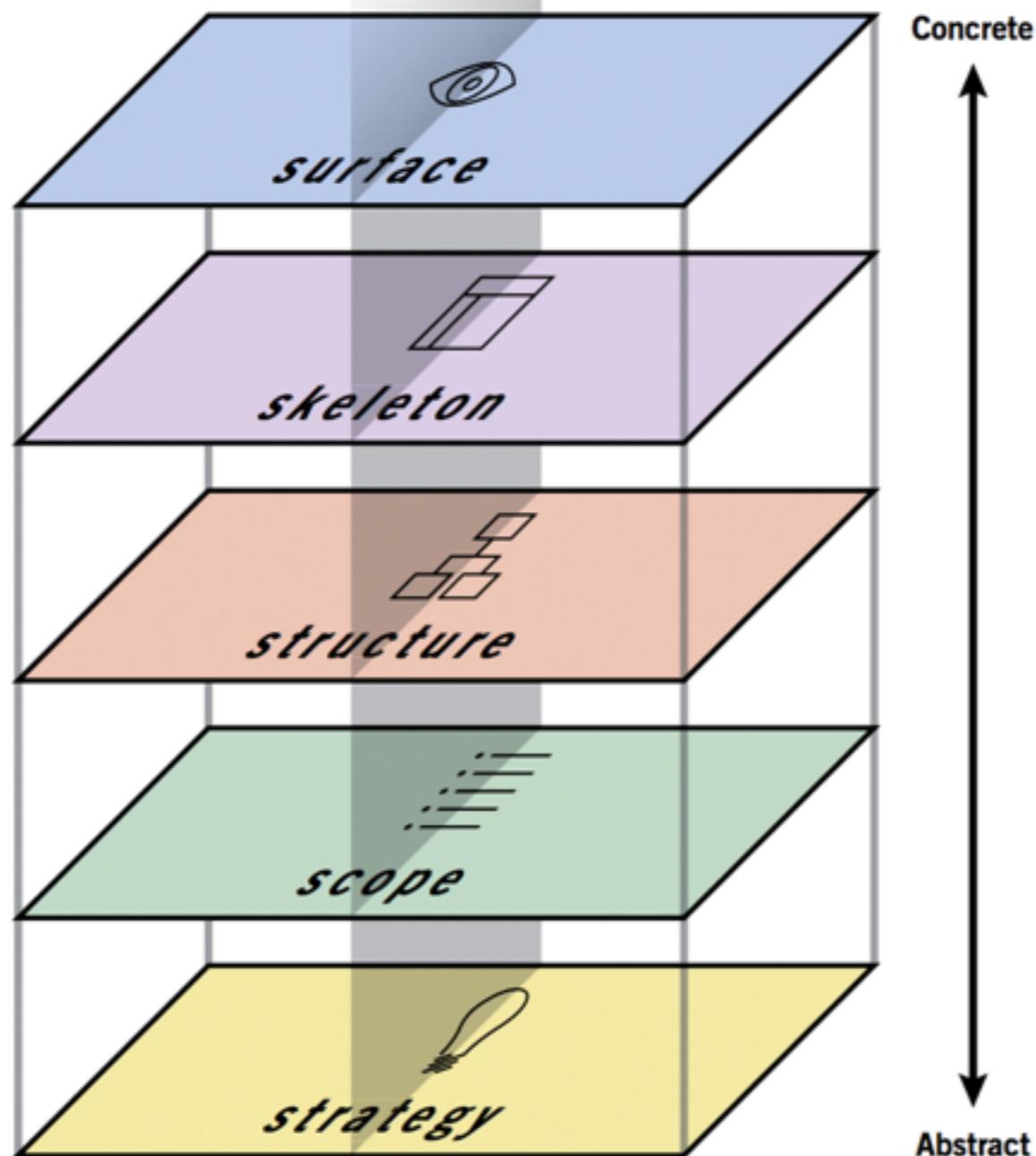


Week 12: Usability & Iteration

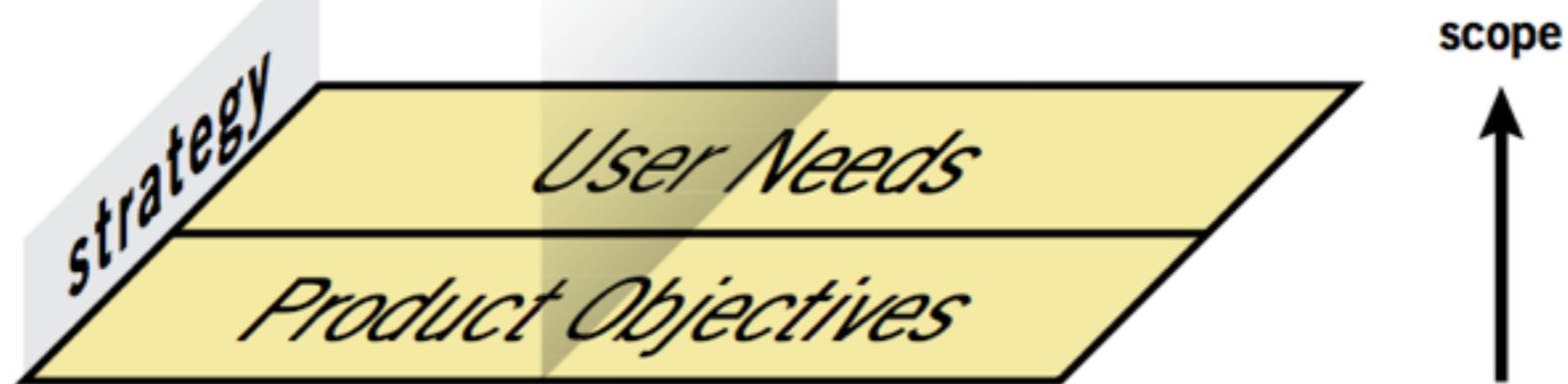
PUCD 2125 Section D, Spring 2017

product as functionality | product as information



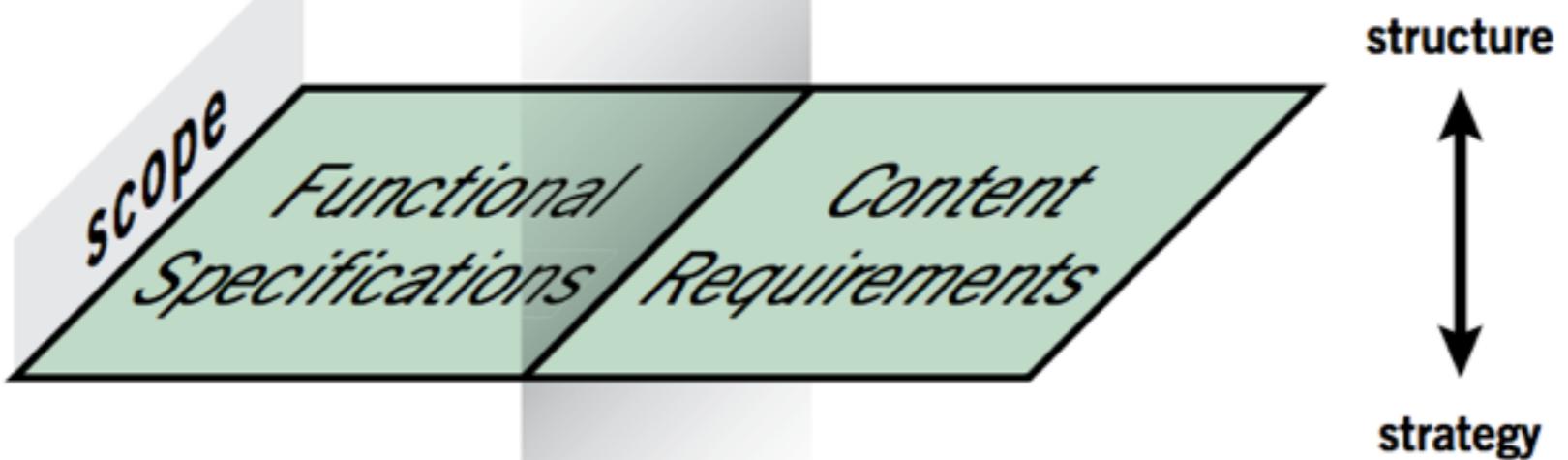
Strategy

product as functionality | **product as information**



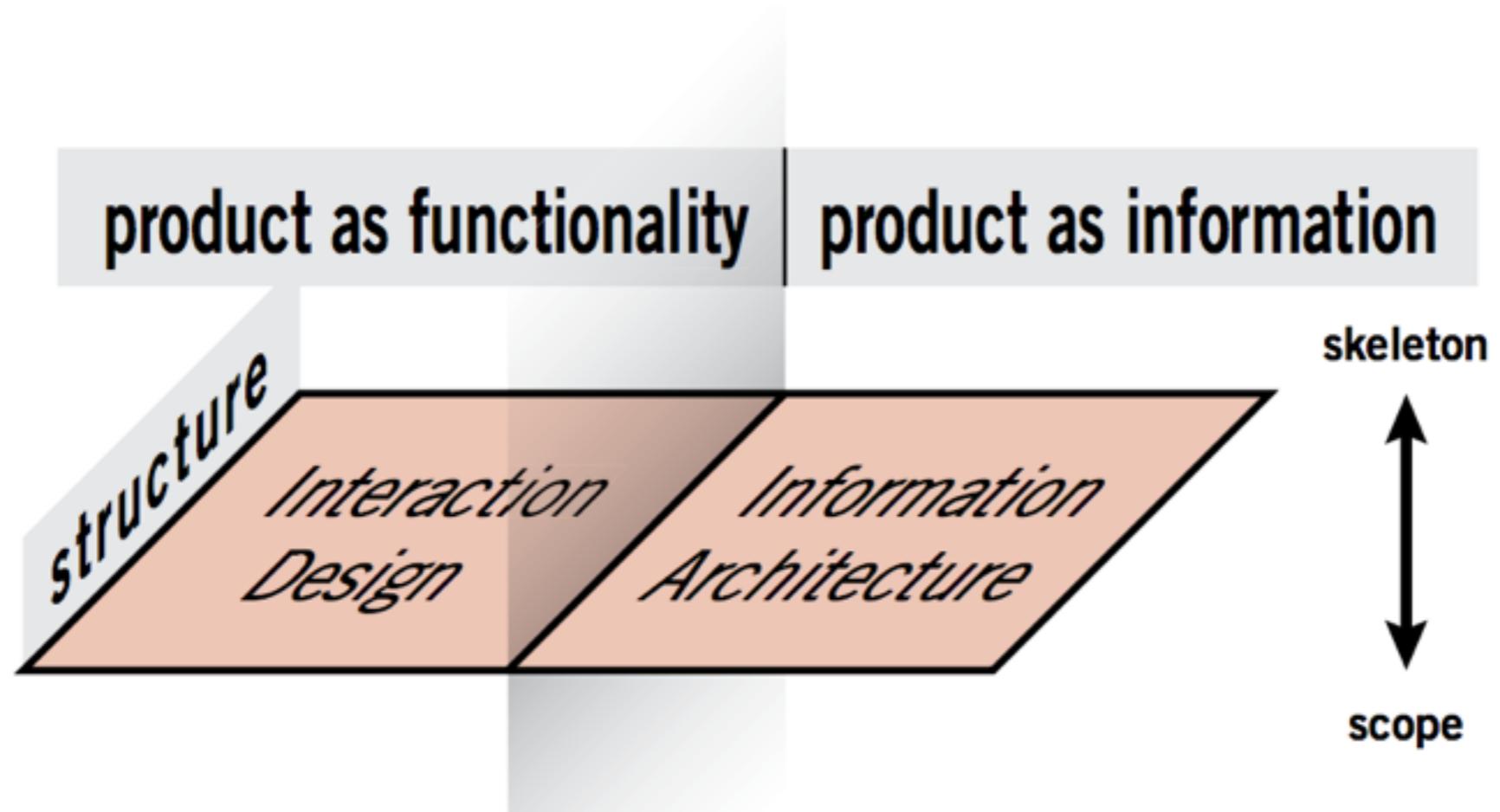
Scope

product as functionality | **product as information**

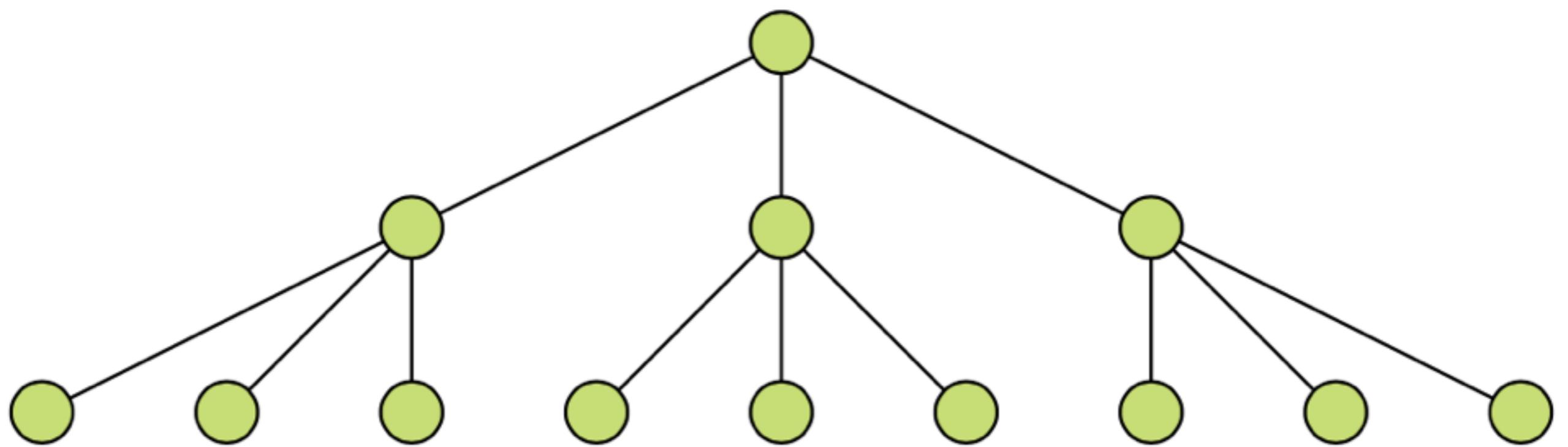


