

# Introduction to User Experience and Design (UX)



# What is User Experience and Design (UX)

- **User Experience (UX)** refers to a person's emotions and attitudes about using a particular [product](#), [system](#) or service. –[Nielsen Norman Group](#)
- **User experience design (UX, UXD)** is the process of enhancing user satisfaction with a product by improving the [usability](#), [accessibility](#), and pleasure provided in the interaction with the product.
- **Donald Norman** brought the term “User Experience” to a wider audience.



# What is User Experience (UX)?

× **Wrong!!!** In the IT industry, software developers and web designers will sometimes talk about user experience using related terms:

- User Interface (UI)
- Usability
- Information architecture (IA)
- Interaction design
- Visual design
- Human factors engineering

- ✓ UX is **NOT** just one of the above items.
- ✓ UX can incorporate **ALL** of the above.

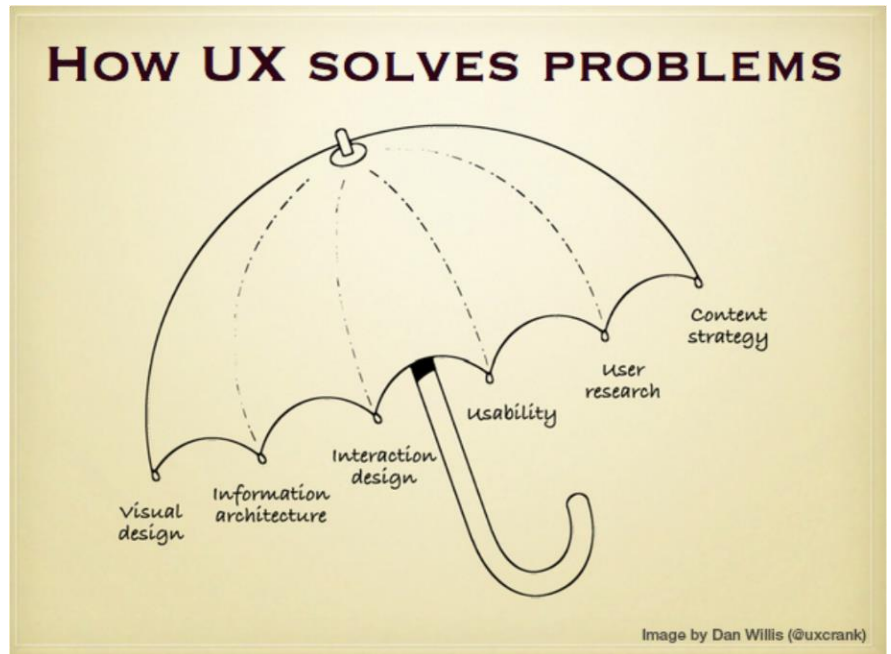
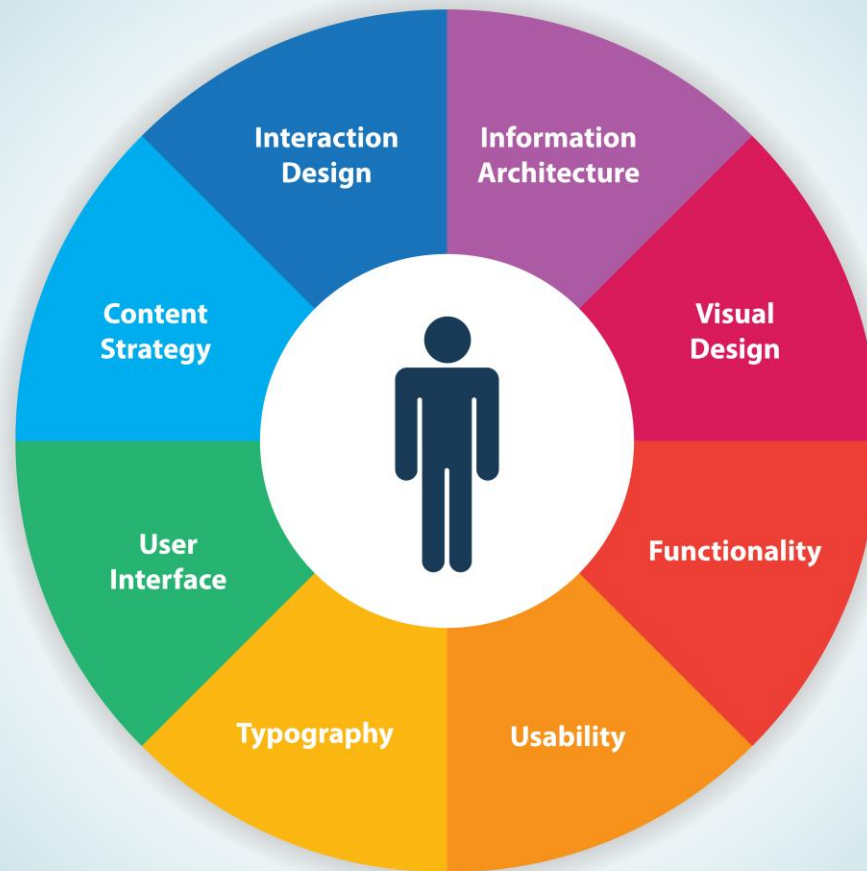


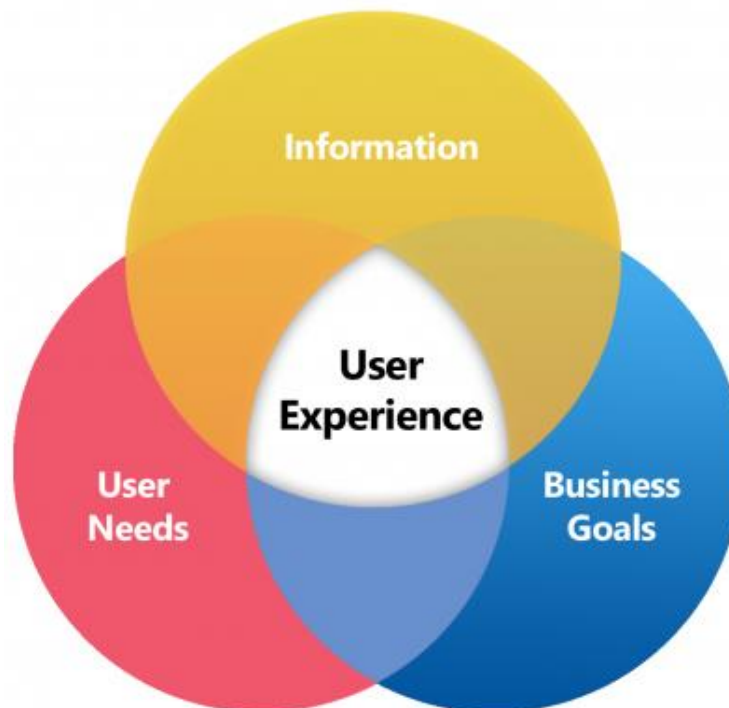
Image by Dan Willis: <http://www.dswillis.com/>

# UX is Not Just UI or Usability



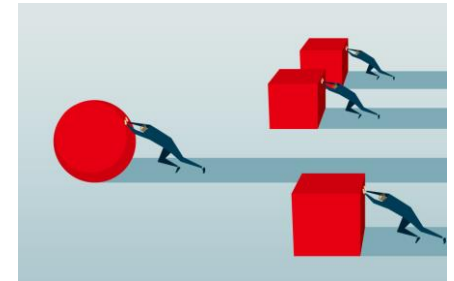
# Why Bother with UX?

