

UX/UI DESIGN PART II

EGCO343 SOFTWARE DESIGN



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USER EXPERIENCE

VISUAL DESIGN

VISUAL DESIGN PRINCIPLE (1)

- The idea and power to control the user is valuable to a UX designer.
- Your job, therefore, is to aid users to notice the things that matter, and it is also important not to distract the users from their goals.
- By introducing visual weight to specific parts of your design, you significantly increase the chance of a user to see them, and you change where their eyes follow next.

VISUAL DESIGN PRINCIPLE (2)

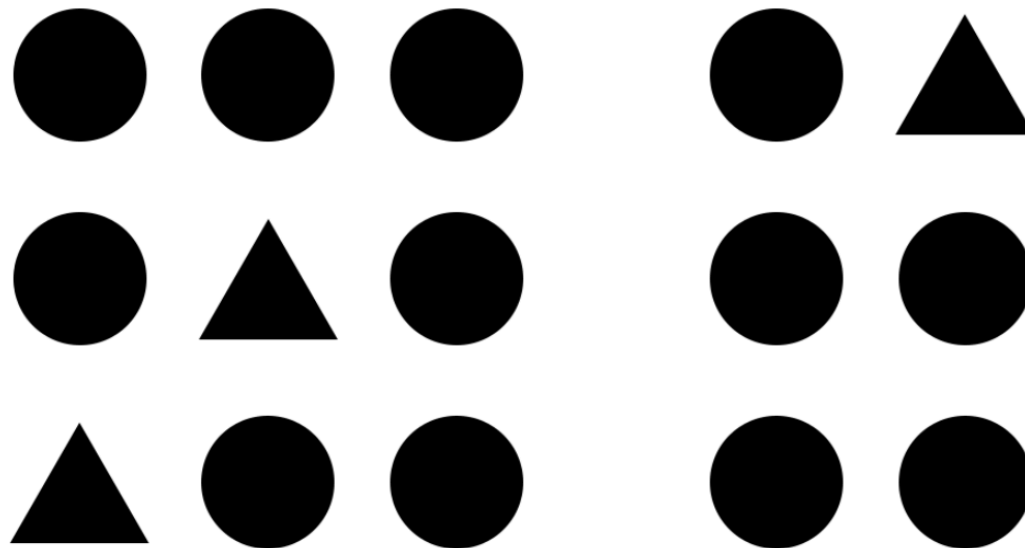
- All visual principles are concerned with comparing a design element to whatever is in its vicinity. At its core, there are five visual design principles in the field of UX.
 - Contrast
 - Balance
 - Scale
 - Visual Hierarchy
 - Gestalt

GESTALT PRINCIPLE

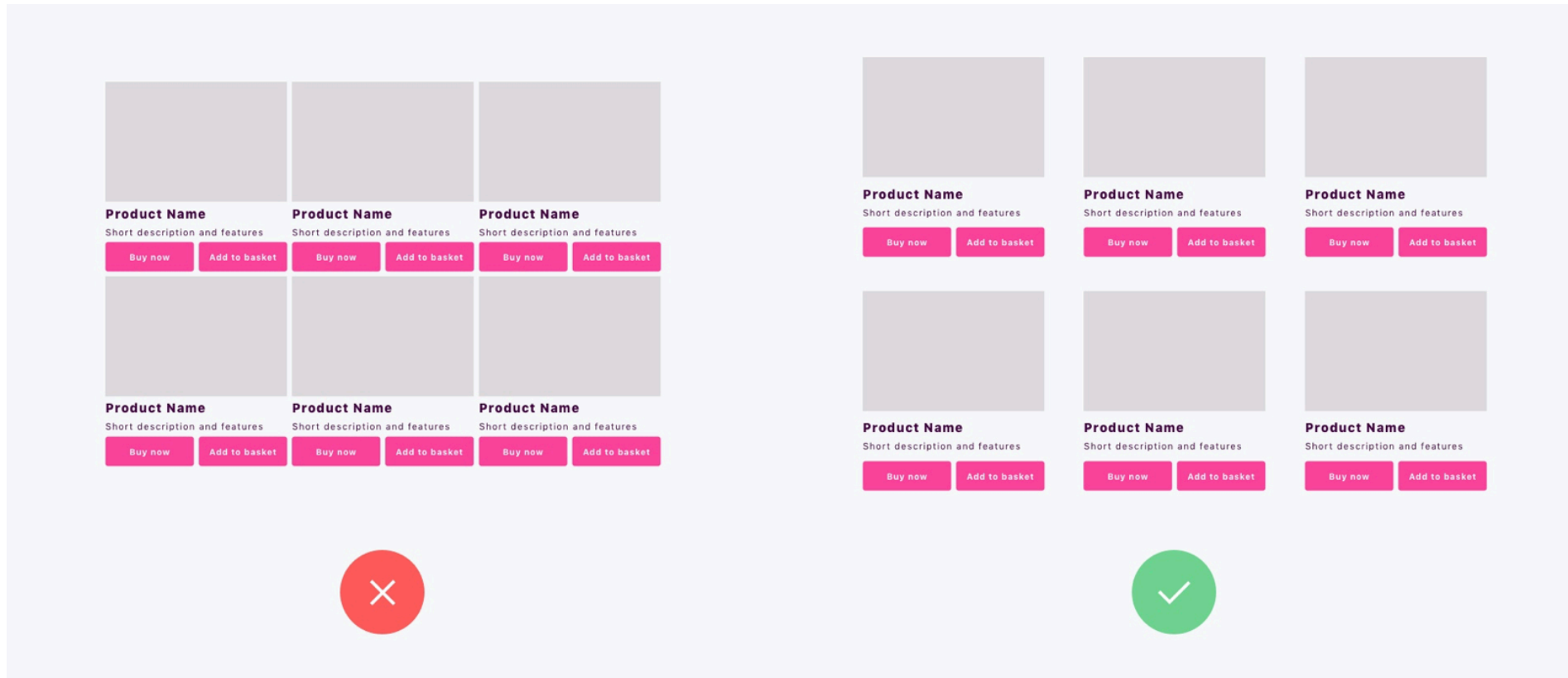
- Early in the twentieth century, a group of German psychologists sought to explain how human visual perception works.
- They observed and catalogued many important visual phenomena. One of their basic findings was that human vision is holistic: Our visual system automatically imposes structure on visual input and is "wired" to perceive whole shapes, figures, and objects rather than disconnected edges, lines, and areas.
- The German word for "shape" or "figure" is "Gestalt" so these theories became known as the Gestalt principles of visual perception

GESTALT PRINCIPLE: PROXIMITY

The principle of proximity states that things that are close together appear to be more related than things that are spaced farther apart.

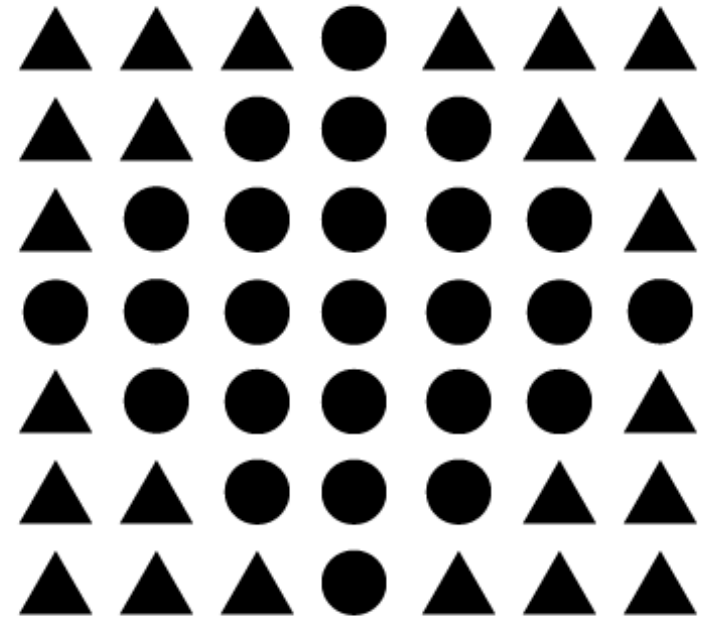


SIMILARITY PROXIMITY – HOW IT IS USED IN UI DESIGN?

