

HCI Lecture 6

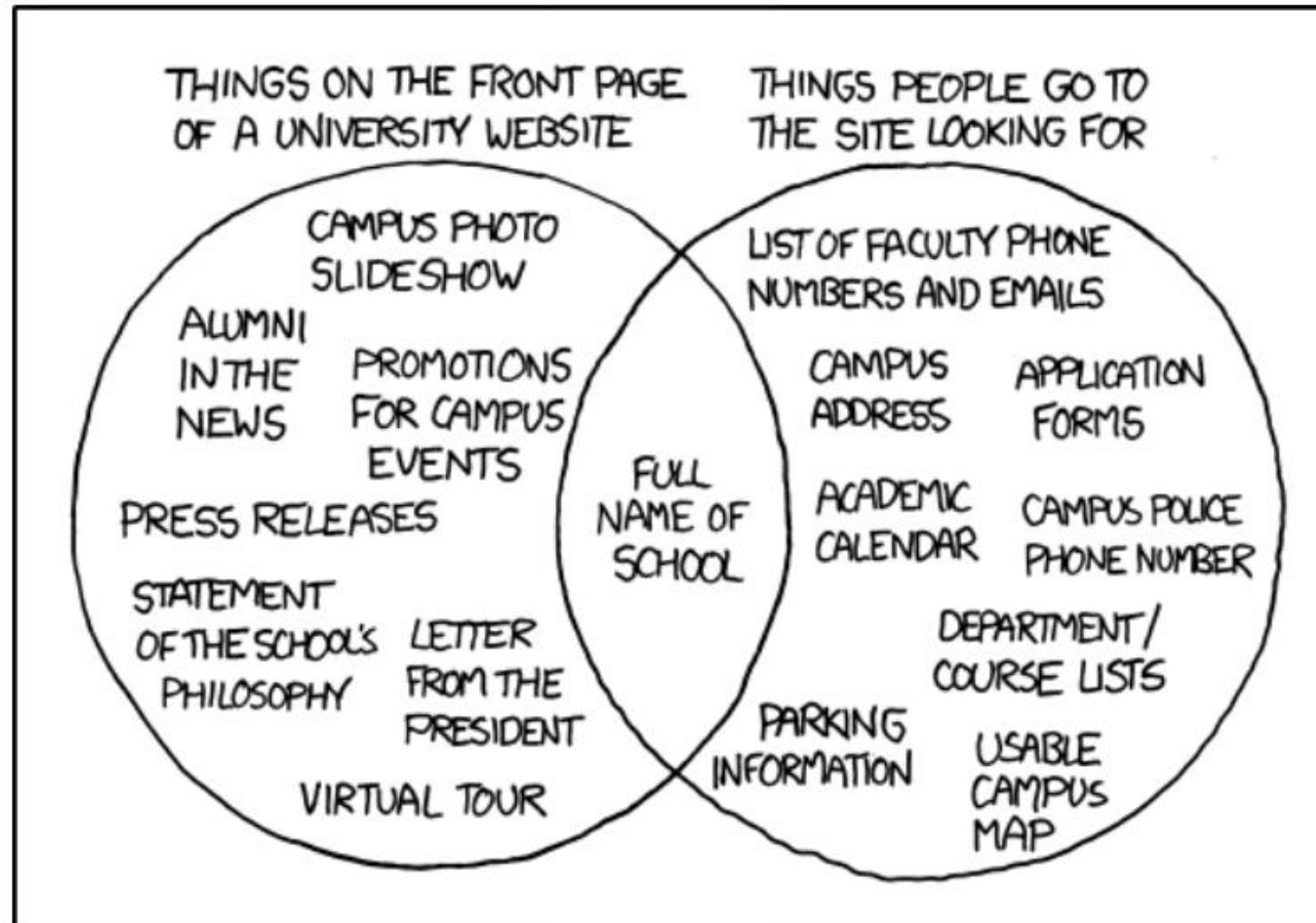
Evaluation and Design Principles (Part II)

5th April 2022

Today's plan

- Icebreaker
- Lecture
 1. Design reviews
 2. More on visual design principles
- **Guest speaker** – Isis Nair will talk on Product Development.

Ice-breaker – food for thought: university websites



Design concepts we have learnt/learning

- **User-centricity** – how does it make user lives better, easier, helps user achieve goals?
- **Usability goals** (Lecture 1, 3)
 - effectiveness, efficiency, safety, utility, learnability, memorability – *Sharp, Preece, Rogers*
 - learnability, efficiency, memorability, errors, satisfaction - *Nielsen*
- **User experience goals** (Lecture 1) – satisfying, enjoyable, engaging, pleasurable etc.
- **10 usability heuristics** (Lecture 4) <https://www.nngroup.com/articles/ten-usability-heuristics/>
- **6 UI/UX Design principles** (Lecture 5)
 - visibility, feedback, constraints, consistency, affordance
- **Visual design fundamentals** (Lecture 5 & 6)
 - Layout, hierarchy, colour, typography, images, copy

Next tute: group evaluation of lo-fi prototypes

- Swap your prototype with another group.
- Conduct **design review** (*expert review*) of the other group's work
- Other group analyses your work.
- Learn what to evaluate.
- Report

Design Reviews

*A **usability-inspection method** in which (usually) one reviewer examines a design to identify usability problems.*

- Find the usability problem in the design
- Find the severity of the usability problem
- Overall usability of the system
- Performed early in the usability engineering lifecycle

<https://www.nngroup.com/articles/summary-of-usability-inspection-methods/>

Book: Usability Inspection Methods, Nielson, Jakob, 1994

<https://www.nngroup.com/books/usability-inspection-methods/>

Usability Inspection Methods

Heuristic evaluation	usability specialist judges whether each webpage follows usability principles
Heuristic estimation	as above but compares the relative usability of two or more designs in terms of expected user performance.
Cognitive walkthrough	simulate user's problem-solving process, user goals, and memory.
Feature inspection	tasks, long sequences, cumbersome steps.
Consistency inspection	designer who knows other projects analyses the webpage in question
Standards inspection	interface compliance
Formal usability inspection	individual and group heuristic and cognitive

Expert Review

- Design review in which a UX expert inspects website or application to check for usability issues.
- General version of **heuristic evaluation**.
- Can be performed at any stage as long as prototype has sufficient detail.
- Inspection not by real user
- Specifications, part of design – dialog box, error-handling workflow
- By contrast **user testing is broader** - exploratory

Expert Reviews

- Expert in **usability best practice, usability research**
- **Independent** (removed from emotion, politics, glaring issues)
- Check against **usability heuristics**
- **Other usability heuristics:** cognitive psychology (really interesting – cover soon), HCI
- Past experience and expertise in the field.
- **Output:** written document

How to write a usability design review

1. **List of usability strengths** – include short explanation
2. **List of usability problems** – include explanation discussing the violated principle (with reference to article)

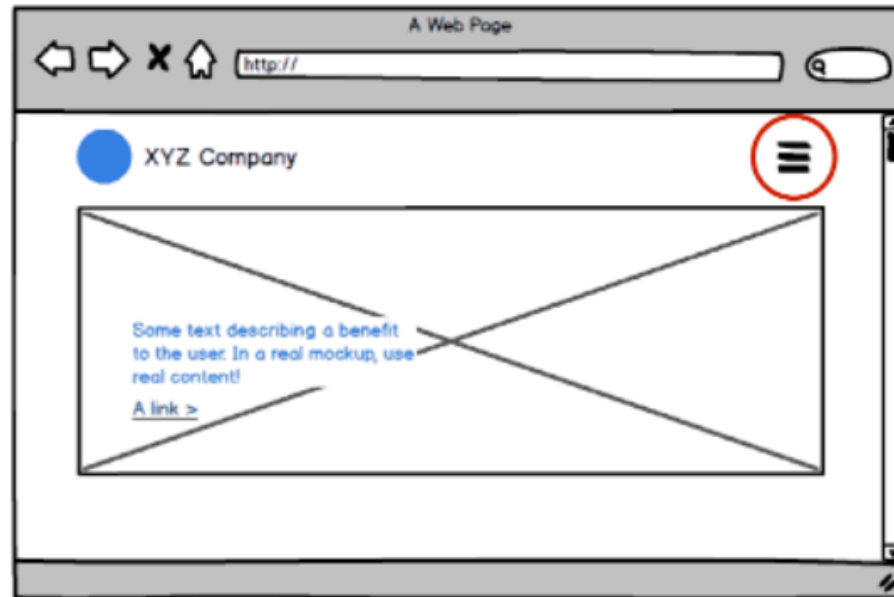
“Users who are asked to confirm each choice that they make become habituated with these confirmation screens and respond automatically without paying attention to the text on the screen, which may result in [slips](#).”

