

# Visual Design and Fluid Navigation

User Experience Design

Alberto Monge Roffarello

Academic Year 2024/2025

# Hall of Fame or Shame?



# Visual Design

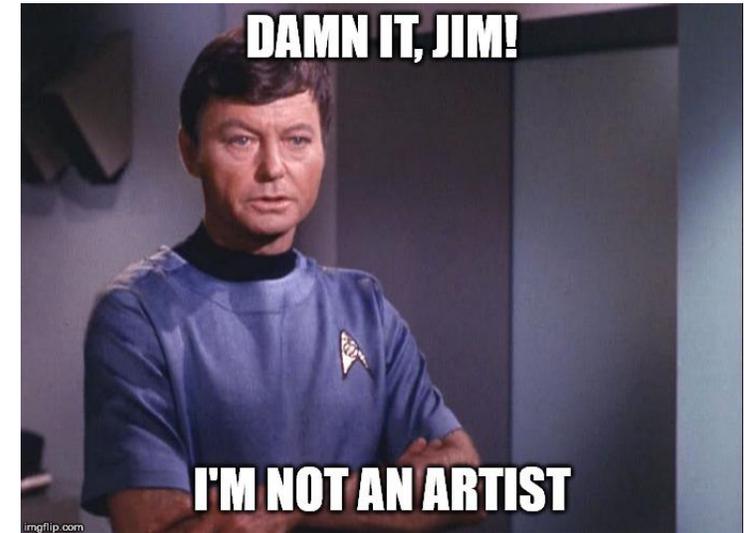
Aesthetics for helping users in understanding and navigating the UI

# Visual Design

- **Guiding:** conveying structure, relative importance, relationships
- **Pacing:** drawing people into your app, orienting them, and showing where to go, providing hooks to dive deeper
- **Messaging:** expressing meaning and style, breathing life into your content
- Both at the conscious and sub-conscious levels
  
- And also...
  - Making everything look aesthetically beautiful (but this is not the goal)

# Visual Design vs. Art and Artistic Skills

- A.k.a. «Help, I'm not an artist!»
- Artistic skills help a bit but are neither necessary nor sufficient
- Art does not need to be practical; design does
- Real design skills take years to master
- Widely-accepted heuristics are a good and easy start



# The Basics of Visual Design

Basic visual design involves text, layout, and colors. First let's start with text. Gracefully using whitespace helps separate out logical chunks of content. Next, font size and style differences convey hierarchy. Finally, alignment is crucial for helping readers scan quickly.

# Whitespace

Basic visual design involves text, layout, and colors. First let's start with text.

Gracefully using whitespace helps separate out logical chunks of content.

Next, font size and style differences convey hierarchy.

Finally, alignment is crucial for helping readers scan quickly.

# Hierarchy

Basic visual design involves ...

## **Text**

Gracefully using whitespace helps separate out logical chunks of content.

Next, font size and style differences convey hierarchy.

Finally, alignment is crucial for helping readers scan quickly.

## **Layout**

## **Colors**

# Alignment

BASIC VISUAL DESIGN

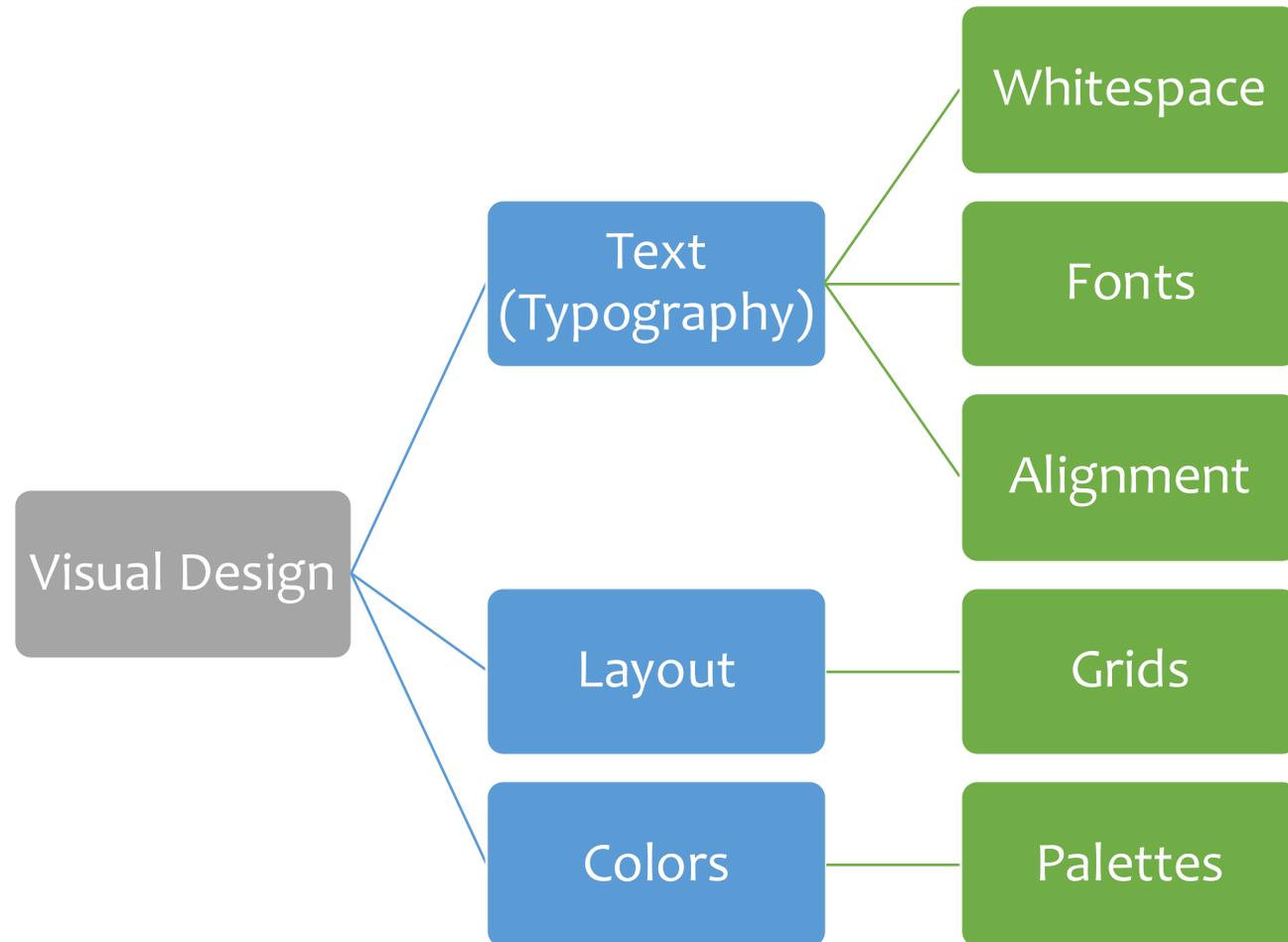
## Text

- **Whitespace**: helps separate out logical chunks of content
- **Font**: size and style differences convey hierarchy
- **Alignment**: crucial for helping readers scan quickly

## Layout

## Colors

# Key Ingredients



# Recognizable Page Structure



# Recognizable Page Structure

The image shows a screenshot of the CNN website's homepage, illustrating a recognizable page structure. At the top is a navigation bar with the CNN logo and various category links: World, US Politics, Business, Health, Entertainment, Style, Travel, Sports, and Videos. On the right side of the navigation bar are options for 'Edition', a search icon, and a user profile icon. Below the navigation bar is a horizontal menu of trending topics: NEW PODCAST: Tug of war, COVID-19: Vaccination tracker, TRENDING: Elon Musk, Oldest surviving Miss America dies, SpaceX toilet problem, and Queen.

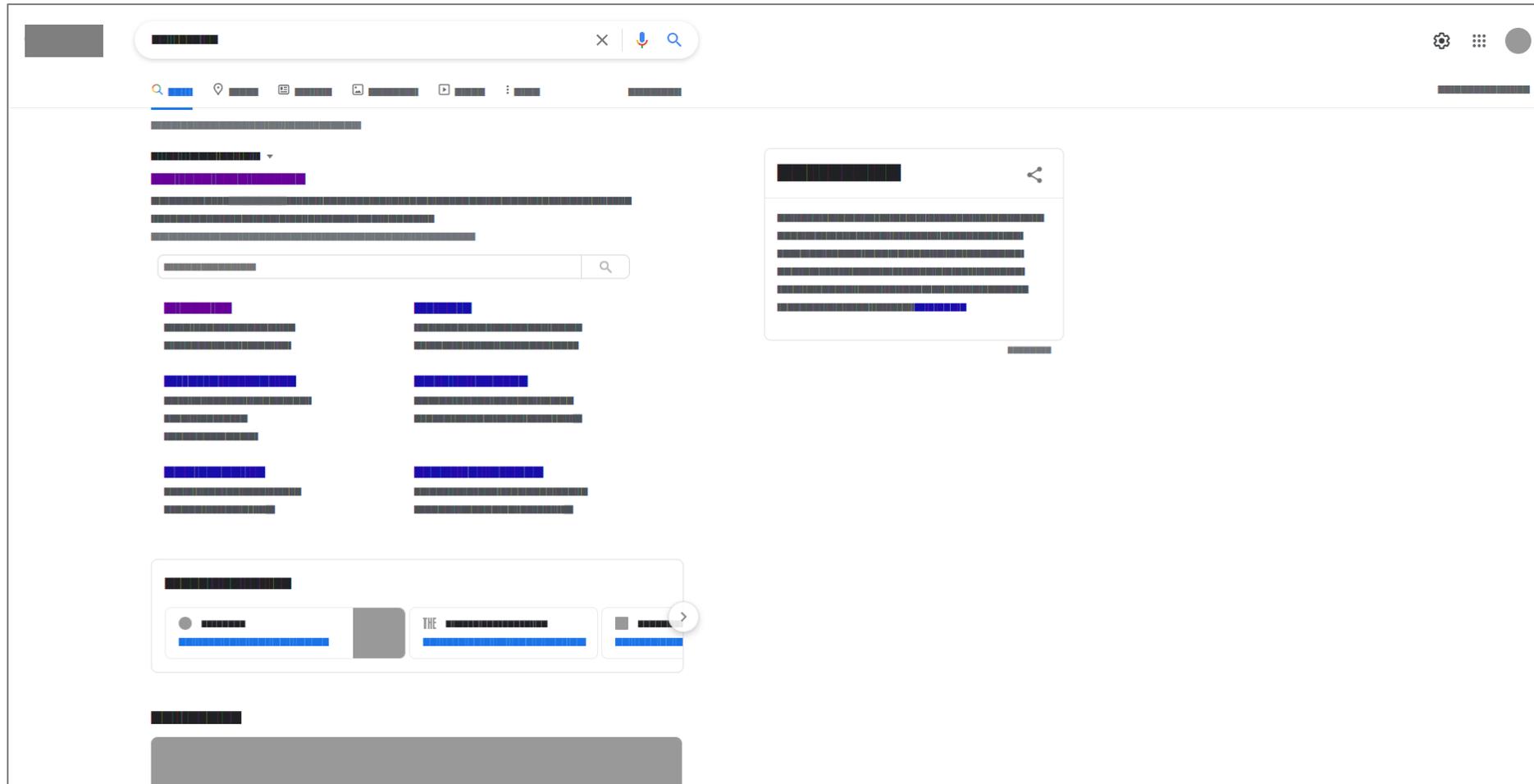
The main content area is organized into several sections:

- Primary Article:** A large article titled "Brazil has big green plans. But its track record is dismal" with a sub-headline "The Brazilian government is bringing ambitious promises to the UN climate summit, but can it be believed?". It features a large image of a forest fire and a vertical "ANALYSIS" label on the right side.
- Developing Story:** A section titled "22-story building collapses in Lagos, Nigeria" with a "DEVELOPING STORY" label and an image of the collapsed building.
- Analysis:** A section titled "'Let's go Brandon,' explained" with a sub-headline "Two conservative justices seem open to arguments from abortion providers" and an image of a man wearing a red mask with the text "LET'S GO BRANDON".
- Other News Items:** Several smaller news items are listed, including "Barclays CEO quits after investigation into links with Jeffrey Epstein", "Missile attack on mosque and religious school kills and injures 29 Yemeni civilians", "At least 12 people killed and 52 injured in Halloween weekend mass shootings in US", "Reporter reveals what Lindsey Graham said during January 6 riot", and "Analysis: Trump escalates Jan. 6 cover-up".
- Manchin Warning:** A section titled "Manchin issues warning to Democrats on Biden's economic package" with a sub-headline "Analysis: Tim Scott confirms he's on the Trump 2024 train" and an image of Senator Manchin.