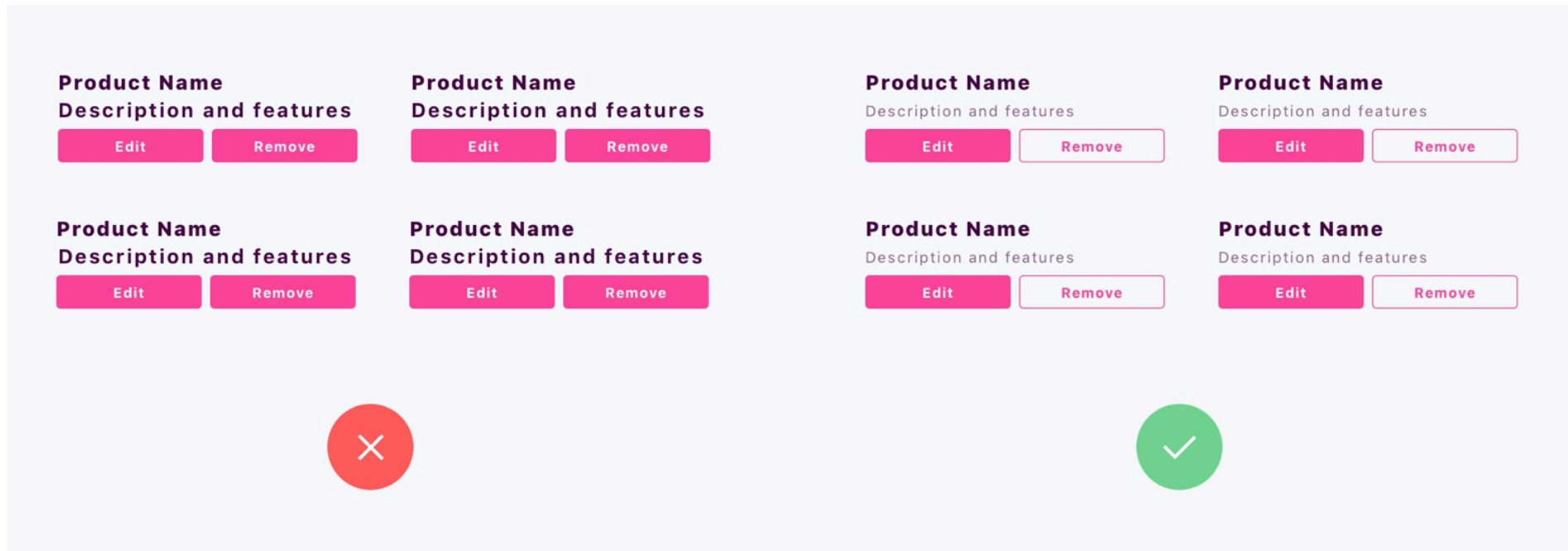


GESTALT PRINCIPLE: SIMILARITY

- The principle of similarity states that when things appear to be similar to each other, we group them together. And we also tend to think they have the same function.
- For instance, in this image, there appear to be two separate and distinct groups based on shape: the circles and the squares.

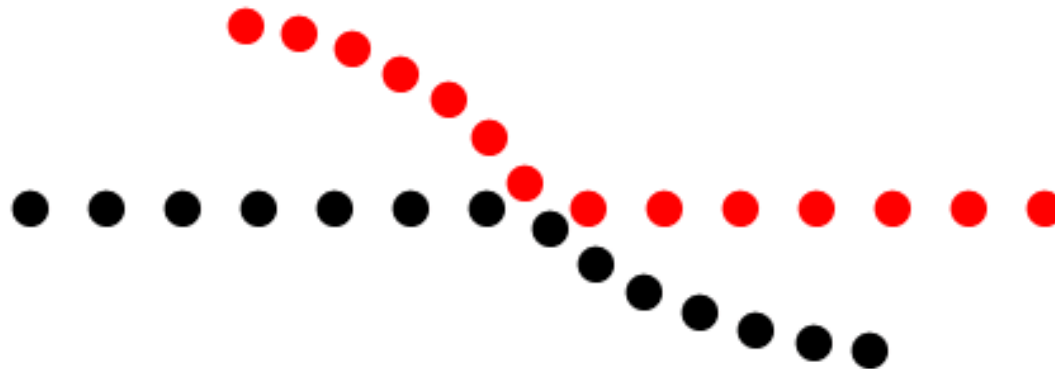


SIMILARITY PRINCIPLE – HOW IT IS USED IN UI DESIGN?

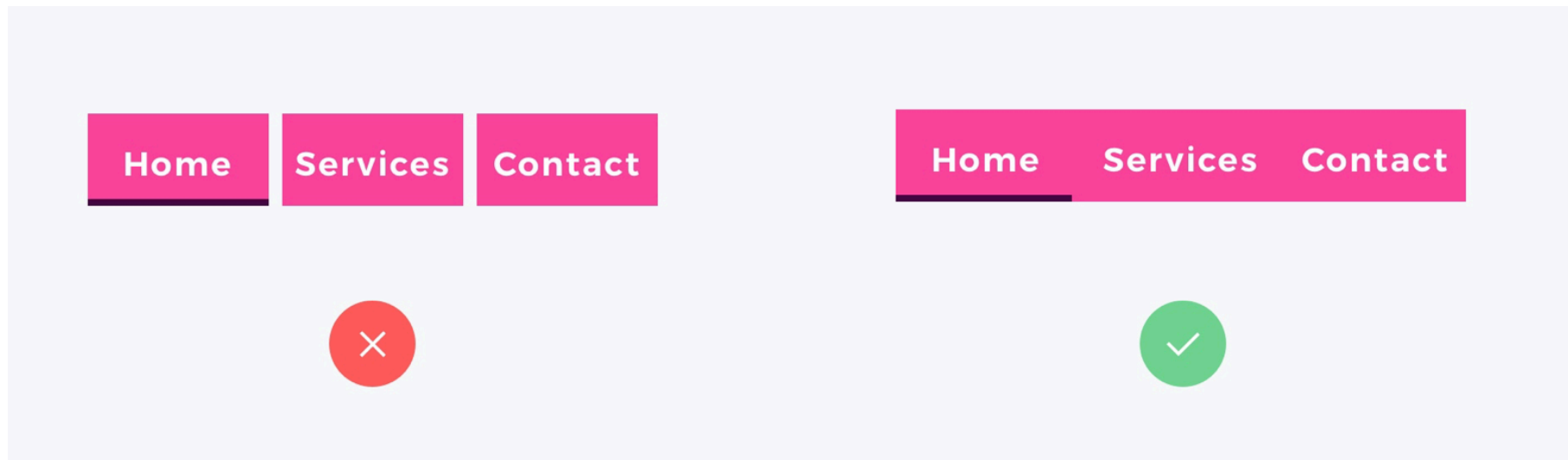


GESTALT PRINCIPLE: CONTINUITY

- The principle of continuity states that elements that are arranged on a line or curve are perceived to be more related than elements not on the line or curve.