3. **Severity rating** (high, medium, low)
4. **Recommendation** (fix or investigate, usability testing, user research)

How to write a usability design review (cont.)

5. Examples of best practices to guide improvements

“Hamburger” menu is less salient on larger screens, often gets overlooked



HIGH SEVERITY

Collapsed, hidden menus are commonly used on mobile designs, but we have found them to be problematic when used on designs for larger screens. On desktop designs, hidden menu icons are easily overlooked by users, who then may not discover those navigational options. Additionally, using a hidden menu increases the interaction cost to access those menu items.

Recommendation:

- On larger screens, present available navigation options directly on the page, rather than relying on hidden menus.

For more on how hidden navigation hurts UX metrics, see: <https://www.nngroup.com/articles/hamburger-menus/>

NN/g

Example of design-review finding: A screenshot from the design is annotated to describe the usability issue found, along with its severity rating. Realistic recommendations for fixing the issue can provide a starting point for the redesign. When available, a reference for the usability guideline can provide curious readers with more background information.

Expert review report

[illegible]

In your Design Review you might like to comment on:

- **10 usability heuristics** (Lecture 4) <https://www.nngroup.com/articles/ten-usability-heuristics/>
- **6 UI/UX Design principles** (Lecture 5)
 - visibility, feedback, constraints, consistency, affordance
- **Visual design fundamentals** (Lecture 5 & 6)
 - Layout, hierarchy, colour, typography, images, copy
- **Other:**
 - quality and relevance of content,
 - stakeholders
 - overall design
 - navigation
 - consistency
 - messaging
 - etc

Expert Reviews vs. Usability Testing

- Different issues are found

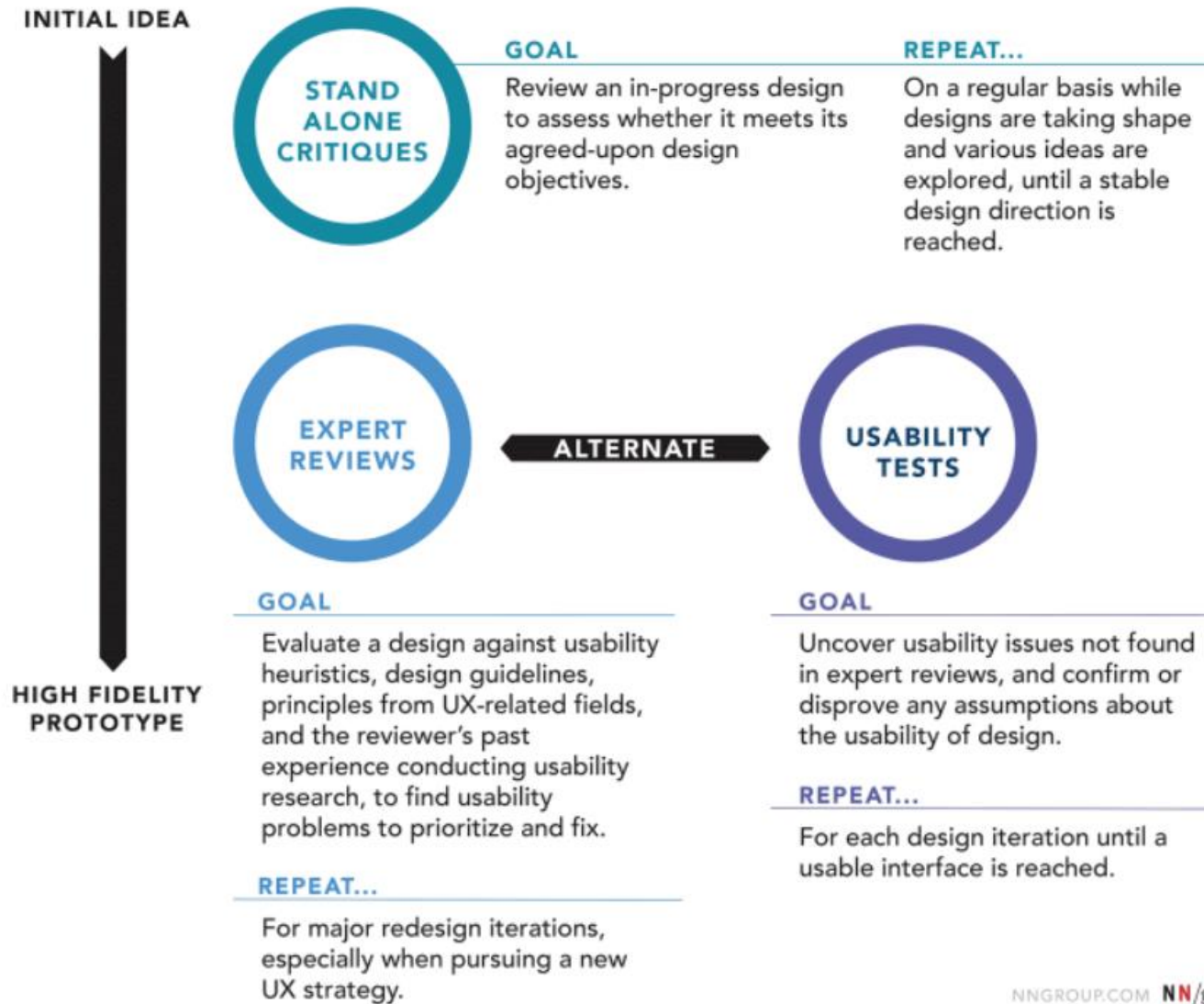
Expert reviews

- small inconsistencies,
- colours
- fonts (picked up before usability testing)

Usability testing

- specific problems that are found due to users having specialist knowledge.

DESIGN REVIEW & TESTING PROCESS



A design cycle can include multiple standalone design critiques during the early design creation phase; then, once the design is fairly stable and higher-fidelity prototypes are created, some form of independent evaluation should be conducted: either an expert review or a usability study.

<https://www.nngroup.com/articles/ux-expert-reviews/>

Fundamentals of Hierarchy

Hierarchy: Size

- Larger object attracts attention
- Text and images
- Visual journey
- Jump in text size - difficult
- Text too big - imbalance

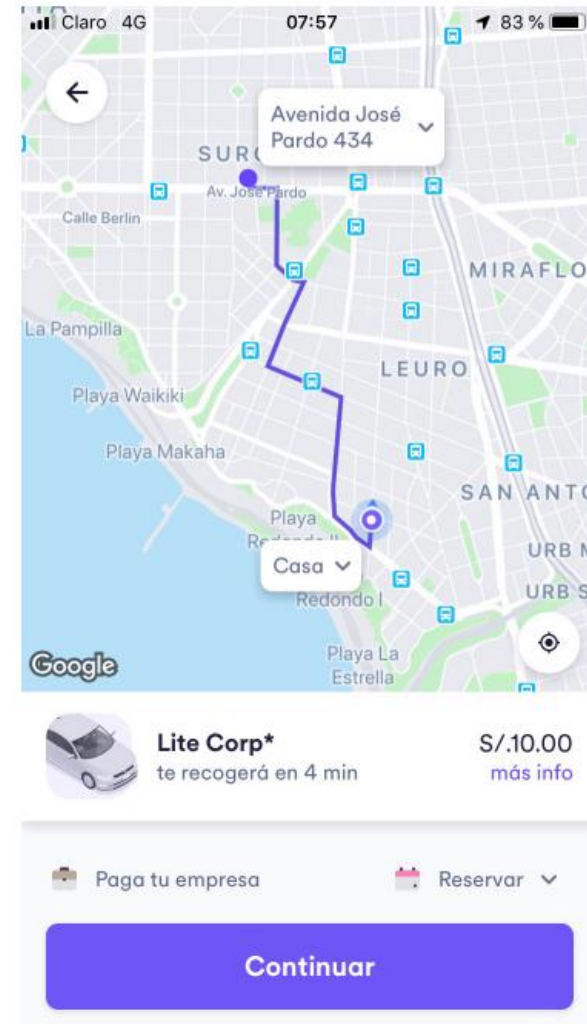


In this snapshot of the Google Arts & Culture application, the title “Pawtraits: Our Changing Relationship ...” is much larger in size than the subtitle “How do we really feel ...”. By separating these scores considerably, the reading order avoids any confusion.

