Interactive Design for Smart Devices

Visual design

Goals of Visual Design

- Help users find their way
  - Learnability
  - Memory
  - Few errors
  - Efficient
- Provide a distinct look and feel
  - Satisfaction

Topics include:

Color • Contrast • Grouping • Simplicity

Goals of Visual Design

Visual design aims to shape and improve the user experience through considering the effects of illustrations, photography, typography, space, layouts, and color on the *usability* of products and on their *aesthetic appeal*.

To help designers achieve this, visual design considers a variety of principles, including Gestalt properties, space, hierarchy, balance, contrast, scale, dominance, and similarity.

Review of Colour Guidelines

- Avoid saturated colours

  - hue refers to the **colour** of the image itself,

  - **saturation** describes the intensity (purity) of that hue. - when **colour** is fully **saturated**, it is purest (truest) – Use pastel colours

- Be consistent with expectations

  – Red means bad, green means go

- Use few colours

  – Too many colours look complex,cluttered, distracting

Chromatic aberration

Different wavelengths focus differently

- E.g., red & blue can't be focused simultaneously

Is this sentence easy to read?

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Techniques for Contrast

- Manipulate appropriate visual variables
- - Brightness (intensity)
  - Hue
  - Texture
  - Shape
  - Position
  - Orientation
  - Size

Why do we need contrast?

- Users need to select an item of a particular value (selectivity).
- Users need to compare items with different values (comparability).
- When there are multiple dimensions, users need the flexibility to ignore one dimension (disassociativity).

- Brightness
- Hue
- Texture
- Shape
- Position
- Orientation
- Size

4.

Nintendo DSi Matte - Black by Nintendo (**Video G**

Buy new: **$169.99**

42 new from $150.99 37 used from $125.00

Get it by **Friday, Mar. 5** if you order in the next **3 hours** a

Eligible for **FREE** Super Saver Shipping.

(248)

ESRB Rating: Everyone

Video Games: See all 14,708 items

5.

Super Mario Brothers: Green Yoshi Slippers Plu

Buy new: **$14.95**

(3)

Clothing & Accessories: See all 1,943 items

6.

Nintendo DS Lite Cobalt / Black by Nintendo (**Ac**

Buy new: ~~$129.99~~ **$129.00**

40 new from $128.00 16 used from $89.99

Get it by **Friday, Mar. 5** if you order in the next **2 hours** a

Eligible for **FREE** Super Saver Shipping.

(1,221)

Video Games: See all 14,708 items

7.