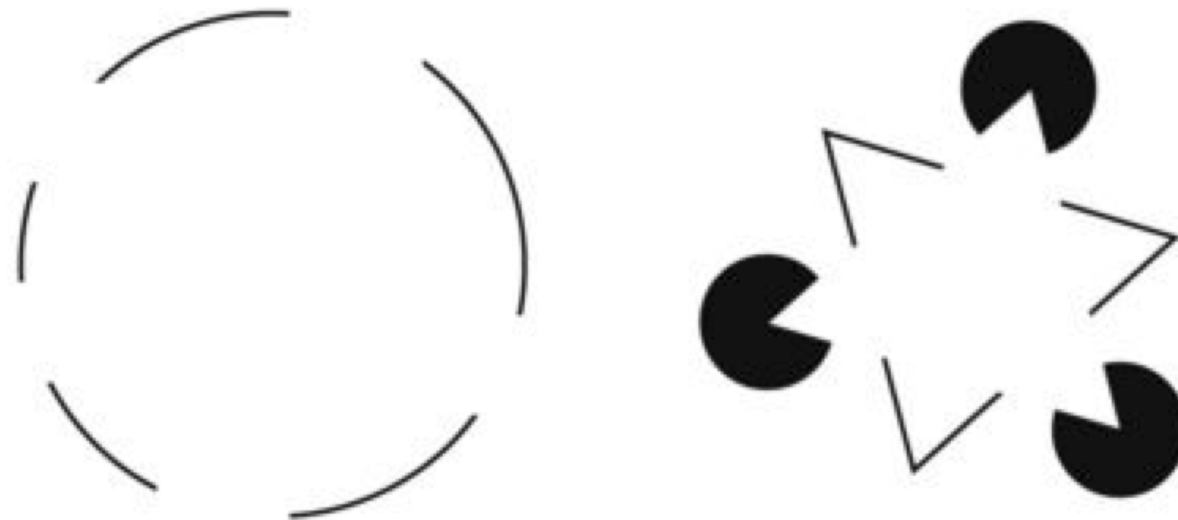


CONTINUITY PRINCIPLE – HOW IT IS USED IN UI DESIGN?

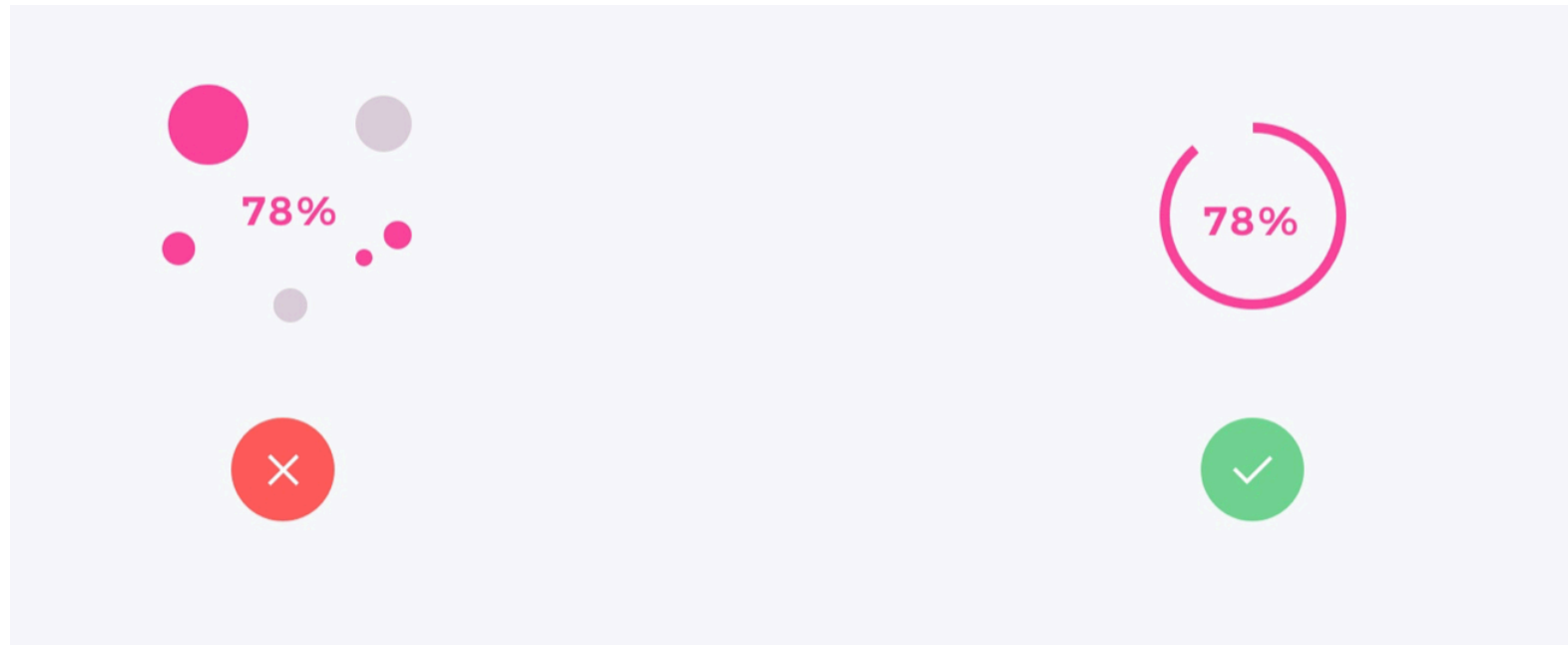


GESTALT PRINCIPLE: CLOSURE

- Related to Continuity is the Gestalt principle of Closure, which states that our visual system automatically tries to close open figures so that they are perceived as whole objects rather than separate pieces. Thus, we perceive the disconnected arcs on the left of figure as a circle.

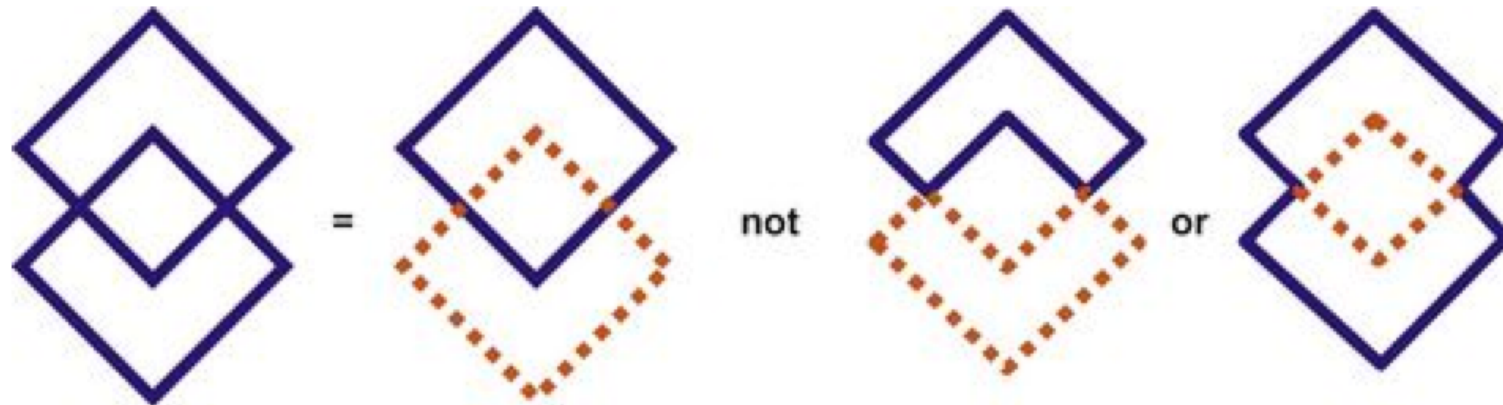


CLOSURE PRINCIPLE – HOW IT IS USED IN UI DESIGN?