<https://medium.com/swlh/fundamentals-of-hierarchy-in-interface-design-ui-ba8e3017dceb>

Hierarchy: Colour

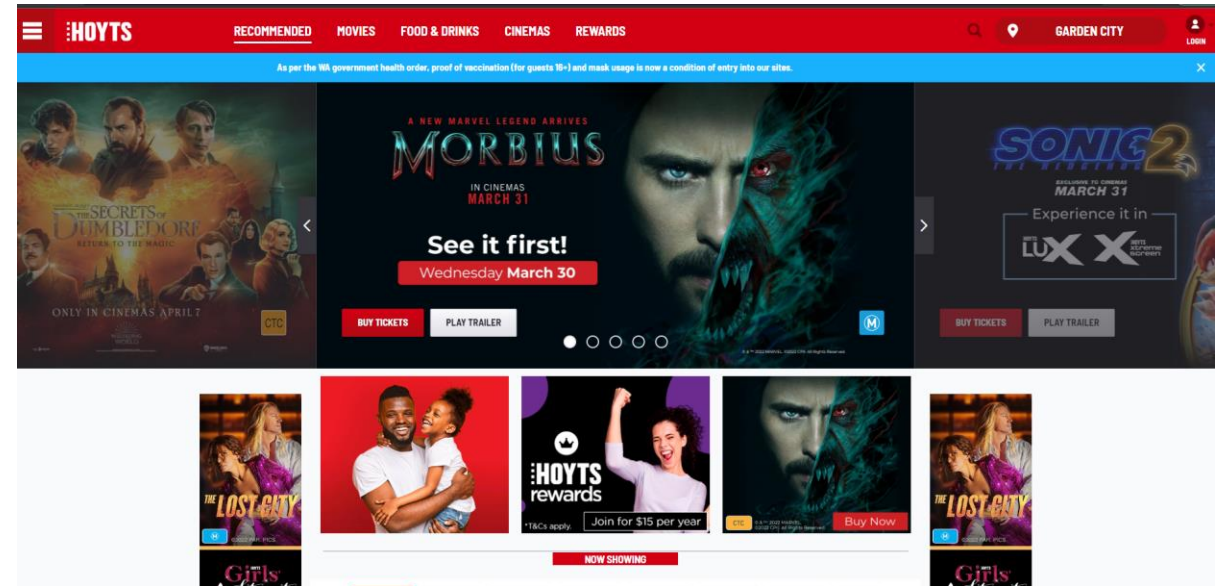
- Bright colours stand out
- Separate elements
- Prioritise /deprioritise
- Strongest colour interaction (action/feedback)



In this Cabify app screenshot, the use of purple color acts as the primary color. Both, the route of the trip and the “Continue” button are first hierarchy, followed by the map and the car in second hierarchy. The harmonic use of hue and saturation separates these elements from a more unsaturated and less important background.

Hierarchy: Proximity

- Close elements more attention
- Categorise/group elements
- Associations/connections
- Dissociations
- Reading order
- Interruptions
- Text – short blocks, grouping sentences, whitespace



<https://medium.com/swlh/fundamentals-of-hierarchy-in-interface-design-ui-ba8e3017dceb>

The Tesla (TSLA) CEO tweeted a meme about a couple breaking up along with the bitcoin hashtag and a broken heart emoji. The post included lyrics from a song by rock band Linkin Park titled "In the end." Bitcoin fell by over 6% to hit \$35,814 at around 8 am ET, according to CoinDesk. It was last trading at \$36,410, having dropped about 5% over the past 24 hours. Other digital currencies lost ground, with ethereum 5.6% weaker in mid-morning US trade at \$2,637 and dogecoin tumbling 10% to around 36 cents. Musk recently told customers that the electric car giant would no longer accept bitcoin as payment for its vehicles because of concerns about the environmental impact of bitcoin mining, which is extremely energy intensive.

Hard to scan

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Easy to scan

Examples of proximity in design: By breaking a text into paragraphs, you make it much easier for users to scan and read it. Image credit Nick Babich.

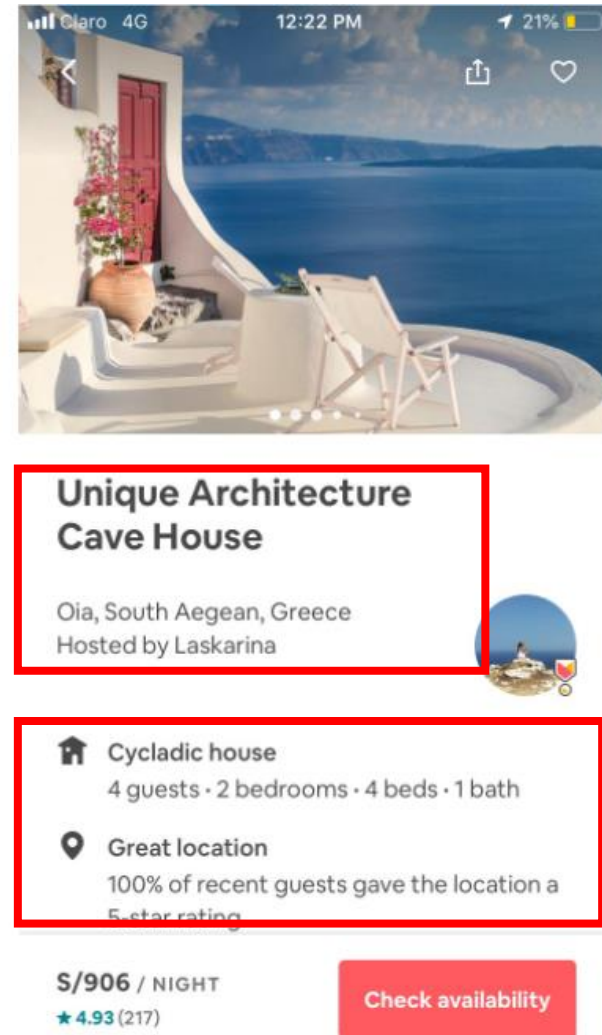
<https://xd.adobe.com/ideas/principles/web-design/proximity-in-design-principles/>

