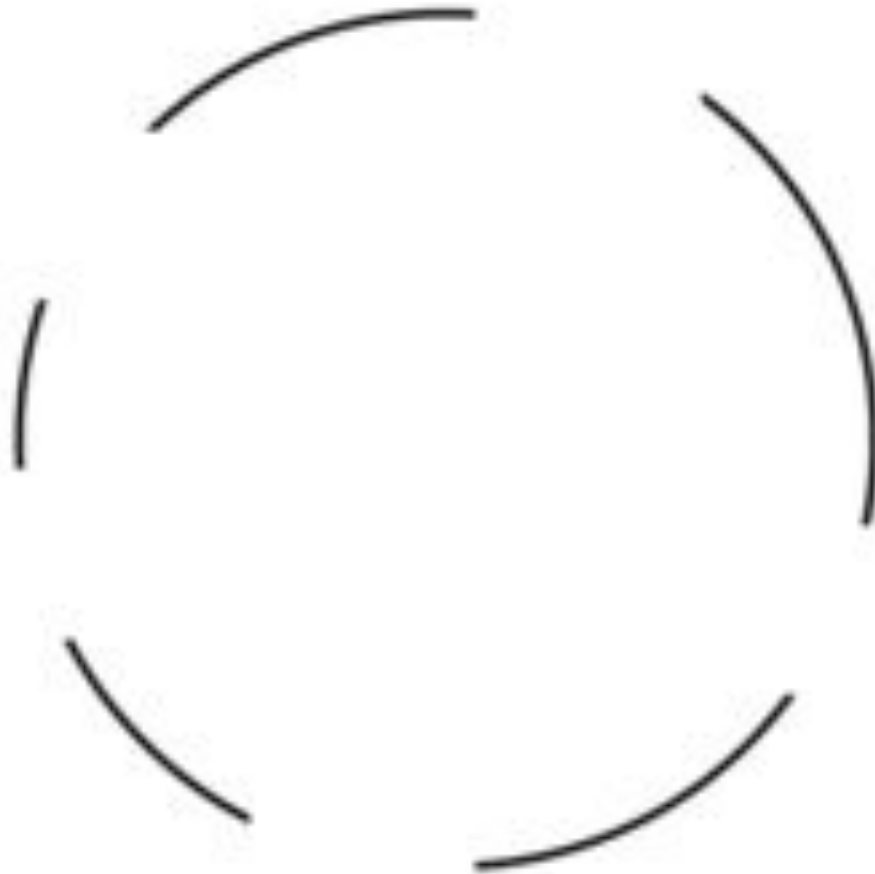


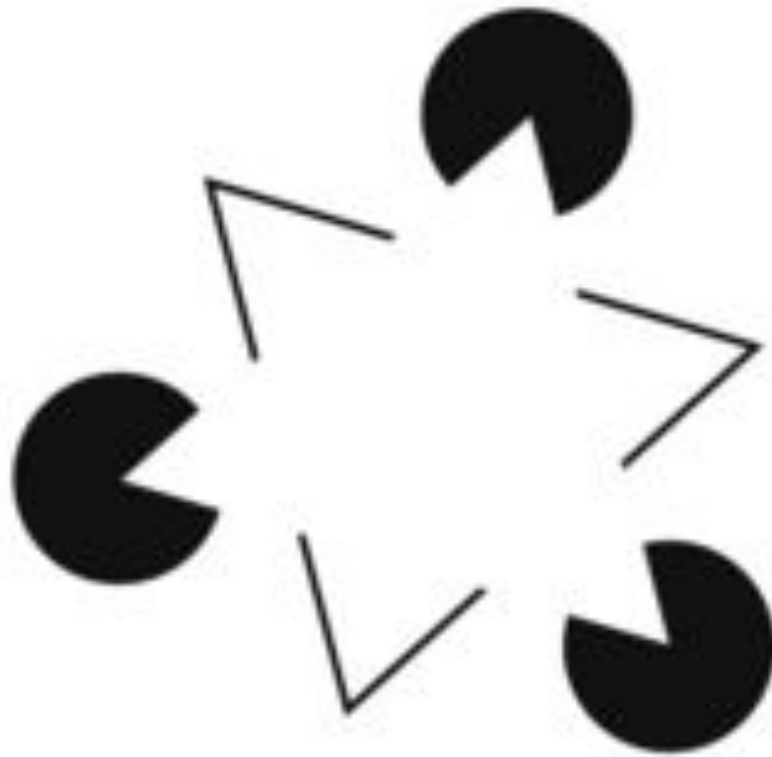
More Gestalt Principles and Visual Structure

- As with the last set of slides
- Based heavily off the book Designing with the Mind in Mind

What do you see here? Why?