What are we making?

Structure



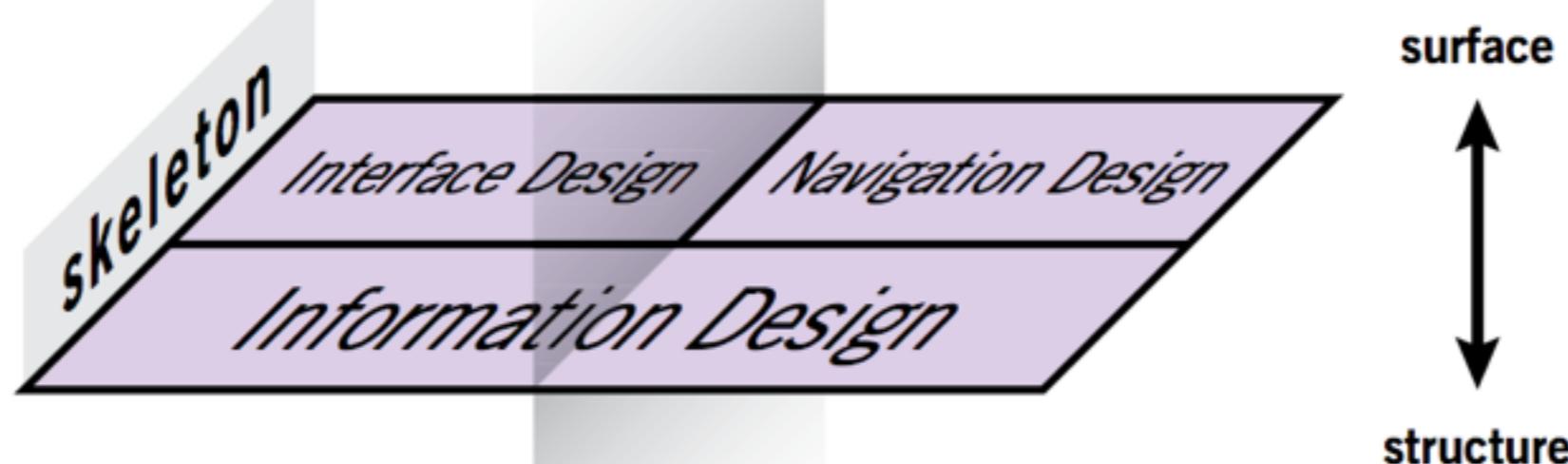




Skeleton

What form will our functionality and content take?

product as functionality | **product as information**





Track plain-text clicks



I'm disabled

Select an option ▾

Select an option

option 1

option 2

option 3

1 Item(S) Selected ▾



Option 1



Option 2



Option 3



Track plain-text clicks



I'm disabled

First name

Any ▾

hello 

is it me 

you're 

looking for? 

