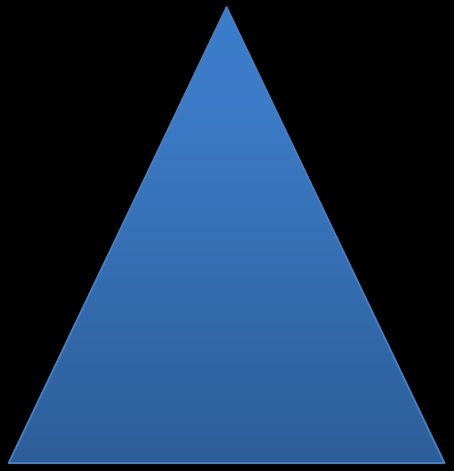
Principles of
visual organization



CSCI 3002 Fall 2018

Today

- Visual organization of user interfaces
- Making things look better,
- and making them work better

Meta

- Group assignment 2 up (due next Thursday)
- Quiz 1 next Friday (in recitation)

Visual Design for User Interfaces

“The eye travels along the paths cut out for it in the work.”
—Paul Klee

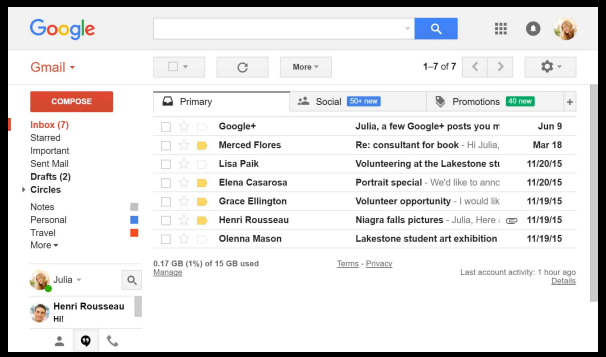
What we're not learning (mostly)

- How to design attractive and aesthetically pleasing user interfaces

What we are learning

- Rules of human visual perception and understanding (discovered by psychologists, artists, and designers)
- How to apply this knowledge to communicate better through designed artifacts
- Improve understanding, support independent learning, reduce errors

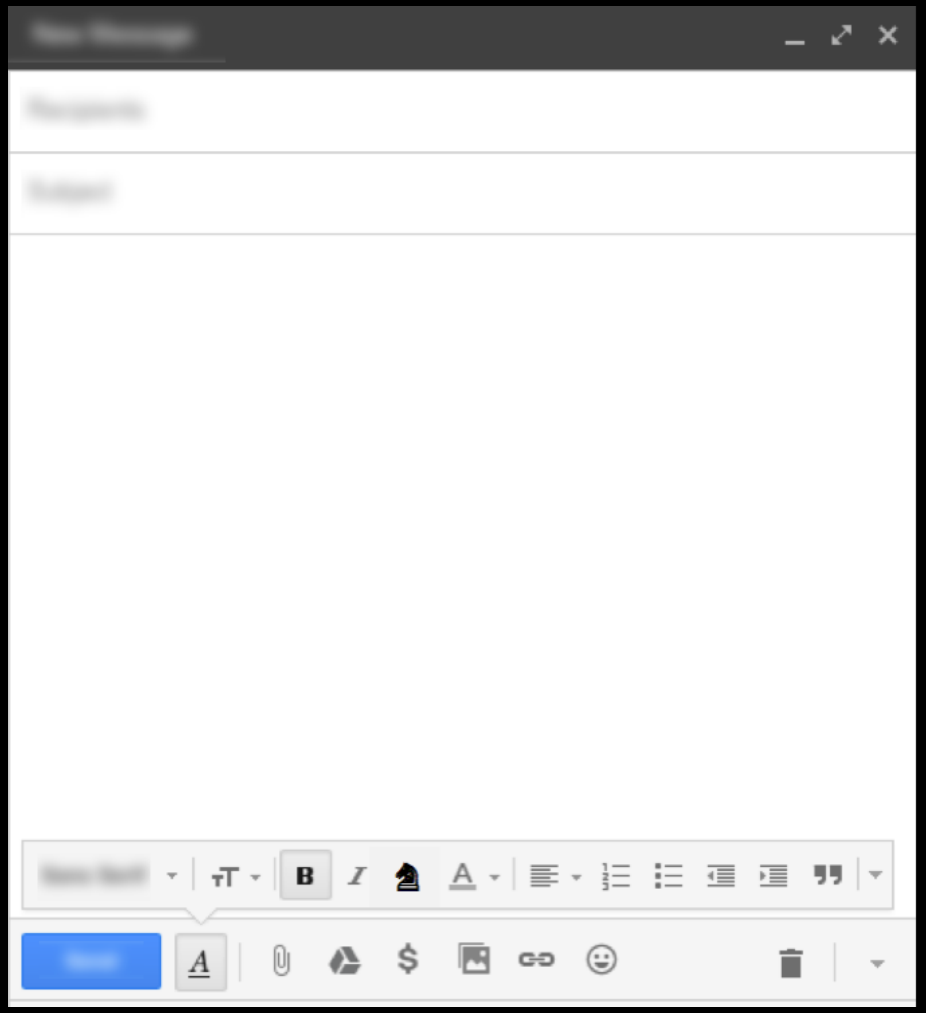
Goals for visual design of UIs



- Make sure visual information is skimmable
- Communicate the state of the system, possible actions
- Communicate differences and changes between similar and sequential items
- Draw attention to what is most important
- **Overall, leverage visual perception to reduce the need for written instructions, training, errors**