Hierarchy: Alignment

- Coherence
- Patterns
- Symmetry
- Asymmetry – call out attention

Alignment 1

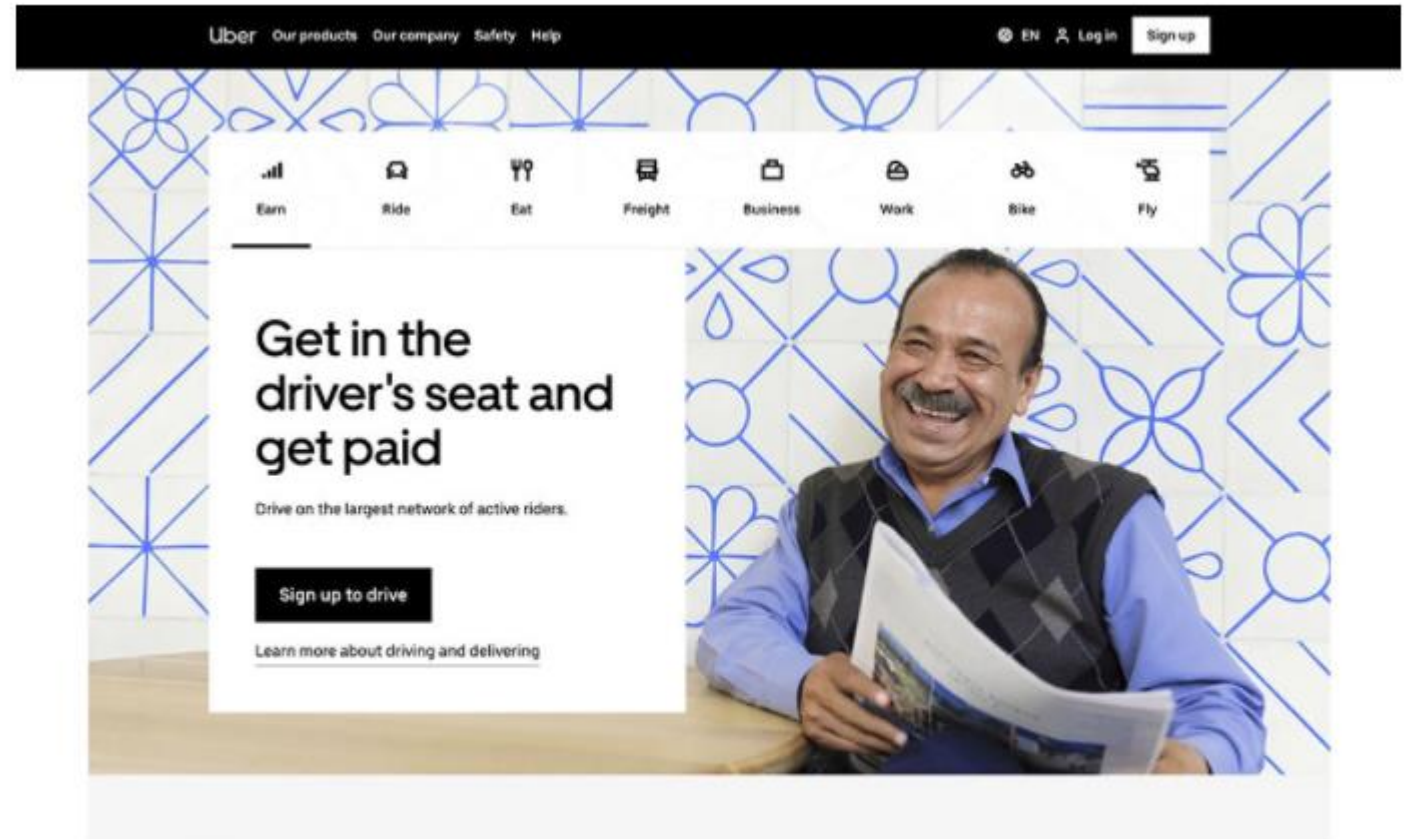
Alignment 2



On the page of an Airbnb accommodation, the title, location and name host belong to one alignment, while the description of the apartment, accompanied by iconography, belong to another. This rupture of an invisible straight line creates hierarchy on two levels.

Hierarchy: Repetition

- Importance



In the white menu of the Uber website, an icon and a label are placed 8 times for their categories. This, balanced with a smaller size, places the menu second in the hierarchy, after the main title "Get in the driver's seat ...". It is important to know that repetitions are very good for creating second or third level relevancies.

Hierarchy: Negative Spaces

- White space
- More attention

**Mauris a enim
cursus, mattis purus
bibendum**

Lorem ipsum dolor sit amet,
consectetur adipisicing elit, sed do
eiusmod tempor incididunt ut labore
et dolore magna aliqua. Ut enim ad
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VS

**Mauris a enim
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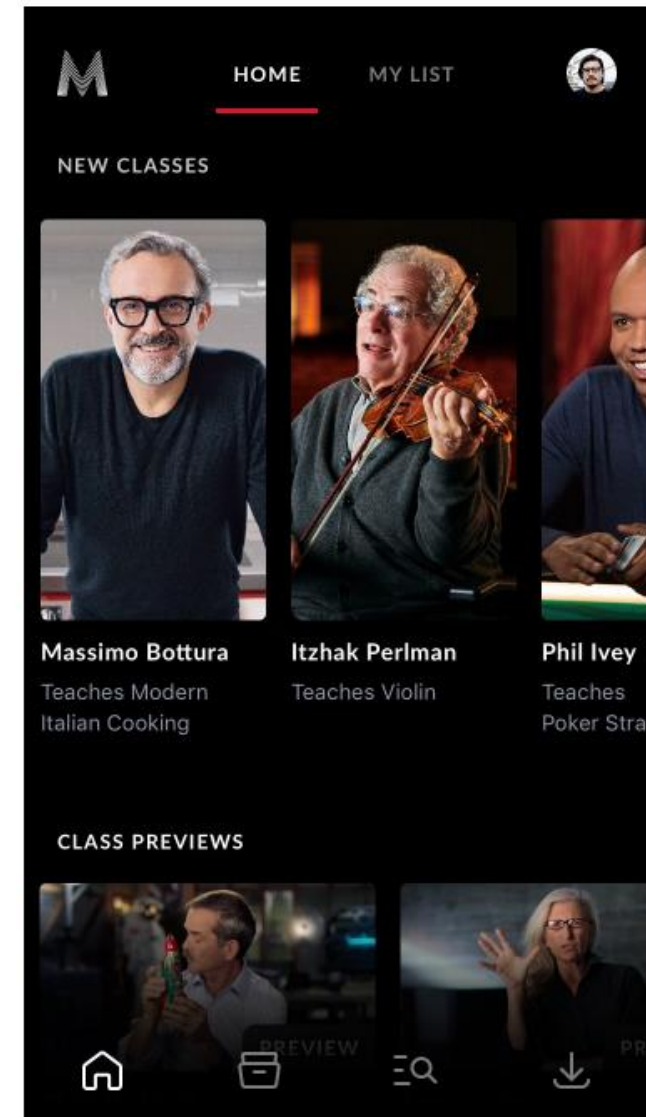
Lorem ipsum dolor sit amet,
consectetur adipisicing elit, sed do
eiusmod tempor incididunt ut labore
et dolore magna aliqua. Ut enim ad
minim veniam, quis nostrud



In this example of the web Design Better, both the number “01” and the title “Motion's purpose” are remarkably surrounded by negative space. Although the illustration has a greater hierarchical weight due to its variety of textures, the well applied negative space can make a balance that prevents the other elements from being relegated.

Hierarchy: Texture

- High resolution photos
- Style
- Atmosphere
- Flat
- Complex



<https://medium.com/swlh/functionality>

Photographs in UI design could be the best example of hierarchy by texture that exists. Their shapes, colors and gradient will always convey more sensations than flat elements. In the case of the Masterclass application, the photographs of the instructors are, without a doubt, first hierarchy, followed by their names in white, and the red color in the menu that indicates the location of the user.