At the bottom of the page, there are three distinct sections:

- News and buzz:** Features a profile picture of Elon Musk and the headline "Elon Musk offers to sell Tesla stock 'right now' if UN can show how \$6 billion would".
- Featured:** Features a black and white portrait of a woman.
- Spotlight:** Features three small articles: "Man scheduled to be executed for murder he says he didn't commit seeks clemency", "Could Covid-19 vaccines impair a child's future fertility? Officials say no.", and "Kal Penn, 'Harold and Kumar' and 'House' star, comes out as gay".

# Recognizable Page Structure



# Recognizable Page Structure

The screenshot displays a Google search result for the query "politecnico". The page layout is highly structured and recognizable, featuring a search bar at the top with the Google logo and search results below. The search results include a link to "Politecnico di Torino" with a brief description and a search bar for "Risultati di polito.it". Below this, there are several categorized links: "Didattica", "Orienta", "Offerta formativa", "Corsi di Laurea", "Apply@polito", and "Scoprire l'Ateneo". A "Trova risultati su" section provides quick access to related content on Facebook, Times Higher Education, and Topuni. At the bottom, a "Politecnico" section includes a map showing the location of the Politecnico di Torino in Italy, near Milan.

Google politecnico

Tutti Maps Notizie Immagini Video Altro Strumenti

Circa 33.000.000 risultati (0,71 secondi)

https://www.polito.it

**Politecnico di Torino**

Da 160 anni, il **Politecnico** di Torino è una delle istituzioni pubbliche più prestigiose a livello italiano ed internazionale nella formazione, ricerca, ...

Hai visitato questa pagina molte volte. Ultima visita: 16/09/21

Risultati di polito.it

**Didattica**  
C.L.A. Centro Linguistico d'Ateneo. Apply@polito.

**Orienta**  
Iscrizione al primo anno - Come orientarsi al Polito - Open Days

**Offerta formativa**  
Corsi di Laurea - Piano degli studi - Percorso INTRAPRENDENTI

**Corsi di Laurea**  
Computer Engineering - Video presentazione - Architettura - ...

**Apply@polito**  
Login - Lauree magistrali - Studenti stranieri - ...

**Scoprire l'Ateneo**  
La nostra organizzazione - Sedi e mappe - Mappa dei Servizi - ...

**Politecnico**

Politecnico è un termine utilizzato in Italia e in altri paesi per definire un istituto di studi superiori, come ad esempio un'università, autonomo dal punto di vista amministrativo e didattico, le cui facoltà sono di ambito tecnologico, tipicamente ingegneria e architettura. [Wikipedia](#)

Trova risultati su

Facebook Politecnico di Torino - Home

Times Higher Education Politecnico di Milano | World...

Topuni Politecnico di

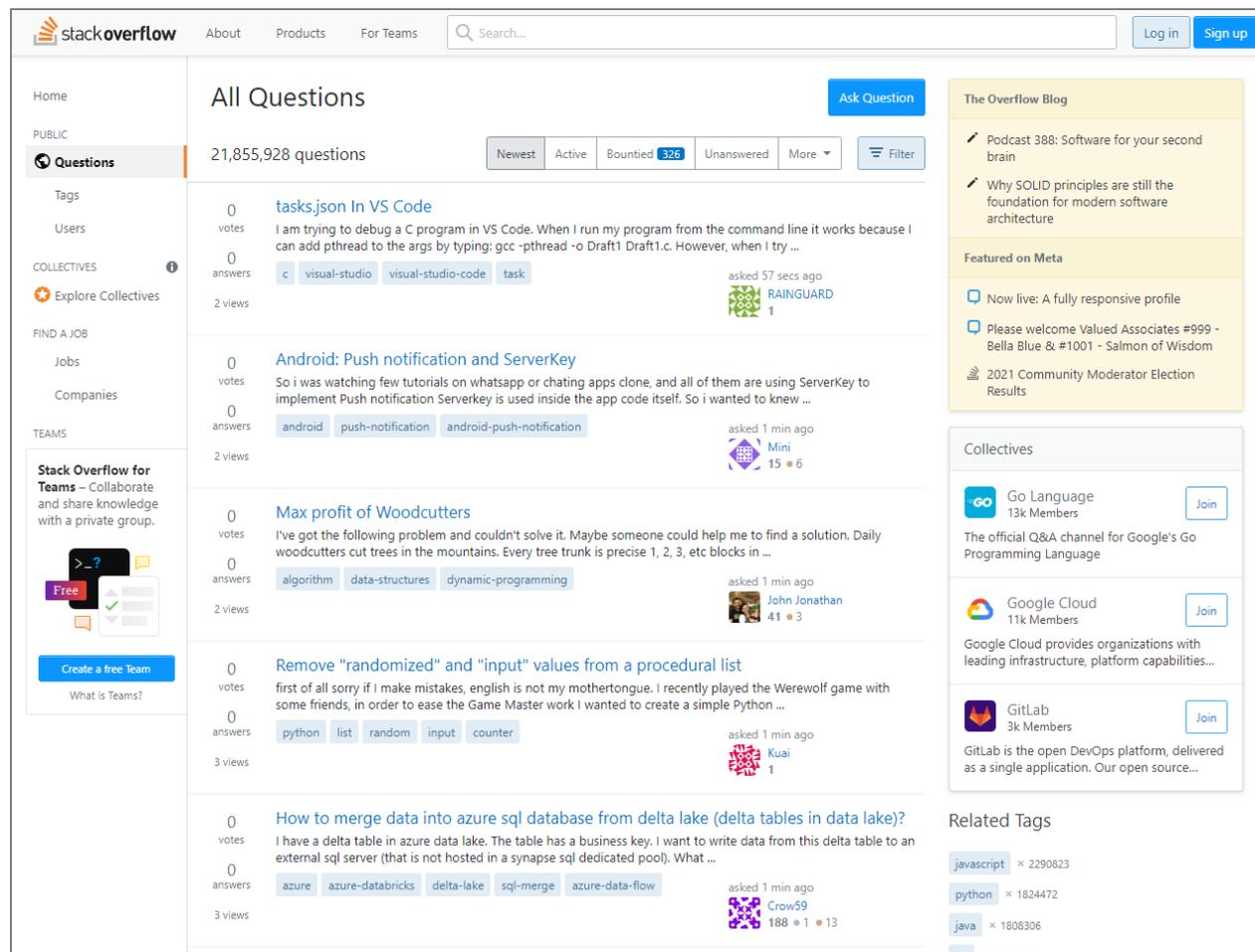
Politecnico

Map showing locations: Albertville, Bourg-Saint-Maurice, Biella, Novara, Milano, Monza.

# Recognizable Page Structure



# Recognizable Page Structure



# Recognizable Page Structure

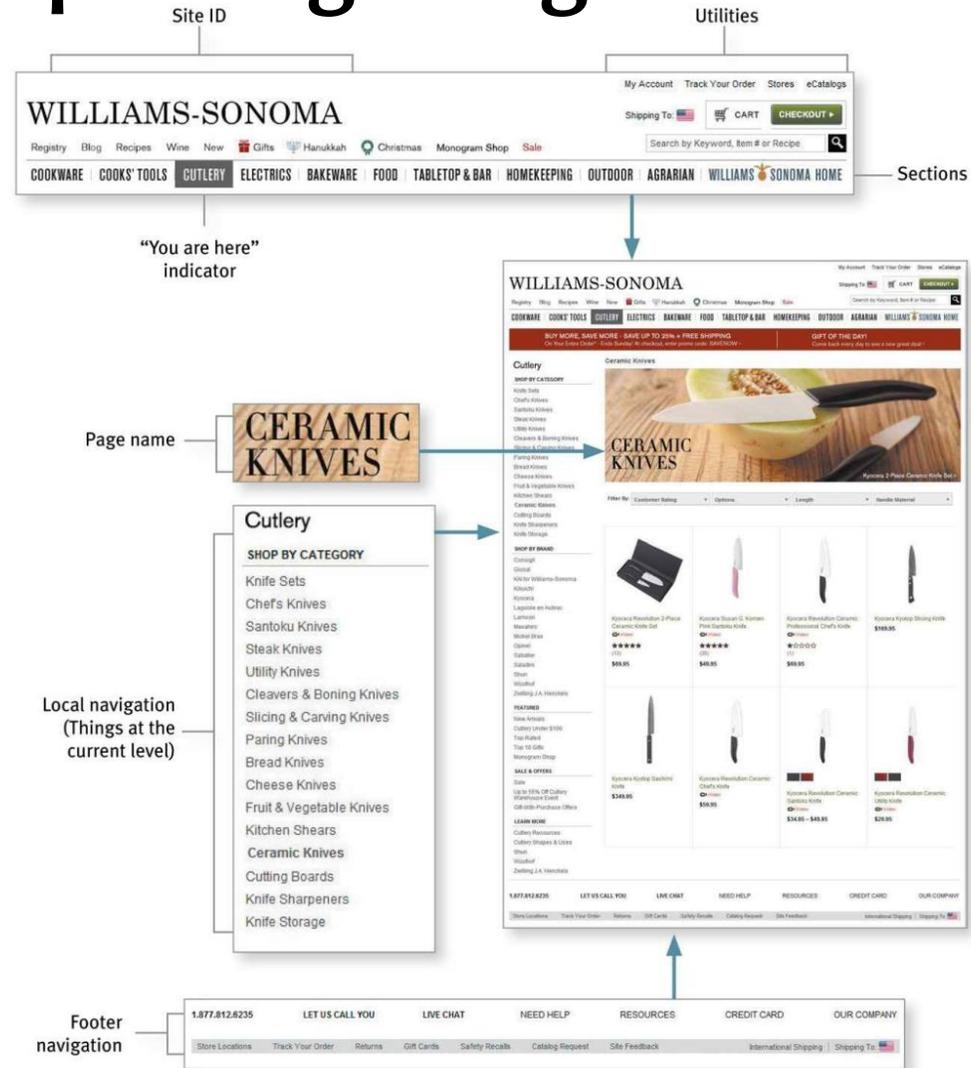


# Recognizable Page Structure

The screenshot displays the TripAdvisor website interface for searching hotels in New York City. The page is structured as follows:

- Header:** Includes the TripAdvisor logo, a search bar, and navigation links for "Scrivi una recensione", "Viaggi", and "Avvisi".
- Breadcrumb:** Shows the location path: "Stati Uniti > New York (NY) > New York City > Hotel New York City".
- Map:** A map of New York City with a "Guarda la mappa" button.
- Search Filters:** Includes arrival and departure dates (currently blank) and the number of guests (1 camera, 2 adulti, 0 bambini).
- Filters Sidebar:**
  - COVID-19:** Option to filter for structures that adopt safety measures.
  - Offerte:** Options for free cancellation, pay when you book, and special offers.
  - Prezzo:** A price range slider from 0 € to 623 €.
  - Molto richiesti:** A list of popular filters such as "4+ stars", "Breakfast included", and "5 stars".
- Main Content:**
  - Shows "911 strutture a New York City" with a sorting dropdown set to "Qualità-prezzo".
  - Displays a list of hotel results, including "Fairfield Inn & Suites" with a price of 161 € and a "Vedi l'offerta" button.
  - Provides detailed information for the selected hotel, including amenities like free Wi-Fi, bar/lounge, and fitness center.