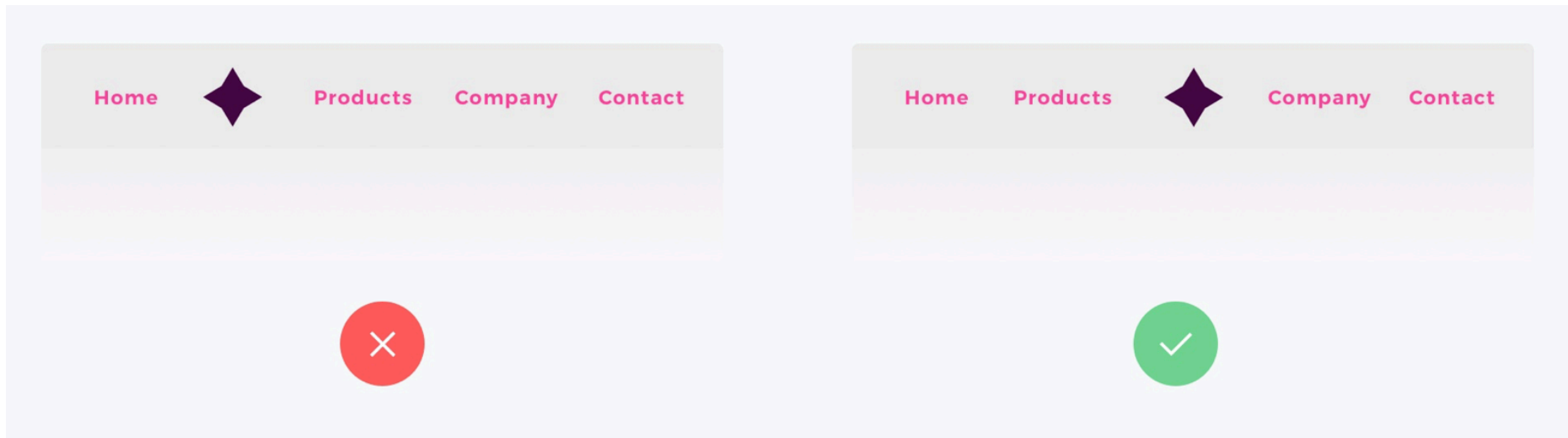


GESTALT PRINCIPLE: SYMMETRY

- A third fact about our tendency to see objects is captured in simpler than the other two interpretations shown on the right of figure: it has fewer sides and more symmetry than the other two interpretations.

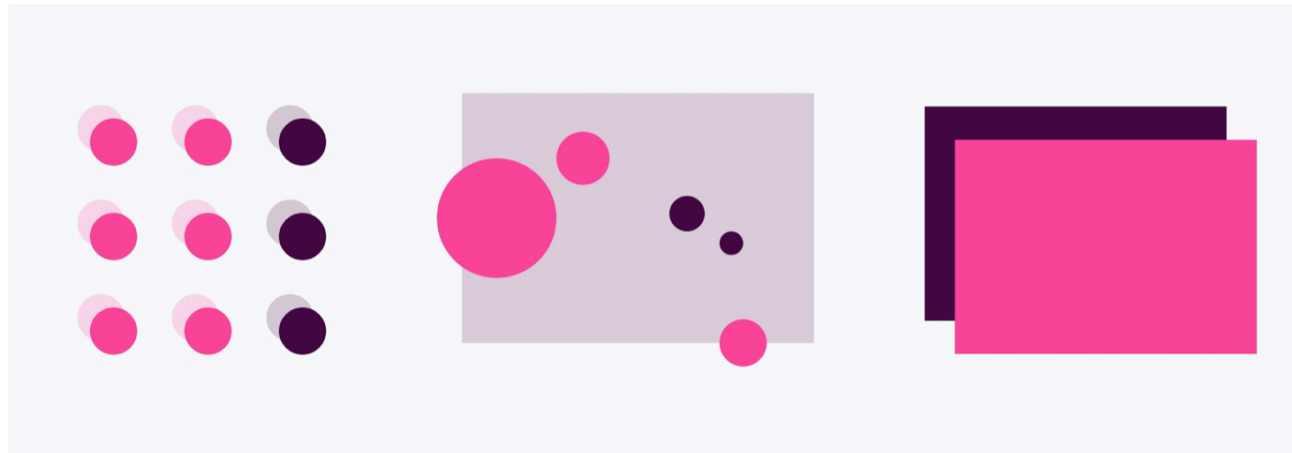


SYMMETRY PRINCIPLE – HOW IT IS USED IN UI DESIGN?



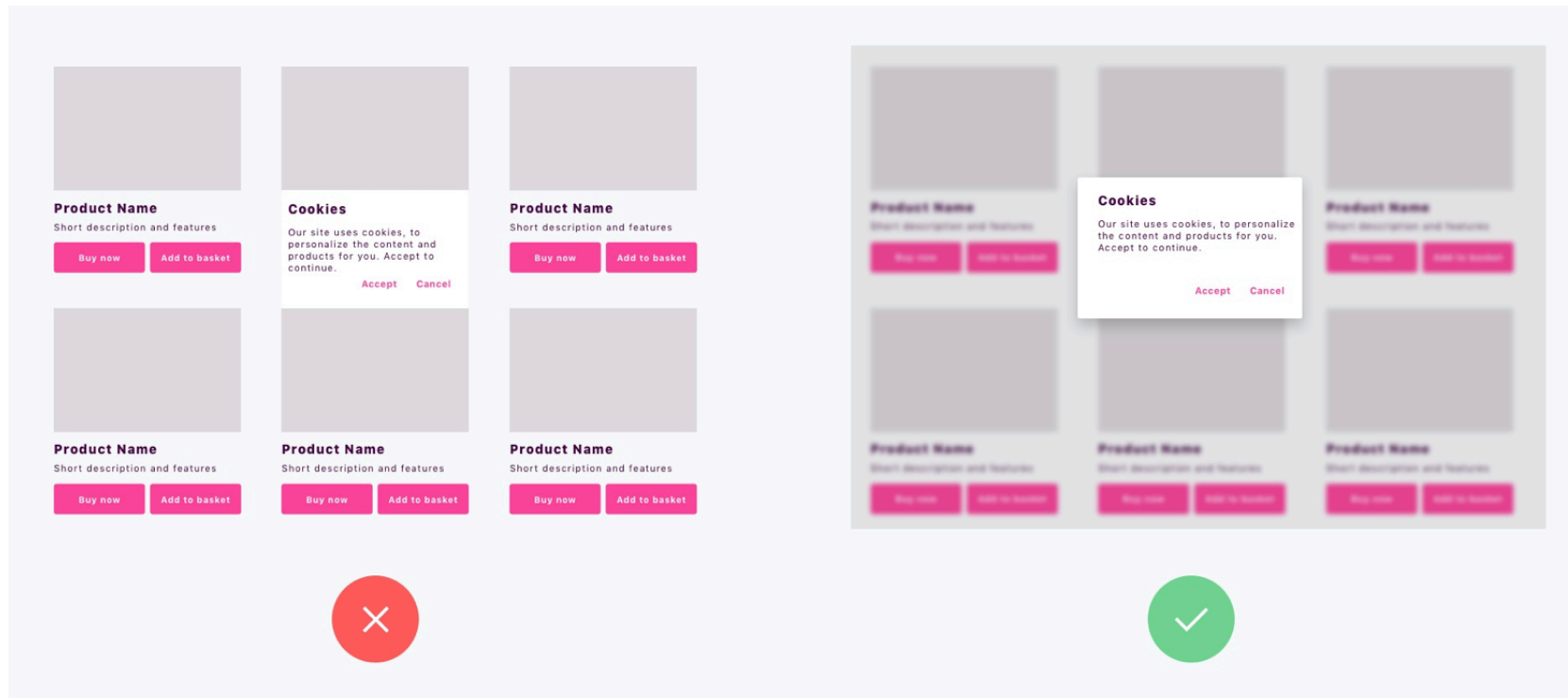
GESTALT PRINCIPLE: FIGURE/GROUND

- The Figure/ Ground principle also specifies that the visual system's parsing of scenes into figure and ground is influenced by characteristics of the scene.