What do you see here? Why?



Closure Principle

- Human visual system automatically tries to close open figures so that they are perceived as whole objects rather than separate pieces
 - We like to see objects so much that we will even interpret black areas as if they were complete objects
 - For example in the first figure we see a circle

Closure Principle

- However, in the second figure we see three circles and two triangles
 - What about how they are positioned?
 - You perceive them as being stacked one on top of the other
 - So objects that are only partially visible that appear to be behind other objects will also be perceived as whole objects

What do you see here? Why?



Interesting



not



or



Symmetry Principle

- We tend to parse complex scenes or objects in a way that will reduce visual complexity
 - If there is more than one way to interpret a scene or objects
 - The visual system will organise and interpret objects in the way that is visually simplest

What do you see here? Why?



Figure/Ground Principle

- Our visual system will tend to separate out the visual field into the figure (foreground) and the ground (background)
 - Because the visual system loves to determine the distance of every object it sees.
 - Foreground consists of elements that are of primary attention
 - Background is everything else
 - For example if a small object overlaps a bigger one
 - Smaller object is figure and larger object is the ground

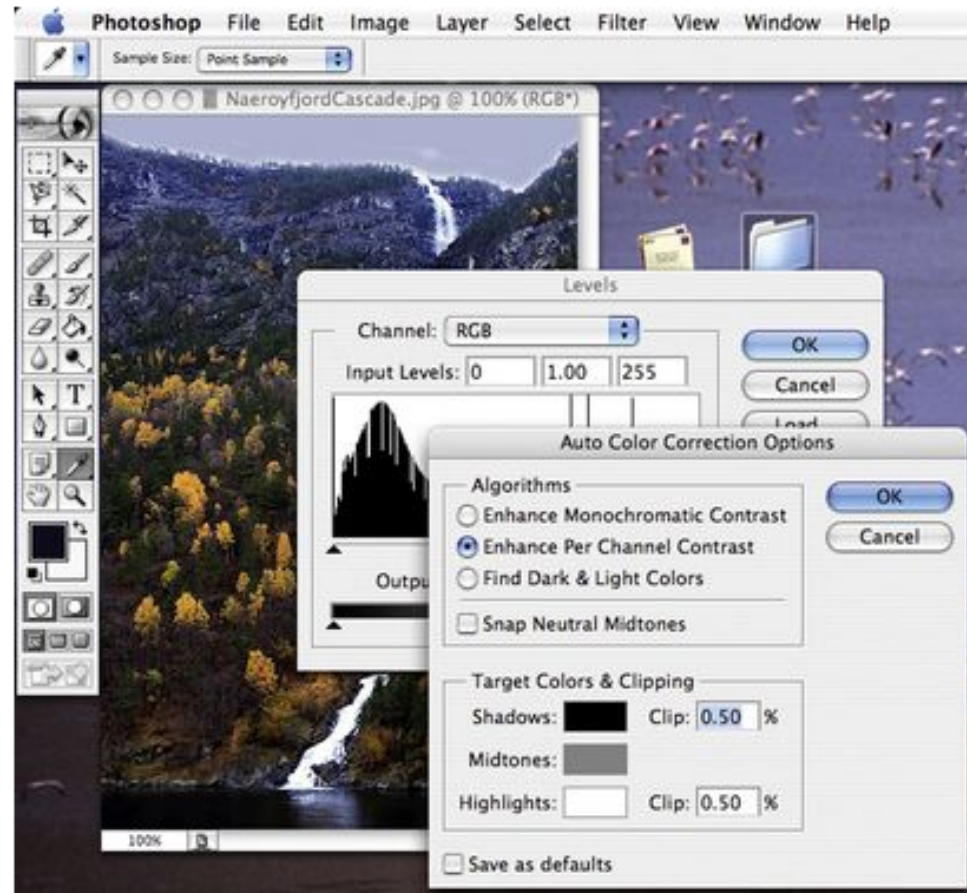
Common Fate

- Previous six principles all concerned static, immobile objects
 - Common Fate on the other hand is concerned with objects that move
 - Is related to the proximity and similarity principles
 - Objects that move together are perceived as being grouped or related
 - Regardless of the distance between them.