The big idea

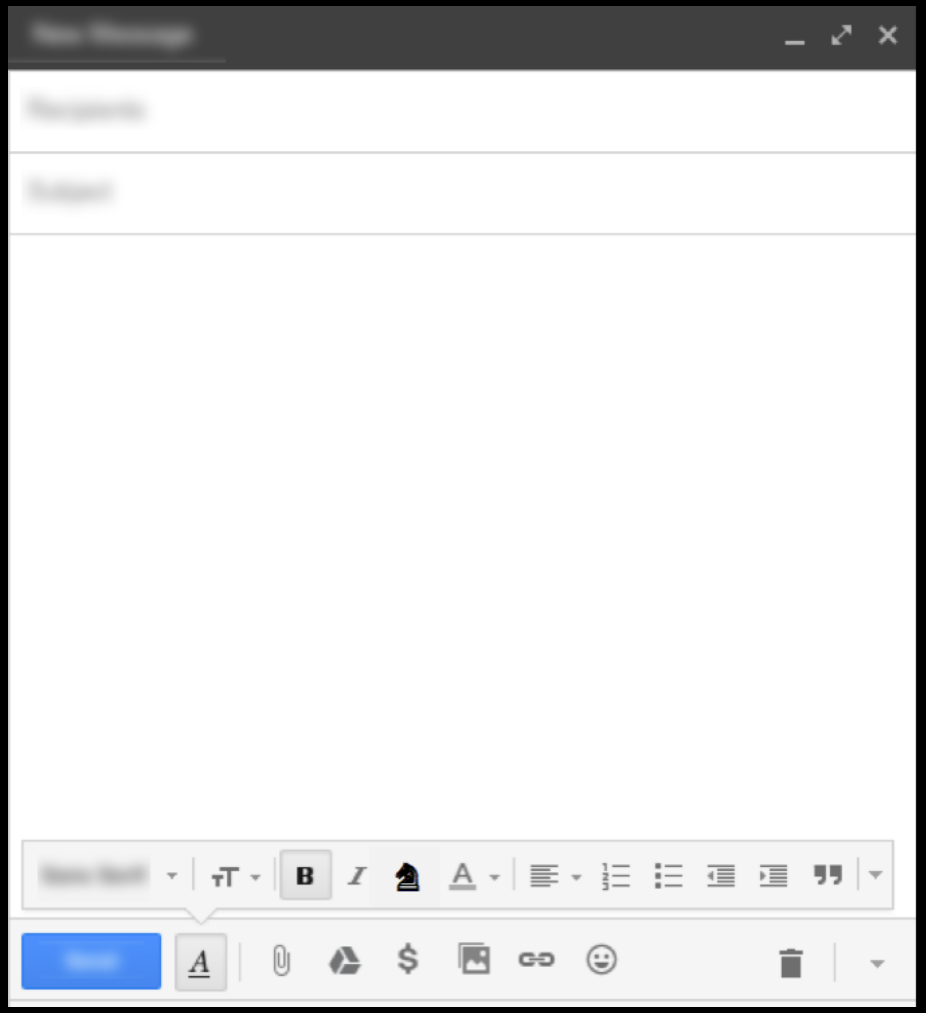
- **Visual** structure should communicate the underlying **logical** structure of the system



Putting it to the test

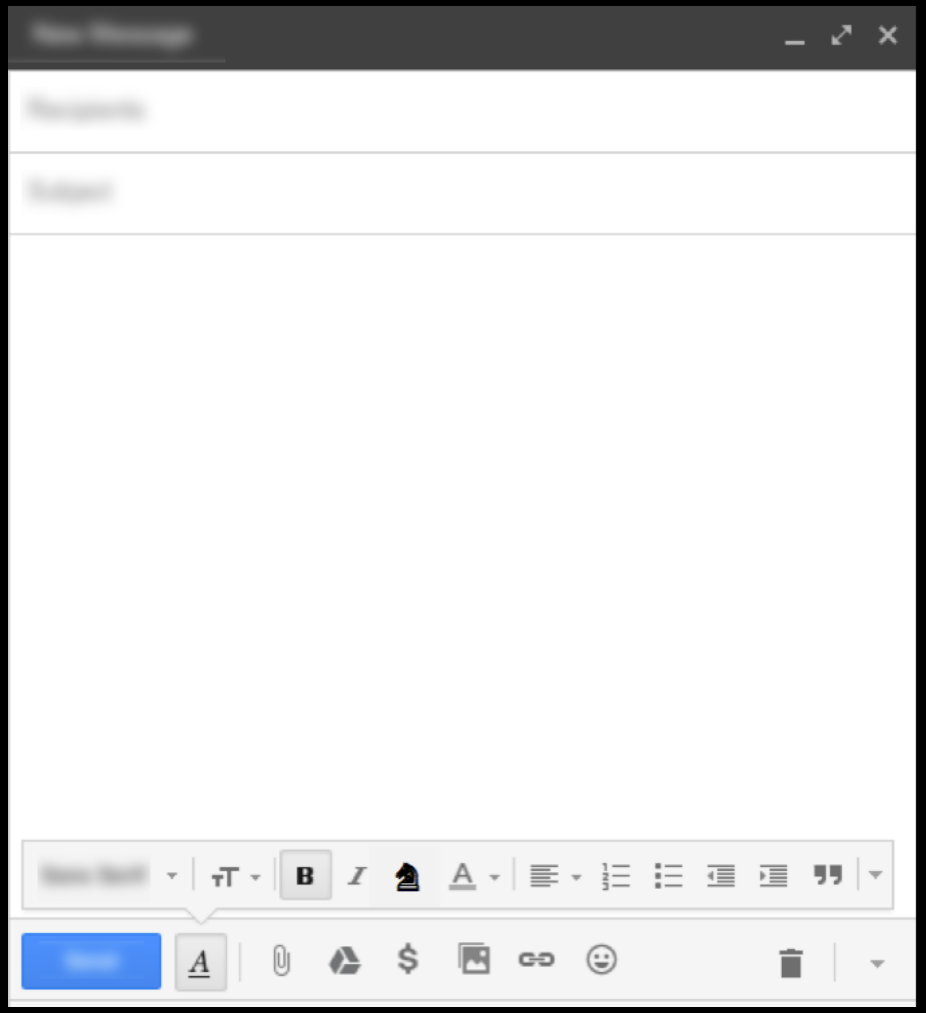
- What is the order in which I should complete this task?

  (and how do we know?)