# Conventions Help Recognizing Structure



# **‘Gestalt’ principles**

Hints from the psychology of Shapes and of Representation

# Gestalt principles

- Laws from 1920s' psychology: how humans typically see objects by grouping similar elements, recognizing patterns and simplifying complex images
- Designers use these to engage users via powerful -yet natural- “tricks” of perspective and best practice design standards
- *“The whole is other than the sum of the parts” - Kurt Koffka*



<https://www.interaction-design.org/literature/topics/gestalt-principles>

<https://www.usertesting.com/blog/gestalt-principles/>

# Some Gestalt Principles

- **Figure/Ground:** Disliking uncertainty, we look for solid, stable items. Foreground catches the eye first
- **Closure:** Preferring complete shapes, we automatically fill in gaps to perceive a complete image; we see the whole first
- **Common Region:** We group elements that are in the same closed region
- **Element Connectedness:** We group elements linked by other elements
- **Continuation:** We follow and “flow with” lines
- **Proximity (Emergence):** We group closer-together elements, separating them from those farther apart.
- **Good Form:** We differentiate elements that are similar in color, form, pattern, etc. and cluster them together
- **Meaningfulness (Familiarity):** We group elements if they form a meaningful or personally relevant image.
- **Prägnanz:** We perceive complex images as simple ones.
- **Convexity:** We perceive convex shapes ahead of concave ones
- **Regularity:** Sorting items, we tend to group some into larger shapes, and connect elements that form a pattern.
- **Similarity (Invariance):** We seek differences and similarities in an image and link similar elements.
- **Symmetry:** We seek balance and order in designs, struggling to do so if they aren’t readily apparent.
- **Common Fate:** We group elements that move in the same direction
- **Synchrony:** We group static visual elements that appear at the same time.

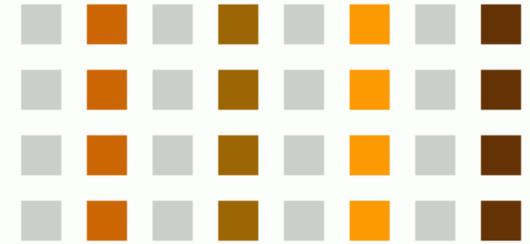
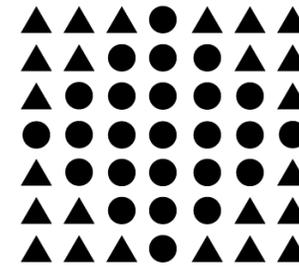
# Examples: Figure-ground



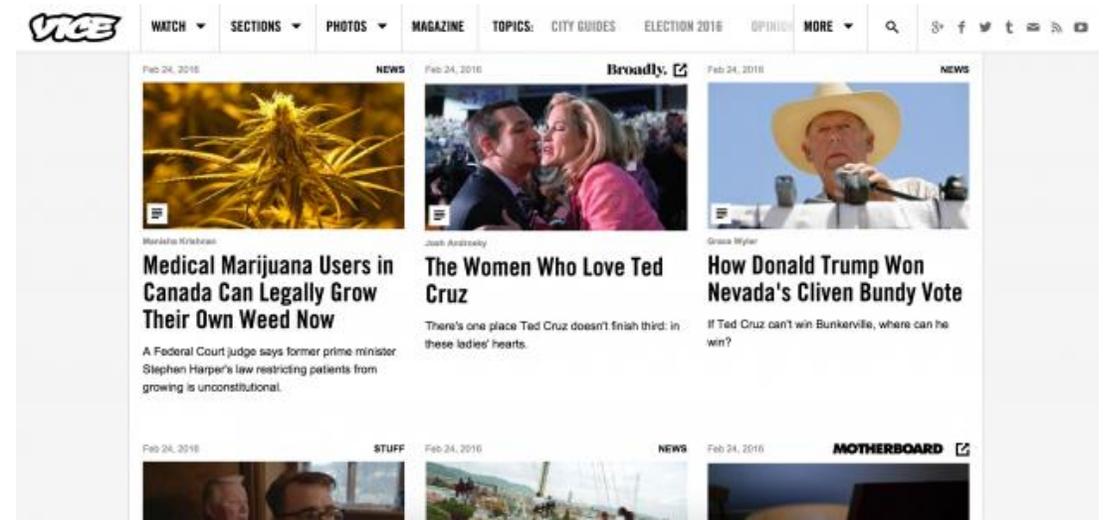
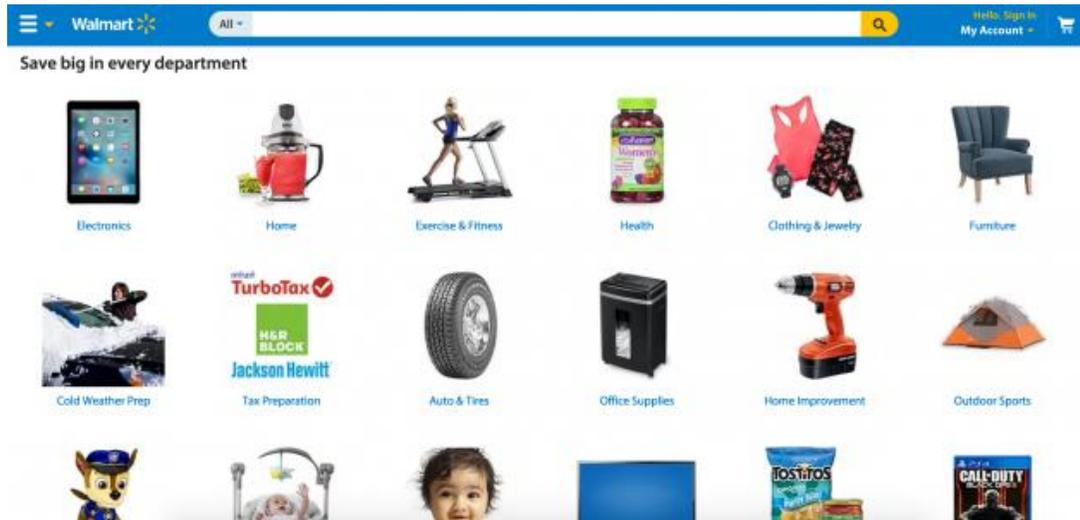
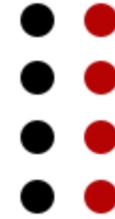
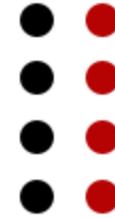
A screenshot of the Basecamp 3 website. The main content area features a large white box with a cartoon illustration of a person's head filled with various icons and text bubbles. The text bubbles contain phrases like "DID WE GET THAT DONE YET?", "WAIT, WHO MADE THAT DECISION?", "WHEN IS THIS DUE?", "WHERE DO I PUT THAT?", "NO ONE TOLD ME THAT!", "WHO SENT THIS TO THE CLIENT?", and "THIS IS EXHAUSTING!". To the right of this illustration is a sign-up form. A black arrow points from the top of the sign-up form to the text "Sign up now for free below" which is overlaid on the white background of the form, demonstrating a figure-ground effect.

A screenshot of the AngelList website. The background is a dark image of Earth from space. The AngelList logo, which includes a peace sign, is prominently displayed. To the right, there is a dark grey menu with several options: "Find a Startup Job", "Post a Job", "Raise Money Online", and "Invest in Startups". The text "Where the world meets startups" is visible below the logo.

# Examples: Similarity

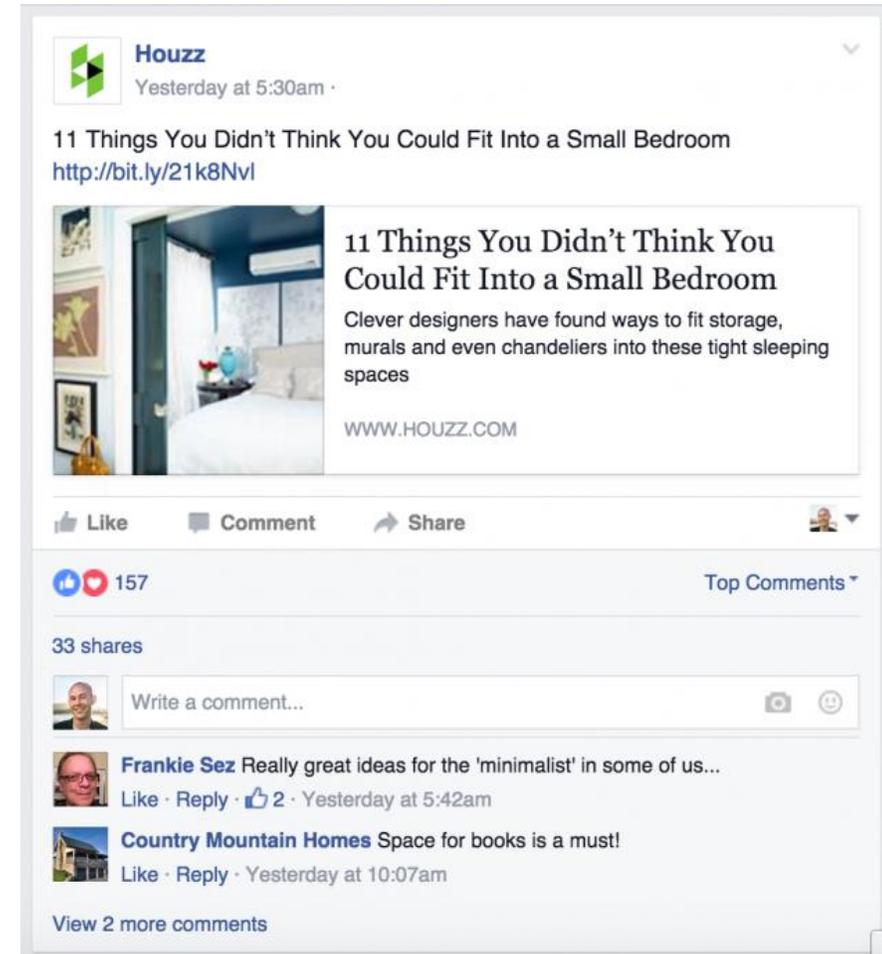
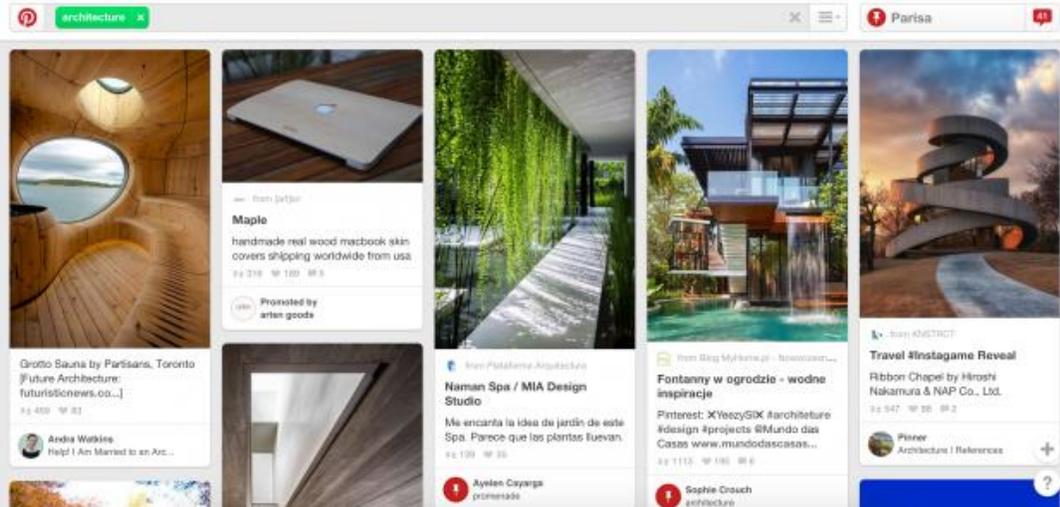
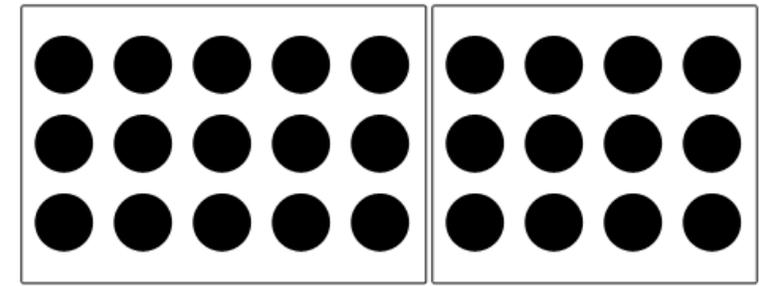