- Most products are supposed to help people be productive.
- Understand users needs  $\Leftrightarrow$  Build better products  $\Leftrightarrow$  Help people like it enough to buy it  $\Leftrightarrow$  meet the business goals.
- Job market is promising.



# Goals of UX

- **Usefulness:** is the product useful, with a clear purpose?
- **Learnability:** How easy is for users to accomplish basic tasks with minimal instructions required?
- **Memorability:** When users return to the product after a period of not using it, how easily they can accomplish the tasks?
- **Efficiency:** How quickly users can perform tasks?
- **Satisfaction:** How pleasant is it for users to use the product?



## Design Principals \*

- **Visibility:** Can I see the functions and interactions?
- **Feedback:** What's the object or device doing right now?
- **Affordance:** How do I use it?
- **Mapping:** What is the relationship between actions and results?
- **Constraints:** Why can't I do that?
- **Consistency:** Is this familiar?



# 1. Visibility

- The more visible functions are, the more likely users will know about them and how to use them. But not so many distractions!

[www.godaddy.com](http://www.godaddy.com)

**GoDaddy.com**  
Make a .com name with us!™

**Reseller Plans! RELOADED**

**Is this really GoDaddy.com?**  
Verify the site for your protection!

**Domain Names** | **Hosting & Servers** | **Site Builders** | **Email** | **SSL Certificates** | **Ecommerce** | **Be a Reseller**

**Customer # or Login name:**  
**Password:**  
**Secure Login**

**Radio-GoDaddy**  
Next show starts in 4 days 9 hrs 49 mins  
Listen to prior shows

**Domain Names**  
- Register new  
- Bulk register  
- Transfer  
- Make Private  
- Backorder  
- NEW! Sell your domain name  
- NEW! View domain auctions

**Web Hosting Up to \$47 off**  
- See All Hosting Plans  
- Virtual Dedicated Servers  
- Dedicated Servers

**Site Builders Save 20%**  
- WebSite Tonight® (Online)  
- WebSite Complete®

**Email Accounts**  
- See All Email Plans  
- Online File Folder  
- Fax Thru Email  
- Online Group Calendar

**Secure SSL Certificates**  
- Turbo - Only \$29.95!  
- High Assurance  
- Wildcard

**Ecommerce**  
- Merchant Accounts  
- Quick Shopping Cart™  
- Traffic Blazer®  
- Express Email Marketing™  
- News-Blazer™  
- c-Store®  
- Reseller Opportunities  
- Go Daddy T-Shirts

**Web Hosting & Servers**  
Up to 4GB space & 200GB transfer from \$3.95/mo!  
- No set-up fee; no annual commitment  
- 99.9% Uptime Guarantee  
- World Class Data Center  
- FREE MySQL & SQL Server  
- NEW! Website Starters for Windows  
- FREE Forums, Blogs & Photo Galleries!  
- NEW! Dedicated Servers and Virtual Dedicated Servers

**Spam, Virus & Fraud Protected Email**  
NEW! Blockbuster plans from just \$9.95/yr!  
- Up to 100 email accounts and 2,000MB storage  
- FREE Webmail. Check email from anywhere. Comes with virus, spam and phishing protection. Address book. Calendar.  
- Other Email Essentials!  
- NEW! Fax-enable your email accounts with Fax-Thru-Email.  
- NEW! Online File Folder gives you on-the-go access to any file.  
- NEW! Share schedules and get organized with Online Group Calendar.

**Traffic Blazer™**  
Prepare your site so the search engines can find it!  
Improve site traffic and sales from \$29.95/yr  
- Optimize your site for top search engine rankings  
- Analyze your site's strengths and potential weaknesses  
- Automated search engine submission  
- Supports Google, Yahoo!, AOL, MSN and more!  
- NEW! Alexa Traffic Rank and Google PageRank™ reports  
- Deluxe and Pro Editions also available

GoDaddy Website (2006)

**GoDaddy** EN

Contact Us 24/7 | Help | Blog | Sign In | Cart

**Domains** | **Websites** | **WordPress** | **Hosting** | **Web Security** | **Online Marketing** | **Email & Office** | **Phone Numbers** | **Promos**

**Search for your \$0.99\* .com domain.**

Type the one you want here **Search**

**Find your perfect domain name.**

- 10 million customers trust us with their domains. They must know something.
- Experts are ready 24/7, and they love to get your call.
- Low prices and a huge selection. Who doesn't love that?

**Go with GoDaddy.**  
If you have questions about domains, we've got you covered.

**Award-winning, 24/7 support.**  
Not sure what you need? That's why we have hundreds of smart, friendly web pros waiting

**More names at better prices.**  
We have 100's of domains to choose from, not to mention prices that other companies

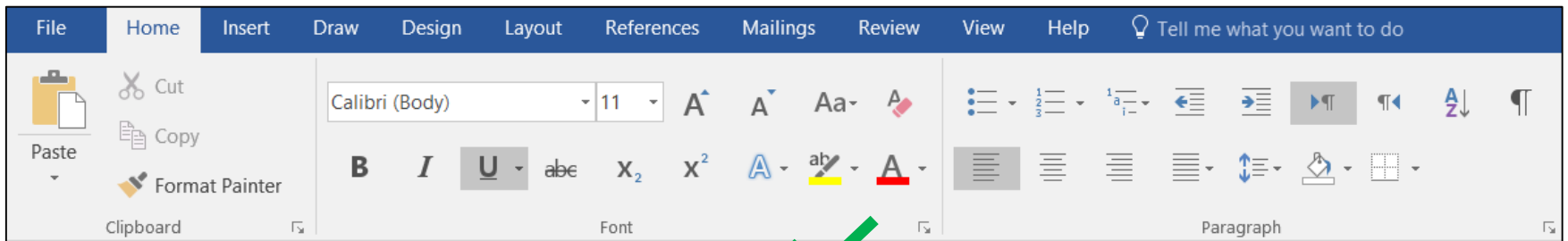
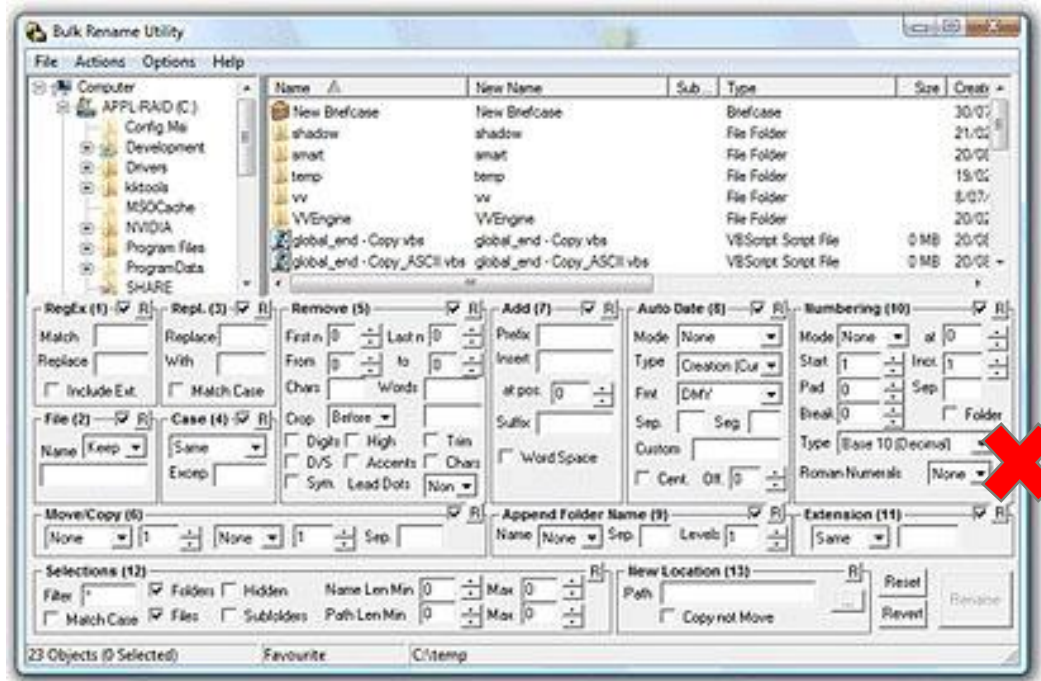
**The world's #1 registrar.**  
With 18 million happy customers and 77 million domains under management, we