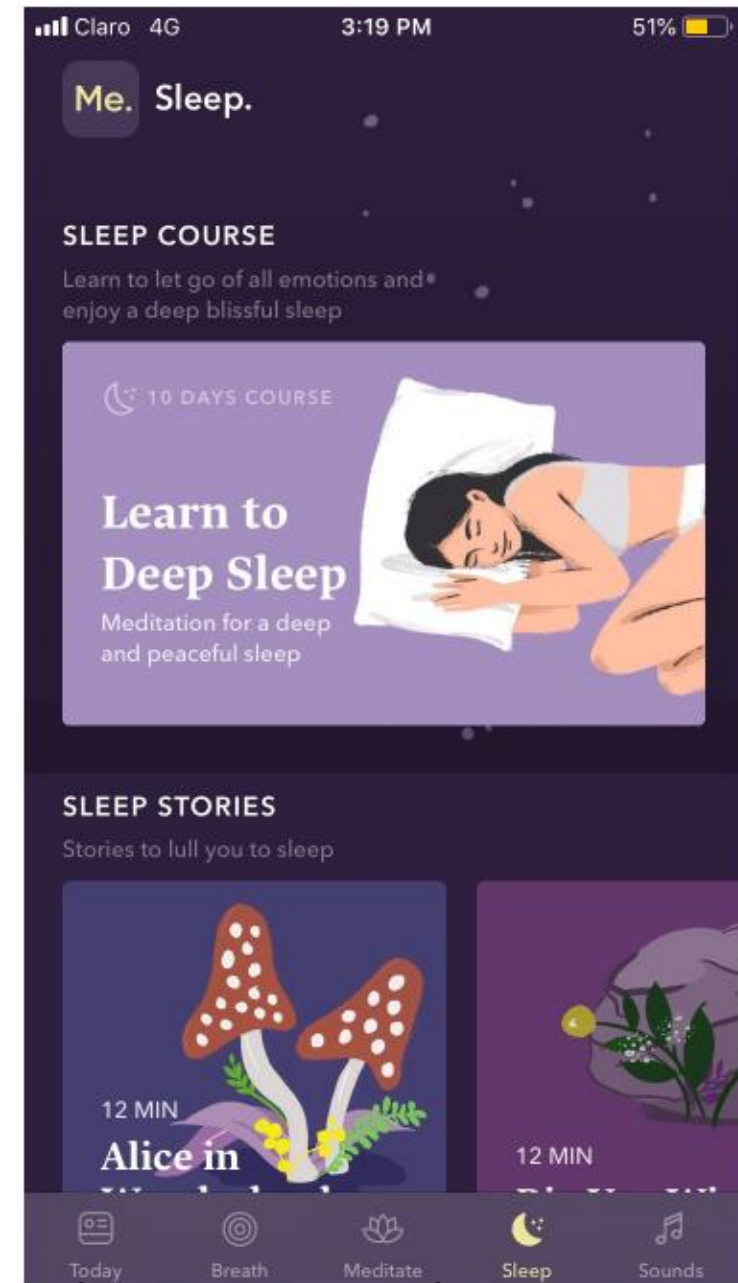
Adobe Color

- <https://color.adobe.com/create/color-wheel>

Fundamentals of colour

Colour: link

- Similar purple colours link to a concept,
Or experience of going to sleep



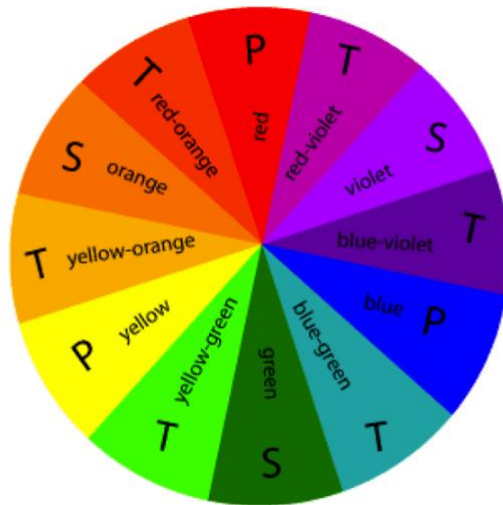
<https://uxdesign.cc/fundamentals-of-color-in-interface-design-ui-8127149f13e6>

The Me. Sleep. application used colors related to the night sky to facilitate the understanding of the concept.

The range of five blues and purples in the design evokes memories about the experience of going to sleep.

Colour: harmony

- Analogous



P = Primary colour : S = Secondary colour : T = Tertiary colour (which is a mix of the 2 colours on either side)

<https://laurelberninteriors.com/2020/01/12/analogous-color-schemes-in-interiors-the-right-way/>

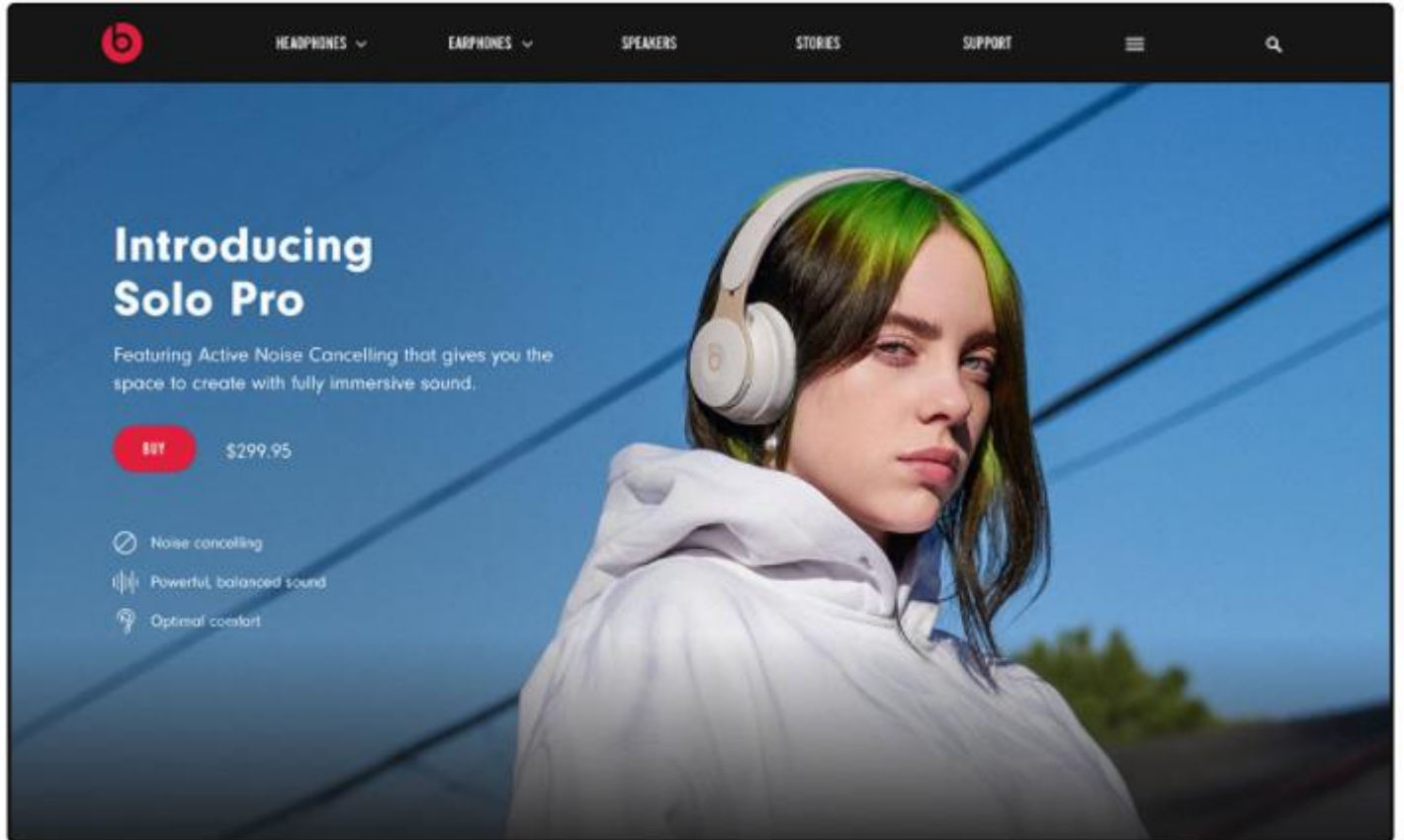
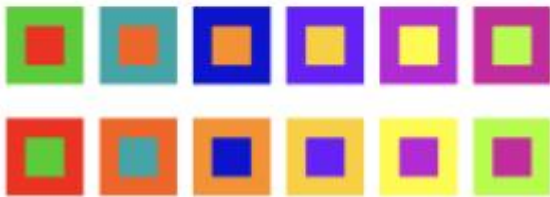
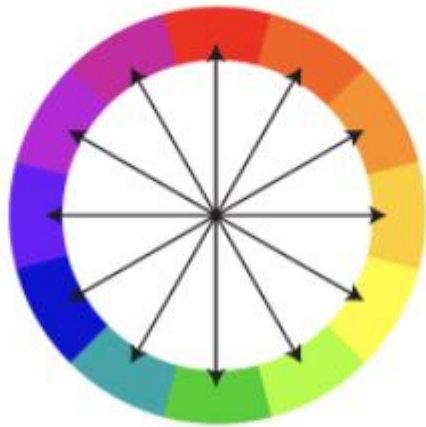


On the Rolling Stones website, the use of red and purple gives us an example of analogous colors. In the color wheel, red degrades towards orange in one direction and towards purple in the other.