Standard

Primary Action

Send Now

Stop This Delivery



February



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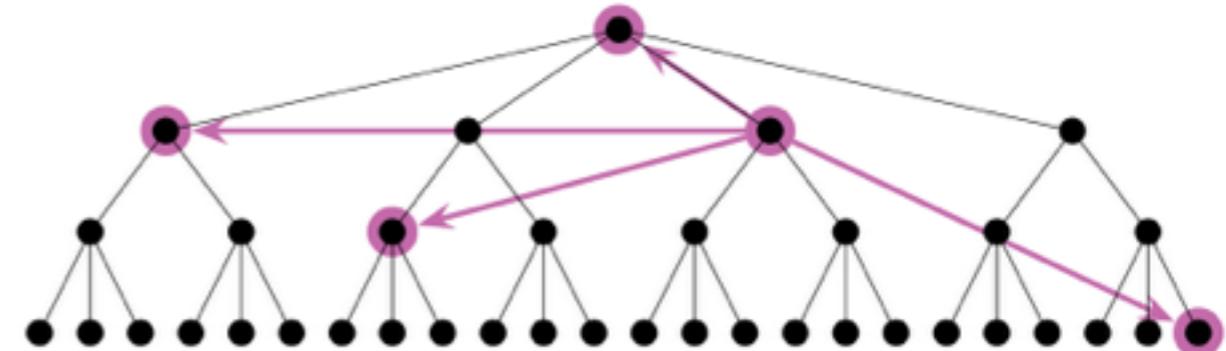
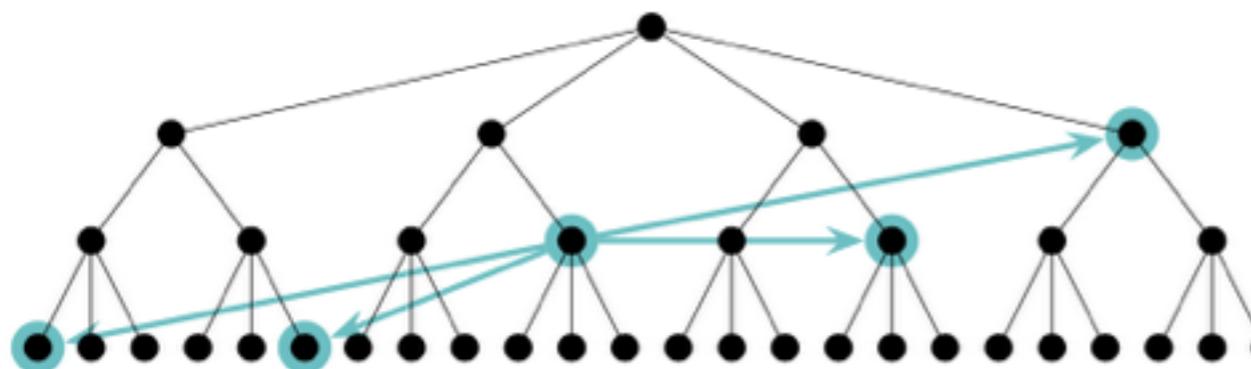
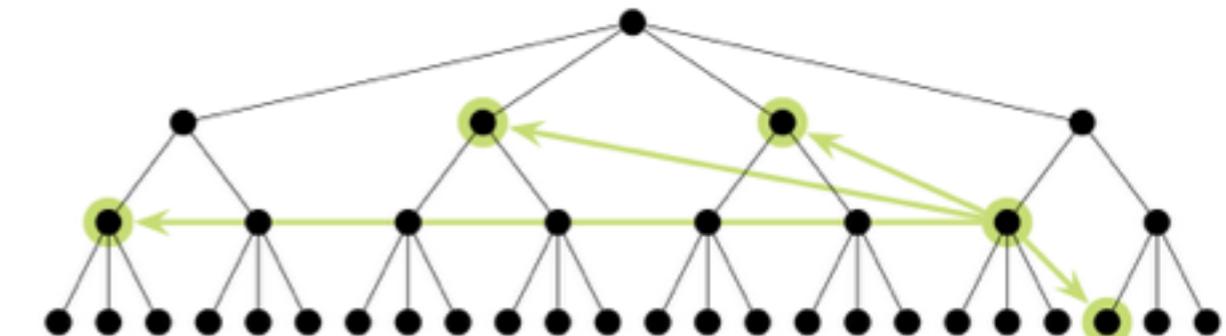
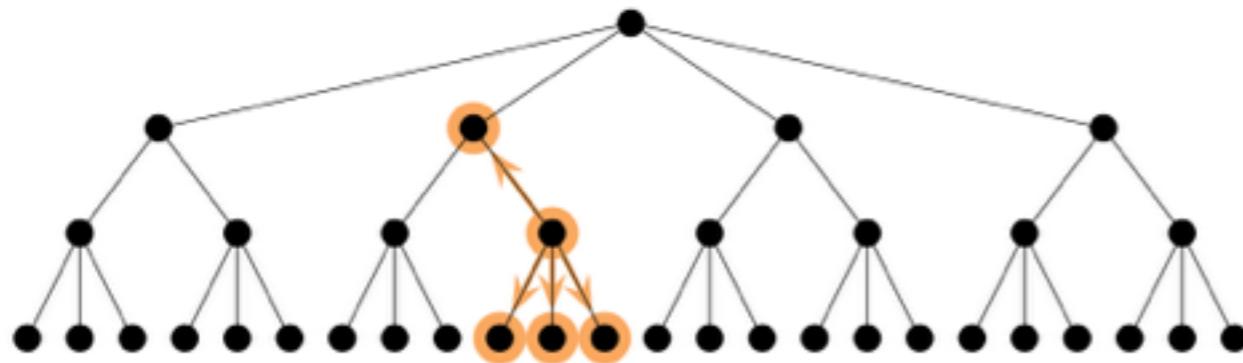
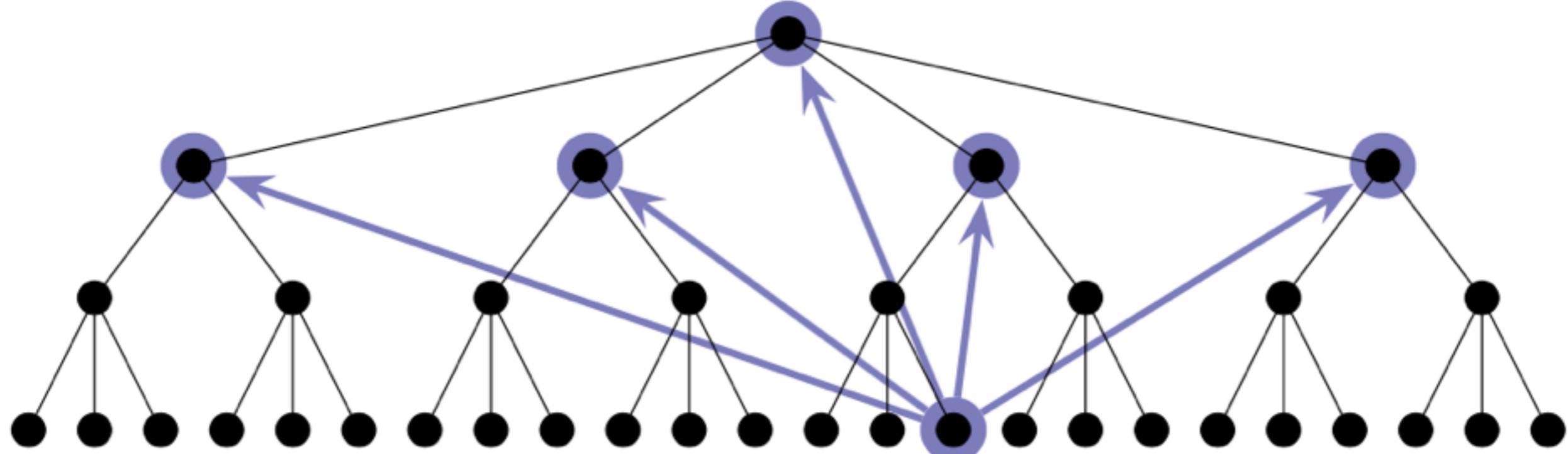
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25



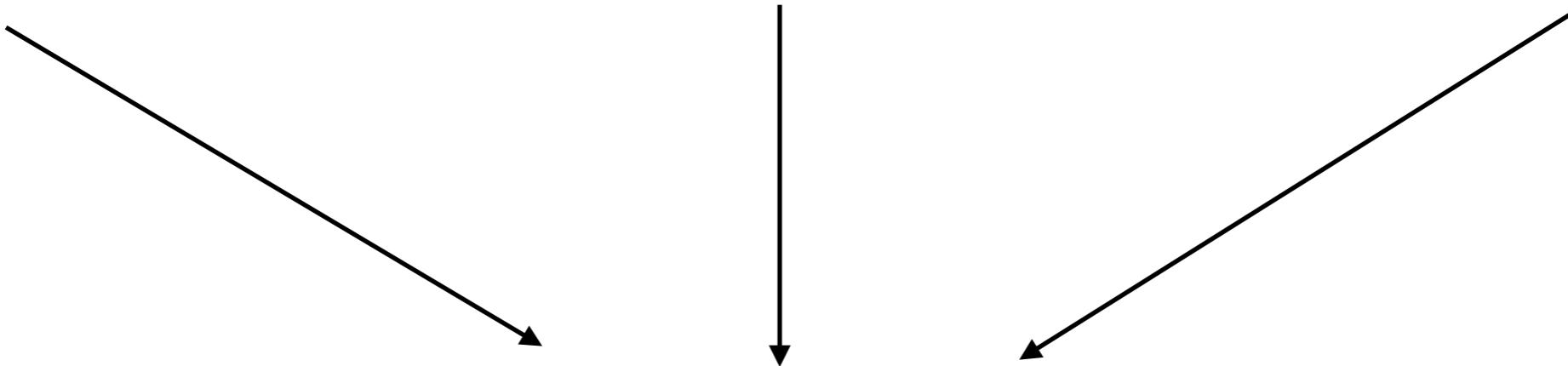
- ▶ Personal information
 - ▶ Name
 - ▶ Job title
 - ▶ Organization
- ▶ Address information
 - ▶ Street address
 - ▶ City
 - ▶ State
 - ▶ Zip code
- ▶ Other contact information
 - ▶ Telephone number
 - ▶ E-mail address
- ▶ Name
- ▶ Job title
- ▶ Organization
- ▶ Street address
- ▶ City
- ▶ State
- ▶ Zip code
- ▶ Telephone number
- ▶ E-mail address
- ▶ State
- ▶ Job title
- ▶ Telephone number
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- ▶ Name
- ▶ Zip code
- ▶ Organization
- ▶ City
- ▶ E-mail address