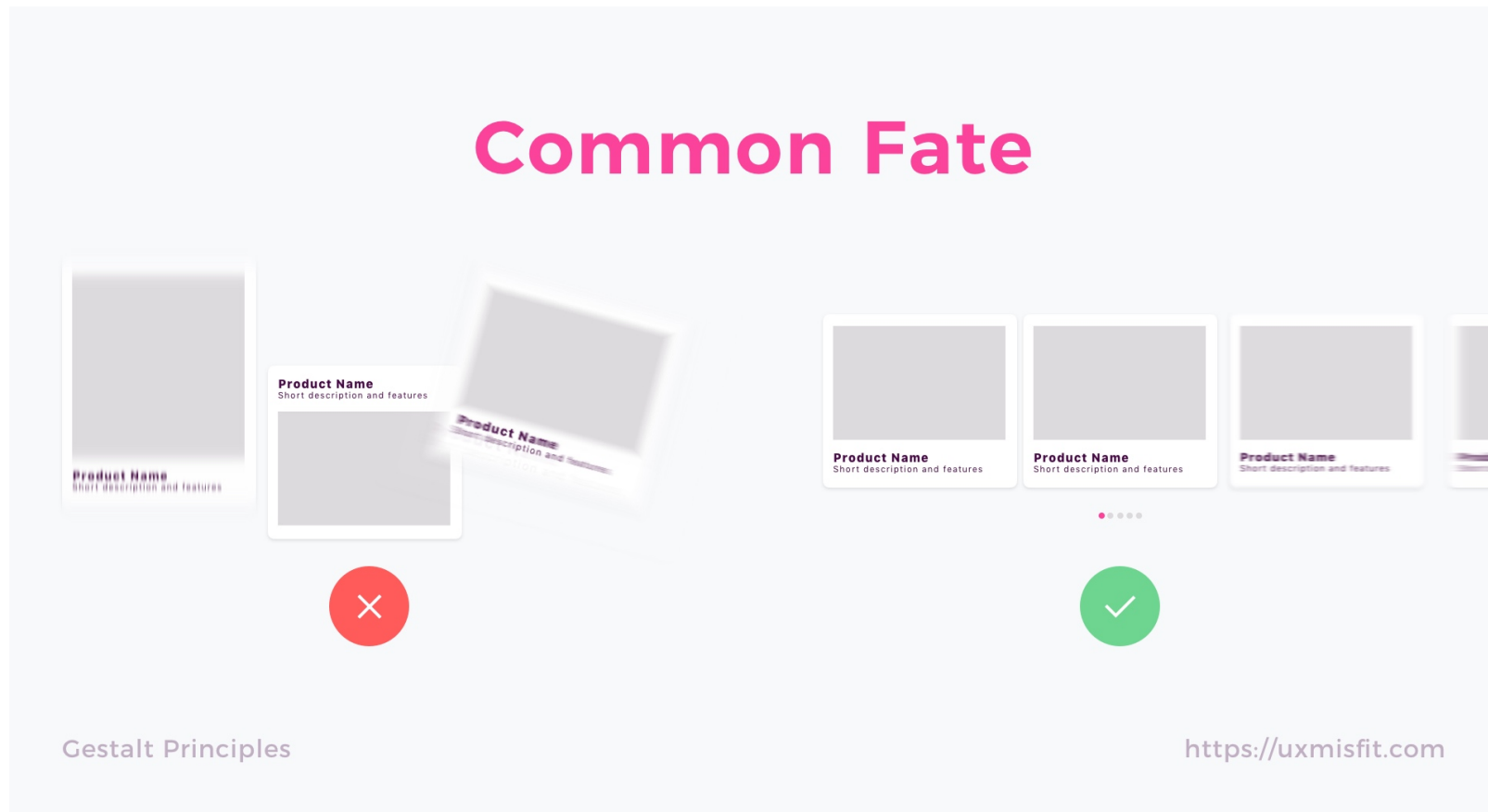


- Figure/Ground: When objects overlap, we see the smaller as figure on ground.

FIGURE-GROUND PRINCIPLE – HOW IT IS USED IN UI DESIGN?

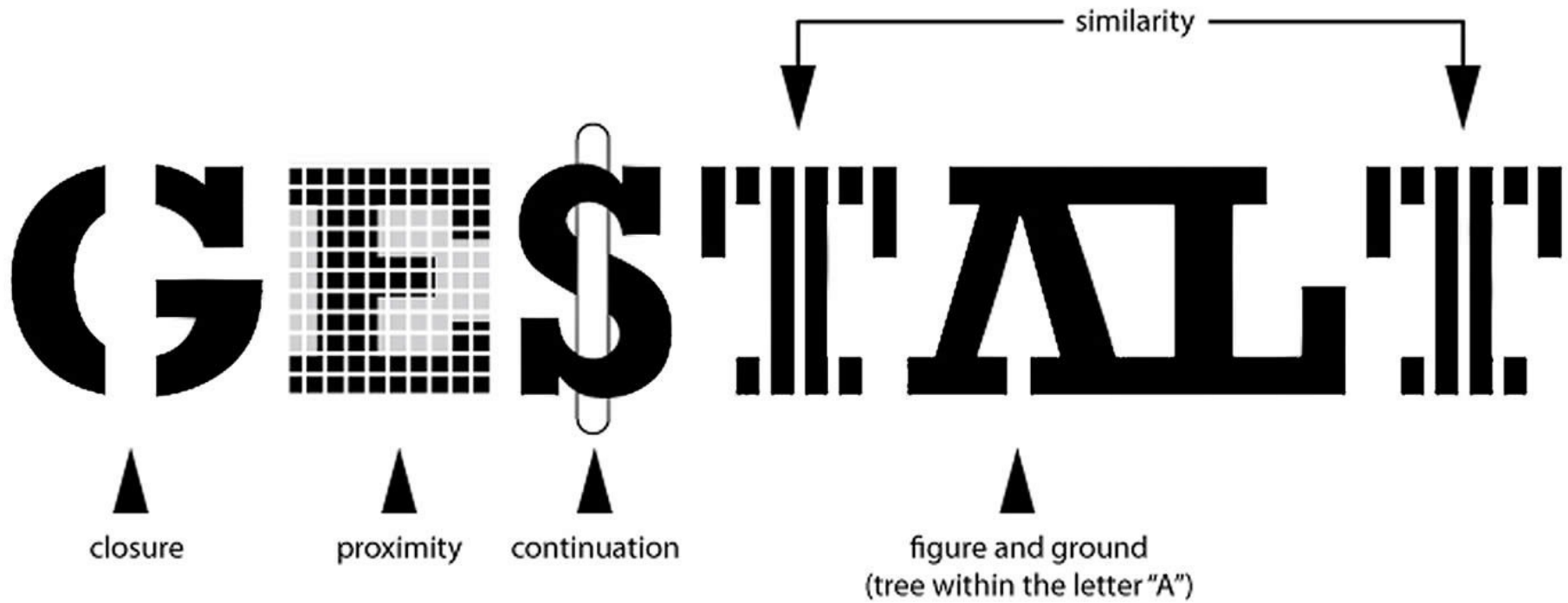


GESTALT PRINCIPLE: COMMON FATE



Common Fate: Items appear grouped or related if they move together.