<https://uxdesign.cc/fundamentals-of-color-in-interface-design-ui-8127149f13e6>

Colour: contrast

High Contrast Colors

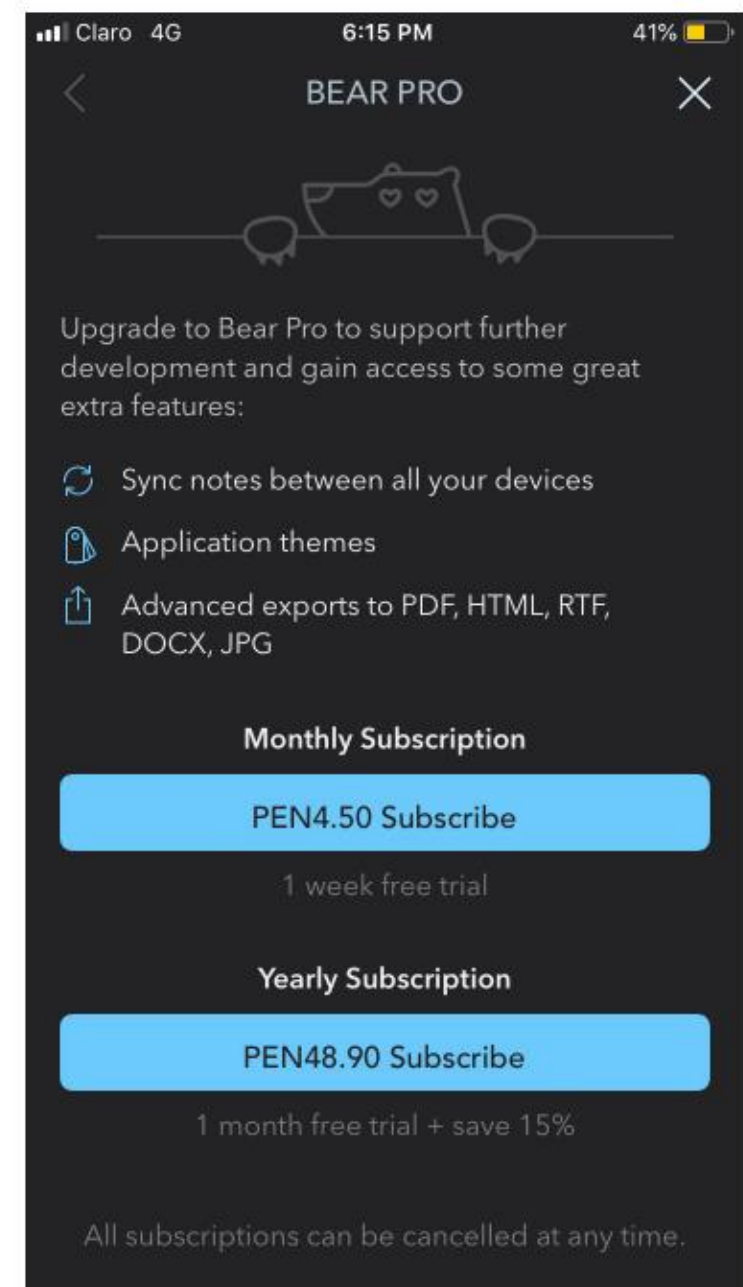


On the Beats website, an interesting color composition is achieved by using the complementary colors red and green. The light blue sky in the photograph, which is an adjacent complement to the red, makes the purchase button “vibrate”. This effect however is very well dosed.

<https://uxdesign.cc/fundamentals-of-color-in-interface-design-ui-8127149f13e6>

<https://www.g2.com/articles/color-contrast>

Colour: scale

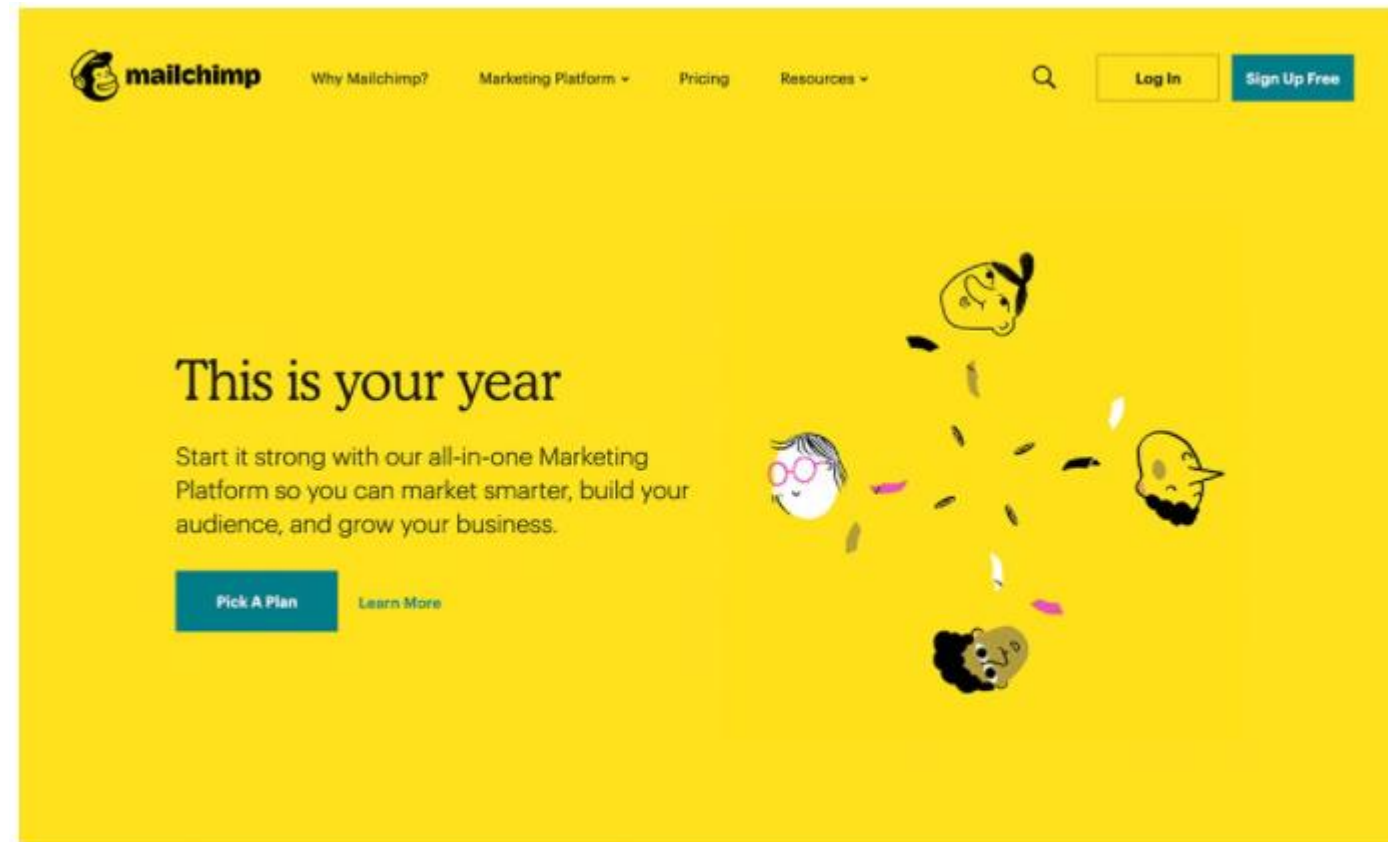


In this screenshot from the Bear application, we see that the white text is on the first level and the gray text is on the second level to create a hierarchy and not overload the view with messages of the same visual weight. This also applies to the bear illustration. Keep in mind that the scales works well when they are part of the same

Colour: proportion



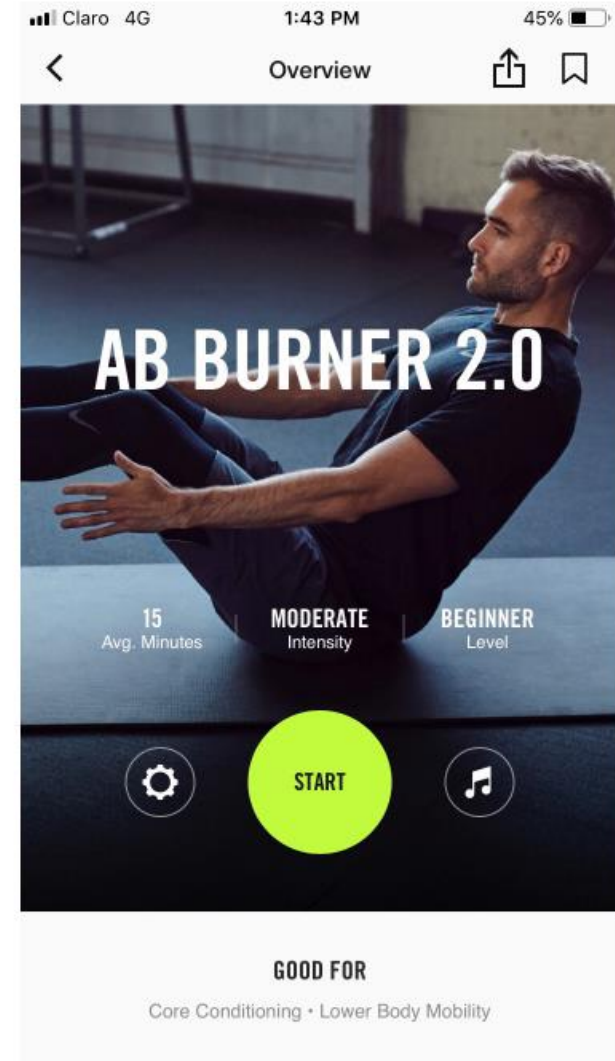
<https://www.hyprfire.com/>



On the Mailchimp home page, yellow is used as the main color while applying only green, pink and black accents. Yellow, like any color, conveys concepts of its own that should not compete in weight with other tones.