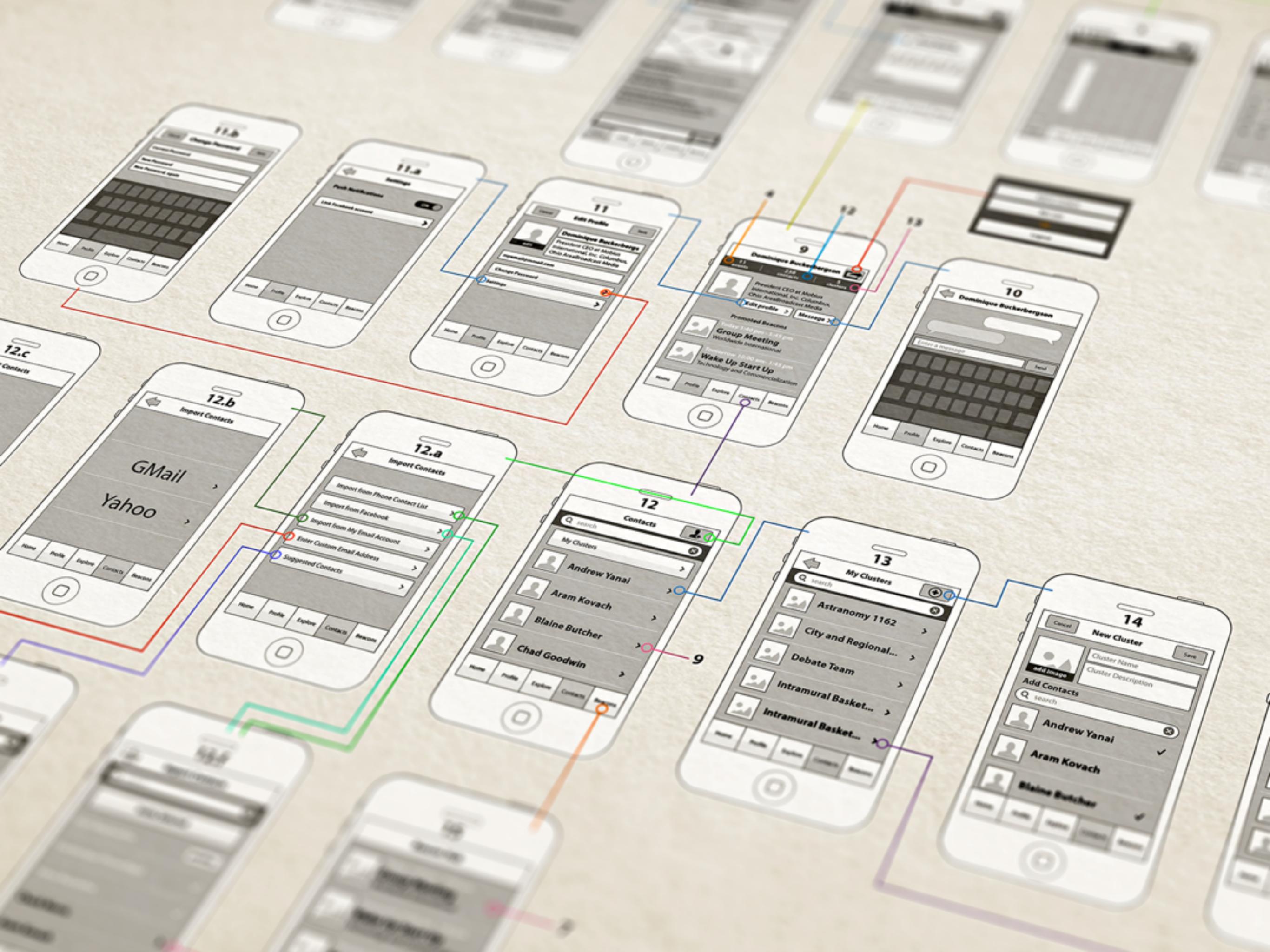
Information Design

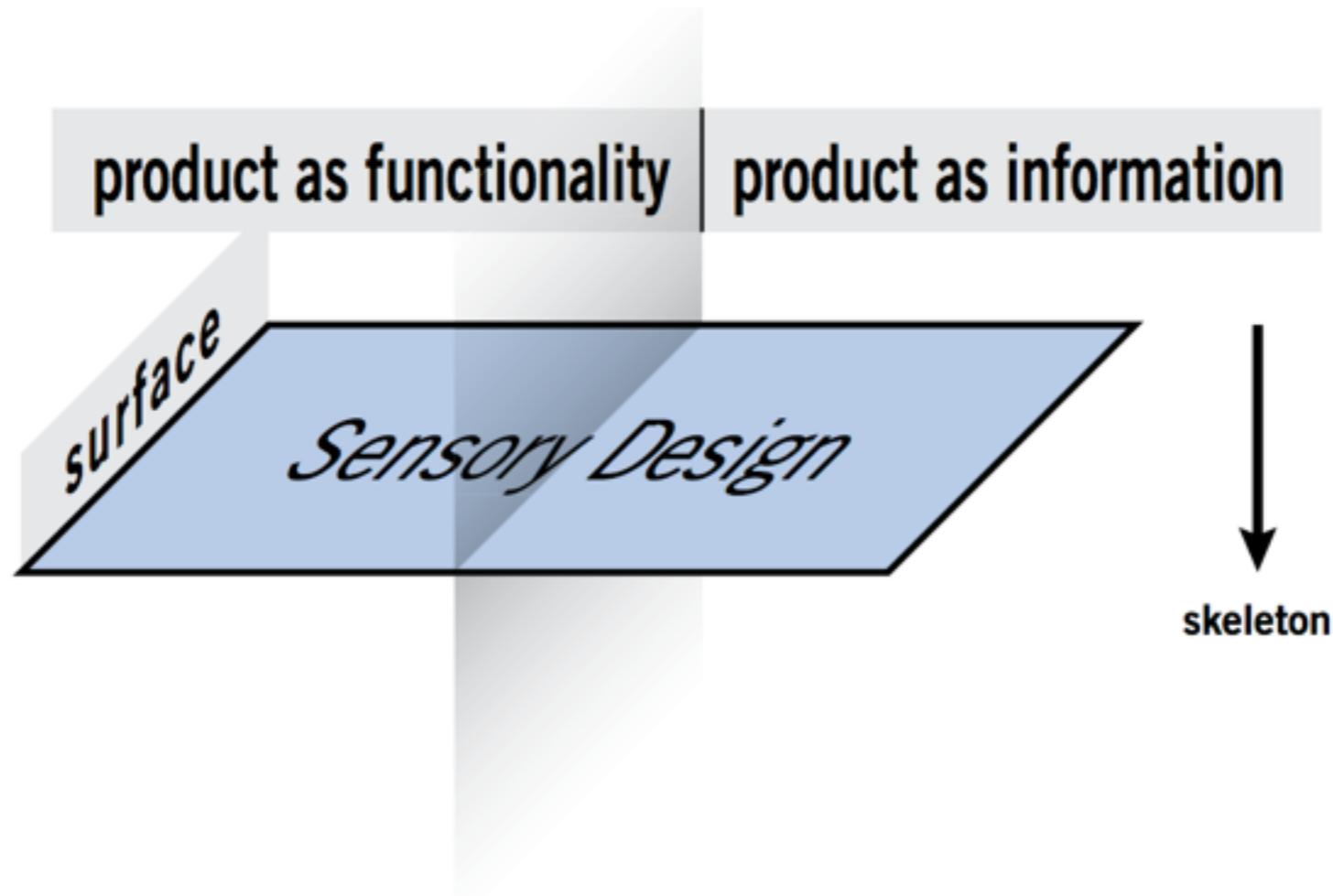
Interaction Design

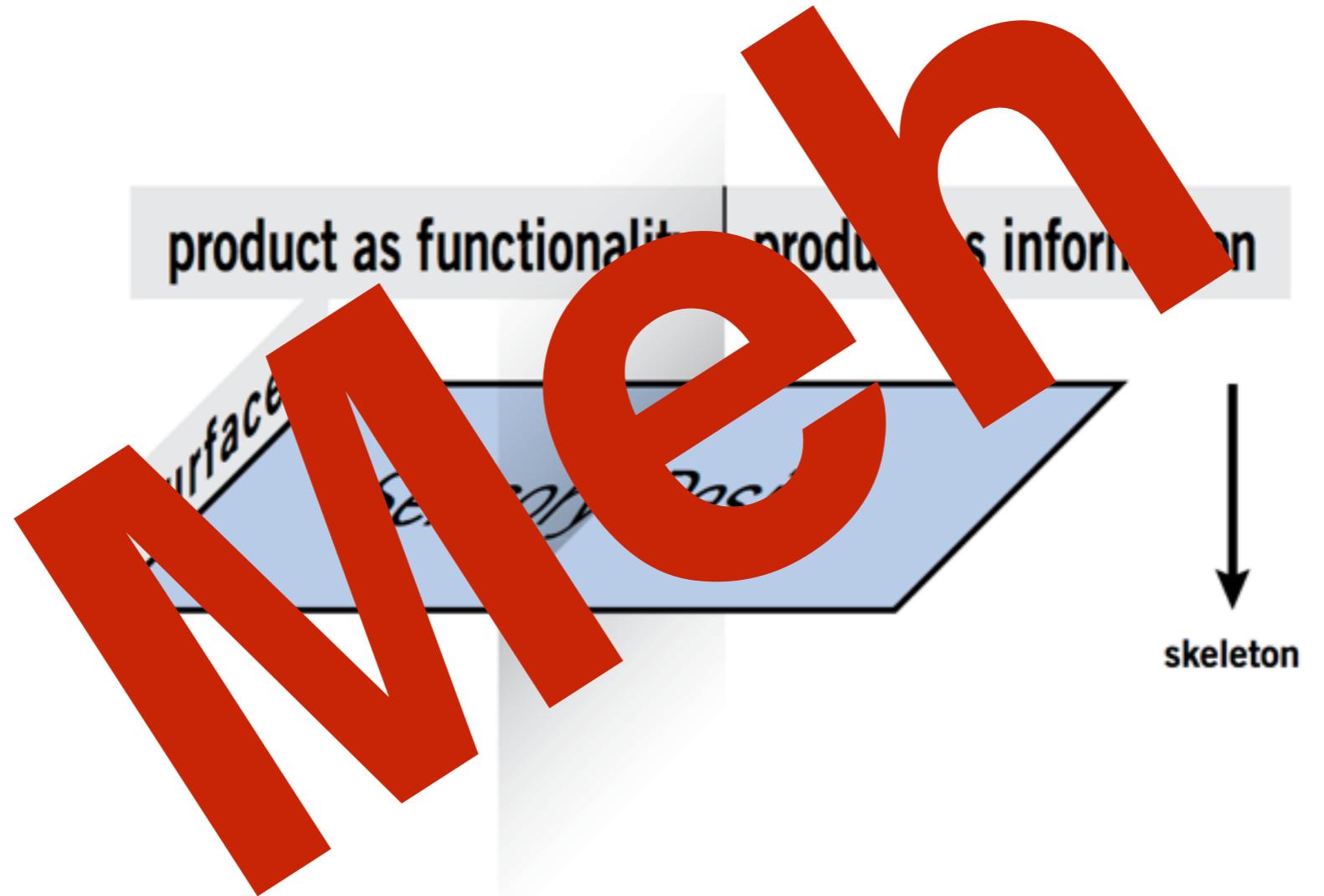
Navigation Design

Page Layout









- Legibility vs Readability
- Texture
- X-height
- Counters
- Contrast
- Technical considerations

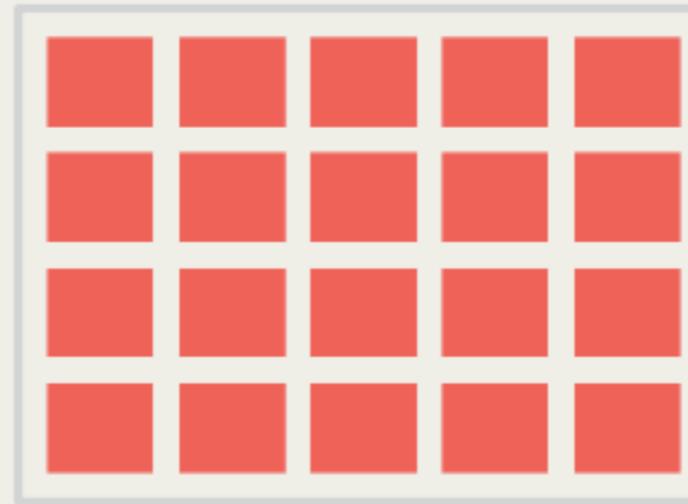
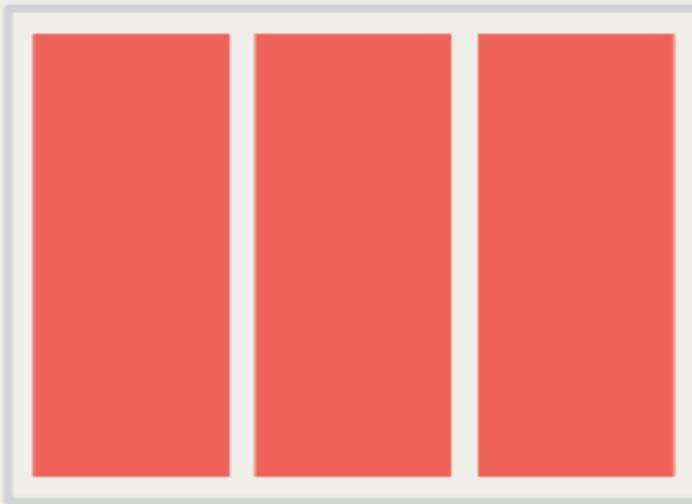
- Size
- Measure
- Line-height (leading)
- Justification
- Color
- Paragraph breaks
- Headlines/subheaders/pullquotes etc

Hierarchy

Grouping similar items, & distinguishing dissimilar items

- Size
- Color
- Placement
- Negative space
- Any combination of the above

Grids



12 Column Grid

940

60

860

140

780

220

700

300

620

380

540

460

460

220

220

60

380

60

380

220

220

What is Usability?