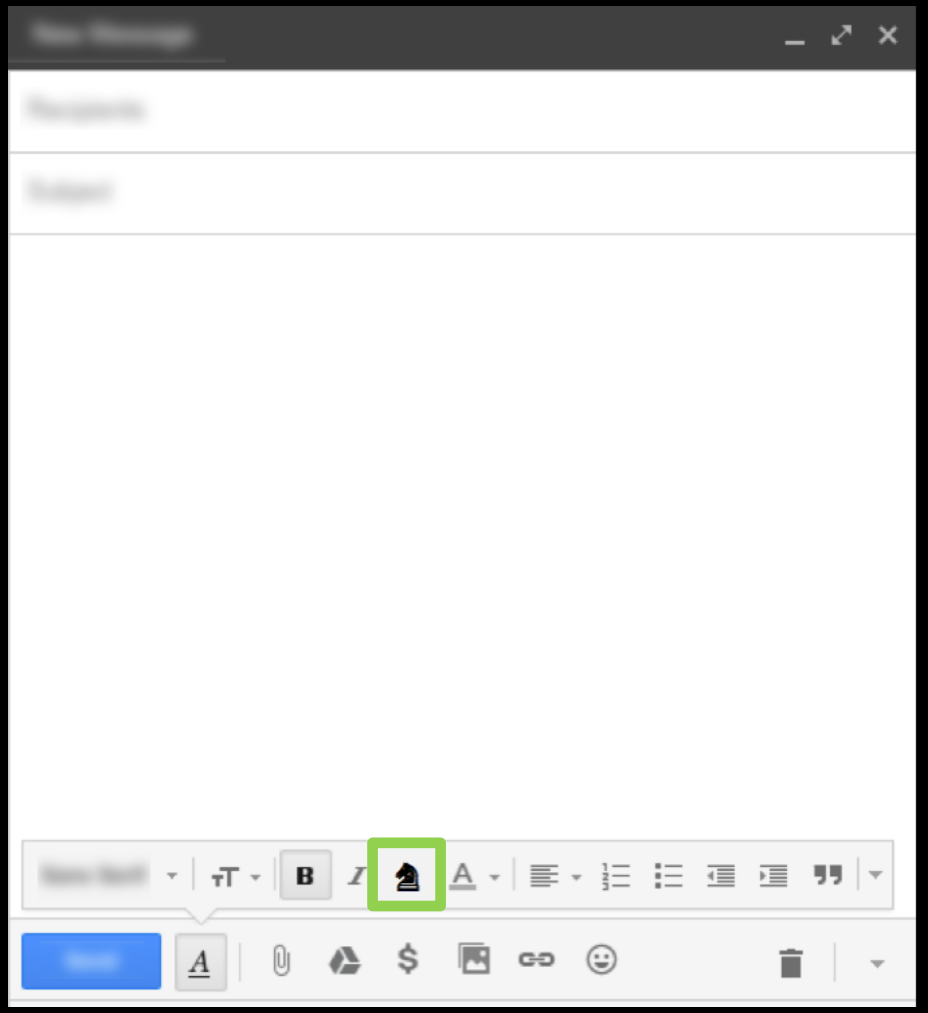
Putting it to the test

- What are the important parts of this task?



Putting it to the test

- What does this new feature do?

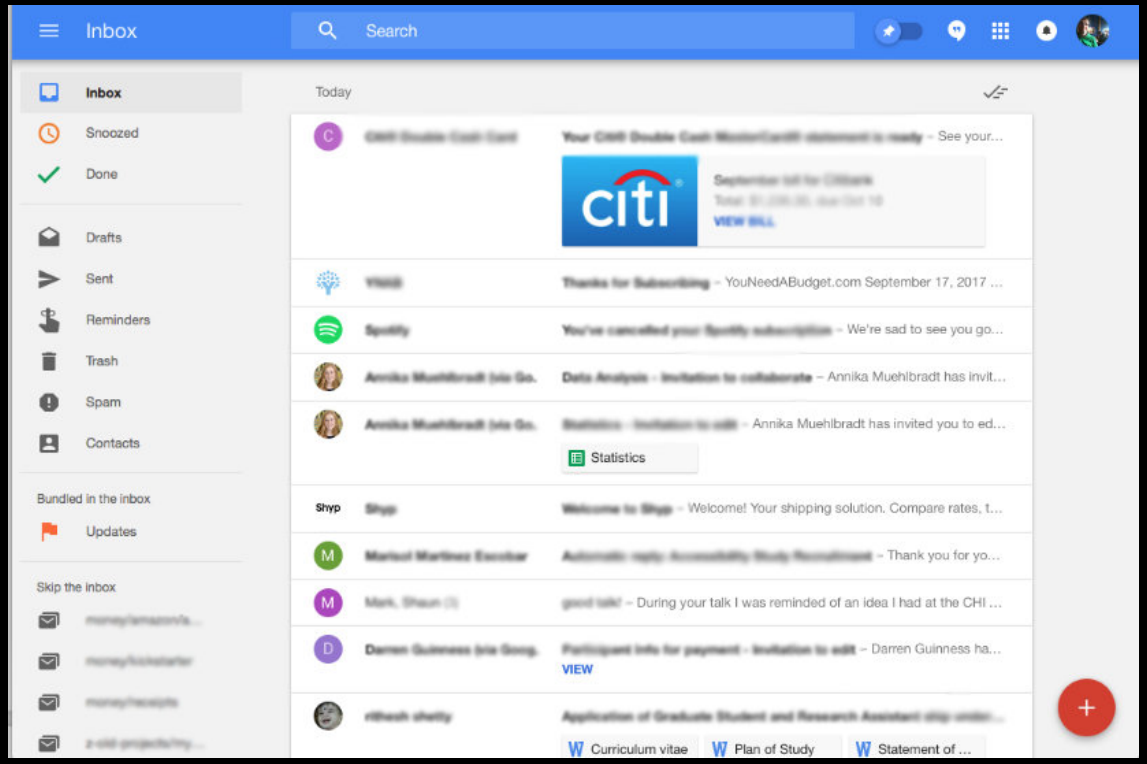


Our toolkit

- How can we control how our user interface is understood?
- Convey **importance**
  —size, color, contrast
- Convey **logical structure**
  —spatial layout, grouping, hierarchy, sequence
- Convey **UI roles**
  —style conventions

Visual organization can convey…

- Relative importance
- Groups of like items
- Order and sequences
- Hierarchical relationships