GoDaddy Website (2018)



# 1. Visibility

- Hide Information that is not needed frequently.



# 1. Visibility: Categorizing Information

[www.arngren.net](http://www.arngren.net)

**www.ARNGREN.net**

**23 Butikker** **Teknologi & Gadgets** **3-hjul Cargo-el-Bike** **el-biler til barn** **Index** **Search** **el-retur** **Index** **Drone-Bike** **Bygg ditt eget** **2-seters Helikopter.**

**Drone med Kamera** **3.998,-** **Nyhet!** **el-Jeep** **4WD** **3.998,-** **el-biler til barn** **12V** **24V** **48V** **fra kr. 1.998,-** **el-bil** **fra** **34.998,-** **el-scooter** **19.998,-** **el-sykkel** **89.998,-** **el-bil** **kr. 89.998,-** **el-ATV** **6000 watt** **kr. 29.998,-** **EL-Scooter** **6000 watt** **kr. 29.998,-** **RC Fly-Båt** **70 cm lang** **fra kr. 1299,-** **El-Bil; Comarth** **2WD/4WD. 2 eller 4 seter** **fra kr. 89.998,-** **Airwolf-m/Innfallb** **T-Rex 450** **kr. 6.998,-**

**Index** **Avanturn** **Alarm** **Alkotester** **ATV (el.)** **Bildefliser** **Bil (elektrisk) gas** **Bilbane** **Conrad-elektronikk** **Digital-Kikkert** **Disko-Lys** **Dummy-Kamera** **DVD-Spiller** **Elektronikk & DAB** **EL-Scooter & Bil** **Figurer** **Golf-biler (m/skilt)** **Hobby & RC** **Hoverpod** **HP-Måler (Bil)** **Isbitmaskin** **Kamera (trådløst)** **Kino (bærbart)** **Kompass (Bil/Bat)** **Laser-Jamer (Bil)** **Luft-Jekk** **Lykt (oppkladbar)** **Mobiltelefon-1.2** **Motorsykkel-Mini** **Omformer (110V)** **Oversetter (44 spk)** **PC-mini (9")** **2.** **Rakett-Fly** **RC Produkter** **Robot-Hund** **Robot-Stevsuger** **Roboter** **Solcelle-Ryggesak** **Star Wars** **Sykkel-PC** **sh** **Topbane (til PC)** **Traktor (elektrisk)** **TV-Ur & Armbr** **Ur** **Walkie Talk**

**Alle Produktene** på denne siden leveres hos **ARNGREN** i Oslo. Se Lagerkoden etter Prisene (lev. 2 - 5 dager) :  
● Er på Lager  
● Kommer før 3 uker  
● Lengre enn 3 uker

**Elektriske-Kjøretøy** **Elektrisk-ATV** **el-biler til barn** **Fjernstyrte produkter** **Forbruker Elektronikk** **Batterier & Ladere, etc** **Disko-Lys** **Roboter** **Rakett** **Kjøpsloven** **Angreskjema** **Avatar-Gunship** **Er det raste** **Helikopter** **noensinne.** **Video** **Nyhet!** **Trådløs Sykkel-PC** **5030 kr. 29,-** **Max 1 pr. kunde** **RC Helikopter** **7044 kr. 29,-** **Forklaringen** **Kamer** **1050 2** **Elektronikk** **Trådløs Skype-tel.** **798,-** **Elektronikk** **Bilde-Fliser** **Flysimulator** **20 - 144x** **Kikkert-lengste & kraftigste.** **Hus-Alarm** **m/nr. sender** **kr. 599,-** **el-retur** **Styreenhet & Fordelere til Bil** **fra kr. 2998,-** **RC Fly-Båt** **70 cm lang** **fra kr. 1299,-** **El-Bil; Comarth** **2WD/4WD. 2 eller 4 seter** **fra kr. 89.998,-** **Airwolf-m/Innfallb** **T-Rex 450** **kr. 6.998,-**



# 1. Visibility: Color and Texts

<http://www.pnwx.com>



**Pacific Northwest X-Ray Inc.**

*Simply the best!*



X-Ray and Radiology? You are at the source! Here you will find hundreds of pages of X-Ray related accessories, parts, supplies, and equipment. Accessories from Lead Aprons to Lead Markers. X-Ray equipment including portables. Not to mention X-Ray parts. Be sure to keep checking back as our web design team is constantly updating the information on the current items and adding new products as they become available.

Search by Product Name, Brand  
Name, Stock Number and more!

Go!

## Equipment

[Darkroom Equipment & Film Processors](#) (15),  
[Digital/DICOM/PACS Products](#),  
[Medical Equipment/Patient Care Equipment](#) (9),  
[Power and Exam Tables](#) (2),  
[Portable Radiographic](#) (5),  
[Radiation Survey Meters](#) (7),  
[Silver Recovery Systems](#) (8),  
[Film Viewboxes](#) (29)  
[More products/complete listing.....](#)

## Accessories

[Cabinetry & Storage](#) (11),  
[Cassettes/OR Plate Storage, Transport, Viewing](#) (17),  
[Cassette/Film/Surgical/Care Carts](#) (10), [Exam Room Products](#) (18),  
[Film Carry Cases, Cassette Holders, Pass Boxes](#) (2),  
[Film Caddies, Wall Film Racks, Positioning Foam](#) (11),  
[X-Ray Markers](#) (13), [Sandbags, Stools](#) (5), [Table Pads](#),  
**Lead Protection Products** [Aprons](#) (71),  
[Gloves](#) (5), [Mobile Barriers, Windows, Eyewear](#) (4),  
[Blockers](#),  
[Clear Barriers, Thyroid Collars, Gonad Protection](#),  
[Warning Signs, Ultrasound Accessories](#),  
[More products/complete listing.....](#)