Usability is a **quality attribute**
that assesses how easy user
interfaces are to use.

Learnability

Learnability

How easy is it for users to accomplish basic tasks the first time they encounter the design?

Efficiency

Efficiency

Once users have learned the design, how quickly can they perform tasks?

Memorability

Memorability

When users return to the design after a period of not using it, how easily can they reestablish proficiency?

Errors

Errors

How many errors do users make, how severe are these errors, and how easily can they recover from the errors?

Satisfaction

Satisfaction

How pleasant is it to use
the design?

Utility

Utility =

Utility = does it provide the features you need?

Utility = does it provide the features you need?

Usability =

Utility = does it provide the features you need?

Usability = is it easy and pleasant to use?

Utility = does it provide the features you need?

Usability = is it easy and pleasant to use?

Useful =

Utility = does it provide the features you need?

Usability = is it easy and pleasant to use?

Useful = **Utility** + **Usability**

Why does usability
matter?

Users will leave.

User Testing

1. Get hold of some representative users

1. Get hold of some representative users
2. Ask the users to perform representative tasks with the design.

1. Get hold of some representative users
2. Ask the users to perform representative tasks with the design.
3. Observe what the users do, where they succeed, and where they have difficulties with the user interface. Shut up and let the users do the talking.



User Testing Tips

- Know what you want to learn: what are the most important features?
Where do you suspect users might have the most challenges?

- Know what you want to learn: what are the most important features?
Where do you suspect users might have the most challenges?
- Test users individually

- Know what you want to learn: what are the most important features? Where do you suspect users might have the most challenges?
- Test users individually
- Let them solve problems on their own– if you help them, you have contaminated the test.

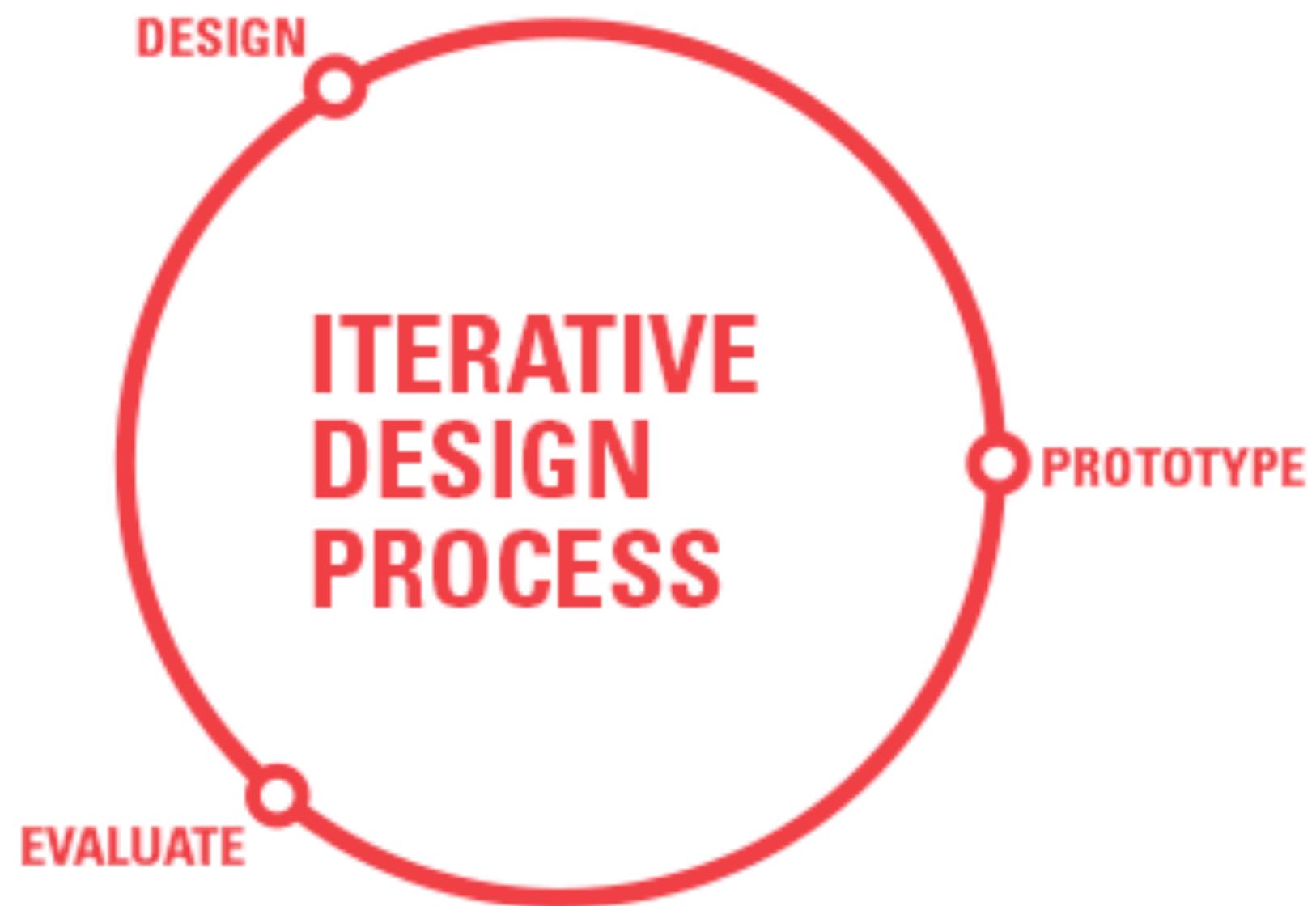
- Know what you want to learn: what are the most important features? Where do you suspect users might have the most challenges?
- Test users individually
- Let them solve problems on their own– if you help them, you have contaminated the test.
- Encourage participants to ‘think out loud.’

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- Testing with 3-5 users is usually enough to start seeing repeating issues with the design

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- Encourage participants to ‘think out loud.’
- Testing with 3-5 users is usually enough to start seeing repeating issues with the design
- Many small tests throughout the process is far more valuable than one large test at the end of the design process.
- Document the process

Iterative Design

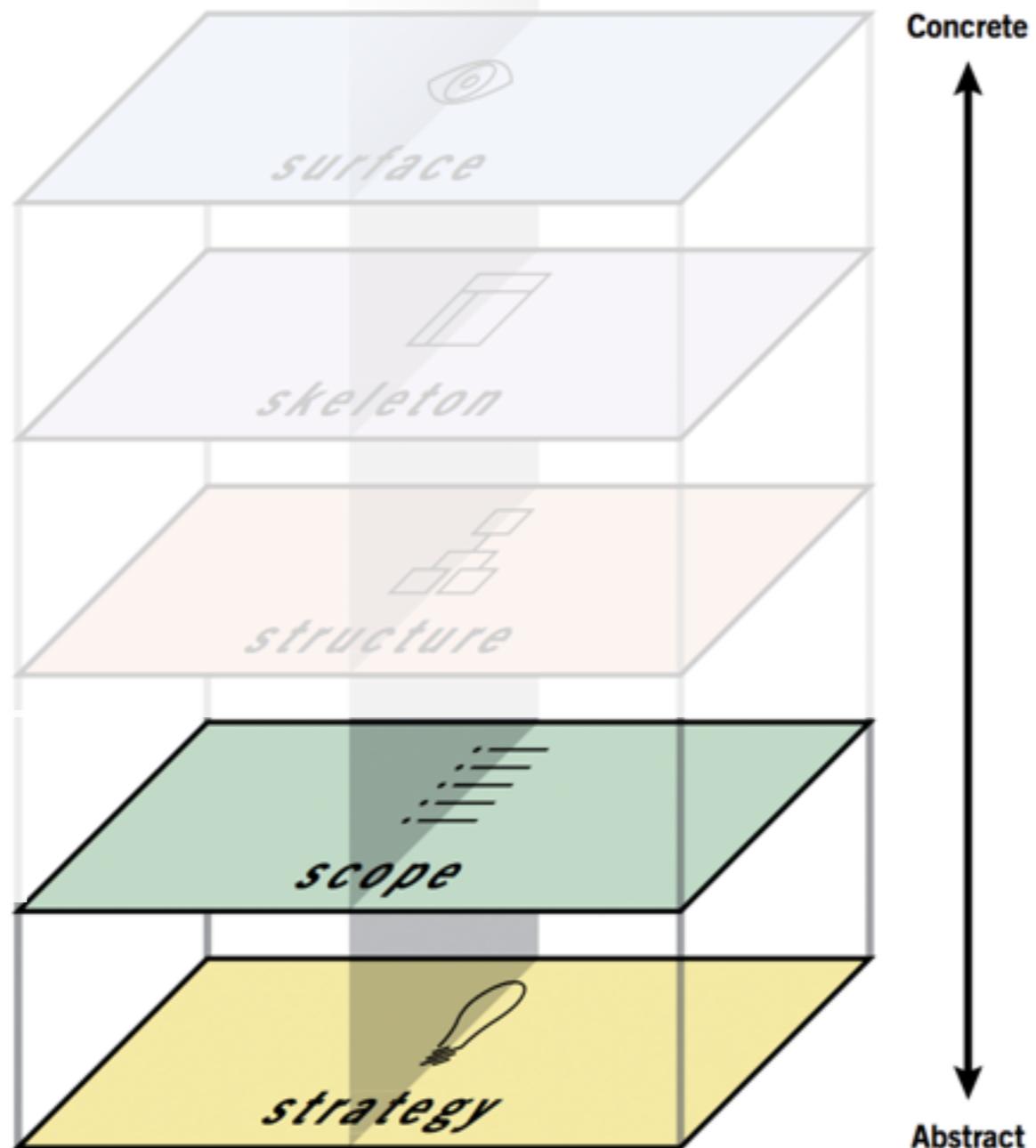


MVP

Minimum Viable Product

What is least amount of design work I can do to start testing with users and validating my assumptions?

product as functionality | product as information





BOOK CHECK IN MANAGE

Deals Flying With Us Where We Fly Fees Flight Status Flight Alerts

Joseph Stewart
0 Points

Round Trip One Way Multi City

Book from **New York City** ▾ to

LAS VEGAS
NV (LAS)

LOS ANGELES
CA (LAX)

PALM SPRINGS
CA (PSP)

SAN FRANCISCO
CA (SFO)

SEATTLE
WA (SEA)

ALL CITIES
▼

OUR NEW SITE HAS LANDED.