GESTALT PRINCIPLE: COMBINED



USER EXPERIENCE
INFORMATION ARCHITECTURE

INFORMATION ARCHITECTURE (1)



INFORMATION ARCHITECTURE (2)

- The structural design of shared information environments.
- The art and science of organizing and labeling web sites, intranets, online communities, and software to support fundability and usability.
- An emerging community of practice focused on bringing principles of design and architecture to the digital landscape.

INFORMATION ARCHITECTURE (3)

- And that's what information architecture is all about:
 - Organising content or objects
 - Describing them clearly
 - Providing ways for people to get to them

WHAT YOU NEED TO CREATE A GOOD INFORMATION ARCHITECTURE

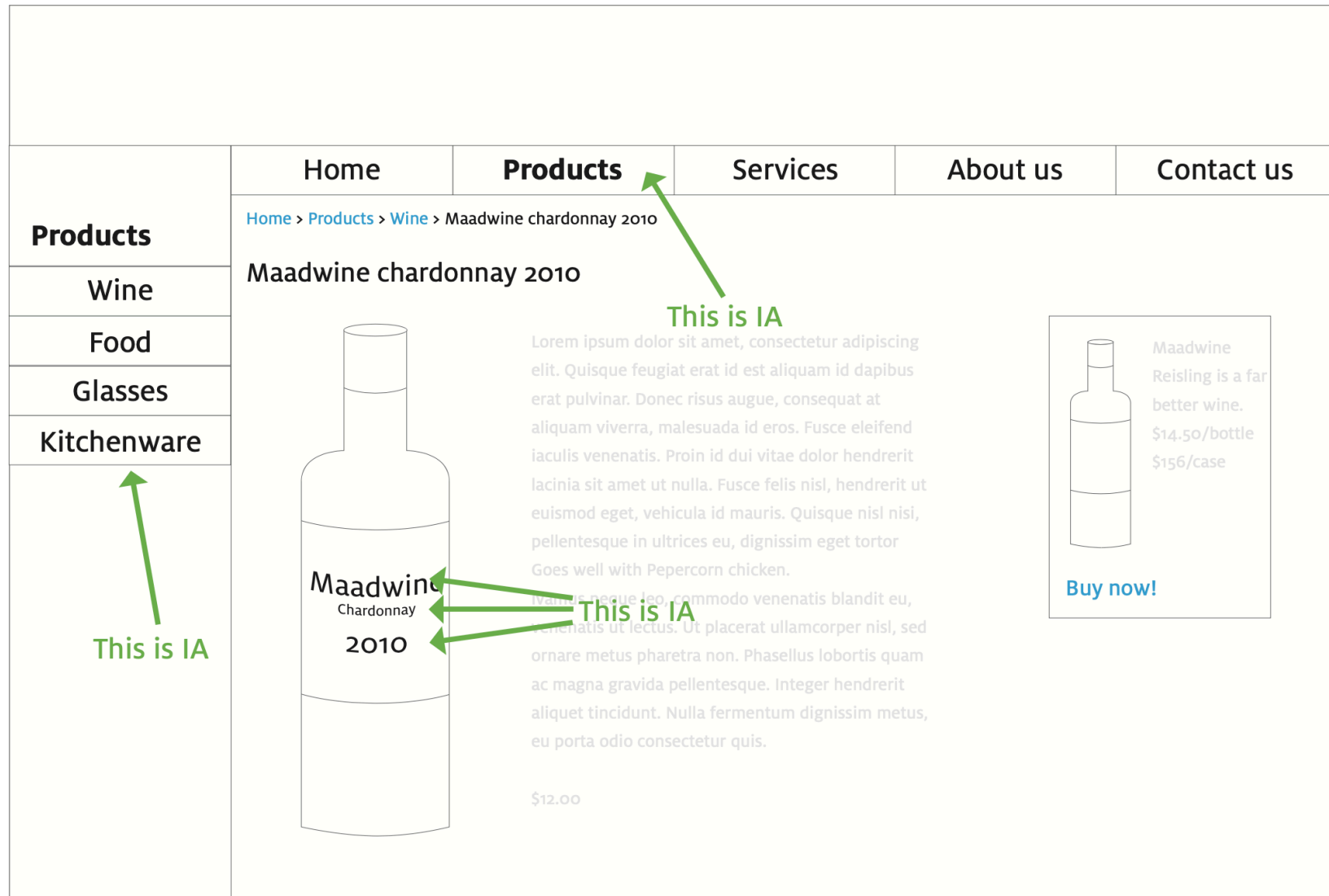
- **People:** What they need do to, how they think and what they already know
- **Content:** What you have, what you should have and what you need
- **Context:** The business or personal goals for the site, who else will be involved and what your constraints are.



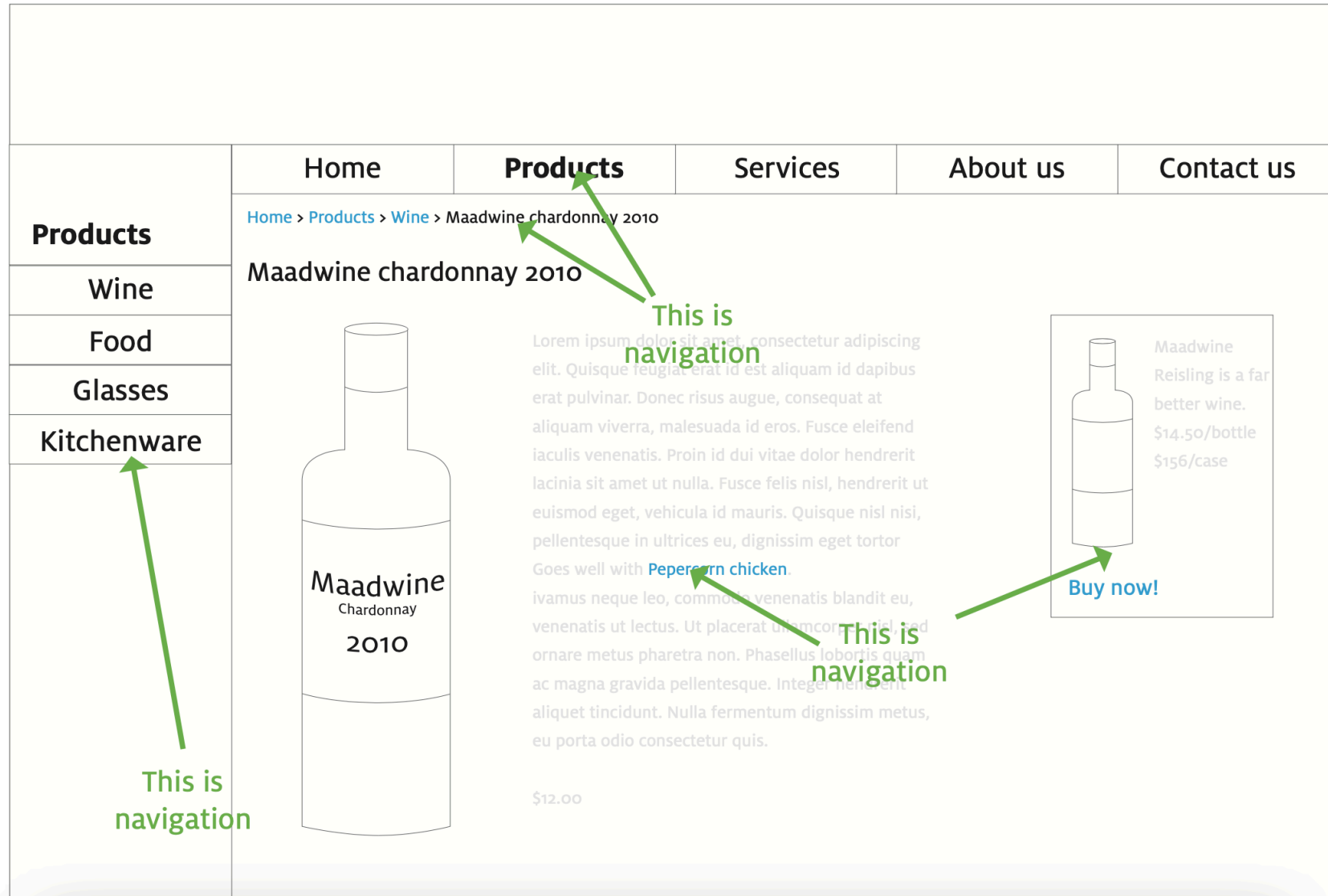
IA DELIVERABLES

- There are two core IA deliverables in the diagram and description overleaf:
 - Information Architecture
 - Navigation

INFORMATION ARCHITECTURE



NAVIGATION



STRUCTURED PRESENTATION (1)

- Structured presentation of airline reservation information is easier to scan and understand.