# Examples: Proximity



<https://www.usertesting.com/blog/gestalt-principles/>

# Examples: Common Region



# Examples: Continuity



## Customers Who Bought This Item Also Bought

Page 1 of 20

Five book recommendations are displayed in a row, each with a cover image, title, author, and price. From left to right:

- Crossing the Chasm, 3rd Edition: Marketing and Selling Disruptive Products** by Geoffrey A. Moore. Paperback, 72 pages. \$12.35. Prime.
- The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to** by Eric Ries. Hardcover, 1,062 pages. \$16.66. Prime.
- The Innovator's Dilemma: The Revolutionary Book That Will Change the Way** by Clayton M. Christensen. #1 Best Seller in Industrial Management. Paperback, 209 pages. \$10.06. Prime.
- The Innovator's Solution: Creating and Sustaining Successful Growth** by Clayton M. Christensen. Hardcover, 22 pages. \$18.33. Prime.
- How Will You Measure Your Life?** by Clayton M. Christensen. Hardcover, 583 pages. \$15.86. Prime.



### Step 1

Choose your meals, drinks and treats from our daily rotating menu.



### Step 2

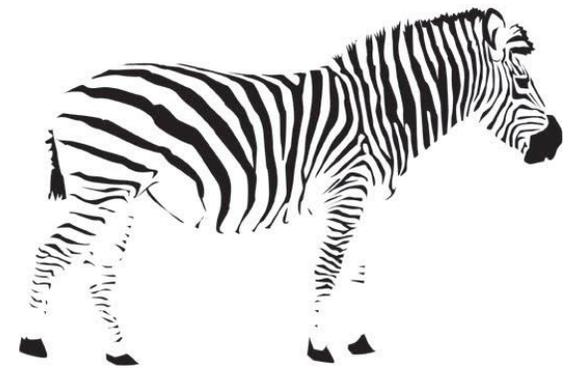
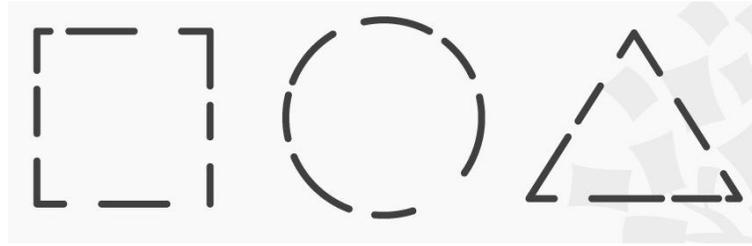
Our friendly servers organize your food for delivery - hot and ready to eat!



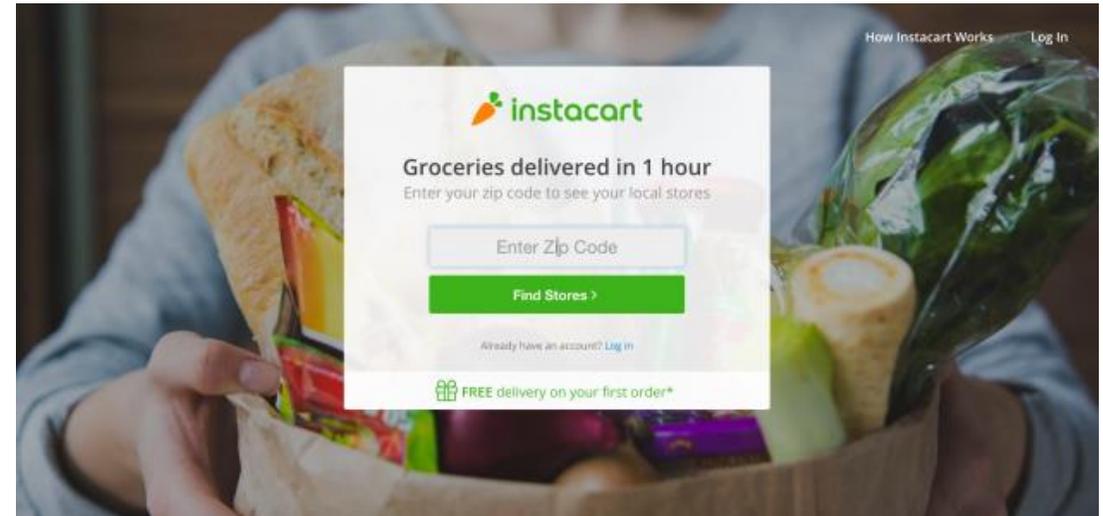
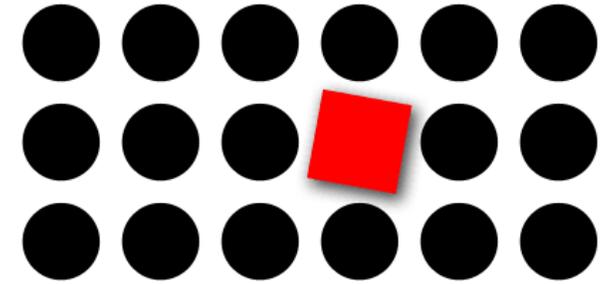
### Step 3

Your meal arrives in around 20 minutes - like a home-cooked meal without the effort!

# Examples: Closure



# Examples: Focal Point

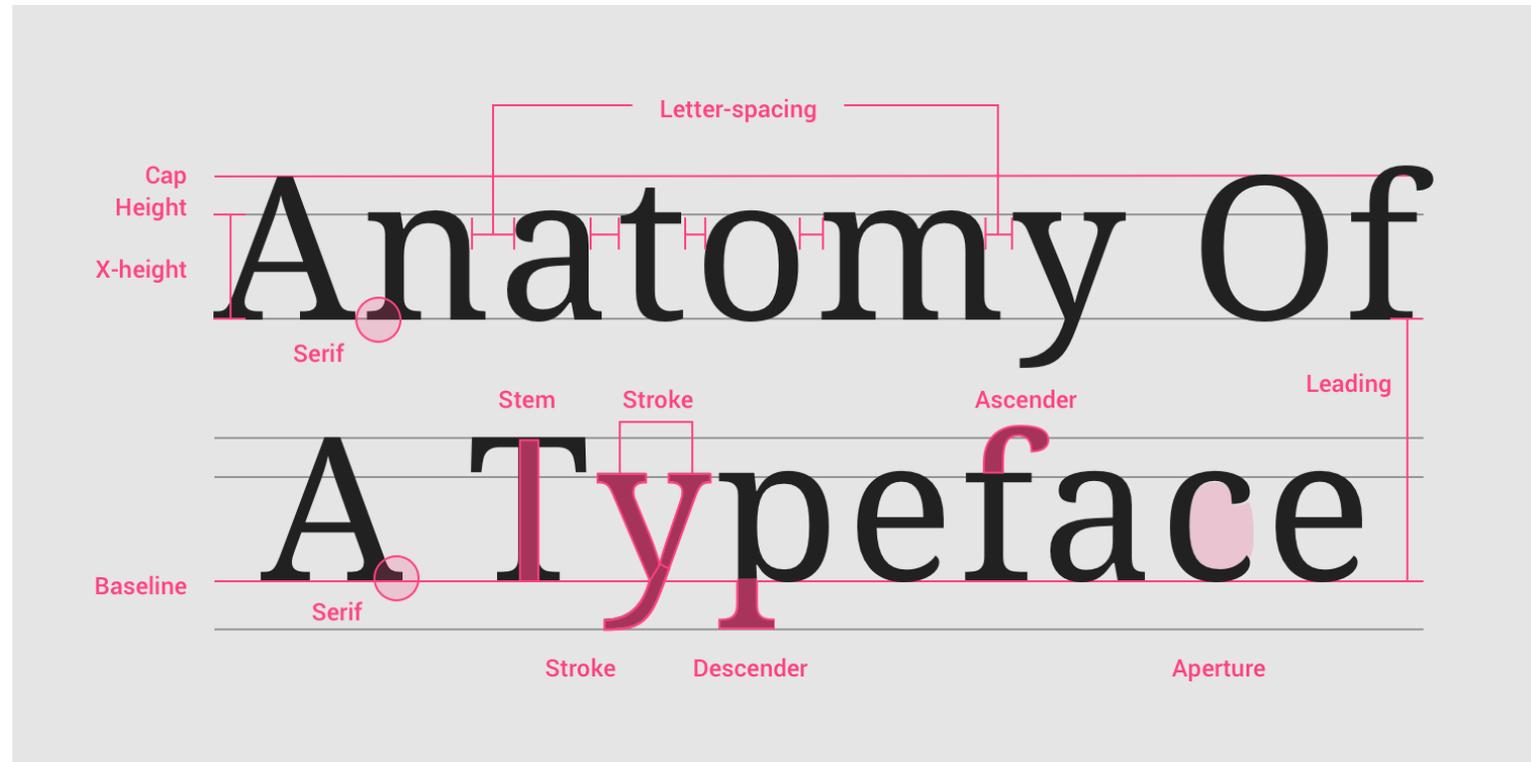


# Typography

Property of text

# Characteristics of Text

- Point Size
- Leading
- Cap Height, x-height
- Ascenders, Descenders
- Weight
- Serifs