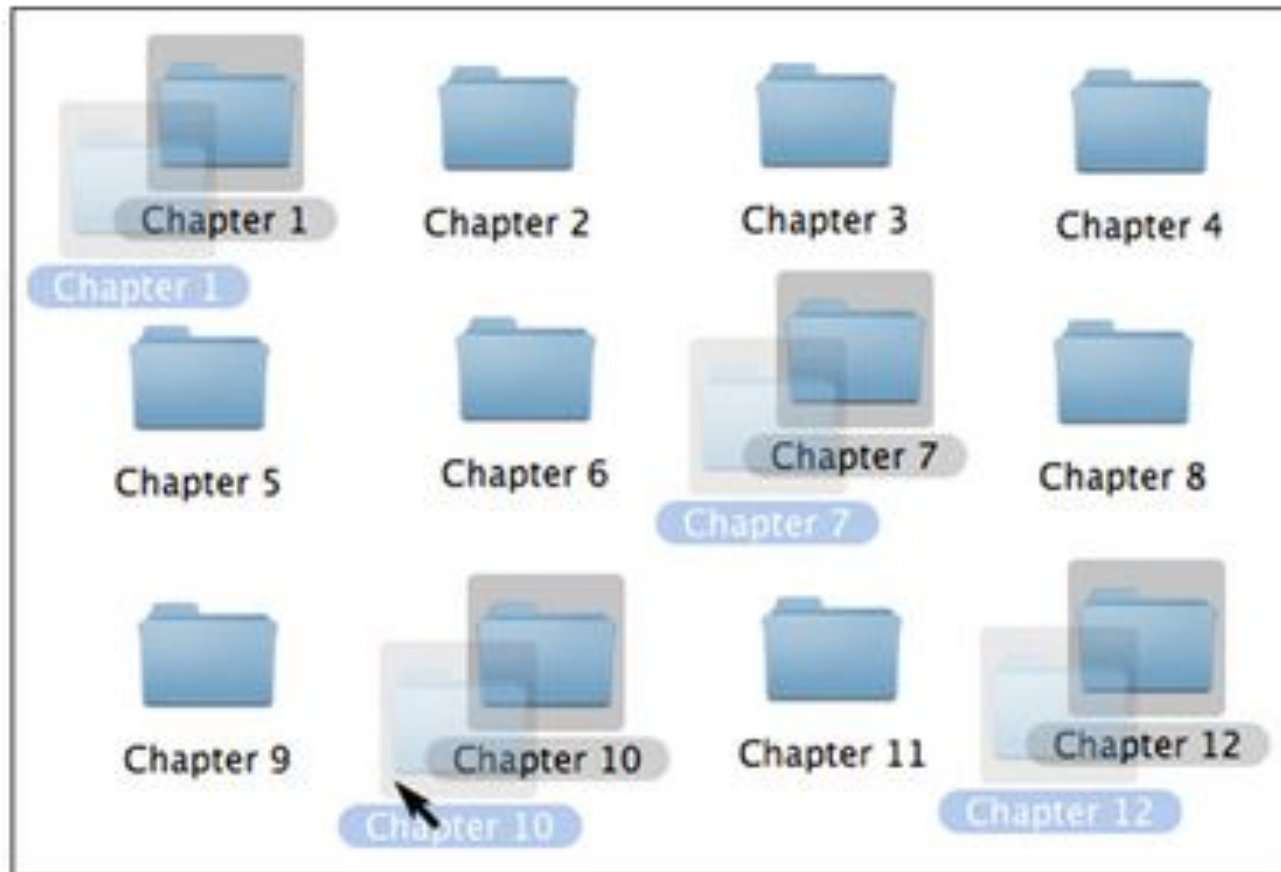
Gestalt principles

- The Gestalt principles are not to be used in isolation but rather in combination
 - Most good interfaces will try to implement as many of these at the same time.
 - In doing so you can imply relationships between objects without your user consciously seeing that relationship
 - Thus when you design a display it is a good idea to look at it with respect to the principles to determine if there are any implied relationships that should not be there.