DEALS FROM \$71 TO YOUR FAVORITE HOT SPOTS.

WIFI AND POWER TO THE PEOPLE.



[TAKE A QUICK TOUR](#)



[SEE ALL DEALS](#)



[GET THE VIRGIN AMERICA EXPERIENCE](#)

Goals

Assumptions

User Needs

Constraints

Homeowner

Profile

Profile

Parking Preview

Description
| write about yourself

Listing

Edit

Payment method

③ Posting

Post

←

Describe

Address

Preferred car(s)

SUV

Truck

Price

We calculate price based on closest parking lots in your area

65 \$6

57 \$7

Your price is \$5.50/m

Brand model license #

③ Reservations (Homeowner + Driver)

Calendar

← October 2014

M T W T F S S

② ① ② ③ ④ ⑤ ⑥

08M 09M 10M 11M 12M 13M 14M

08M 09M 10M 11M 12M 13M 14M

15M 16M 17M 18M 19M 20M 21M

15M 16M 17M 18M 19M 20M 21M

16M 17M 18M 19M 20M 21M 22M

16M 17M 18M 19M 20M 21M 22M

Transactions

←

From (selected)

To

Start → 10:00

End → 11:00

Cancel

Chart +

Report details

\$300.00

All rents

Income 510.00 ✓

Over - TVs

Chart +

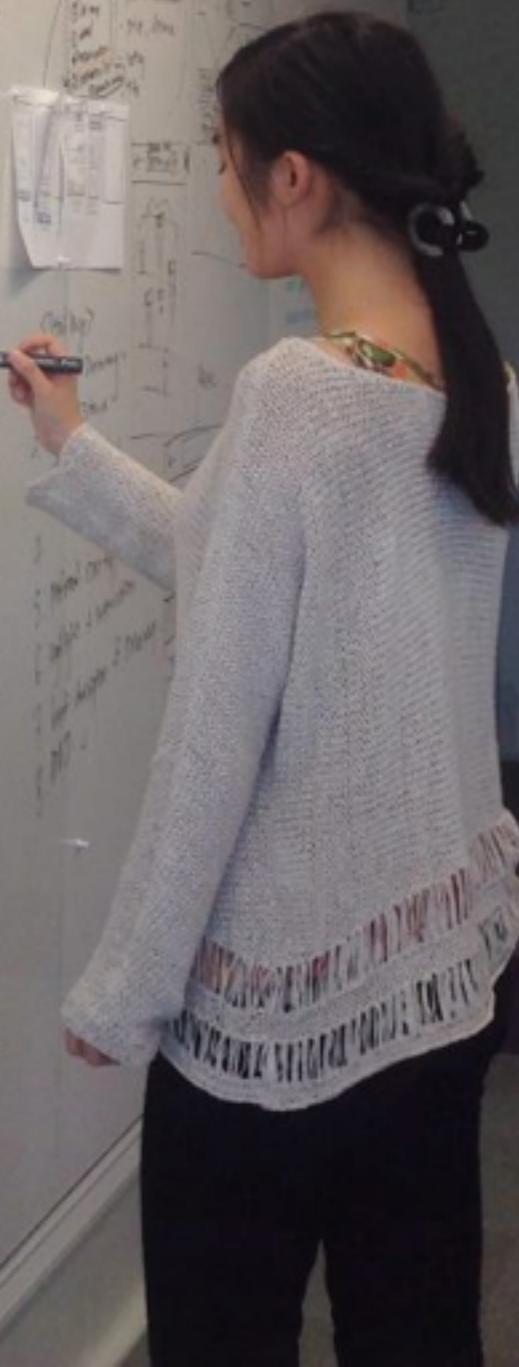
Report details

\$300.00

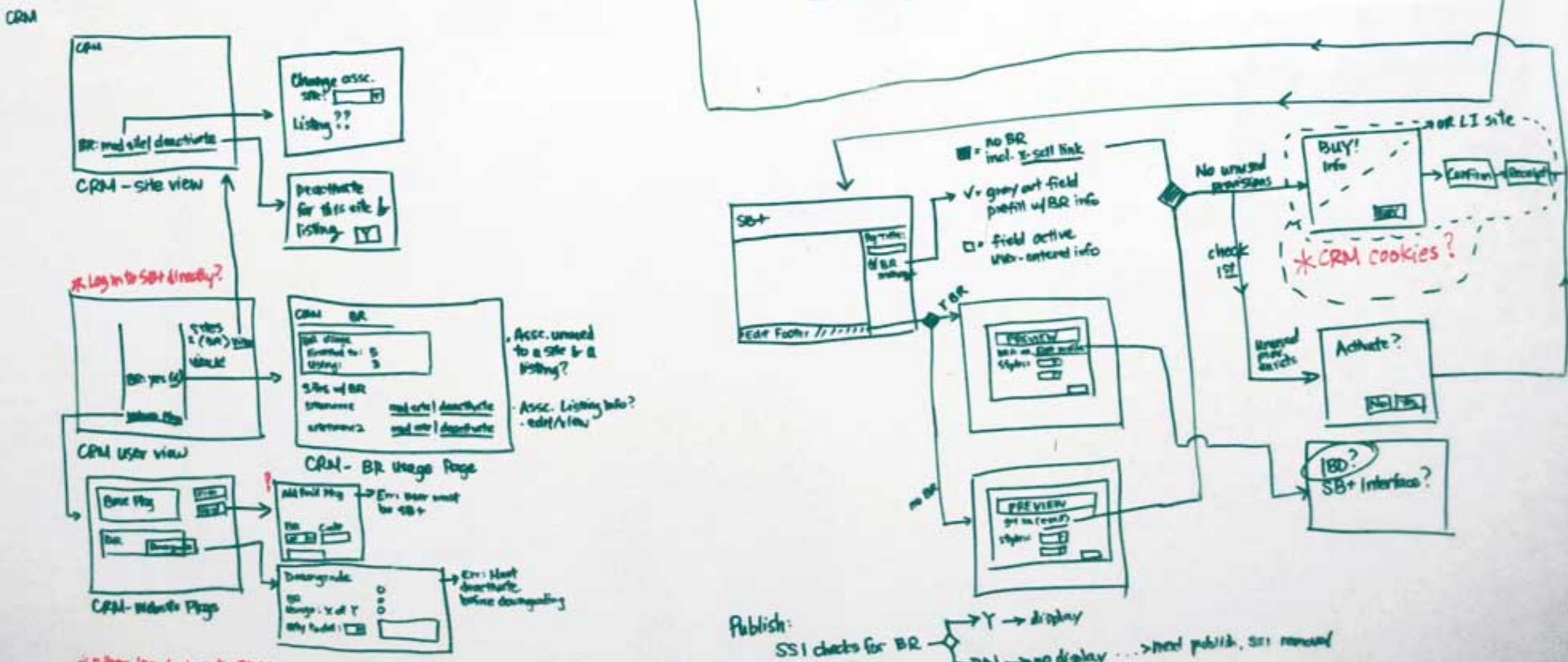
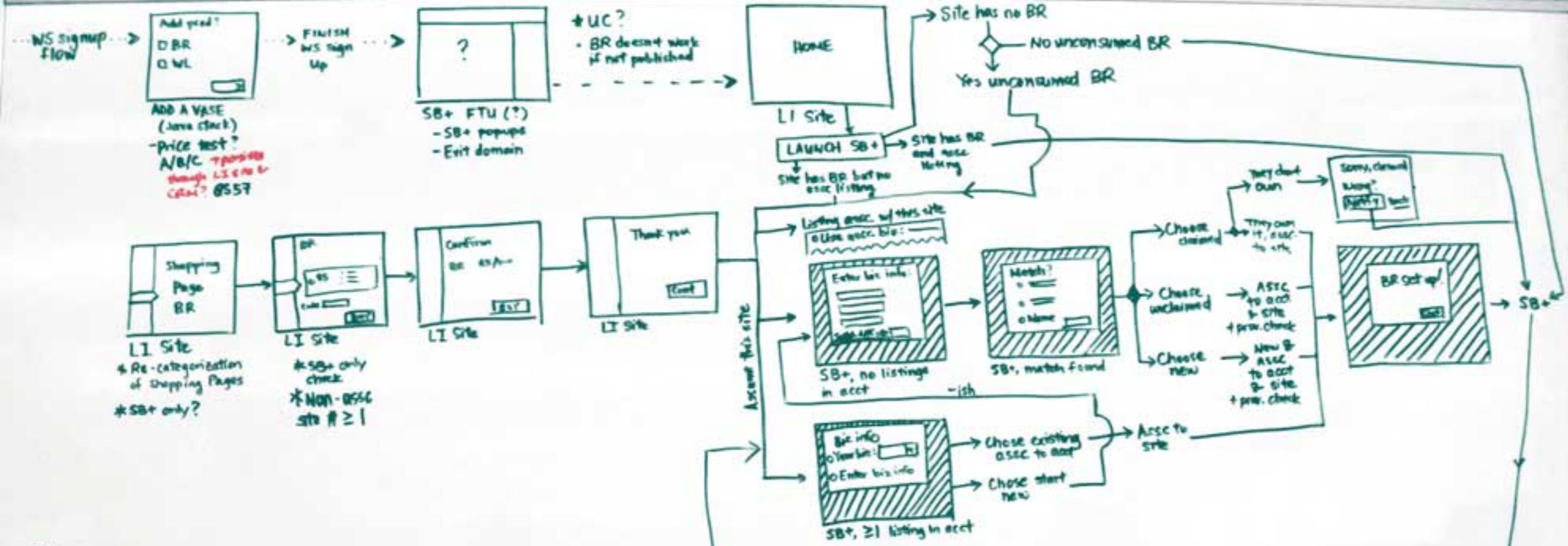
All rents