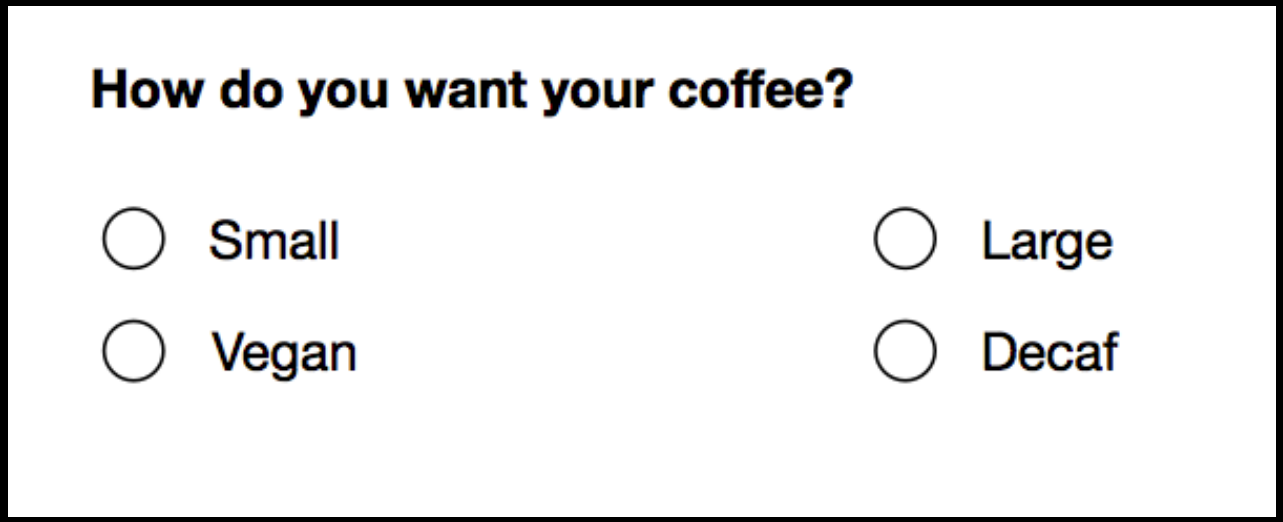


Gestalt processing

- Our brains process visual objects as part of their larger context
- **To put it simply:**
  — objects that look similar, close together, or aligned, represent the same kind of thing
  — objects that look different, far apart, or aligned differently represent different things

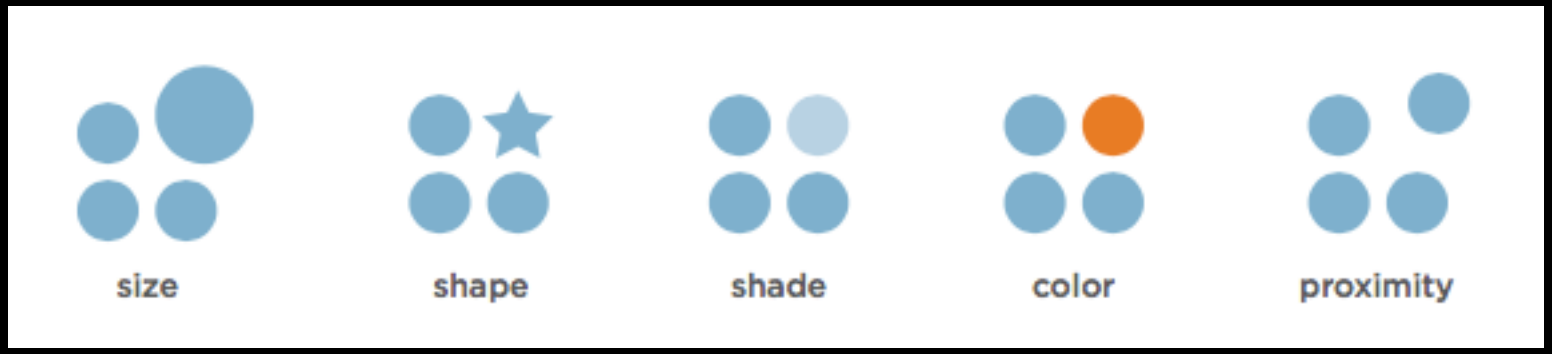
False structure

- Users will make inferences about the meaning of your user interface based on its appearance
- If the user interface is designed in an arbitrary way, users will still try to make sense of it



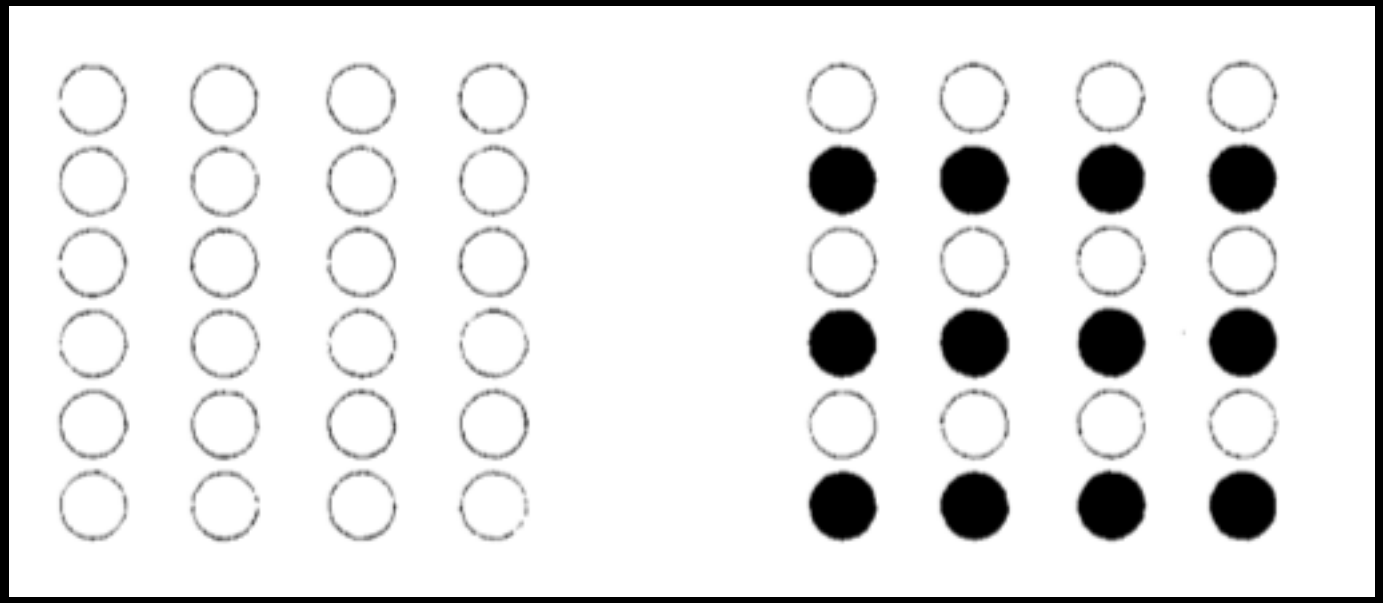
Visual contrast and similarity

- Visual contrast is an essential tool for establishing relationships
- Components of contrast include color, size, shape, alignment