<https://uxdesign.cc/fundamentals-of-color-in-interface-design-ui-8127149f13e6>

Colour: interaction



In this capture of the Nike application, the call to action stands out for having the most saturated color of the composition. Lemon green is kept as the main button in the other screens to give consistency to the user's learning. We also notice that the circular shape stands out better against the classic rectangular shape.

<https://uxdesign.cc/fundamentals-of-color-in-interface-design-ui-8127149f13e6>

6 Fundamentals of typography in UI

Typeface

- San Serif, Serif, Hand writing
- Clarity and readability
- Mood, emotion, expression, harmony, curiosity, attention, elegance.



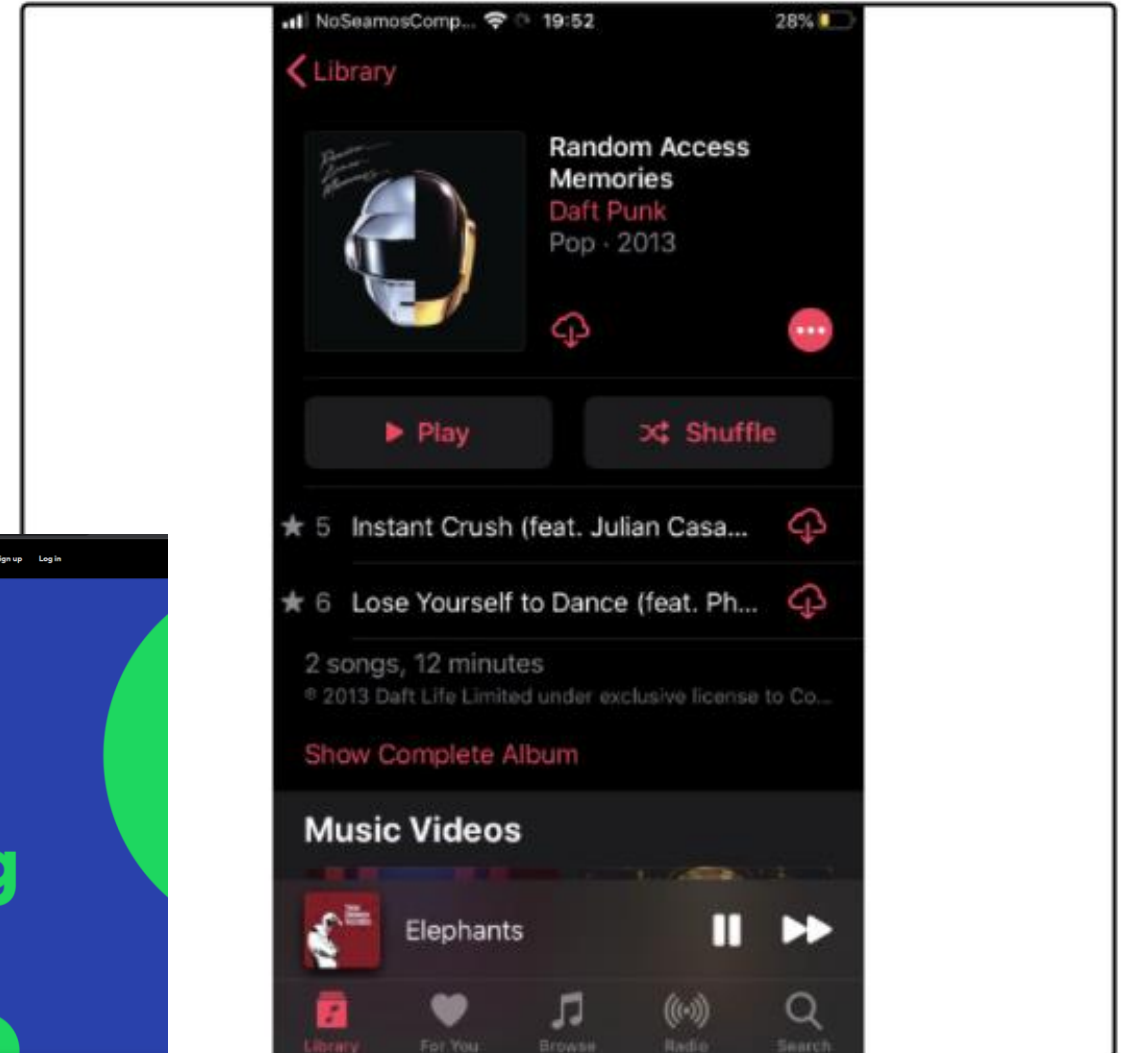
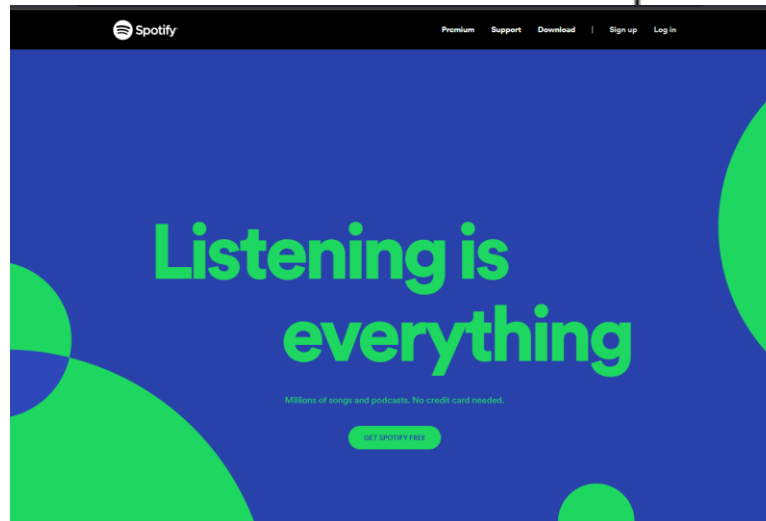
Sans Serif, Serif and Handwriting (left to right) are three of the most popular groups of typography. Others like Display and Monospace are also well known.

<https://uxdesign.cc/fundamentals-of-typography-in-user-interface-design-ui-67cdd13bfa24>

Typography – 1. colour

Legibility:

- Read immediately without strain – use the colour of font and not background
- Low contrast
- High contrast – vibrant unreadable



<https://uxdesign.cc/fundamentals-of-typography-in-user-interface-design-ui-67cdd13bfa24>

In this screenshot of the Apple Music app, fonts are used in white, red, and gray on a black background. These options have enough contrast from the background for a pleasant reading. The gray texts handle a lower contrast so they stick more to the background but without complicating the reading.

Typography: 2. complexity

- Depends on screen size
- Intricate and artistic typefaces larger
- Straightforward typefaces smaller

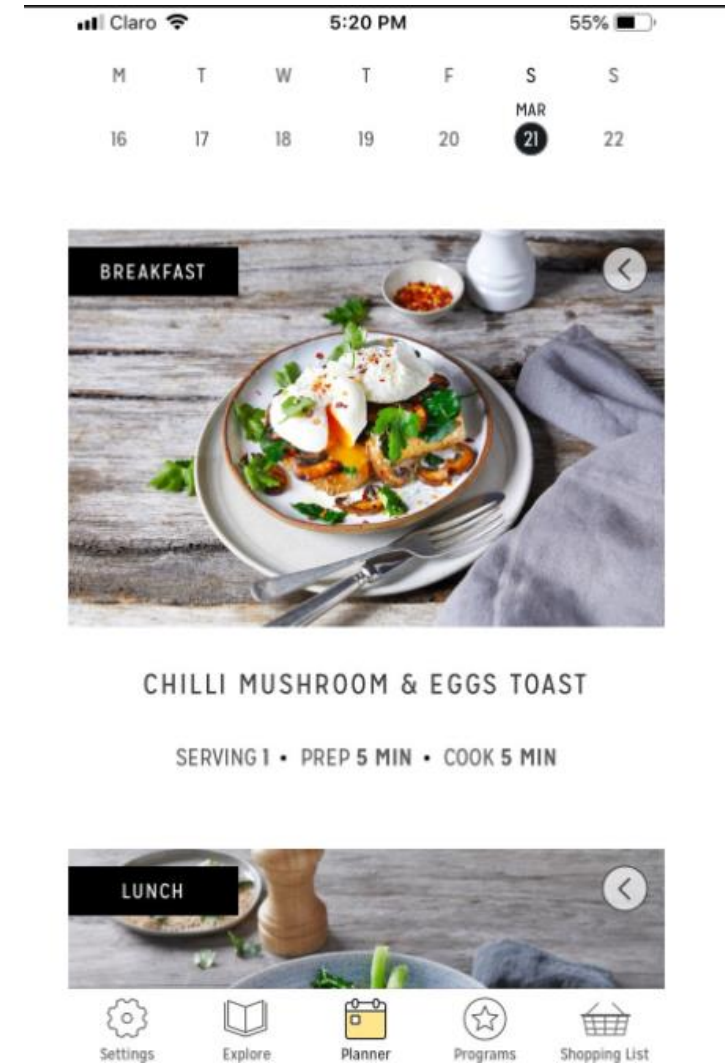


<https://uxdesign.cc/fundamentals-of-typography-in-user-interface-design-ui-67cdd13bfa24>