Income 510.00 ✓

Over - TVs



EXIT

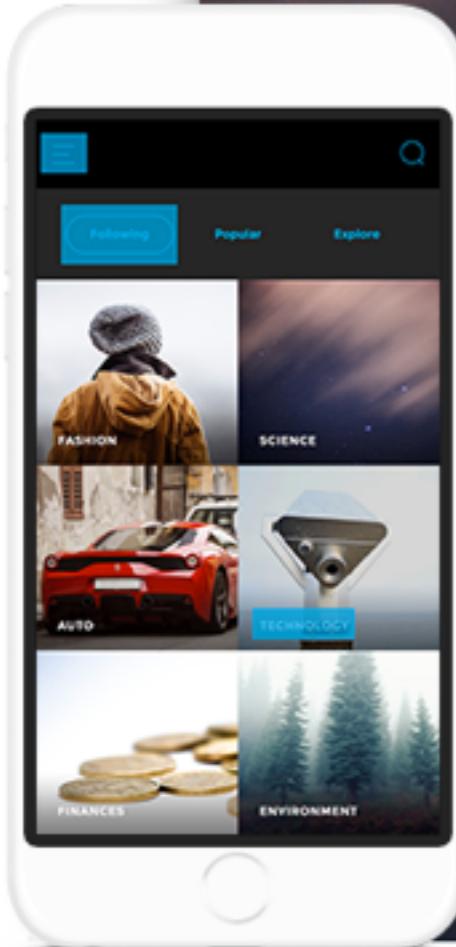


Paper Prototyping

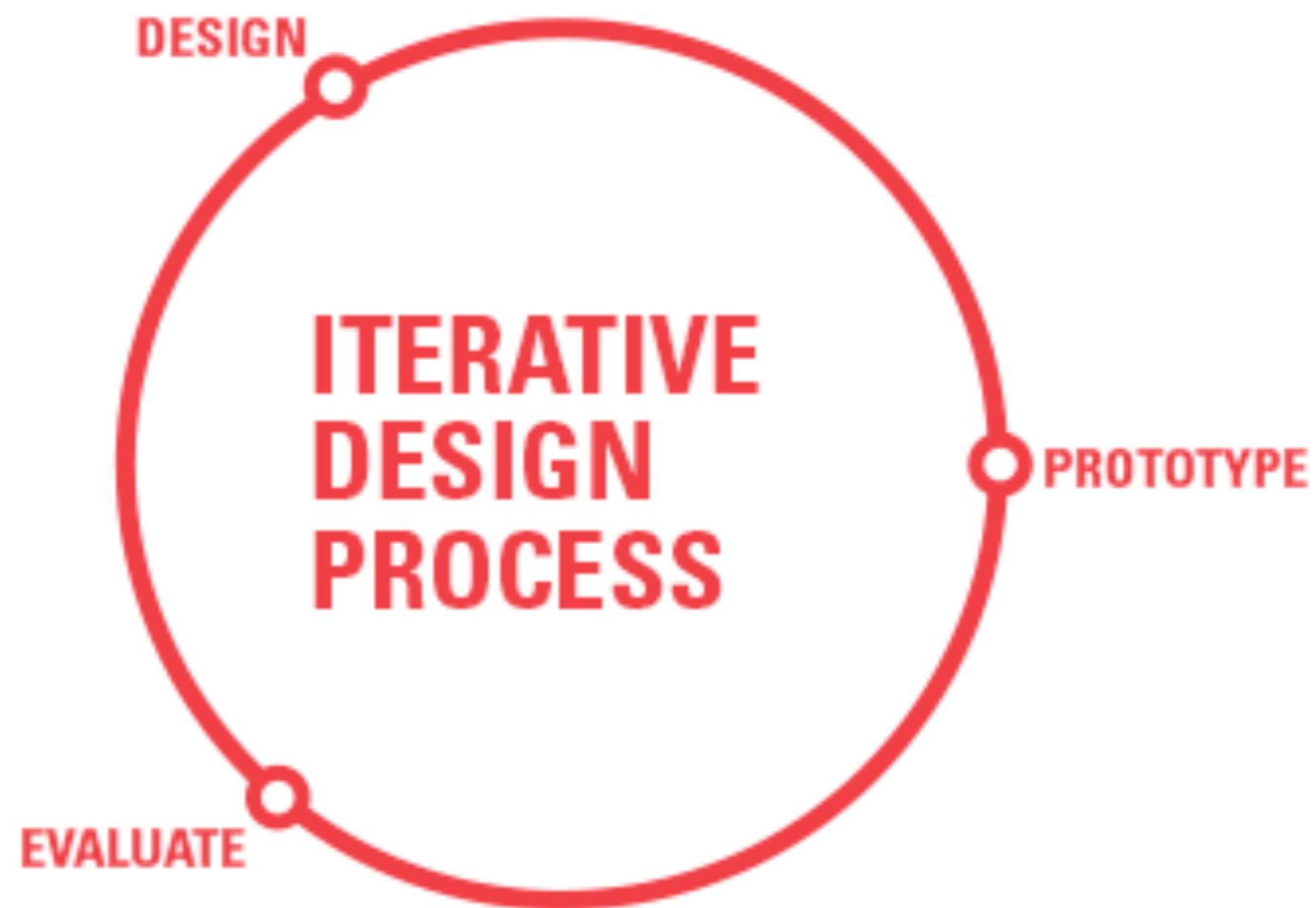
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John Doe	10	15	Male	5'8"	150 lbs	01/01/2000	123 Main Street	555-1234	john.doe@example.com
Jane Doe	10	15	Female	5'7"	145 lbs	01/01/2000	123 Main Street	555-1234	jane.doe@example.com
Bob Smith	11	16	Male	5'9"	160 lbs	01/01/2000	123 Main Street	555-1234	bob.smith@example.com
Sarah Smith	11	16	Female	5'6"	140 lbs	01/01/2000	123 Main Street	555-1234	sarah.smith@example.com
David Johnson	12	17	Male	6'0"	170 lbs	01/01/2000	123 Main Street	555-1234	david.johnson@example.com
Karen Johnson	12	17	Female	5'5"	135 lbs	01/01/2000	123 Main Street	555-1234	karen.johnson@example.com
Michael Williams	13	18	Male	6'2"	180 lbs	01/01/2000	123 Main Street	555-1234	michael.williams@example.com
Laura Williams	13	18	Female	5'4"	125 lbs	01/01/2000	123 Main Street	555-1234	laura.williams@example.com
Christopher Lee	14	19	Male	6'3"	190 lbs	01/01/2000	123 Main Street	555-1234	christopher.lee@example.com
Elizabeth Lee	14	19	Female	5'3"	130 lbs	01/01/2000	123 Main Street	555-1234	elizabeth.lee@example.com
Matthew Green	15	20	Male	6'4"	200 lbs	01/01/2000	123 Main Street	555-1234	matthew.green@example.com
Ashley Green	15	20	Female	5'2"	120 lbs	01/01/2000	123 Main Street	555-1234	ashley.green@example.com
James White	16	21	Male	6'5"	210 lbs	01/01/2000	123 Main Street	555-1234	james.white@example.com
Samantha White	16	21	Female	5'1"	110 lbs	01/01/2000	123 Main Street	555-1234	samantha.white@example.com
William Black	17	22	Male	6'6"	220 lbs	01/01/2000	123 Main Street	555-1234	william.black@example.com
Olivia Black	17	22	Female	5'0"	100 lbs	01/01/2000	123 Main Street	555-1234	olivia.black@example.com
Benjamin Brown	18	23	Male	6'7"	230 lbs	01/01/2000	123 Main Street	555-1234	benjamin.brown@example.com
Madison Brown	18	23	Female	5'9"	190 lbs	01/01/2000	123 Main Street	555-1234	madison.brown@example.com
Christopher Green	19	24	Male	6'8"	240 lbs	01/01/2000	123 Main Street	555-1234	christopher.green@example.com
Elizabeth Green	19	24	Female	5'7"	180 lbs	01/01/2000	123 Main Street	555-1234	elizabeth.green@example.com
Matthew Black	20	25	Male	6'9"	250 lbs	01/01/2000	123 Main Street	555-1234	matthew.black@example.com
Ashley Black	20	25	Female	5'6"	170 lbs	01/01/2000	123 Main Street	555-1234	ashley.black@example.com
James White	21	26	Male	6'10"	260 lbs	01/01/2000	123 Main Street	555-1234	james.white@example.com
Samantha White	21	26	Female	5'5"	160 lbs	01/01/2000	123 Main Street	555-1234	samantha.white@example.com
Benjamin Brown	22	27	Male	6'11"	270 lbs	01/01/2000	123 Main Street	555-1234	benjamin.brown@example.com
Madison Brown	22	27	Female	5'10"	260 lbs	01/01/2000	123 Main Street	555-1234	madison.brown@example.com
Christopher Green	23	28	Male	6'12"	280 lbs	01/01/2000	123 Main Street	555-1234	christopher.green@example.com
Elizabeth Green	23	28	Female	5'9"	270 lbs	01/01/2000	123 Main Street	555-1234	elizabeth.green@example.com
Matthew Black	24	29	Male	6'13"	290 lbs	01/01/2000	123 Main Street	555-1234	matthew.black@example.com
Ashley Black	24	29	Female	5'12"	280 lbs	01/01/2000	123 Main Street	555-1234	ashley.black@example.com
James White	25	30	Male	6'14"	300 lbs	01/01/2000	123 Main Street	555-1234	james.white@example.com
Samantha White	25	30	Female	5'11"	290 lbs	01/01/2000	123 Main Street	555-1234	samantha.white@example.com
Benjamin Brown	26	31	Male	6'15"	310 lbs	01/01/2000	123 Main Street	555-1234	benjamin.brown@example.com
Madison Brown	26	31	Female	5'14"	300 lbs	01/01/2000	123 Main Street	555-1234	madison.brown@example.com
Christopher Green	27	32	Male	6'16"	320 lbs	01/01/2000	123 Main Street	555-1234	christopher.green@example.com
Elizabeth Green	27	32	Female	5'13"	310 lbs	01/01/2000	123 Main Street	555-1234	elizabeth.green@example.com
Matthew Black	28	33	Male	6'17"	330 lbs	01/01/2000	123 Main Street	555-1234	matthew.black@example.com
Ashley Black	28	33	Female	5'16"	320 lbs	01/01/2000	123 Main Street	555-1234	ashley.black@example.com
James White	29	34	Male	6'18"	340 lbs	01/01/2000	123 Main Street	555-1234	james.white@example.com
Samantha White	29	34	Female	5'15"	330 lbs	01/01/2000	123 Main Street	555-1234	samantha.white@example.com
Benjamin Brown	30	35	Male	6'19"	350 lbs	01/01/2000	123 Main Street	555-1234	benjamin.brown@example.com
Madison Brown	30	35	Female	5'18"	340 lbs	01/01/2000	123 Main Street	555-1234	madison.brown@example.com
Christopher Green	31	36	Male	6'20"	360 lbs	01/01/2000	123 Main Street	555-1234	christopher.green@example.com
Elizabeth Green	31	36	Female	5'17"	350 lbs	01/01/2000	123 Main Street	555-1234	elizabeth.green@example.com
Matthew Black	32	37	Male	6'21"	370 lbs	01/01/2000	123 Main Street	555-1234	matthew.black@example.com
Ashley Black	32	37	Female	5'20"	360 lbs	01/01/2000	123 Main Street	555-1234	ashley.black@example.com
James White	33	38	Male	6'22"	380 lbs	01/01/2000	123 Main Street	555-1234	james.white@example.com
Samantha White	33	38	Female	5'19"	370 lbs	01/01/2000	123 Main Street	555-1234	samantha.white@example.com
Benjamin Brown	34	39	Male	6'23"	390 lbs	01/01/2000	123 Main Street	555-1234	benjamin.brown@example.com
Madison Brown	34	39	Female	5'22"	380 lbs	01/01/2000	123 Main Street	555-1234	madison.brown@example.com
Christopher Green	35	40	Male	6'24"	400 lbs	01/01/2000	123 Main Street	555-1234	christopher.green@example.com
Elizabeth Green	35	40	Female	5'21"	390 lbs	01/01/2000	123 Main Street	555-1234	elizabeth.green@example.com
Matthew Black	36	41	Male	6'25"	410 lbs	01/01/2000	123 Main Street	555-1234	matthew.black@example.com
Ashley Black	36	41	Female	5'24"	400 lbs	01/01/2000	123 Main Street	555-1234	ashley.black@example.com
James White	37	42	Male	6'26"	420 lbs	01/01/2000	123 Main Street	555-1234	james.white@example.com
Samantha White	37	42	Female	5'23"	410 lbs	01/01/2000	123 Main Street	555-1234	samantha.white@example.com
Benjamin Brown	38	43	Male	6'27"	430 lbs	01/01/2000	123 Main Street	555-1234	benjamin.brown@example.com
Madison Brown	38	43	Female	5'26"	420 lbs	01/01/2000	123 Main Street	555-1234	madison.brown@example.com
Christopher Green	39	44	Male	6'28"	440 lbs	01/01/2000	123 Main Street	555-1234	christopher.green@example.com
Elizabeth Green	39	44	Female	5'25"	430 lbs	01/01/2000	123 Main Street	555-1234	elizabeth.green@example.com
Matthew Black	40	45	Male	6'29"	450 lbs	01/01/2000	123 Main Street	555-1234	matthew.black@example.com
Ashley Black	40	45	Female	5'28"	440 lbs	01/01/2000	123 Main Street	555-1234	ashley.black@example.com
James White	41	46	Male	6'30"	460 lbs	01/01/2000	123 Main Street	555-1234	james.white@example.com
Samantha White	41	46	Female	5'27"	450 lbs	01/01/2000	123 Main Street	555-1234	samantha.white@example.com
Benjamin Brown	42	47	Male	6'31"	470 lbs	01/01/2000	123 Main Street	555-1234	benjamin.brown@example.com
Madison Brown	42	47	Female	5'29"	460 lbs	01/01/2000	123 Main Street	555-1234	madison.brown@example.com
Christopher Green	43	48	Male	6'32"	480 lbs	01/01/2000	123 Main Street	555-1234	christopher.green@example.com
Elizabeth Green	43	48	Female	5'28"	470 lbs	01/01/2000	123 Main Street	555-1234	elizabeth.green@example.com
Matthew Black	44	49	Male	6'33"	490 lbs	01/01/2000	123 Main Street	555-1234	matthew.black@example.com
Ashley Black	44	49	Female	5'30"	480 lbs	01/01/2000	123 Main Street	555-1234	ashley.black@example.com
James White	45	50	Male	6'34"	500 lbs	01/01/2000	123 Main Street	555-1234	james.white@example.com
Samantha White	45	50	Female	5'29"	490 lbs	01/01/2000	123 Main Street	555-1234	samantha.white@example.com
Benjamin Brown	46	51	Male	6'35"	510 lbs	01/01/2000	123 Main Street	555-1234	benjamin.brown@example.com
Madison Brown	46	51	Female	5'31"	500 lbs	01/01/2000	123 Main Street	555-1234	madison.brown@example.com
Christopher Green	47	52	Male	6'36"	520 lbs	01/01/2000	123 Main Street	555-1234	christopher.green@example.com
Elizabeth Green	47	52	Female	5'30"	510 lbs	01/01/2000	123 Main Street	555-1234	elizabeth.green@example.com
Matthew Black	48	53	Male	6'37"	530 lbs	01/01/2000	123 Main Street	555-1234	matthew.black@example.com
Ashley Black	48	53	Female	5'32"	520 lbs	01/01/2000	123 Main Street	555-1234	ashley.black@example.com
James White	49	54	Male	6'38"	540 lbs	01/01/2000	123 Main Street	555-1234	james.white@example.com
Samantha White	49	54	Female	5'31"	530 lbs	01/01/2000	123 Main Street	555-1234	samantha.white@example.com
Benjamin Brown	50	55	Male	6'39"	550 lbs	01/01/2000	123 Main Street	555-1234	benjamin.brown@example.com
Madison Brown	50	55	Female	5'33"	540 lbs	01/01/2000	123 Main Street	555-1234	madison.brown@example.com
Christopher Green	51	56	Male	6'40"	560 lbs	01/01/2000	123 Main Street	555-1234	christopher.green@example.com
Elizabeth Green	51	56	Female	5'32"	550 lbs	01/01/2000	123 Main Street	555-1234	elizabeth.green@example.com
Matthew Black	52	57	Male	6'41"	570 lbs	01/01/2000	123 Main Street	555-1234	matthew.black@example.com
Ashley Black	52	57	Female	5'34"	560 lbs	01/01/2000	123 Main Street	555-1234	ashley.black@example.com
James White	53	58	Male	6'42"	580 lbs	01/01/2000	123 Main Street	555-1	