Contrast is contextual

- The power of any contrasting element depends on the surrounding elements



Practical guidance

What to do

- Identify important elements by making them larger, near the top, contrasting visually
- Use proximity, alignment, visual similarity to create groups
- Create a visual hierarchy that communicates the structure of your application
- Order the sequence of steps in line with reading order

Contrast

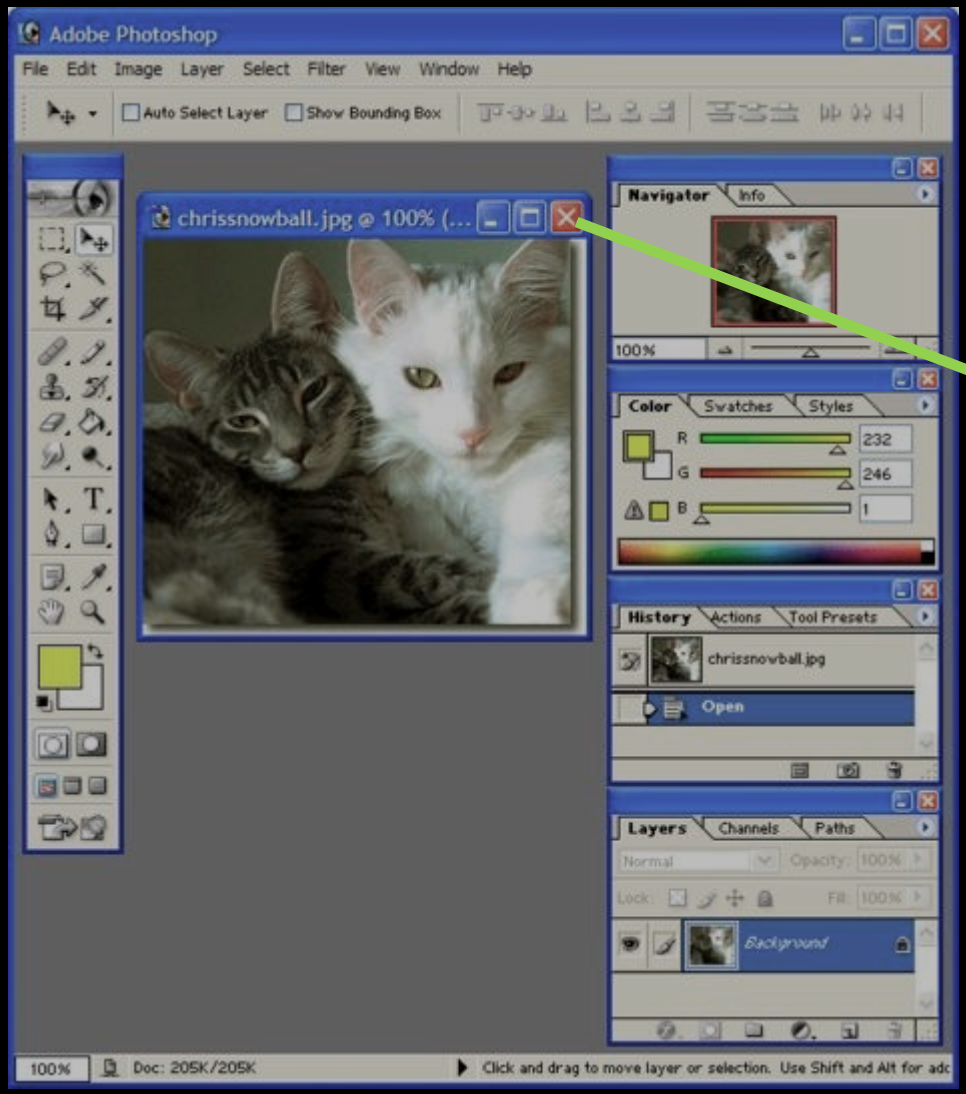
- Things that are the same: present them as the same
- Things that are different: make them really different
- Let visual structure reinforce the structure of the content

Contrast

- Things that are the same: present them as the same
- Things that are different: make them **really** different
- Let visual structure r he content

Make changes **bold!**
Minor changes in size, color, etc. may be missed (or look like mistakes)
Change multiple variables at once.

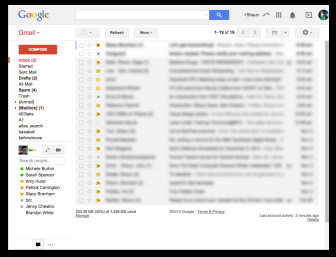
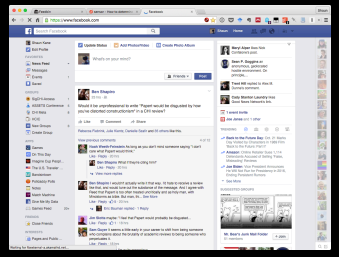
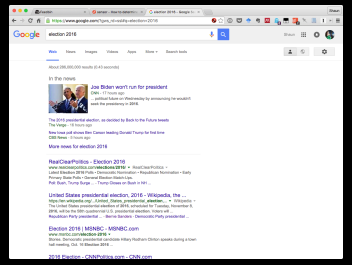
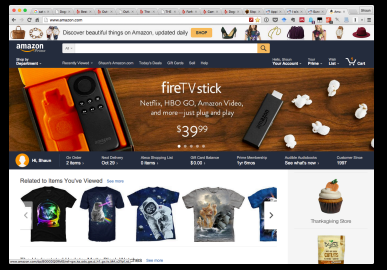
Visual hierarchy

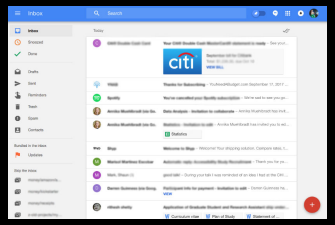


what does this button act on?

Testing visual hierarchy

- **Thumbnail test:** If you reduce the screen down to a tiny image (“thumbnail”), is it still understandable?



Don’t just put everything in a box

- It is extremely common for early designers to just draw a box around everything
- This can really impair readability!
- …plus you’re missing out on the tools that are available to you
- Use spacing, alignment, size, color etc. to create a visual hierarchy

My blog

UCD class is the best class

posted Thursday by Shaun

Seriously this class is off the hook!