Typography: 3. space

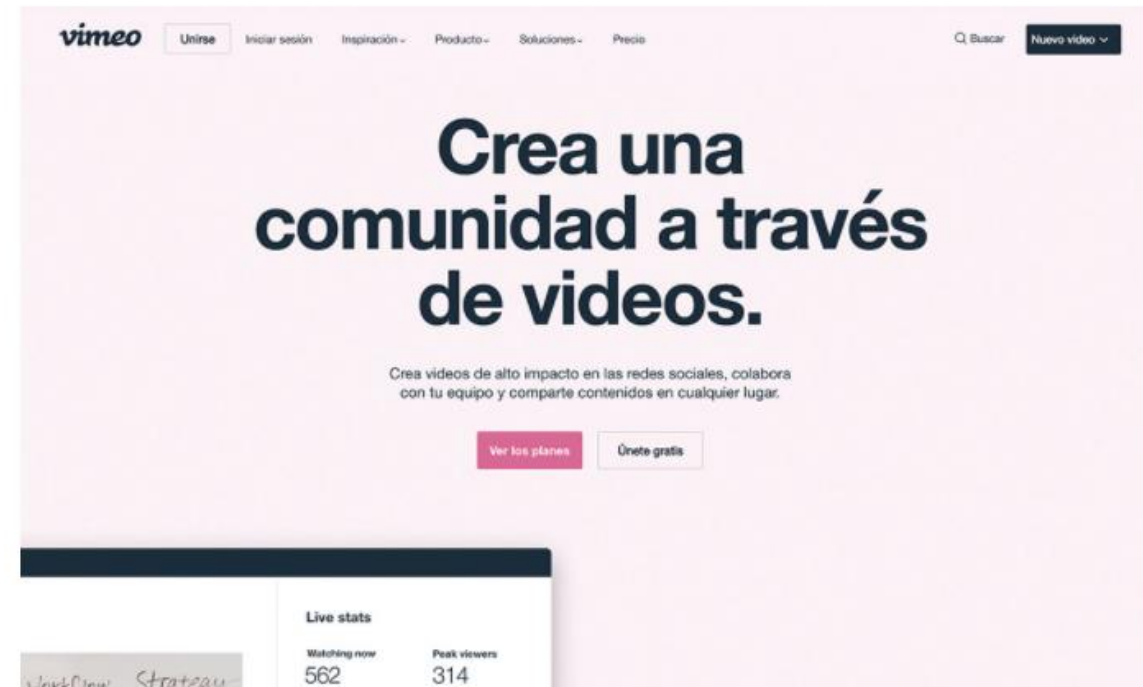
- Negative space improves readability
- Visual associations/ disassociations

<https://uxdesign.cc/fundamentals-of-typography-in-user-interface-design-ui-67cdd13bfa24>



Typography: 4. font size

- Size hierarchy to understand content
- Larger font – more recognisable from the rest
- Larger font – more important
- Reading order
- Beginning or end of section
- Isolate information
- Distinguish using title, subtitle, headline, body

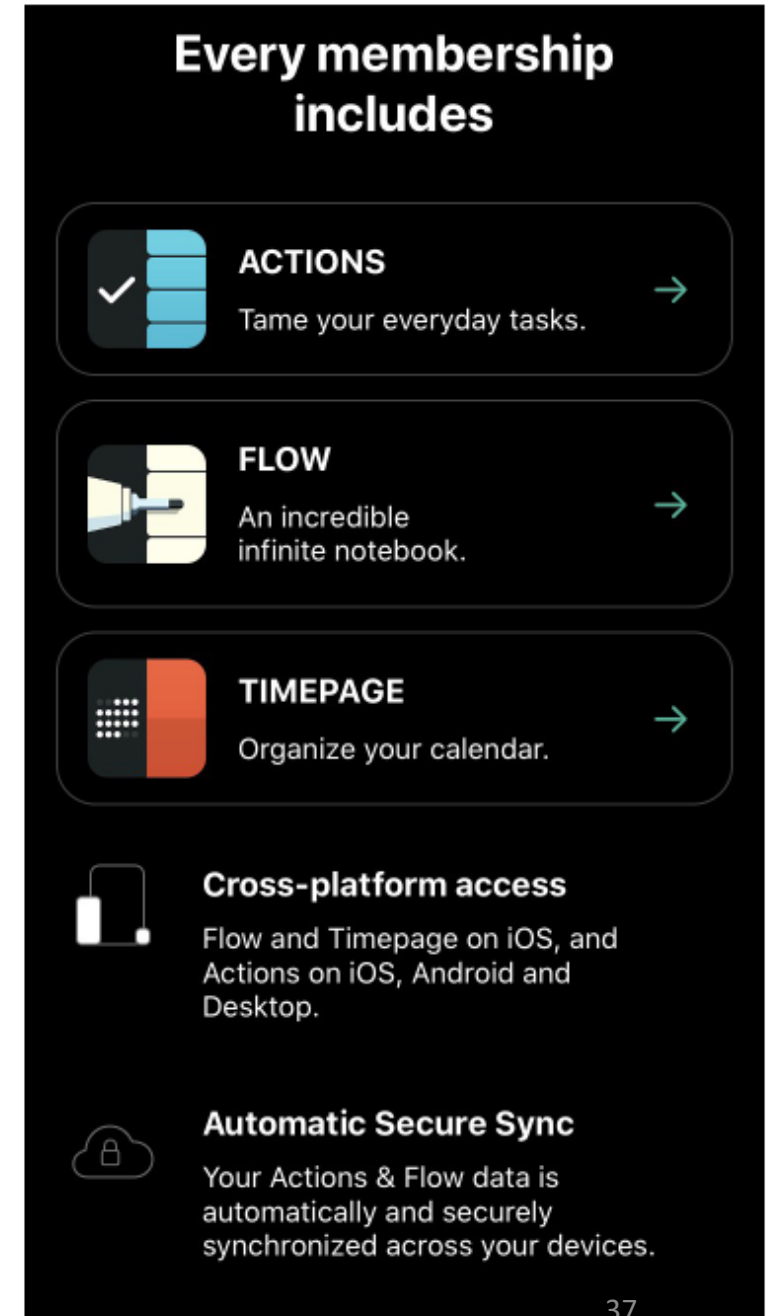


In this screenshot from the Vimeo website, they have placed a strong size hierarchy to the main text that explains what the service is about. This in contrast to the bottom text which is very smaller.

Typography: 5. Uppercasing

- Bring attention to areas in design
- Where lower case has been overused
- Unreadable in some situations but can be a highlight
- Uppercase – reduce visual monotony
 - Short titles
 - Buttons
 - Navigation lists
 - Labels
 - Table headers
- Aligned on X height

<https://uxdesign.cc/fundamentals-of-typography-in-user-interface-design-ui-67cdd13bfa24>



Typography: 6. Alignment

- Structure and unity
- Not detectable and hard to theorize
- Text alignments connect elements efficiently
- Invisible lines
- Left/right
- Width of container
- Paras – L or R align
- Short messages – centre
- Do not use justified text – irregularity of spacing

<https://uxdesign.cc/fundamentals-of-typography-in-user-interface-design-ui-67cdd13bfa24>