## Supplies

[Custom Printed CD Media and Packaging](#) (3),  
[Jacket Labels and Dispensers](#),  
[Processing Chemistry](#),  
[Film Envelopes, X-Ray Screen Cleaner](#)

## Parts

[X-Ray Grids, Collimator Lamps](#),  
[High Voltage Cables](#)

**Why We're  
The Best!**

**How To  
Purchase**

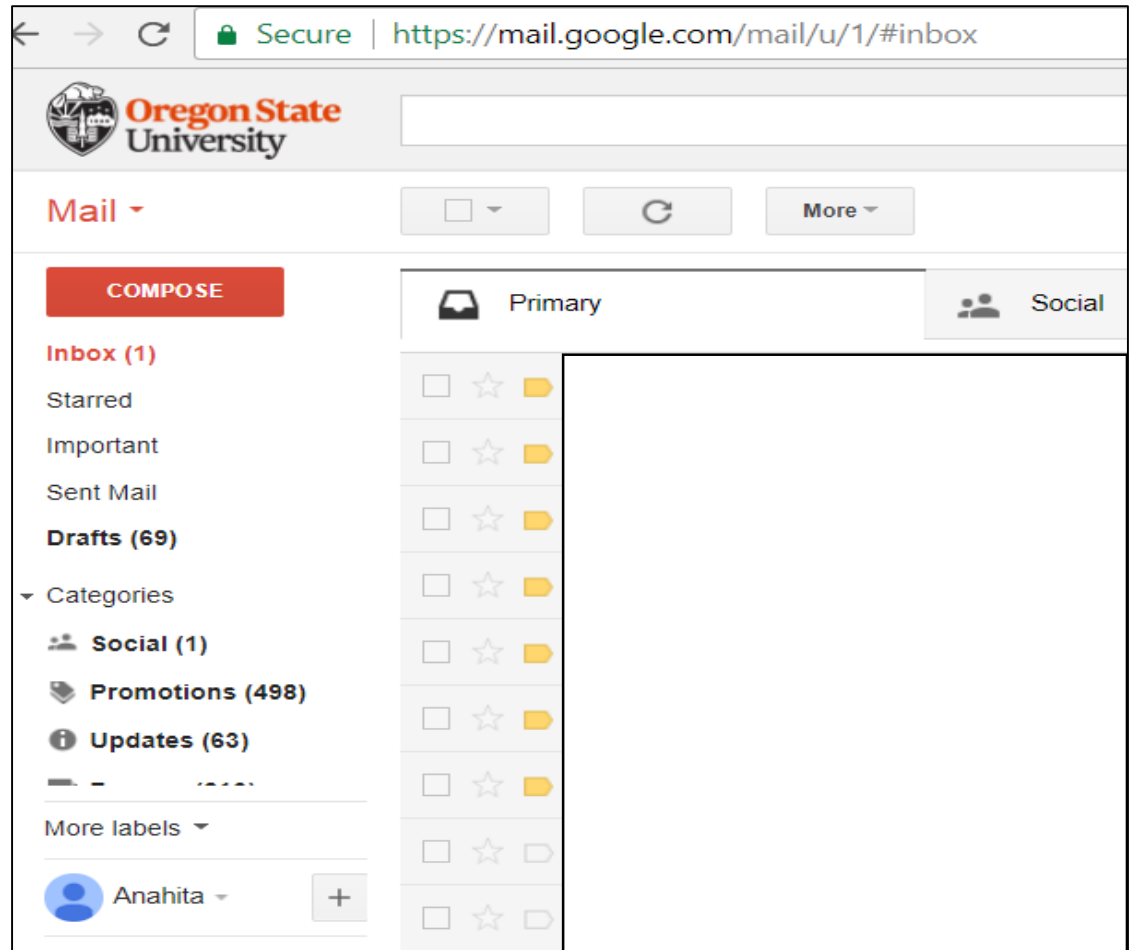
**Closeouts &  
Bargains**

**Radiology  
Related Links**

**What's New  
Around Here?**

# 1. Visibility

- Do not create busy user interfaces (keep it simple)
- Make the most important elements of your design easy to find:
  - Hide elements that might interfere (with less priority)
  - Larger icons
  - Color contrast

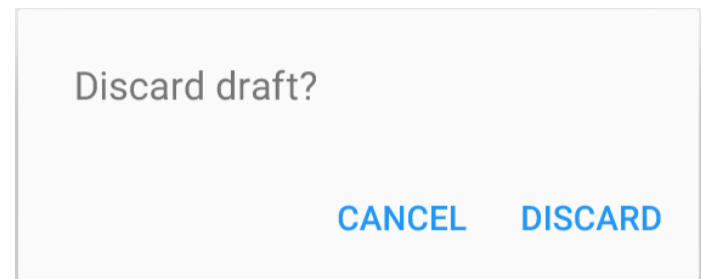
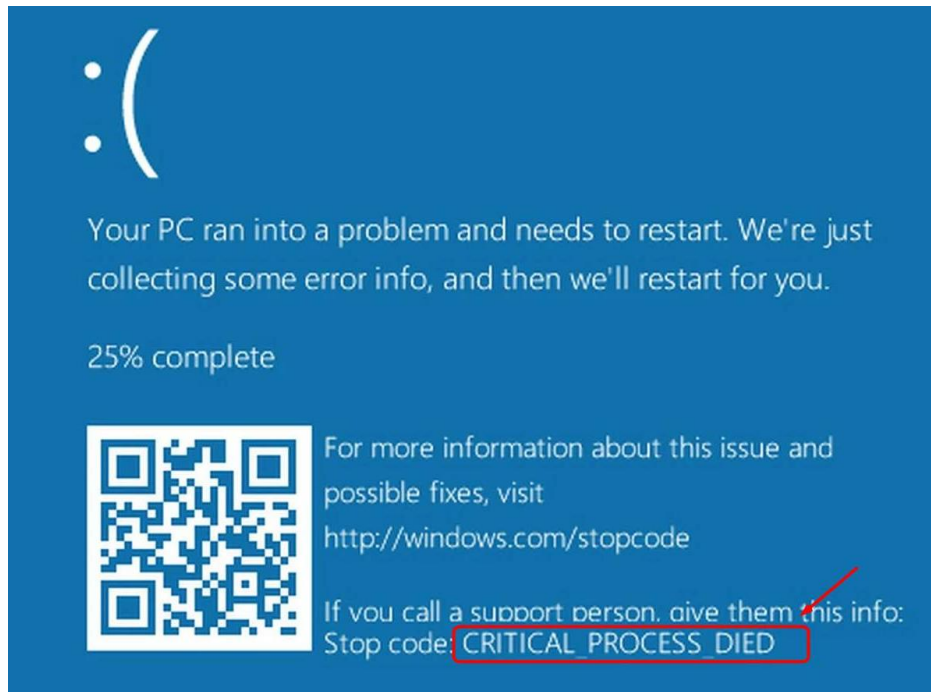


## 2. Feedback

- Sending back information about what action has been done, allowing the person to continue with the activity.
  - Visual, tactile, audio, and more
- What is a good feedback?