When will the coffee cart open??

posted Tuesday by Shaun

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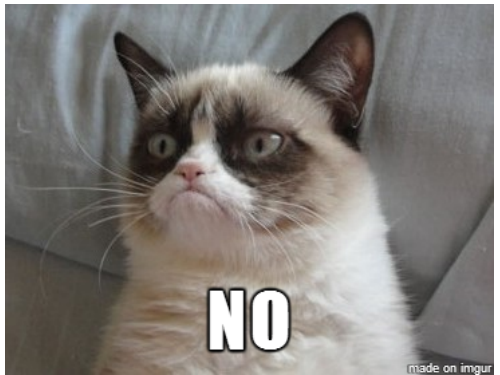

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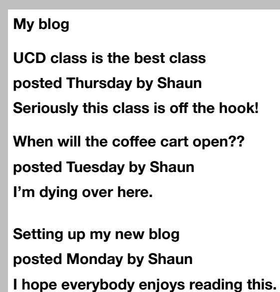
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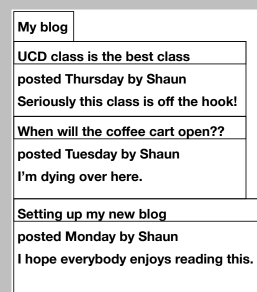
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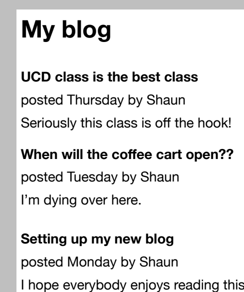
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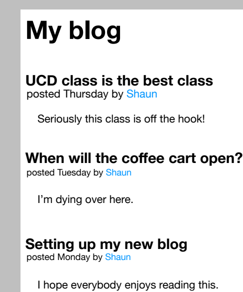
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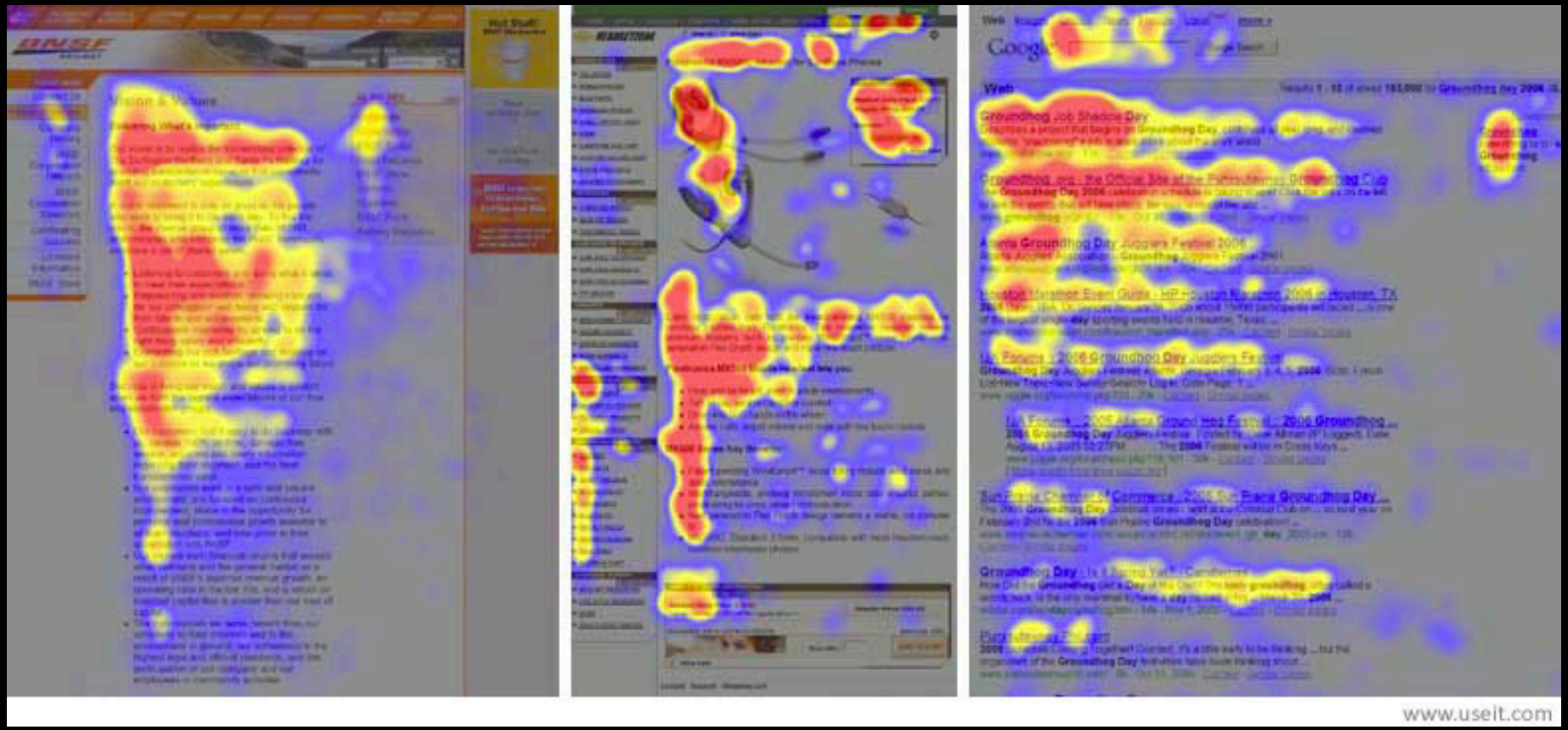
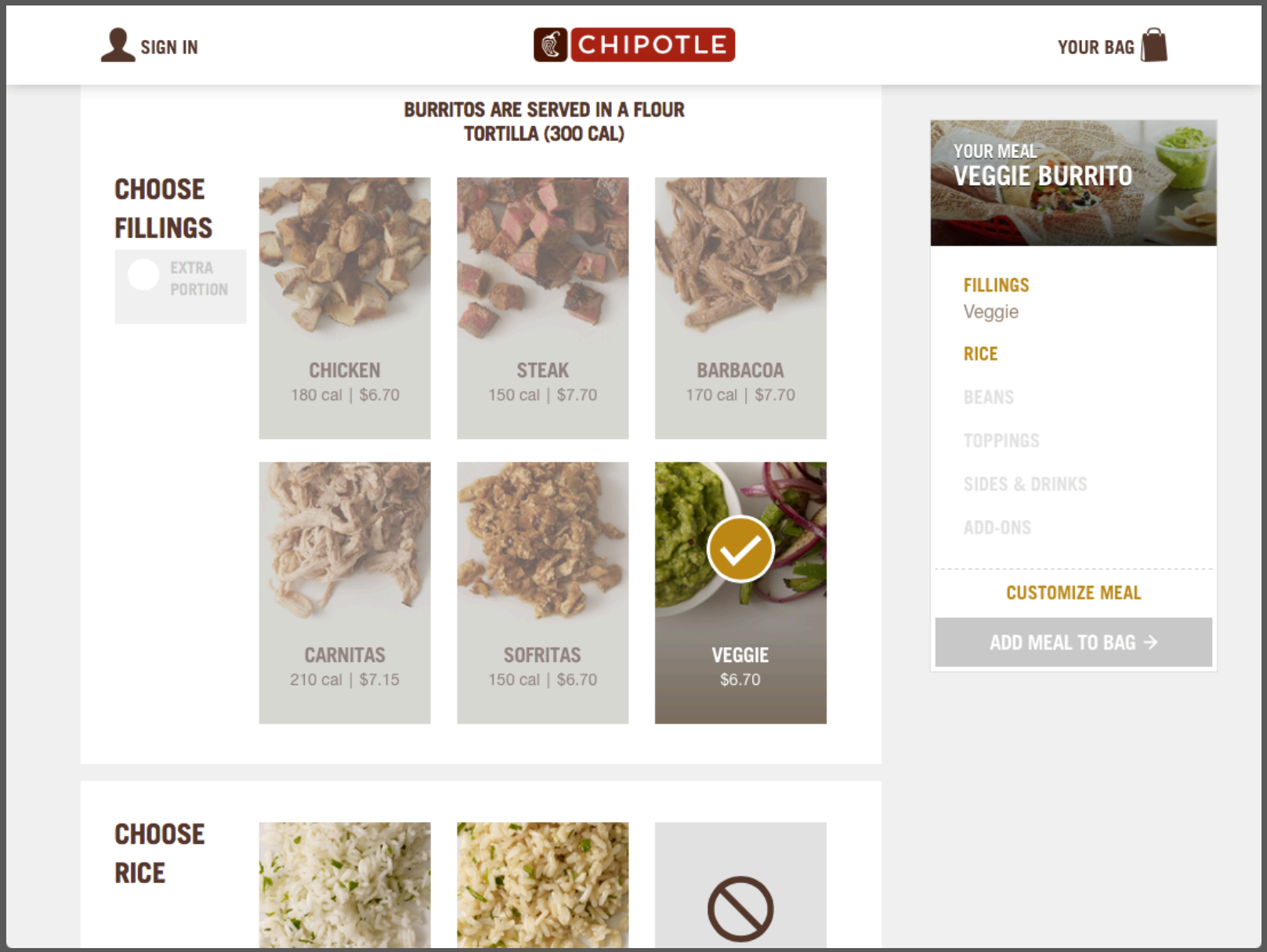
Reading order