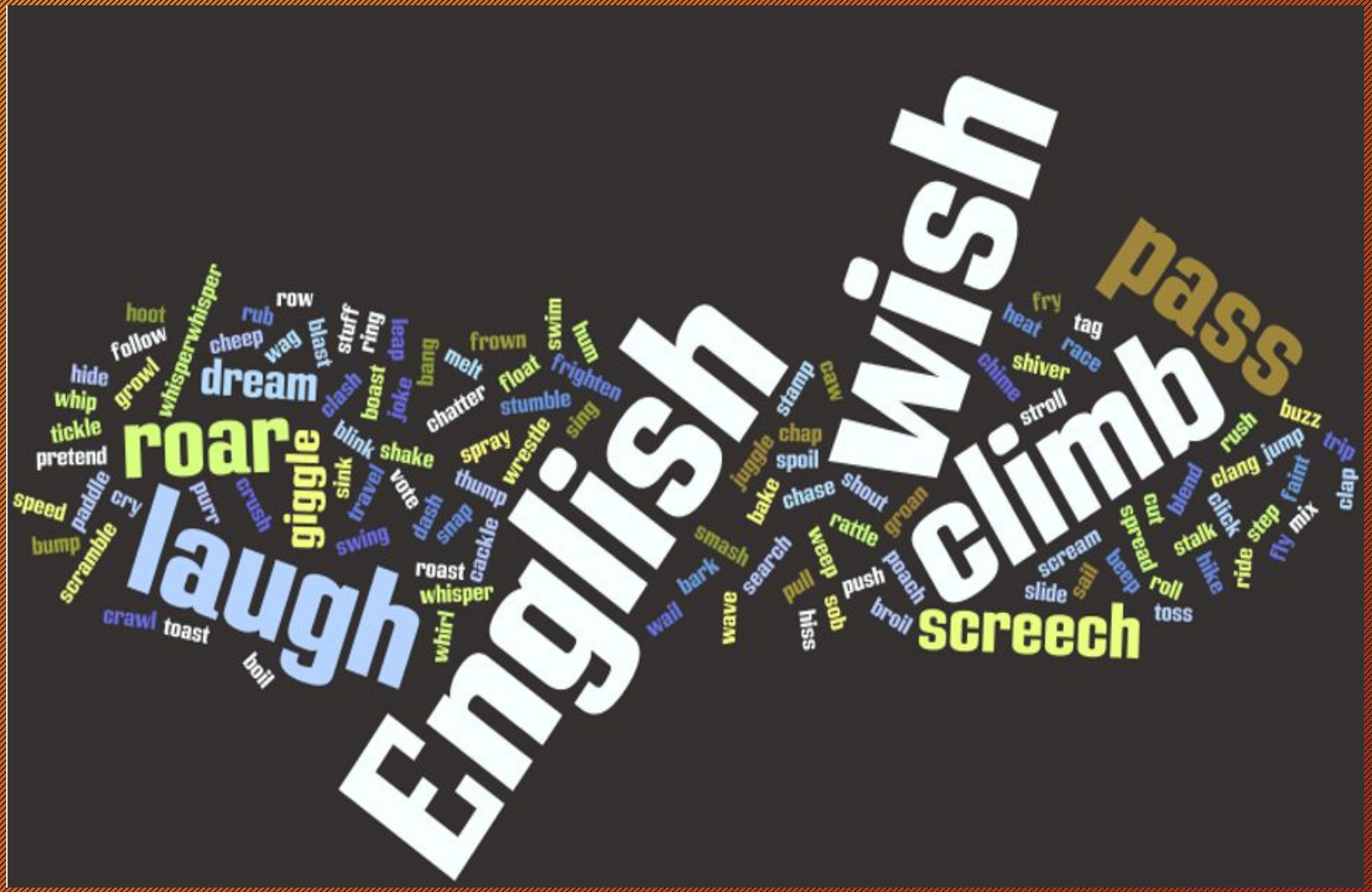
Nintendo NES System - Video Game Console by

52 used from $39.99

(79)

See newer version of this game

Video Games: See all 14,708 items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broil
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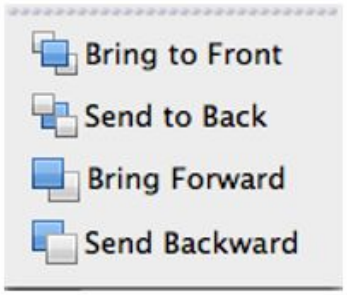
tag
race
shiver
chime
stroll
buzz
rush
jump
trip
clang
faint
clap
blend
cut
click
step
mix
stalk
spread
beep
hike
ride
fly
scream
slide
sail
roll
toss