<https://material.io/design/typography/understanding-typography.html>

# Example: Material Design Type Scale

A combination of 13 styles that are supported by the type system

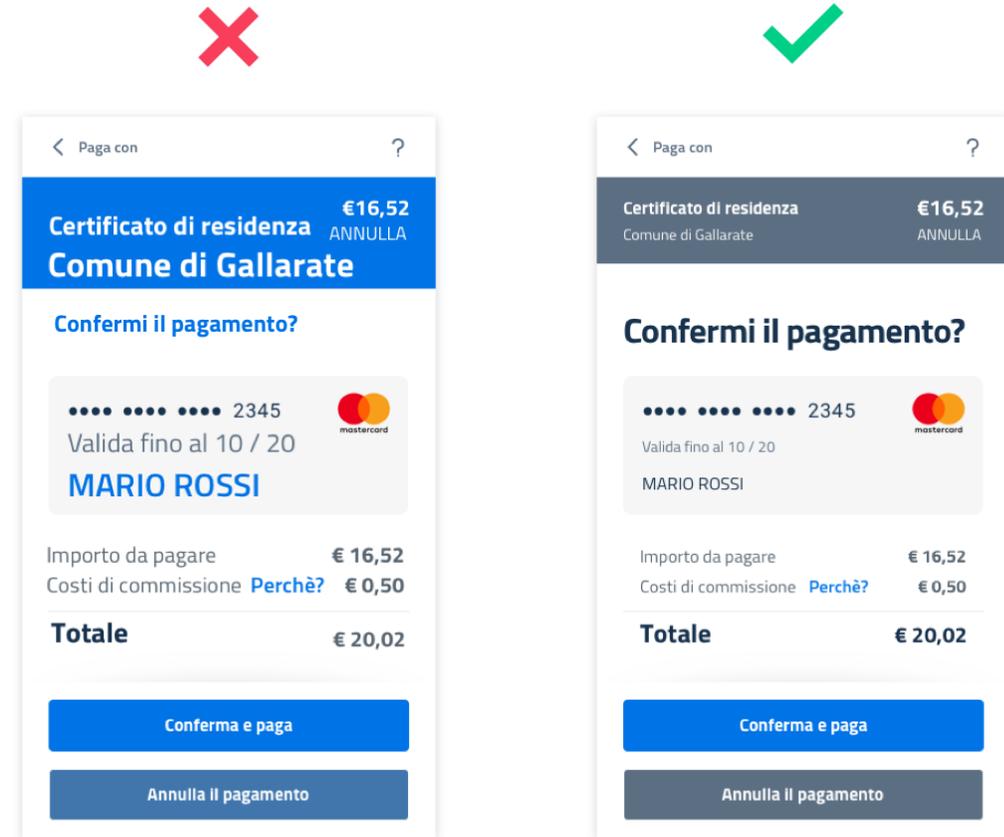
Reusable categories of text, each with an intended application and meaning

Scale Category	Typeface	Font	Size	Case	Letter spacing
H1	Roboto	Light	96	Sentence	-1.5
H2	Roboto	Light	60	Sentence	-0.5
H3	Roboto	Regular	48	Sentence	0
H4	Roboto	Regular	34	Sentence	0.25
H5	Roboto	Regular	24	Sentence	0
H6	Roboto	Medium	20	Sentence	0.15
Subtitle 1	Roboto	Regular	16	Sentence	0.15
Subtitle 2	Roboto	Medium	14	Sentence	0.1
Body 1	Roboto	Regular	16	Sentence	0.5
Body 2	Roboto	Regular	14	Sentence	0.25
BUTTON	Roboto	Medium	14	All caps	1.25
Caption	Roboto	Regular	12	Sentence	0.4
OVERLINE	Roboto	Regular	10	All caps	1.5

<https://material.io/design/typography/the-type-system.html#type-scale>

# Text

- Font size, color and spacing define a hierarchy of visibility and attention
- The visual hierarchy should match the relative importance of the information content



<https://docs.italia.it/italia/designers-italia/design-linee-guida-docs/it/stabile/doc/user-interface/il-disegno-di-un-interfaccia-e-lo-ui-kit.html>

# Text and Layout Convey Meaning

The image compares two real estate listing cards. The left card, marked with a red 'X', uses a list format for attributes. The right card, marked with a green checkmark, uses a more integrated layout. Annotations on the right card highlight improvements: 'Present data in a more useful way' points to the 'DETACHED HOUSE · 5Y OLD' header; 'Emphasize the most important content' points to the price '\$750,000'; and 'Combine labels and values into human-readable phrases' points to the '3 Bedrooms' and '2 Bathrooms' line.

Attribute	Value
Building Type	Detached House
Year Of Construction	2012
Listing Price	\$750,000
Address	742 Evergreen Terrace
Bedrooms	3
Bathrooms	2
Real Estate Agent	Tiffany Heffner
Contact	(555) 555-4321

**Annotations for the improved layout:**

- Present data in a more useful way (points to: DETACHED HOUSE · 5Y OLD)
- Emphasize the most important content (points to: \$750,000)
- Combine labels and values into human-readable phrases (points to: 3 Bedrooms, 2 Bathrooms)

www.refactoringui.com

Refactoring UI

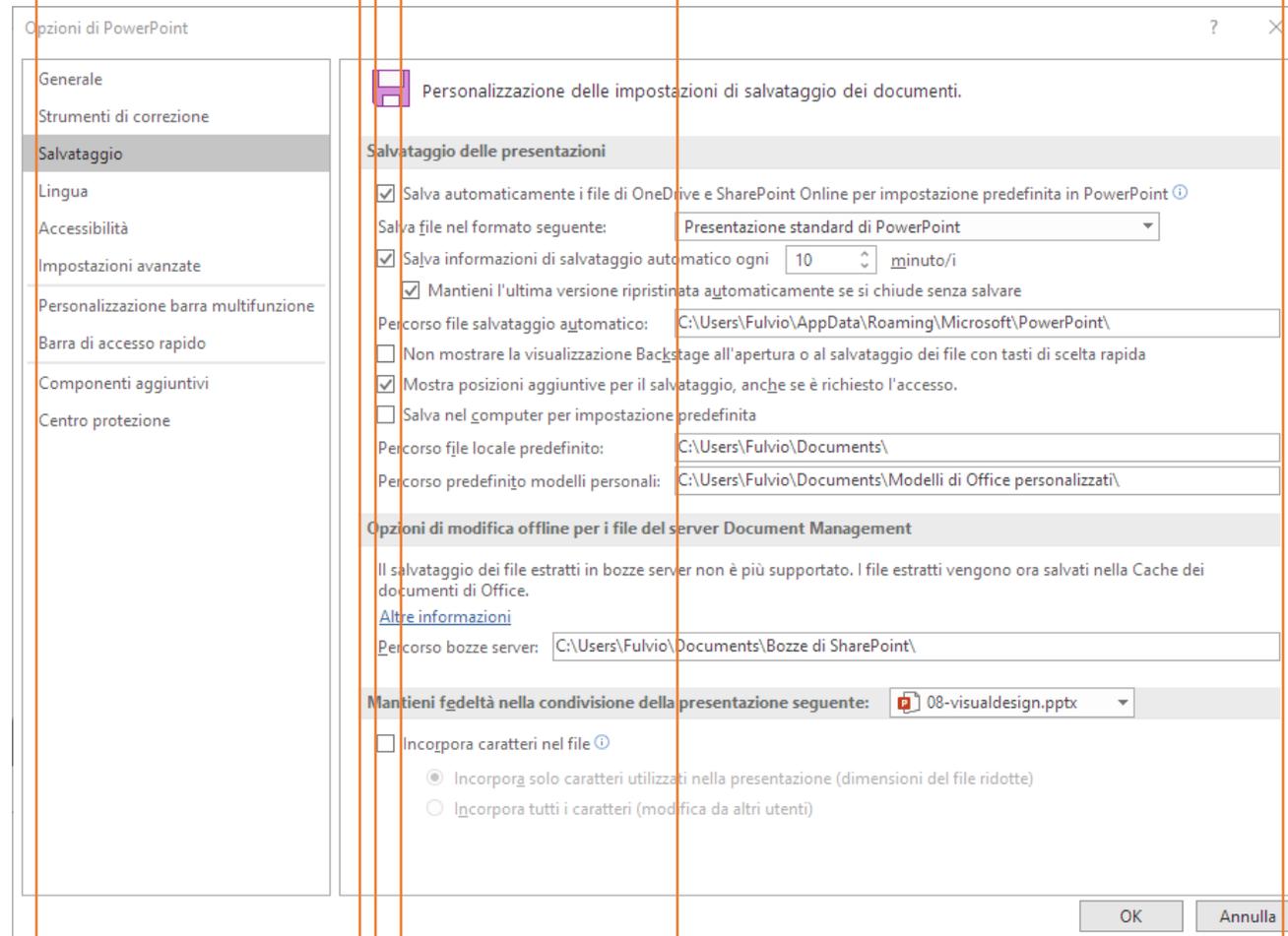
# Grids and Alignment

Exploiting grouping and alignment to convey content, at different levels

# Alignment

- Invisible lines that run through the interface and “attract” the left- or right-edge of a widget control
  - Vertical
  - Horizontal

# Example



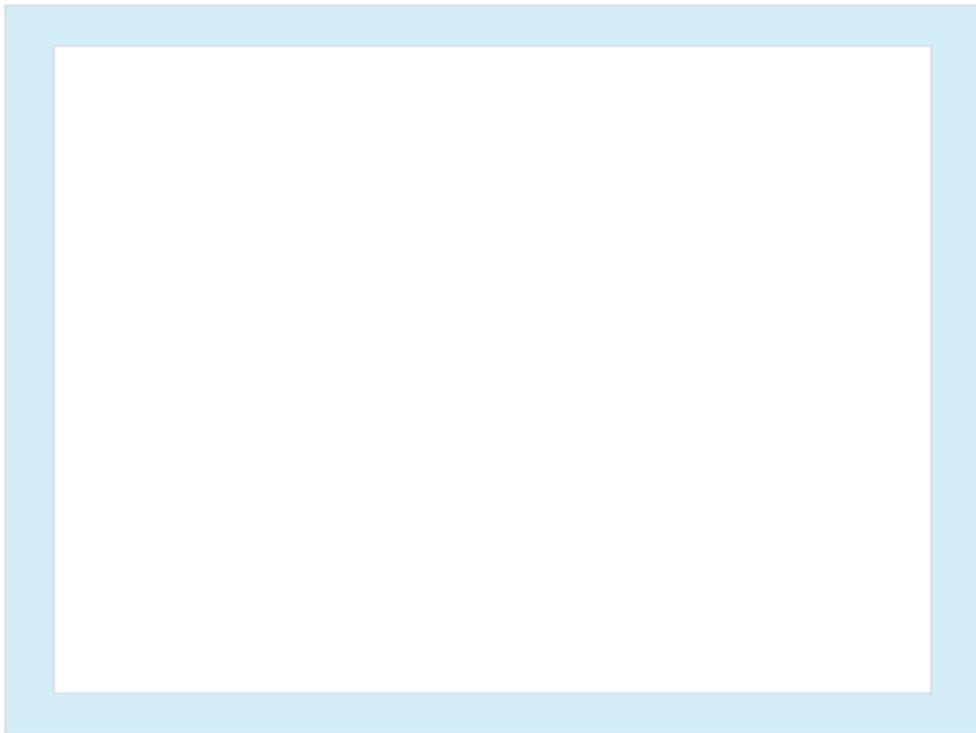


# Grid Layout Ingredients

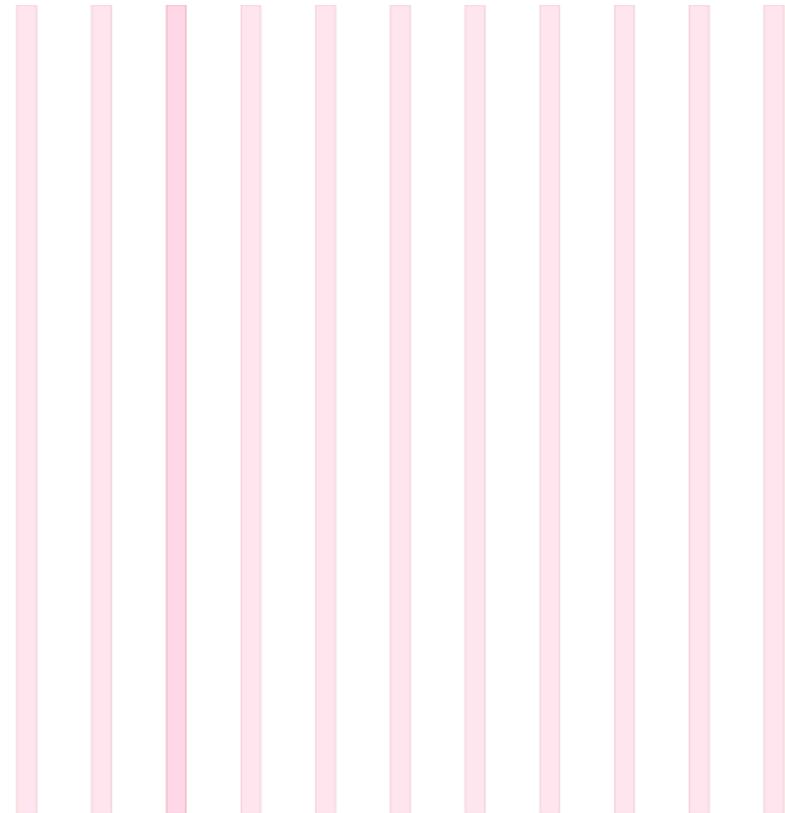
- **Guides:** The edge which you choose to align content with
- **Column:** A vertical division of content
- **Row:** A horizontal division of content
- **Margins:** The area surrounding your content
- **Gutters:** The margins between columns
- **Hang-line:** A horizontal guide to align content to hang off of
- **Baseline:** The horizontal guide for an element to sit on top of
- **Rhythm:** Proportion systems that can help define the sizing frequency and spacing of each of the above elements.