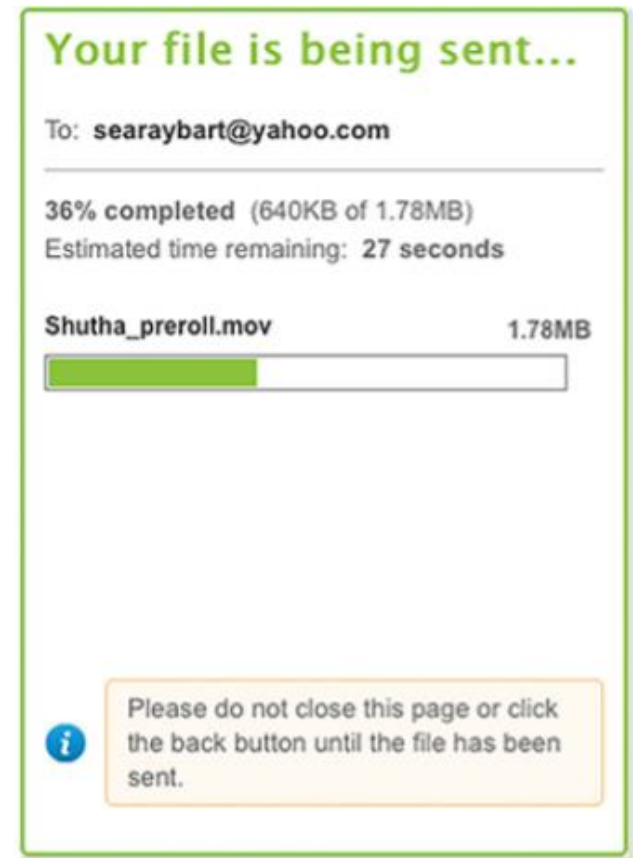


## 2. Feedback: What Do You Think?



## 2. Feedback

- **For every action there should be a reaction!**
- Good feedback should answer:
  - How do I get started?
  - Should I click that?
  - Is that work saved?
  - Am I almost finished?
  - Should I cancel this, or wait a little longer?
- Do not interrupt the experience
- Feedback for error prevention:
  - Describe what happened
  - Explain why it happened
  - Suggest a fix





### 3. Constraints

- Limiting the range of interaction possibilities for the user
- Limitless possibilities often leave the user confused

Enable Disable Submit Button Using  
jQuery

---

Name :

Email :

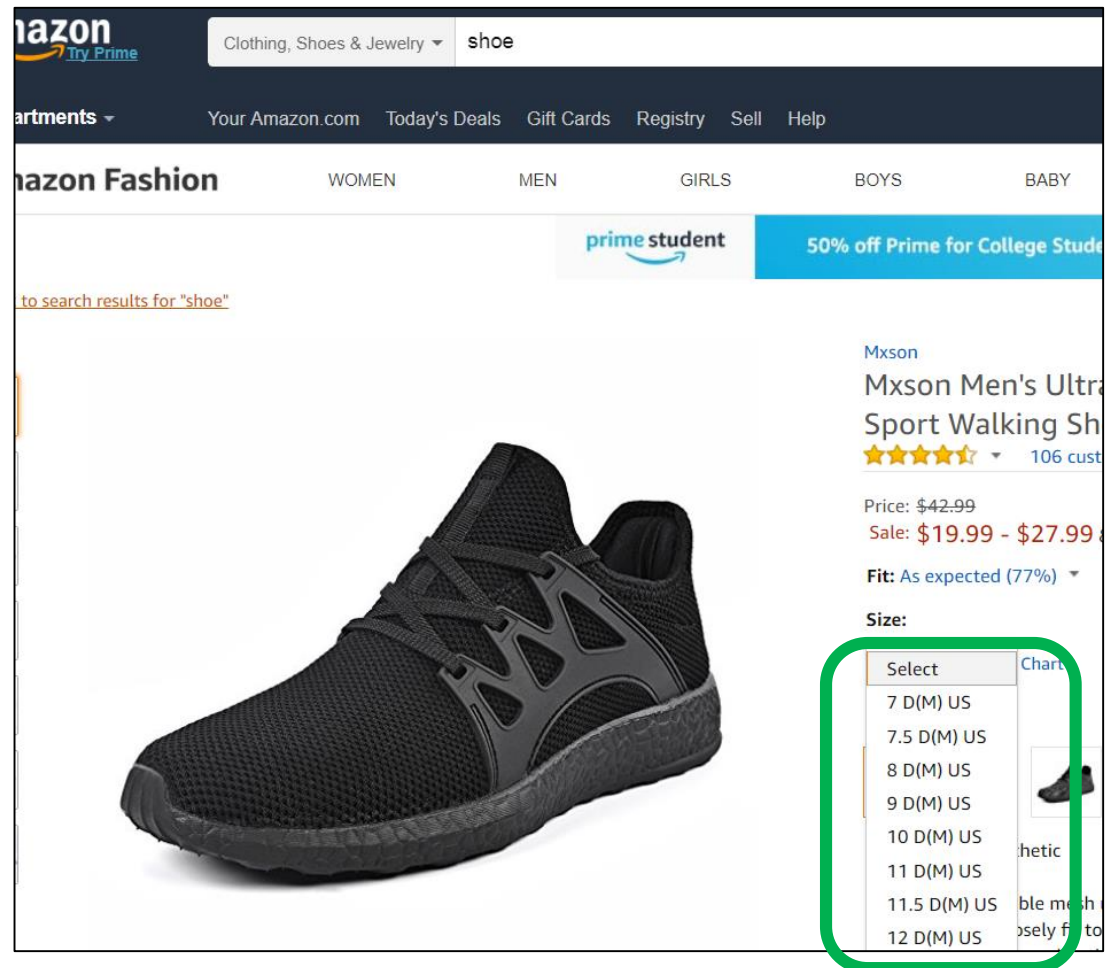
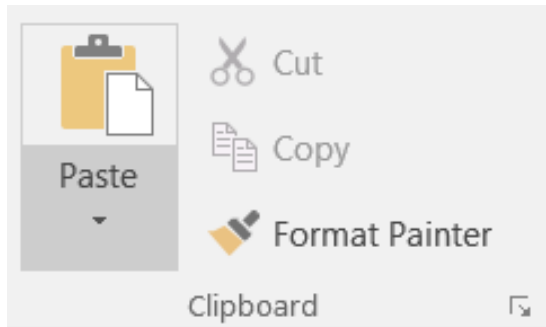
Message :

Submit



### 3. Constraint

- Limiting the range of interaction possibilities for the user to simplify the product.