Click-through prototypes





The screenshot shows a digital channel interface titled "SCIENCE CHANNEL". The main header bar includes a "CHANNELS" button, a search icon, and a "Fixed Header ?" button. Below the header is a "Link To:" modal window. The modal has fields for "Select a Destination" (with a "Browse" button), "Click" (selected) or "Hover" (unselected) options, and checkboxes for "Maintain scroll position after click" and "Include hotspot in template". It also contains a "Save" button and a "cancel" link. The background of the interface features a dark space-themed image with stars. On the left, there's a mobile phone icon showing a news feed with categories like Popular, Explore, SCIENCE, TECHNOLOGY, and ENVIRONMENT. The main content area displays several news cards. One card on the right is titled "The balloons that could fly tourists to the edge of space" and includes a "CNN" logo and a date of April 1, 2015. Other cards include a "Red Planet 2039" card dated April 5, 2015, and a partially visible card about a car. The bottom navigation bar includes icons for Channel Overview, a camera, a video play button, a speech bubble, a clock, a gear, and a share button.



Project 3: Participatory Experience

Project 3: Brief

Identify a friction point or opportunity for improvement for yourself, or for a specifically defined audience.

Design a simple web and/or mobile application to alleviate that friction, or embrace that opportunity for improvement.

Build a working “MVP” prototype of your application, first with a tool like InVision, and then in HTML/CSS.

Conduct User Testing, and refine your application.

Project 3: Requirements

- Your experience must include *at least* 3 distinct user flows.
- You must test each of your user flows at least once, with 3 different people.
- Your experience must include a non-desktop-centric component (e.g. mobile). It would be great if it also has a desktop component (but not required).

Project 3: Technical Requirements

- Every line of HTML/CSS/JS must be written by you.
- You may look at external examples for inspiration or guidance, but you must be able to re-appropriate any external example by rewriting it from scratch in the context of your own project (no wholesale copy and pasting).

Project 3: Timeline

4/18 Strategy and Structure

4/25 Prototype & Testing

5/02 Production

5/09 Final Critique

Project 3: Timeline

Due 4/18: Strategy and Structure

- Define your design objectives, inspiration and precedents.
- Define your intended audience(s), and your anticipated audience needs.
- Define your functional requirements
- Diagram your experience's anticipated information architecture.
- Create wireframes of your anticipated templates.
- Assemble wireframes into a click-through prototype

Project 3: Timeline

Due 4/25: Testing and Refinement

- Test your design with at least 3 different people, and update your designs accordingly, incorporating feedback from the previous week's review.
- Full fidelity design mockups of each unique template in your experience using Sketch.
- Click-through prototype of your experience using InVision.
- A style guide of your typography system and common interface elements, using Sketch.

Project 3: Timeline

Due 5/02: Production

- Any refinements to your interface based on learnings from user testing.
- Create an HTML/CSS click-through prototype of your final experience, that works on it's intended device.

5/09: Final Critique