# Grid Layout Ingredients

## Margins

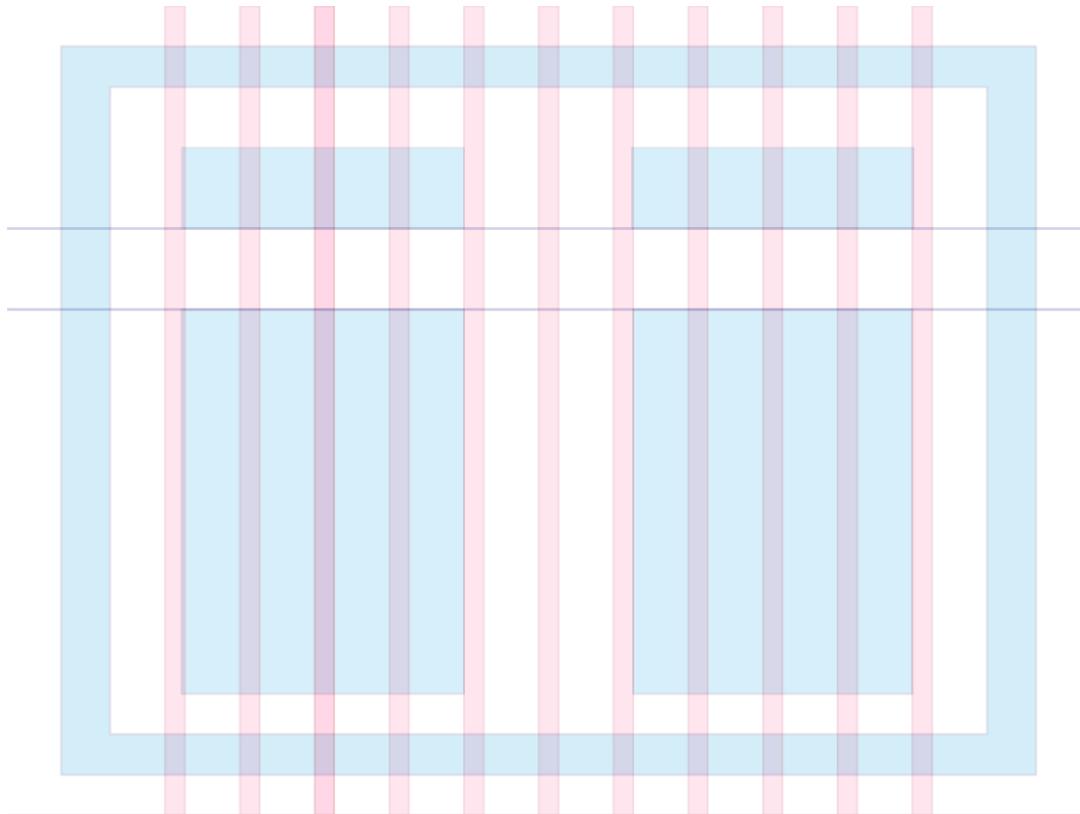


## Columns & Gutters



# Grid Layout Ingredients

## Hanglines and Baselines

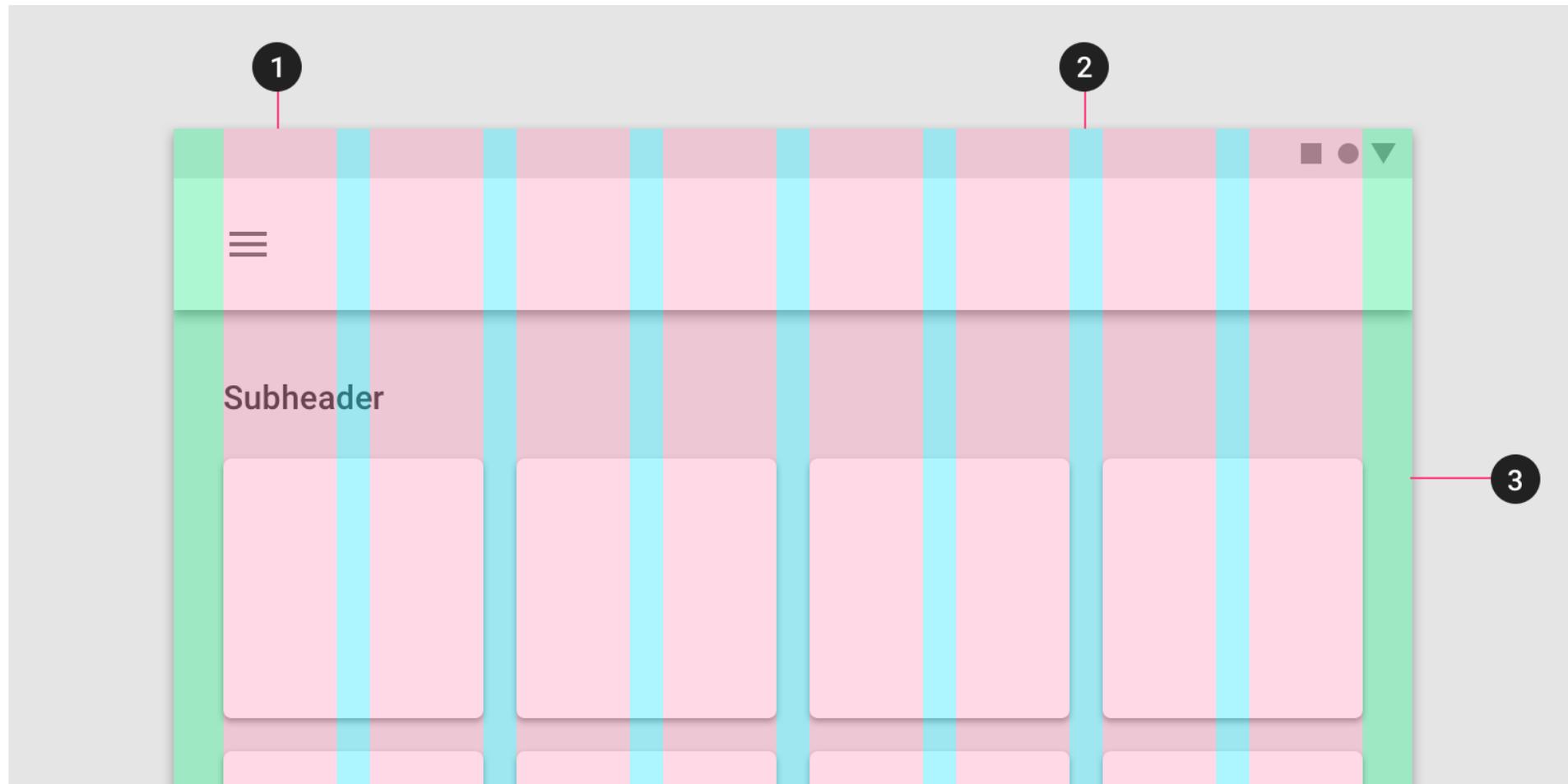


## Baseline Grids



# Example Grid-based layout

1. Columns
2. Gutters
3. Margins



# Example: Bootstrap grid

Always 12 columns in total

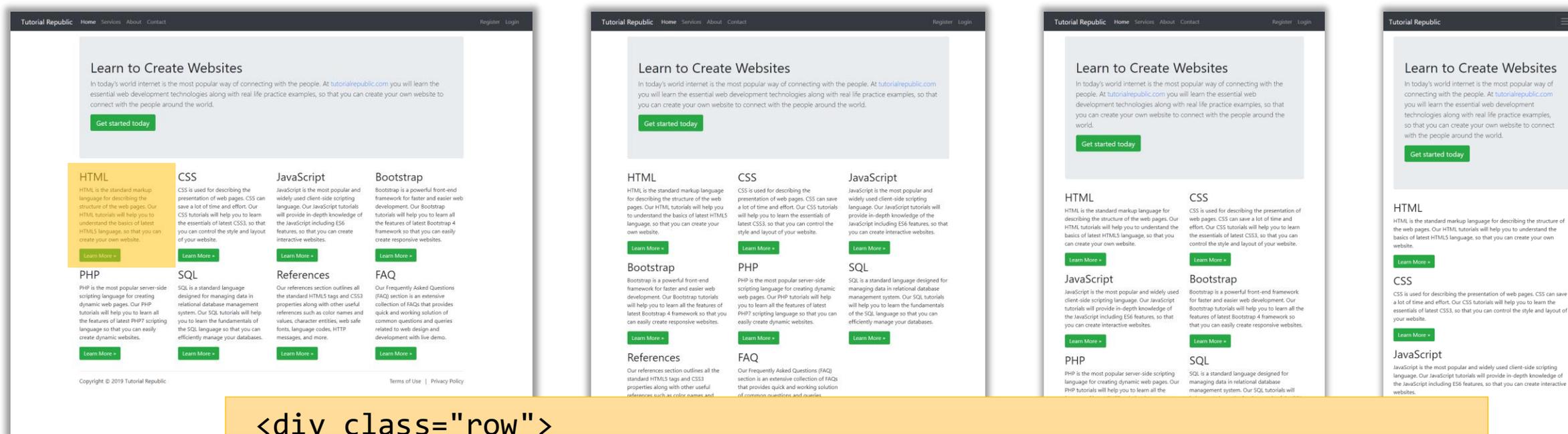
May choose to span a group of columns

Each column is tagged according to the screen size:

- xs (phones - <768px)
- sm (tablets - >=768px)
- md (small laptops - >=992px)
- lg (laptops and desktops - >1200px)

span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1
span 4				span 4				span 4			
span 4				span 8							
span 6						span 6					
span 12											

# Responsive Grid Layout



```
<div class="row">
  <div class="col-md-6 col-lg-4 col-xl-3">
    <h2>HTML</h2>
    <p>...</p>
    <p><a href="..." class="btn btn-success">...</a></p>
  </div>
```

# Other Grid Systems

Unsemantic (responsive, based on %)

The screenshot shows the Unsemantic website homepage. At the top is the 'unsemantic' logo. Below it is a navigation bar with links for Home, About, Demo, CSS Documentation, and Sass Documentation. There are two buttons: 'Download Here' and 'GitHub Repo'. The main content area is divided into sections: 'What is it?' with a definition and example usage of grid classes; 'Successor to 960.gs' explaining the grid system; 'SE-Oh?' discussing search engines; 'Built with Sass' describing the Sass approach; 'Responsive Demo' with links to demos; 'Adapt.js Demo' with links to demos; and 'Browser Support' listing supported browsers. A footer contains license, creator, and hosting information.