## 3. Constraint

- Limiting the range of interaction possibilities for the user:
  - Help users understand status of the system
  - Simplify the product
  - Less confusion
  - Error prevention

The screenshot displays the SKINNY TIES checkout interface. At the top, the brand name 'SKINNY TIES' is on the left, followed by navigation links: 'Collection', 'Color', 'Width', 'Fabric', and 'Pattern'. On the right, there are links for 'SIGN IN' and 'REGISTER', a shopping cart icon with a '2' badge, and a search bar. Below the navigation bar is a large blue header with the word 'Checkout' in white. The main content area is divided into two parts. On the left, 'Your Checkout Progress' shows a vertical list of steps: 'BILLING ADDRESS', 'SHIPPING ADDRESS', 'SHIPPING METHOD', and 'PAYMENT METHOD', each with a 'Pending' status. On the right, the '1 Checkout Method' section is active. It contains a 'Sign In' form with fields for 'Email' and 'Password', both marked with an asterisk. Below these fields are a 'SIGN IN' button and a 'Forgot password?' link. To the right of the sign-in form are two options: 'Create An Account' with a radio button for 'Register and checkout together', and 'Guest Checkout' with a radio button for 'Checkout without registering'. A blue 'CONTINUE' button is positioned below the guest checkout option. At the bottom of the checkout section is a horizontal progress bar with six steps: '1 Checkout Method' (active), '2 Billing Address', '3 Shipping Address', '4 Shipping Method', '5 Payment Method', and '6 Order Review'.

## 4. Consistency

- Having similar operations and similar elements for achieving similar tasks.

Film Camera (1980's)



DSLR Camera (2018)

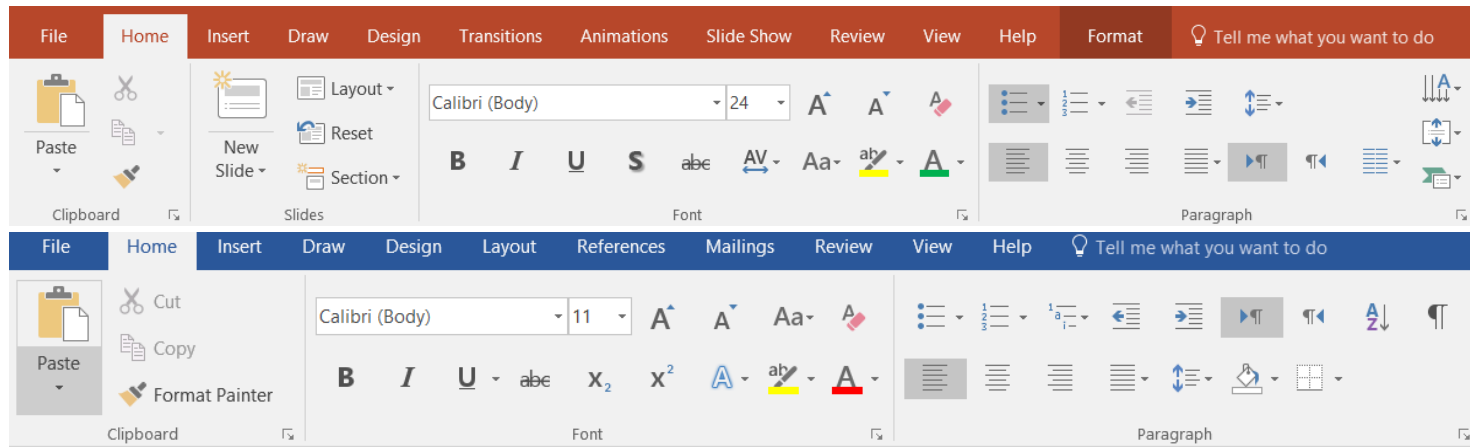


Point & Shoot Camera (2010)



## 4. Consistency

- Having similar operations and similar elements for achieving similar tasks.



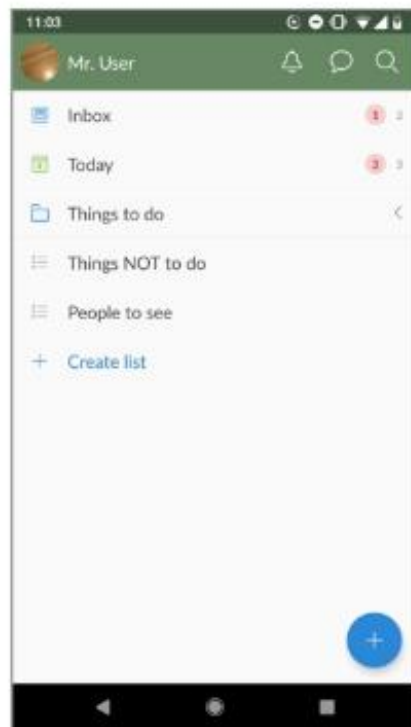
The image shows two examples of form layouts. The top example shows three 'CONTACT US' buttons on a blue background. The first two buttons have a green checkmark icon above them, and the third button has a red X icon above it. The bottom example shows three 'BIRTHDAY' form fields on a blue background. The first two fields have a green checkmark icon above them, and the third field has a red X icon above it. The first two fields contain 'JANUARY (01)' and '2017' with dropdown arrows, while the third field contains '00/00/0000'. This illustrates inconsistency in button placement and form structure for similar tasks.

The image shows two examples of form layouts. The top example shows a 'Save changes' button and a 'Cancel' button. The bottom example shows a 'Cancel' button and a 'Save changes' button. This illustrates inconsistency in button placement for similar tasks.

## 4. Consistency

- Provide a consistent experience throughout your products
  - Reduce the learning time for a product
  - Inconsistency → frustration

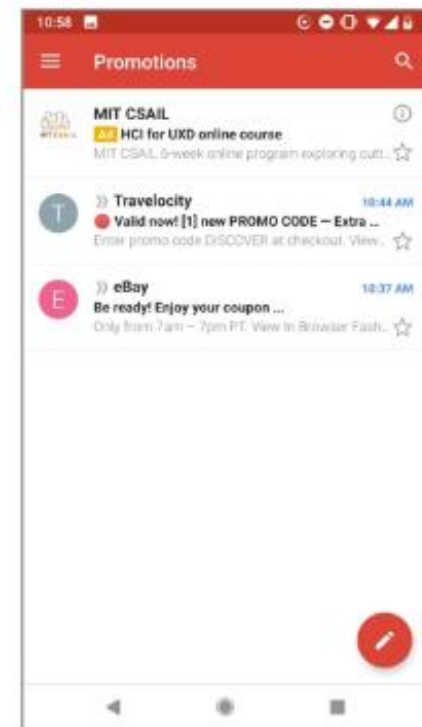
Wunderlist



Twitter

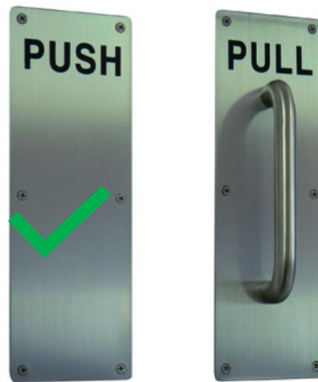


Gmail



## 5. Affordance

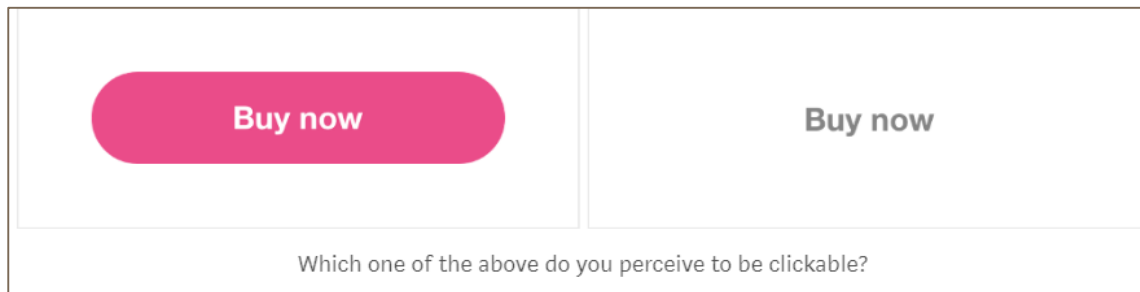
- An attribute of an object that allows people to know how to use it.
  - “To give a clue”: Mouse button