See if you can spot the principles here



See if you can spot the principles
here



Visual Structure

- The visual system always seeks and uses visual structure
 - Simplifies what we see and enables us to identify relevant objects
 - Discard anything that is irrelevant
 - Thus in an ideal display information should be displayed in a terse and structured way

Compare These

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**

Structure

- The more structured and terse the presentation of information, the more quickly and easily users can understand it and comprehend it
 - Because the human visual system has evolved over thousands of years to see structure.

Try reading this

Renewals, Duplicates, and Information Changes for Driver Licenses and/or ID Cards

- [How to renew your driver license in person](#)
- [How to renew your driver license by mail](#)
- [How to renew your driver license by Internet](#)
- [How to renew your instruction permit](#)
- [How to apply for a duplicate driver license or identification \(ID\) card](#)
- [How to change your name on your driver license and/or identification \(ID\) card](#)
- [How to notify DMV of my change of address](#)
- [How to register for the organ donor gift of life program](#)

Issues with reading that

- Wordy repeatitive links slow users down and bury important words
- Users want to accomplish tasks as quickly as possible
- Is it possible to redesign this in such a way that is much easier to read and identify relevant information

How about this representation

Licenses & ID Cards: Renewals, Duplicates, Changes

- Renew license: [in person](#) [by mail](#) [by Internet](#)
- Renew: [instruction permit](#)
- Apply for duplicate: [license](#) [ID card](#)
- Change of: [name](#) [address](#)
- Register as: [organ donor](#)

Changes made

- Much less of everything
 - Text
 - Repetition
- Use of easy to understand visual structure
 - 5x4 grid layout used
 - Easy symmetrical structure to understand and deduce information from

How about this example?

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

Issues with this representation

- Violates two important principles of graphic design
 - People read from top to bottom
 - Labels for amounts are below their values
 - Proximity principle is also violated
 - Labels are roughly the same distance between both values
 - Have to observe the full text before a deduction on what label applies to which value.
 - Gets worse
 - One of the values is embedded in a label

Hypothetical redesign

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

Changes that were made

- Complete reorganisation of information
 - Each line is separated by regions of alternating colour
 - Making use of the figure/ground principle
 - Labels appear in foreground
 - On background with a distinct colour
 - Easy to deduce the relevant information
 - Note that the value of 360 was split out into its own label and line

Structure and numbers

Easy: (415) 123-4567

Hard: 4151234567

Easy: 1234 5678 9012 3456

Hard: 1234567890123456

Structure and Numbers

- Structure enhances the ability to parse and scan long numbers
 - Credit card numbers are broken into 4 groups of 4 to make it easier to parse and remember
 - Same with license keys for software they are broken up into short strings of 3 or 4 characters

Structure and Numbers

Depart

Oct 21 

Morning

E-mail Address: fred @ bedrock . com

How well can you read this?

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.

How well can you read this?

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

- Visual hierarchy enables a user to focus on relevant information
 - Even if you only present text it can be structured to help users find information quickly.
 - Break information into distinct sections
 - Break large sections into subsections
 - Label each section and sub section prominently
 - Present the sections and subsections as a hierarchy

Visual Hierarchy

- Visual hierarchies enable users to separate relevant and irrelevant information quickly
 - Speeds up user goals
 - This is also true for visual interfaces
 - See the next two examples
 - Gestalt principles will help here

Visual Hierarchy

Select Re-Harmonist (new chords for an existing melody)

☐ Show All Genre **Ballad (Jazz)**

☒ OK to load style

Style variations **110 *Ballad - Vibes** **Play**

Style **JIMANCNE.STY**

Track with melody **Melody**

Mix Chords from Major and Minor Keys (%) **0**

Number of variations (range 1 to 100) **16**

Key **Bb** note: Key analysis shows that the key is correct.

☐ Part of Song
☒ **Whole Song**

Set Range

Bar	9
Chords	1
# bars	4

Defaults **OK -Reharmonize** **Cancel** **Help**

Visual Hierarchy