Unstructured:

You are booked on United flight 237, which departs from Auckland at 14:30 on Tuesday 15 Oct and arrives at San Francisco at 11:40 on Tuesday 15 Oct.

Structured:


***Flight:* United 237, Auckland → San Francisco**
***Depart:* 14:30 Tue 15 Oct**
***Arrive:* 11:40 Tue 15 Oct**

- The more structured and terse the presentation of information, the more quickly and easily people can scan and comprehend it.

STRUCTURED PRESENTATION (2)

- Left: Mortgage summary presented by a software mortgage calculator. Right: Improved design.

Mortgage Summary	
\$1,840.59	\$662,611.22
Monthly Payment	Total of 360 Payments
\$318,861.22	Sep, 2037
Total Interest Paid	Pay-off Date
\$93,750.00	\$0.00
Total Tax Paid	Total PMI Paid



Mortgage Summary	
<i>Monthly Payment</i>	\$ 1,840.59
<i>Number of Payments</i>	360
<i>Total of Payments</i>	\$ 662,611.22
<i>Interest Total</i>	\$ 318,861.22
<i>Tax Total</i>	\$ 93,750.00
<i>PMI Total</i>	\$ 0.00
<i>Pay-off Date</i>	Sep 2037



STRUCTURE ENHANCES PEOPLE'S ABILITY TO SCAN LONG NUMBERS

- Telephone and credit card numbers are easier to scan and understand when segmented.
 - (Easy) 083-448-1981
 - (Hard) 0834481981
- (Easy) 1234 5678 9012 3456
- (Hard) 1234567890123456

VISUAL HIERARCHY (1)

- One of the most important goals in structuring information presentations is to provide a visual hierarchy

Create a Clear Visual Hierarchy

Organize and prioritize the contents of a page by using size, prominence, and content relationships. Let's look at these relationships more closely. The more important a headline is, the larger its font size should be. Big bold headlines help to grab the user's attention as they scan the Web page. The more important the headline or content, the higher up the page it should be placed. The most important or popular content should always be positioned prominently near the top of the page, so users can view it without having to scroll too far. Group similar content types by displaying the content in a similar visual style, or in a clearly defined area.

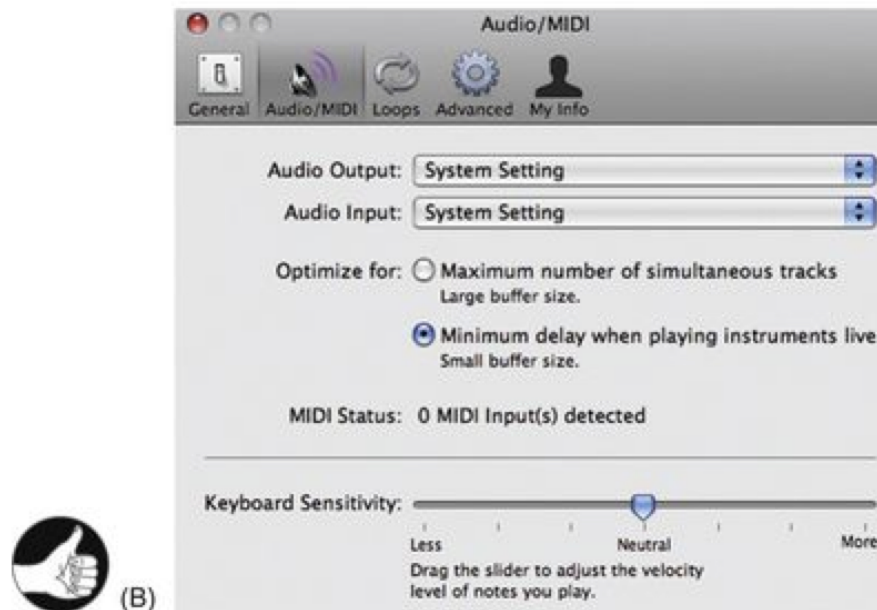
Create a Clear Visual Hierarchy

Organize and prioritize the contents of a page by using size, prominence, and content relationships.

Let's look at these relationships more closely:

- **Size.** The more important a headline is, the larger its font size should be. Big bold headlines help to grab the user's attention as they scan the Web page.
- **Prominence.** The more important the headline or content, the higher up the page it should be placed. The most important or popular content should always be positioned prominently near the top of the page, so users can view it without having to scroll too far.
- **Content Relationships.** Group similar content types by displaying the content in a similar visual style, or in a clearly defined area.

VISUAL HIERARCHY (2)



POOR INFORMATION DESIGN

- Careless presentation of text can reduce skilled readers' automatic, context-free reading to conscious, context-based reading, burdening working memory, thereby decreasing speed and comprehension.

UNCOMMON OR UNFAMILIAR VOCABULARY

- One way software often disrupts reading is by using unfamiliar vocabulary — words the intended readers don't know very well or at all.
- One type of unfamiliar terminology is computer jargon, sometimes known as "geek speak."
- For example, an intranet application displayed the following error message if a user tried to use the application after more than 15 minutes of letting it sit idle:

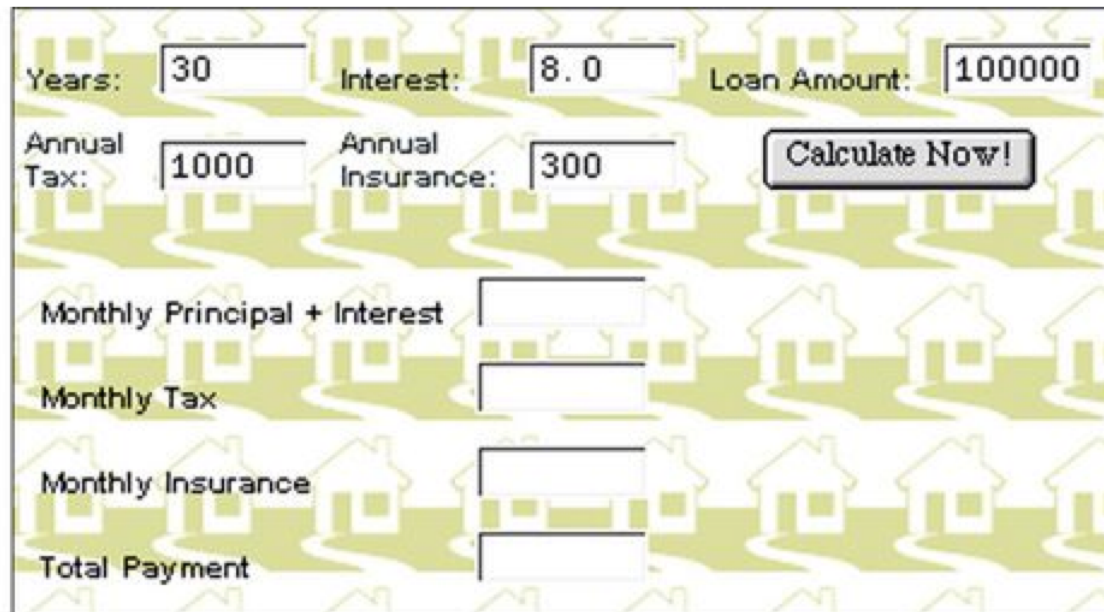
"Your session has expired. Please reauthenticate."