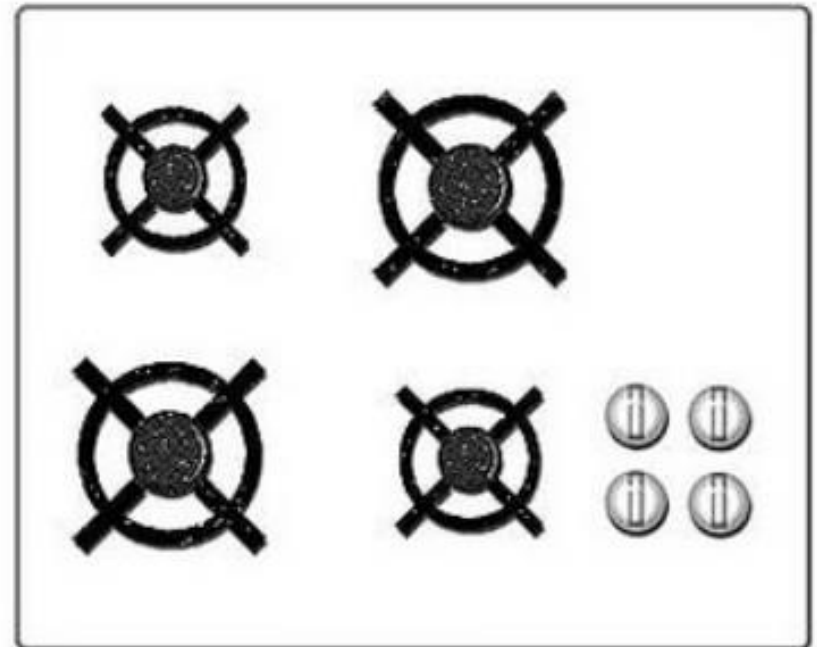
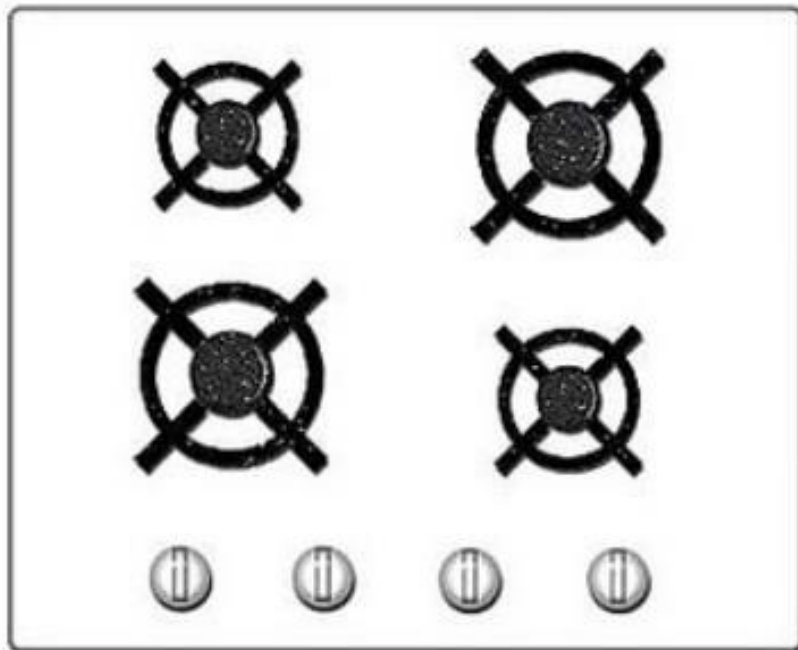
## 5. Affordance

- User can perceive possible actions based on the properties of an objects.
- Use cues to suggest actions that are possible by a system element
- Giving incorrect visual cues can ruin user experience and lead to frustration.



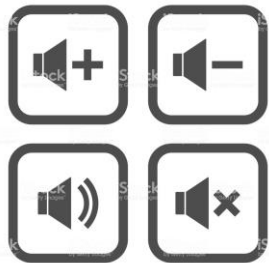
## 6. Mapping

- Mapping is about having a clear relationship between controls and the effect they have on the world.
- Which one is a better mapping, why?



## 6. Mapping

- Mapping is about having a clear relationship between controls and the effect they have on the world.



# UX Process

- **Research:**

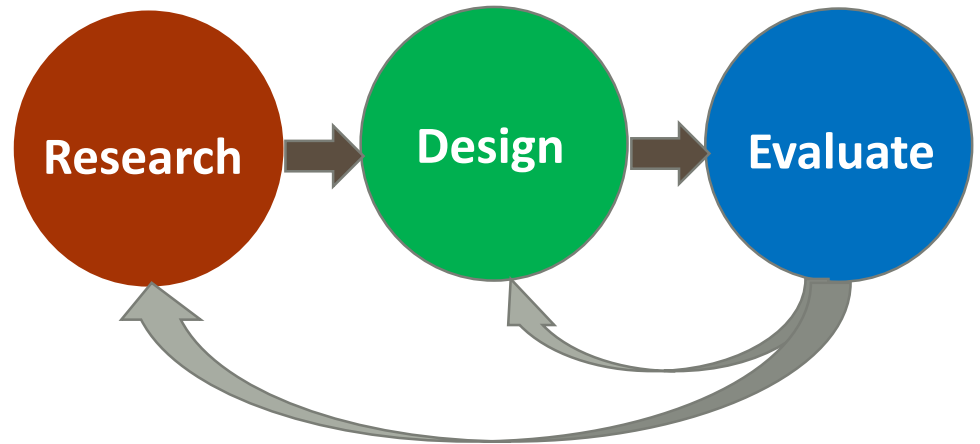
- Identify needs/requirements
  - Of the user experience.

- **Design:**

- Develop many alternative design ideas
  - That meet the requirements.
- Mock-up and later build versions of the designs
  - To communicate/evaluate.

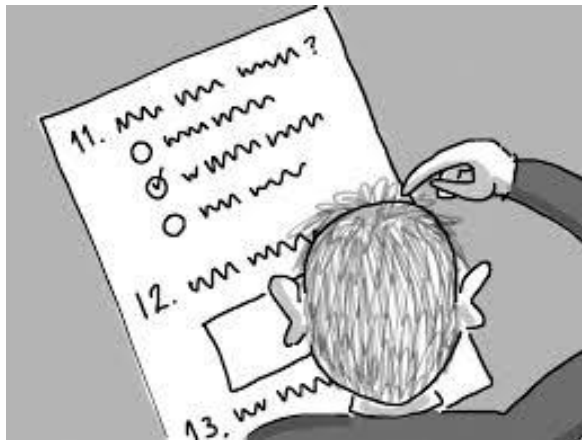
- **Evaluate:**

- Throughout the process.