Techniques for simplicity

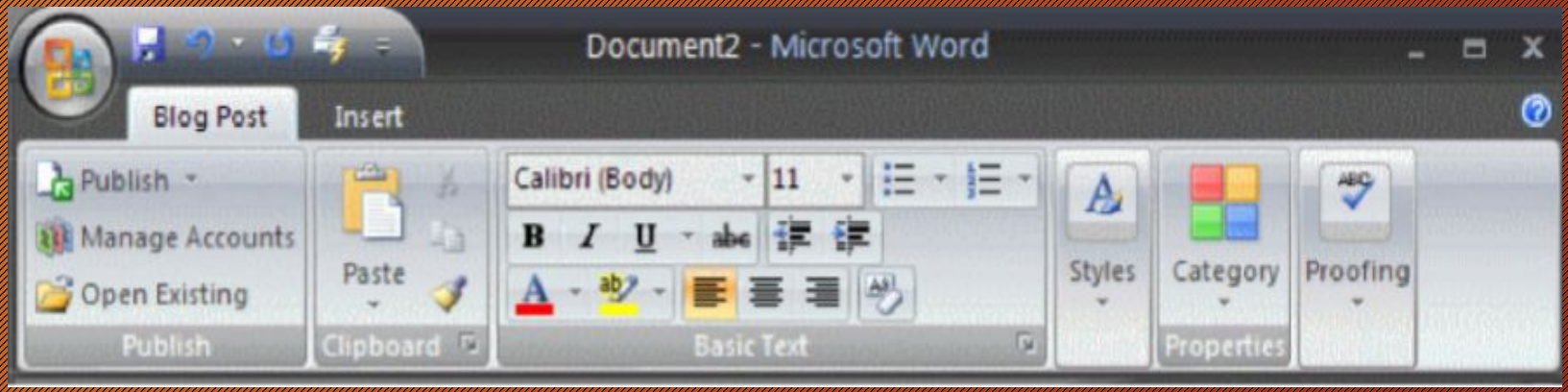
- "Simplicity is the ultimate sophistication." Leonardo Da Vinci.
- Reduce – Hide or remove inessential component
- Regularize – Limit inessential variations
- Organize – Arrange controls in logical groups

Reduce

Regularise



Organise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Grouping – Gestalt Principles

- The **principles** of grouping (or **Gestalt laws** of grouping) are a set of **principles** in psychology, first proposed by **Gestalt** psychologists to account for the observation that humans naturally perceive objects as organized patterns and objects, a **principle** known as Prägnanz.
- According to **Gestalt psychology**, the whole is different from the sum of its parts. Based upon this belief, **Gestalt psychologists** developed a set of **principles** to explain perceptual organization, or how smaller objects are grouped to form larger ones

Grouping – Gestalt Principles

- Proximity
- Similarity
- Continuity
- Closure
- Figure & Background
- Symmetry
- --- Fancy way of saying “Grouping”
- Source: https://wiki.cs.umd.edu/cmsc434_s10/images/b/be/L11-Visual-Design-Principles.pdf

Proximity

- *Proximity* occurs when elements are placed close together. They tend to be perceived as a group.
- The nine squares *below* are placed with and without proximity. Are they perceived as **separate shapes**?

Similarity

- *Similarity* occurs when **objects look similar** to one another. People often perceive them as a group or pattern.
- The example below has 11 distinct objects but appears as as **single unit** because all of the shapes have **similarity.** Unity occurs because the triangular shapes at the bottom of the eagle symbol **look similar** to the sunburst shapes

Continuity

- Continuation occurs when the eye is compelled to **move through** one object and **continue** to another object.
- Continuation occurs in the example below, because the viewer's eye will naturally follow a line or curve. The smooth flowing crossbar of the "H" leads the eye directly to the maple leaf.

Closure

- *Closure* occurs when an object is *incomplete* or a space is not *completely enclosed*. If enough of the shape is indicated, people fill in the missing infomation.
- Although the panda below is not complete, enough is present for the eye to complete the shape. When the *viewer's perception completes a shape*, **closure** occurs.

Figure & Background

- The eye differentiates an object form its surrounding area – a silhouette, or shape is naturally perceived as **figure** (object), while the surrounding area is perceived as **ground** (background).
- Balancing figure and ground can make the perceived image more clear. Using unusual figure/ground relationships can add interest and sublety to an image.
- Here, the figure & ground relationships **change** as the eye perceives the form of a shade or the silhouette of a face.