- Top to bottom, left to right
- “F” shape (at least in English)



Sequence constraints



Next steps

- Two (shorter) in-class activities for Thursday: design scavenger hunt, visual design practice
- Next assignment: heuristic evaluation
- Next week: color, type, grids

Next time

- Elements of visual design: color, type, grids

A brief rant about simplicity

- We are conditioned to believe that **simplicity** always leads to good design
- So, the way to make something better is to remove parts of it
- This is untrue.

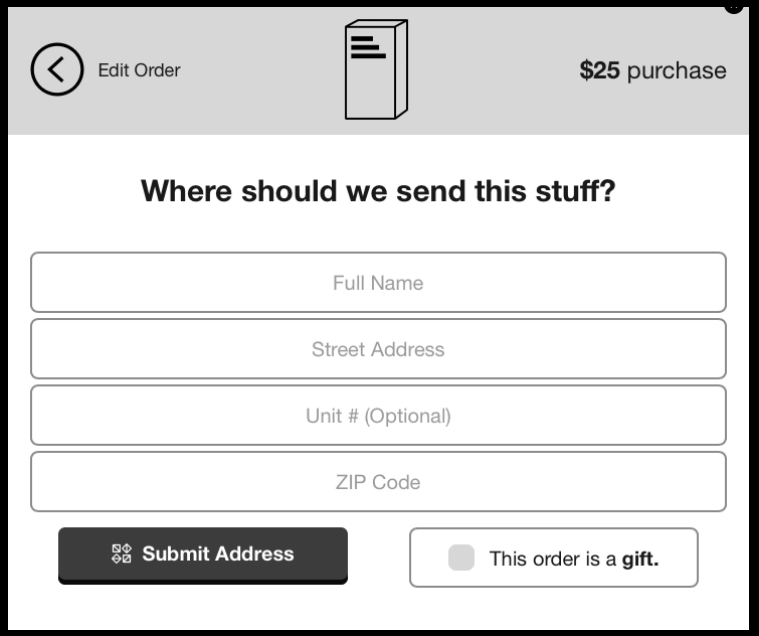
The MacBook Wheel

What do we actually mean by ‘simplicity’?

- Some tasks have unnecessary steps → remove the extra steps
  (not the ability to complete the task)