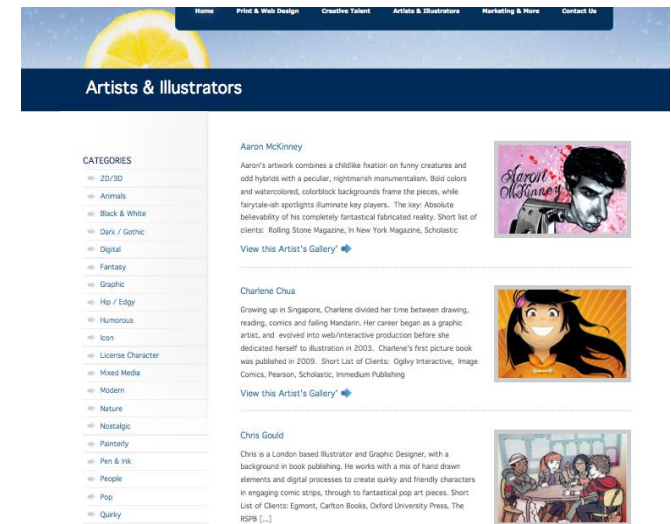
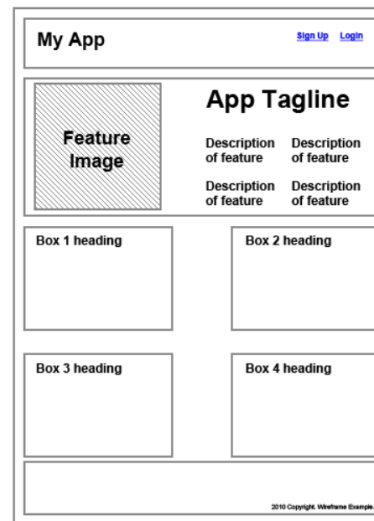
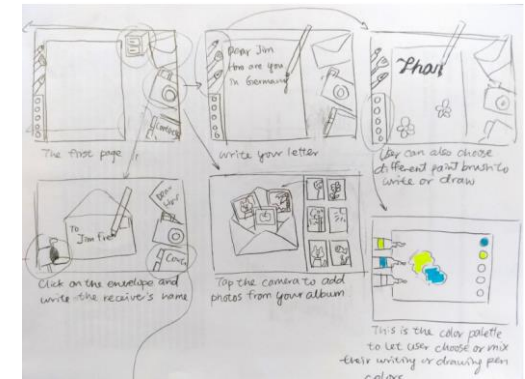
# User Experience Methods: Research

- Ethnographic Field Studies and Observations
- User Interviews
- Diary studies
- Surveys



# User Experience Methods: Design

- Low fidelity to high fidelity prototype
- Sketching
- Storyboarding
- Wireframing
- Digital





# User Experience Methods: Evaluation

- Heuristic evaluation
- Cognitive walkthrough
- Usability testing



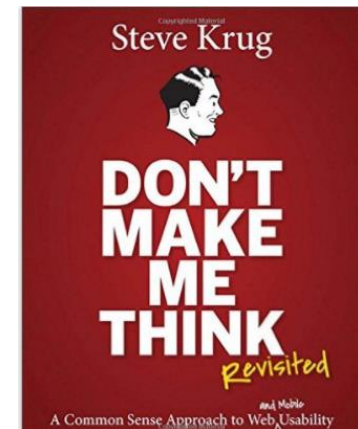
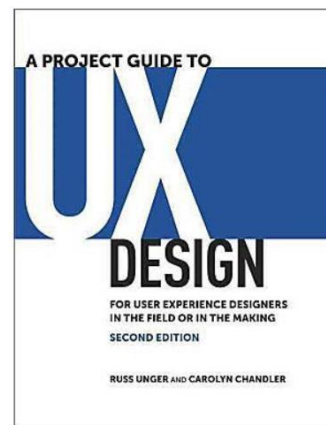
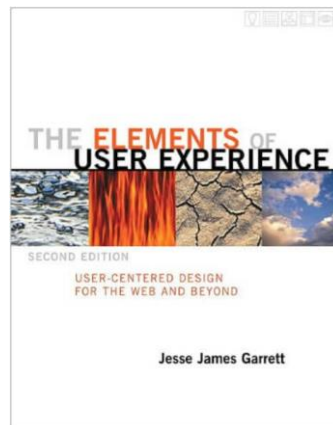
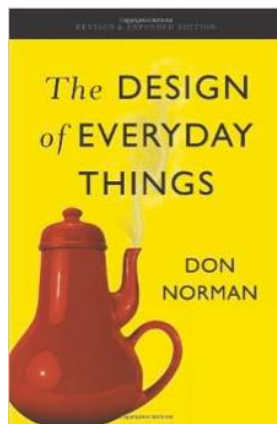


# Summary

- What is User experience and UX design and why is it important?
- What are the design principals we should care about?
- What is a user experience process?

# And More...

- A practice for you:
  - Apply the design principles of visibility, feedback, constraints, consistency, affordance to an existing piece of software:
    - Can you find a concrete example of how the software supports/violates that principle
- Some other Suggested books



# References and image Sources

- Don Norman Image: <https://newschoolarch.edu/events/lecture-series-don-norman/>
- Usability Testing images: <https://www.experiencedynamics.com/services/usability-testing>
- User Experience Diagram: <https://commons.wikimedia.org/wiki/File:User-experience-diagram.png>
- User Experience as a whole: <https://usabilitygeek.com/user-experience/>
- US Umbrella : <http://www.helloerik.com/ux-is-not-ui>
- Consistency images: Source: <https://gofishdigital.com/guide-design-consistency/>

# Sources

- UX Design Learning Links: <https://uxdesign.cc/>  
<https://www.smashingmagazine.com/cate...>  
<https://www.uxpin.com/knowledge.html> <http://uxmag.com/>  
<https://www.nngroup.com/> <http://www.uxbooth.com/> UI design, short for user interface design, support the UX design visually through colors, fonts, icons and graphics. UI Design Learning Links: <https://designcode.io/>  
<http://trydesignlab.com/>  
<https://teamtreehouse.com/library/mob...>  
<https://www.udemy.com/ui-web-design-u...>  
<http://learnui.design/>

# General Resources

- <http://www.usability.gov/how-to-and-tools/methods/index.html>
- <http://www.usabilitybok.org/what-is-usability>
- [https://en.wikipedia.org/wiki/User interface design](https://en.wikipedia.org/wiki/User_interface_design)
- [https://en.wikipedia.org/wiki/User experience design](https://en.wikipedia.org/wiki/User_experience_design)
- <https://uxmag.com/>
- <http://www.usabilityfirst.com/>
- <http://alistapart.com/article/usability-testing-demystified>
- <http://uxmyths.com/>