<https://unsemantic.com>

tailwindcss (responsive, flexible)

The screenshot shows the Tailwind CSS website homepage. At the top is the 'tailwindcss' logo and navigation links for Docs, Components, Blog, and Showcase. The main headline reads 'Rapidly build modern websites without ever leaving your HTML.' Below this is a sub-headline: 'A utility-first CSS framework packed with classes like flex, pt-4, text-center and rotate-90 that can be composed to build any design, directly in your markup.' There is a 'Get started' button and a search bar. A testimonial from Sarah Dayan, Staff Engineer at Algolia, is featured with a quote: 'Tailwind CSS is the only framework that I've seen scale on large teams. It's easy to customize, adapts to any design, and the build size is tiny.' To the right, a code editor shows HTML code using Tailwind CSS classes like 'bg-slate-100', 'rounded-xl', 'p-8', 'dark:bg-slate-800', 'img class="w-24 h-24 rounded-full mx-auto"', and 'div class="pt-6 space-y-4"'. The footer contains license, creator, and hosting information.

<https://tailwindcss.com>

# Grid Structure

Main body:  
Mix of 2x and 3x  
columns

Alternating row  
types



Title area outside the  
grid

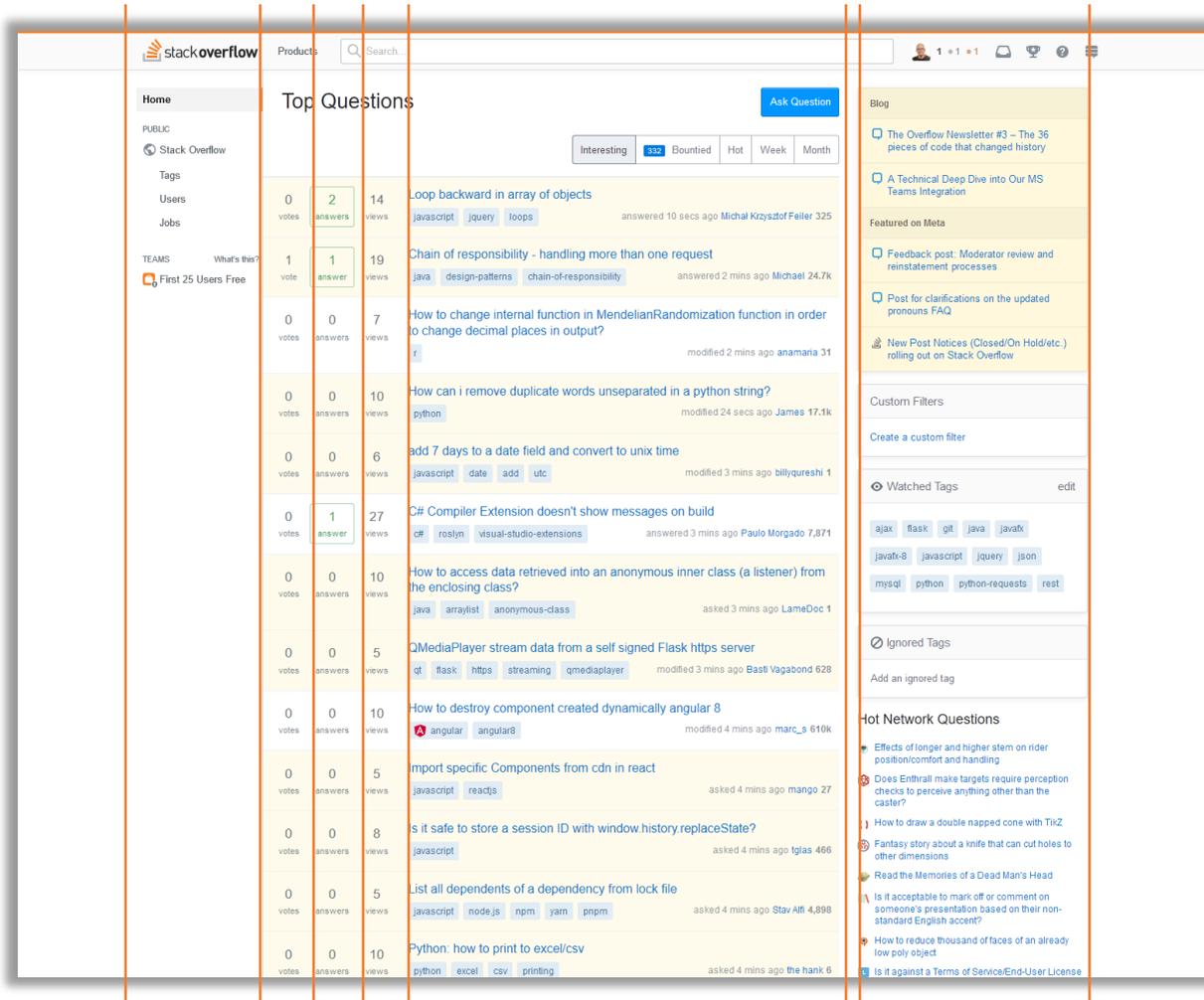
Right column for  
other types of  
articles

# Grid Structure

Main content  
(center, wide)

Navigation  
(left, smaller)

Related content  
(right, smaller)



# Example (2019)

Software								
<b>1° anno</b>								
Periodo	Codice	Lingua	Insegnamento	Crediti	Docente	Note	Vincoli	
1	01PDW0V	EN	Information systems ING-INF/05 (6)	6	M. Morisio			
1	02GOLOV	IT	Architetture dei sistemi di elaborazione ING-INF/05 (10) Oppure	10	P. Bernardi E. Sanchez Sanchez			
1	02LSE0V	EN	Computer architectures ING-INF/05 (10)	10	P. Montuschi			
1	01SQJOV	EN	Data Science and Database Technology ING-INF/05 (8) Oppure	8	S. Chiusano			
1	01SQMOV	IT	Data Science e Tecnologie per le Basi di Dati ING-INF/05 (8)	8	E. Baralis			
1	010TWOV	EN	Computer network technologies and services ING-INF/05 (6) Oppure	6	M. Baldi			
1	02KPN0V	IT	Tecnologie e servizi di rete ING-INF/05 (6)	6	G. Marchetto			
2	02JEU0V	EN	Formal languages and compilers ING-INF/05 (6)	6	R. Sisto			
2	05BID0V	IT	Ingegneria del software ING-INF/05 (8) Oppure	8	G. Bruno			
2	04GSP0V	EN	Software engineering ING-INF/05 (8)	8	M. Morisio			
2	01UDFOV	IT	Applicazioni Web I ING-INF/05 (6) Oppure	6	E. Masala			
2	01TXYOV	EN	Web Applications I ING-INF/05 (6)	6	F. Corno			
2	02GRSOV	IT	Programmazione di sistema ING-INF/05 (10) Oppure	10	G. Cabodi			
2	01NYHOV	EN	System and device programming ING-INF/05 (10)	10	S. Quer			
<b>2° anno</b>								
Periodo	Codice	Lingua	Insegnamento	Crediti	Docente	Note	Vincoli	
1			Insegnamento a scelta 1	6				
1	01TYMOV	EN	Information systems security ING-INF/05 (6) Oppure	6				
1	01UDU0V	IT	Sicurezza dei sistemi informativi ING-INF/05 (6)	6				
1	01SQNOV	EN	Software Engineering II ING-INF/05 (6)	6				
1,2			Crediti liberi	6				
1,2	29EBHOV		Tesi	30				
2			Insegnamento a scelta 2	6				
<b>Insegnamento a scelta 1</b>								
Periodo	Codice	Lingua	Insegnamento	Crediti	Docente	Note	Vincoli	
1	01TYDOV	EN	Cloud Computing ING-INF/05 (6)	6				
1	01PDCOV	EN	Digital control technologies and architectures ING-INF/04 (6)	6				
1	01TXZOV	EN	Distributed systems programming ING-INF/05 (6)	6				Si
1	01NWPOV	IT	Elaborazione dell'audio digitale ING-INF/05 (6)	6				
1	01UDGOV	EN	Energy management for IoT ING-INF/05 (6)	6				Si
1	02JSKOV	EN	Human Computer Interaction ING-INF/05 (6)	6		★		
1	01SQIOV	EN	Machine Learning and Artificial Intelligence ING-INF/05 (6)	6				
1	01PDXOV	EN	Modern design of control systems ING-INF/04 (6)	6				
1	01OUVOV	EN	Optimization methods and algorithms MAT/09 (6)	6				

# Example (same page in 2020)

Software

1° anno 2020/2021

Periodo	Codice	SSD	Insegnamento	Lingua	Crediti	Docente	Note	Orario
1	01PDWOV	ING-INF/05 (6)	Information systems	🇬🇧	6	M. Morisio (118 iscr.)	🟢	🕒
1	02GOLOV	ING-INF/05 (10)	Architetture dei sistemi di elaborazione	🇮🇹	10	P. Bernardi (150 iscr.) E. Sanchez Sanchez (159 iscr.)	🟢 🟢	🕒
oppure								
1	02LSEOV	ING-INF/05 (10)	Computer architectures	🇬🇧	10	P. Montuschi (207 iscr.)	🟢 🟢	🕒
1	01SQJOV	ING-INF/05 (8)	Data Science and Database Technology	🇬🇧	8	S. Chiusano (172 iscr.)	🟢 🟢	🕒
oppure								
1	01SQMOV	ING-INF/05 (8)	Data Science e Tecnologie per le Basi di Dati	🇮🇹	8	E. Baralis (254 iscr.)	🟢 🟢	🕒
1	01OTWOV	ING-INF/05 (6)	Computer network technologies and services	🇬🇧	6	G. Marchetto (161 iscr.)	🟢 🟢	🕒
oppure								
1	02KPNOV	ING-INF/05 (6)	Tecnologie e servizi di rete	🇮🇹	6	G. Marchetto (253 iscr.)	🟢 🟢	🕒
2	02JEUOV	ING-INF/05 (6)	Formal languages and compilers	🇬🇧	6	R. Sisto (60 iscr.)	🟢 🟢	🕒
2	05BIDOV	ING-INF/05 (8)	Ingegneria del software	🇮🇹	8	G. Bruno (132 iscr.)	🟢 🟢	🕒
oppure								
2	04G5POV	ING-INF/05 (8)	Software engineering	🇬🇧	8	M. Morisio (202 iscr.)	🟢 🟢	🕒
2	01UDFOV	ING-INF/05 (6)	Applicazioni Web I	🇮🇹	6	E. Masala (91 iscr.) L. De Russis (57 iscr.)	🟢	🕒
oppure								
2	01TXYOV	ING-INF/05 (6)	Web Applications I	🇬🇧	6	F. Corno (185 iscr.)	🟢	🕒
2	02GRSOV	ING-INF/05 (10)	Programmazione di sistema	🇮🇹	10	G. Cabodi (100 iscr.) A. Savino (112 iscr.)	🟢 🟢	🕒
oppure								
2	01NYHOV	ING-INF/05 (10)	System and device programming	🇬🇧	10	S. Quer (108 iscr.)	🟢	🕒

2° anno 2021/2022

Periodo	Codice	SSD	Insegnamento	Lingua	Crediti	Docente	Note	Orario
1			Insegnamento a scelta 1		6		🟢	
1	01TYMOV	ING-INF/05 (6)	Information systems security	🇬🇧	6		🟢	🕒
oppure								
1	01UDUOV	ING-INF/05 (6)	Sicurezza dei sistemi informativi	🇮🇹	6		🟢	🕒
1	01SQNOV	ING-INF/05 (6)	Software Engineering II	🇬🇧	6		🟢	🕒
1,2			Crediti liberi		6		🟢	
1,2	29EBHOV		Tesi		30		🟢	
2			Insegnamento a scelta 2		6		🟢	

# Example (2015 vs. 2019)

## Add an address

**Full Name:**

**Address Line 1:**   
Street address, P.O. box, company name, c/o

**Address line 2:**   
Apartment, suite, unit, building, floor, etc.

**City:**

**State/Province/Region:**

**ZIP:**

**Country:**

**Phone Number:**  [Learn more](#)

### Optional Delivery Preferences [\(What's this?\)](#)

**Weekend Delivery:**

**Security Access Code:**   
For buildings or gated communities

Save & Add Payment Method

Save & Continue

Il tuo account > I tuoi indirizzi > [Nuovo indirizzo](#)

## Aggiungi un nuovo indirizzo

Oppure ritira i tuoi colli quando desideri, presso i nostri punti self-service. Per aggiungere un punto di ritiro o un Amazon Locker, clicca [qui](#).