FONT

- Another way to make text hard to read in software applications, Websites, and electronic appliances is to use fonts that are too small for their intended readers' visual system to resolve.
- Developers sometimes use tiny fonts because they have a lot of text to display in a small amount of space. But if the intended users of the system cannot read the text, or can read it only laboriously, the text might as well not be there.

TEXT ON NOISY BACKGROUND

- The Federal Reserve Bank's online mortgage calculator formerly displayed text on a patterned background.



The image shows a screenshot of a mortgage calculator interface. The background is a repeating pattern of small, stylized houses in a light green color. The calculator fields are arranged as follows:

Years:	<input type="text" value="30"/>	Interest:	<input type="text" value="8.0"/>	Loan Amount:	<input type="text" value="100000"/>
Annual Tax:	<input type="text" value="1000"/>	Annual Insurance:	<input type="text" value="300"/>	<input type="button" value="Calculate Now!"/>	
Monthly Principal + Interest	<input type="text"/>				
Monthly Tax	<input type="text"/>				
Monthly Insurance	<input type="text"/>				
Total Payment	<input type="text"/>				

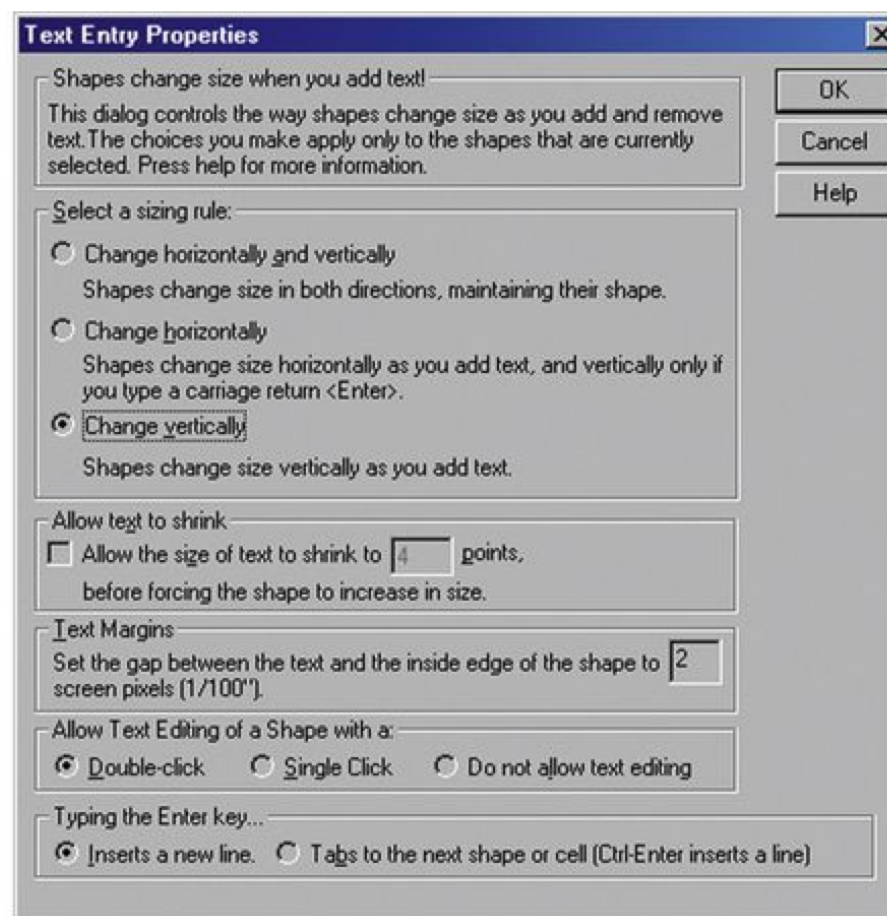
INFORMATION BURIED IN REPETITION

- Visual noise can also come from the text itself. If successive lines of text contain a lot of repetition, readers receive poor feedback about what line they are focused on, plus it is hard to pick out the important information.




MUCH OF READING IS UNNECESSARY (1)

- In addition to committing design mistakes that disrupt reading, many software user interfaces simply present too much text, requiring users to read more than is necessary.



MUCH OF READING IS UNNECESSARY (2)



2002

Jeep

FIND A DEALER

It's easy to locate a dealer. 1. Click and hold box number 1 to select your search by Zip Code, City, Dealership Name or State. 2. Enter the Zip Code, City, or Dealership Name in the box marked number 2. 3. If searching by State only, select the state from the pull-down menu in box number 3. **If choosing to search by city or state, type the city in box 2 then select a state in the box marked number 3 to make your search complete. 4. Once finished, simply click the "Search" button.

Search by: Enter Zip Code, City, or Dealership name:

Select a State:

If you are a member of the U.S. Military, an executive, or a diplomat living outside the U.S., [click here](#) for special options.



2003

Jeep

FIND A DEALER

It's easy to locate a Jeep Dealer near you.

- Select Zipcode, City or Dealership Name
(If you choose to search by city, you will be prompted to provide the state.)
- Provide the Zip Code, City or Dealership Name
- Click on Search

Search by: Enter Zip Code, City, or Dealership name:



2007

FIND A DEALER ▾

MAKING USERS NOTICE MESSAGES (1)

- If the common , conventional methods of making users notice messages are not enough, three stronger methods are available to user interface designers.
 - Pop-up message in error dialog box.
 - Use sound (e.g., beep).
 - Flash or wiggle briefly

MAKING USERS NOTICE MESSAGES (2)

- Appropriate pop-up error dialogs: (A) Microsoft Excel, (B) Adobe InDesign.



LAWS OF UX (1)

- Jacob's Law
 - Users spend most of their time on other sites, and they prefer your site to work the same way as all the other sites they already know.
- Fitts' Law
 - The time to acquire a target is a function of the distance to and size of the target.
- Hick's Law
 - The time it takes to make a decision increases with the number and complexity of choices available.

LAWS OF UX (2)

- Miller's Law
 - The average person can keep only 7 (\pm 2) items in their working memory.
- Peak-End Rule
 - People judge an experience largely based on how they felt at its peak and at its end, rather than on the total sum or average of every moment of the experience.
- Aesthetic-Usability Effect
 - Users often perceive aesthetically pleasing design as design that's more usable.

LAWS OF UX (3)

- Von Restorff Effect
 - When multiple similar objects are present, the one that differs from the rest is most likely to be remembered.
- Doherty Threshold
 - Productivity soars when a computer and its users interact at a pace (<400 ms) that ensures that neither has to wait on the other.
- Gestalt Principles
- Etc.

UX TESTING

- UX Testing (User Experience Testing) is the process of evaluating a product (website, mobile app, system) by observing real users as they interact with it.
- The goal is simple: find problems, improve usability, and ensure the product is easy, efficient, and enjoyable to use.

COMMON TYPES OF UX TESTING

- Usability Testing
 - Users try to complete tasks while you observe.
- A/B Testing
 - Compare two versions (A and B) to see which performs better.
- Remote Testing
 - Users test the product from anywhere, using an online tool.
- Moderated vs Unmoderated Testing
- Prototype Testing
 - Testing wireframes or prototypes before development.

LEARNING ABOUT USERS

- Two important things:
 - Not everyone knows as much as you do about computers and the internet.
 - Even when you think you've made something completely obvious, it might not be.
- That's why we do some type of user research for all projects.