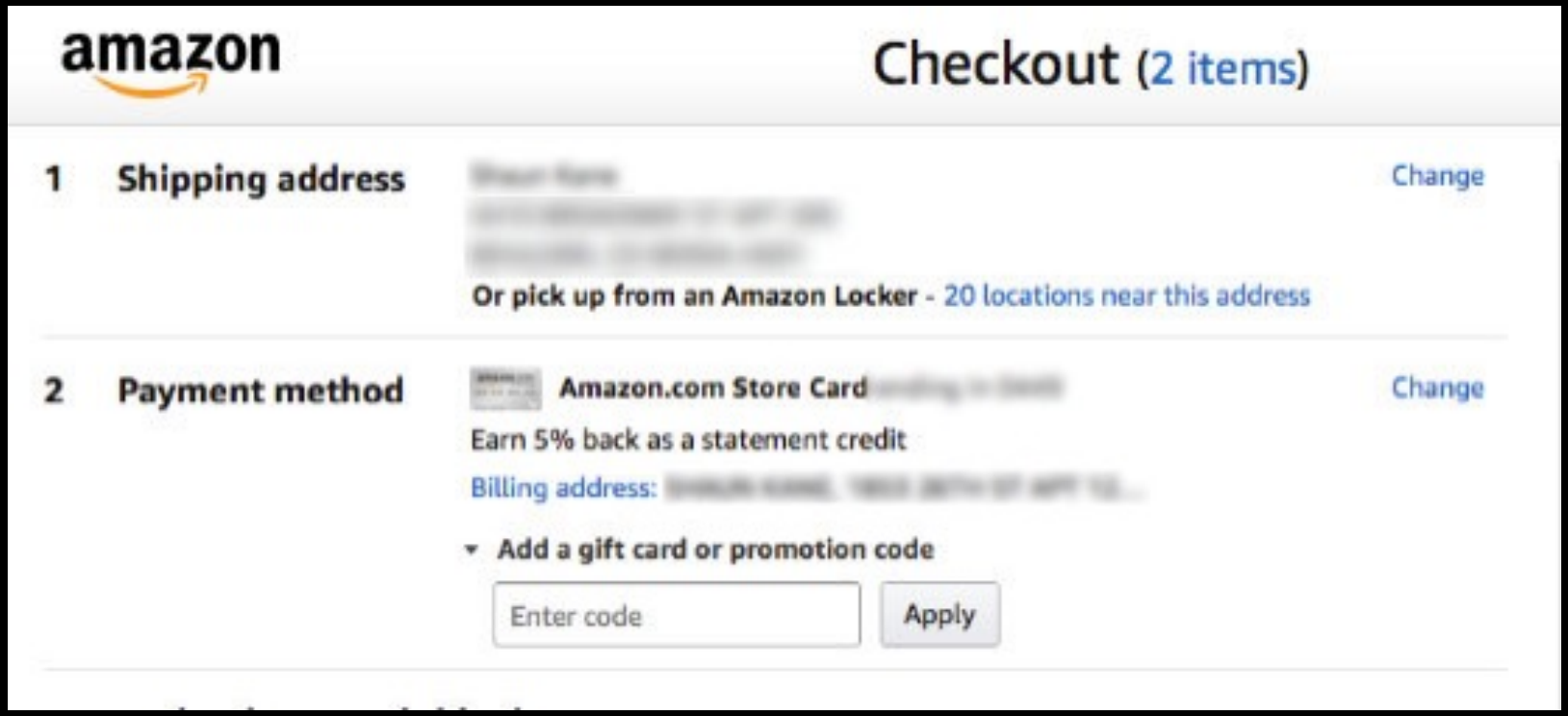
- Use sensible defaults

- The user can’t find what they are looking for → simplify organization, add shortcuts



Sensible defaults?

- Use sensible defaults, so the user only needs to input **unexpected** information
- But be clear about what the system is assuming



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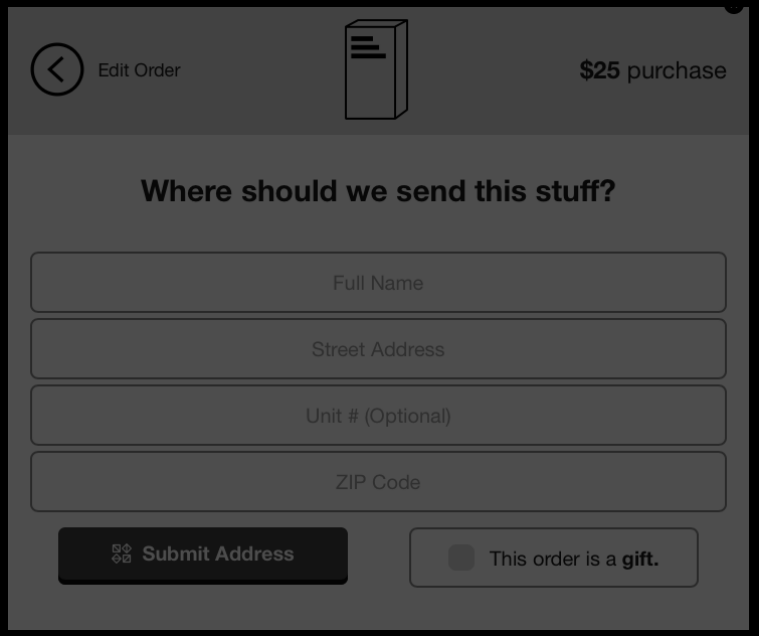
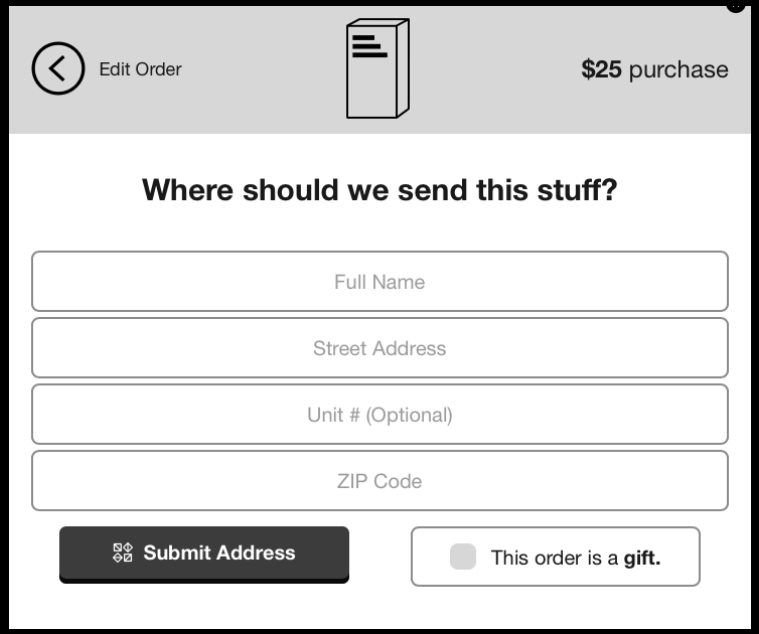


- The user can’t find what they are looking for → simplify organization, add shortcuts

Using simplicity responsibly

- Note that, in both cases, solving these problems requires deep understanding of user goals and activities
- Almost never involves actually removing things
- “Make the easy jobs easy, without making the hard jobs impossible”
  —Larry Wall, *Learning Perl*

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