**Paese/Regione**

**Nome e cognome**

**Indirizzo**

**Città**

**Provincia**

**Codice postale**

**Numero di telefono**  
  
Può essere utilizzato per aiutare consegna

**Aggiungi istruzioni di consegna**  
**Consegna nel fine settimana**

Aggiungi indirizzo

# Some Best Practices

- When designing a template, start from the longest block of text
- Left-aligned text is (usually) faster to skim
- Alignment guides the eye and reduces clutter
  - Avoid slight misalignments
  - Patterns and deviations are “automatically” detected
    - Deviate from a pattern for strategic reasons
  - Use visual proximity and scale to convey semantic information

# Colors

The most dangerous weapon in your toolset



I AM LING YOU CAN TRUST ME

### Menu

- Home
- Cars
- Vans
- Customers
- About Ling
- Fun stuff
- Free stuff
- Live staff

### CARS A-Z



**ABARTH**  
 124 Spider  
 Convertible  
 595 Convertible  
 595 Hatchback  
 695 Convertible



**ALFA ROMEO**  
 Giulia Saloon  
 Giulietta  
 Stelvio Estate



# LINGSCARS.com

Leader of the Pack - The UK's favorite car leasing website!  
 Contract hire cars from Ling Valentine. LINGSCARS is the UK's favourite car leasing website - On 2016 I leased over £85 million in cars!

**Stop**

"Believe it or not, this Gateshead-based website, featuring Mrs Ling jiggling on her motorbike, is one of the biggest online drivers of car sales in Great Britain" **25th July 2017**

**4 News**

**Leader of the Pack**  
 "[Ling Valentine is] Britain's **BIGGEST** individual seller of new cars."

**BREXIT RISK FREE!** February 2017 **theguardian**

**LING'S BREXIT BORIS PROMISE:** If the UK leaves the EU with "no deal", tariffs may apply to EU built cars landing in the UK after Brexit day (31st Jan?). If this is the case with YOUR car, and IF the price increases due to tariffs, YOU will be able to cancel the car order at **NO COST** to you. **YOU can order a new car from me, with NO BREXIT RISK.** - Ling

**MY BEST SELLING CAR LEASING DEALS!**

**500 IDEAS!** **NICOLE...PAPA!** **MEGA-HATCH!**

**F** Facebook **T** Twitter

**Car Leasing Online Service Response Times**  
 Quote > Proposal > Order > Delivery

**15 CUSTOMERS IN 'PROPOSAL'**  
 Ling replies in... **0:03:07**

**129 CUSTOMERS IN 'ORDER'**  
 Ling replies **0:05:03**

<p><b>Fiat 500</b>          1.2 Pop 8v (69bhp) (4 seats)          Hatchback 3dr 1242cc Petrol Manual (5 Speed)</p> <p><b>RENT NEW</b>  <b>£127</b>/mth including VAT</p> <p>3 year cheap car leasing <b>9+35</b></p>	<p><b>Renault Clio</b>          0.9 TCE Iconic 12v (90bhp)          Hatchback 5dr 898cc Petrol Manual (5 Speed)</p> <p><b>RENT NEW</b>  <b>£152</b>/mth including VAT</p> <p>3 year cheap car leasing <b>6+35</b></p>	<p><b>Citroen C3</b>          1.2 PureTech 12v (83bhp) Flair          Hatchback 5dr Manual 1199cc</p> <p><b>RENT NEW</b>  <b>£157</b>/mth including VAT</p> <p>2 year cheap car leasing <b>6+23</b></p>
--	---	---

**1 DELIVERY TODAY**

Ford Ka+  
 10 Arthur  
 ATTLEBOROUGH, NR17

**21 DELIVERIES IN LAST WEEK**

Renault Captur  
 10 Cath  
 PONTEFRAC T, WF81

Mercedes GLC Coupe  
 10 Bill  
 BEDLINGTON, NE22

BMW 2 Series Convert...  
 10 Pingu  
 DERBY, DE56

Nissan Qashqai  
 10 Arlene  
 GLASGOW, G11

Volvo XC60 Estate  
 10 Saif  
 HILTON KEYNES, MK8

Seat Leon  
 10 Ben  
 BARNSELY, S70

Skoda Kodiaq Estate  
 10 Hannah  
 HAY-ON-WYE, HR3

Renault Clio  
 10 Paul  
 MIDDLEBROUGH, TS7

Renault Clio  
 10 Paul  
 MIDDLEBROUGH, TS7

Seat Arona  
 10 Steve  
 LONDON, SE18

Seat Leon  
 10 Adam  
 HATFIELD, AL10

Audi A3 Sportback  
 10 Chris  
 WYMONDHAM, NR18

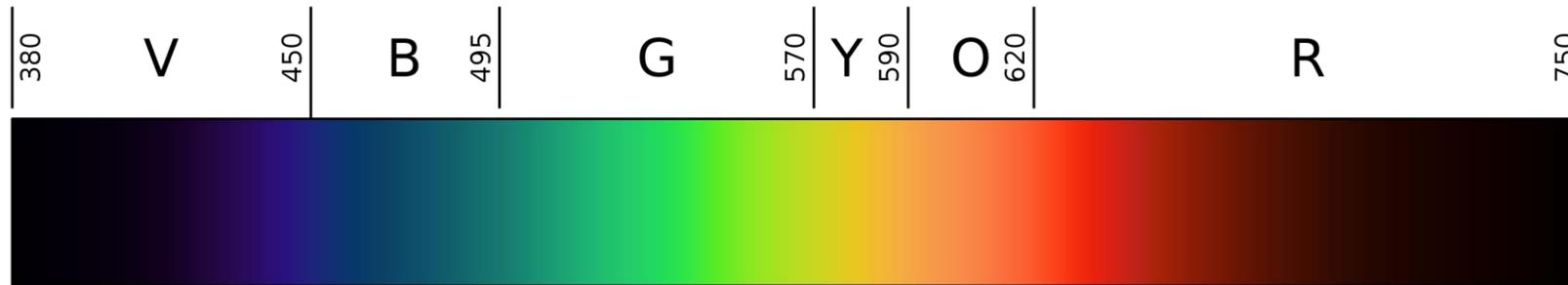
# Colors

- A powerful tool to improve interfaces by communicating **key information**
- Inappropriate use of colors can severely **reduce the performance** of an interactive system

# Colors: Suggestions

- Be careful, do not exaggerate
- Design in grayscale, first
  - Ensure information is conveyed by text and layout
- When adding colors, try to conserve the same luminance of the grayscale design
- Assign meaning to color
- Use a limited and consistent palette and use slight variations
- Avoid simultaneous display of pure (highly-saturated), spectrally extreme colors
  - e.g., no blue at the same time as red
  - desaturated combinations (pastels) are better

# Visible Spectrum

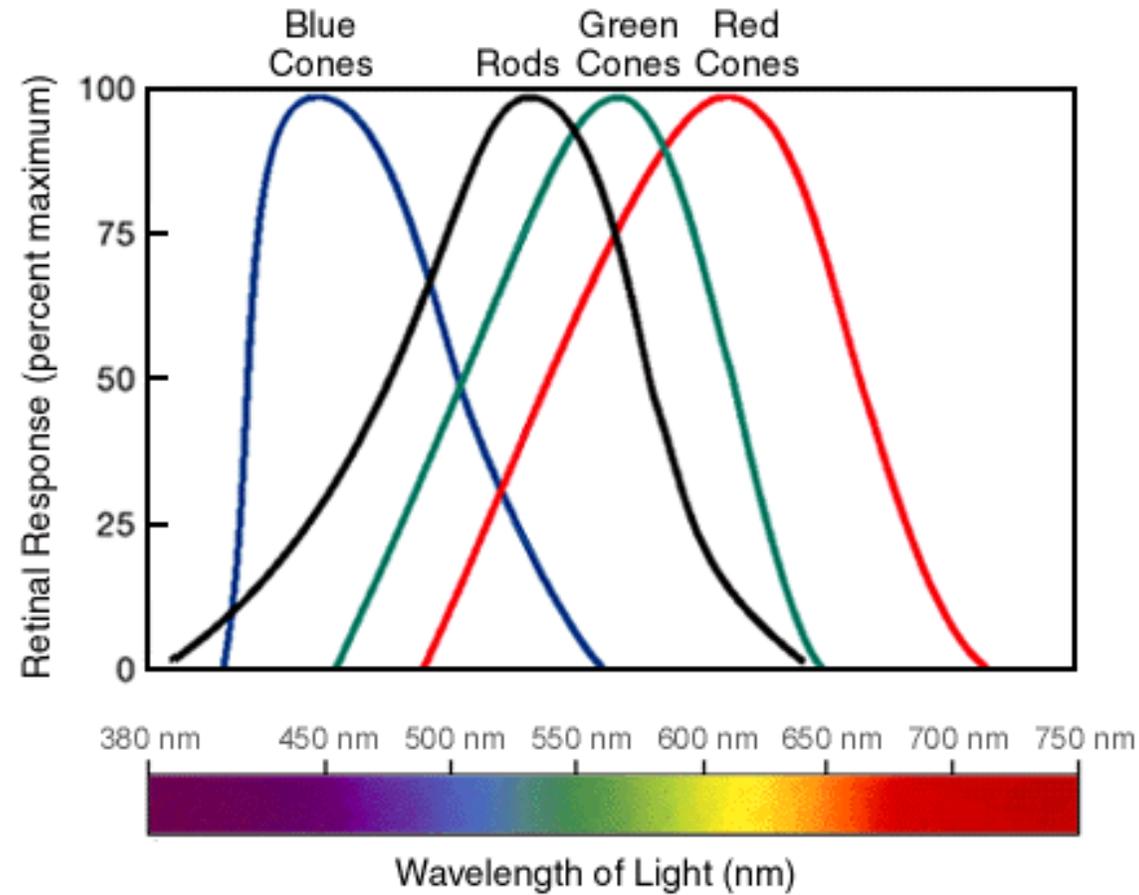


- UV spectrum ends on the left, IR starts on the right
- Wavelengths are in nm
- Source: [https://commons.wikimedia.org/wiki/File:Linear\\_visible\\_spectrum.svg](https://commons.wikimedia.org/wiki/File:Linear_visible_spectrum.svg)

# Human Vision

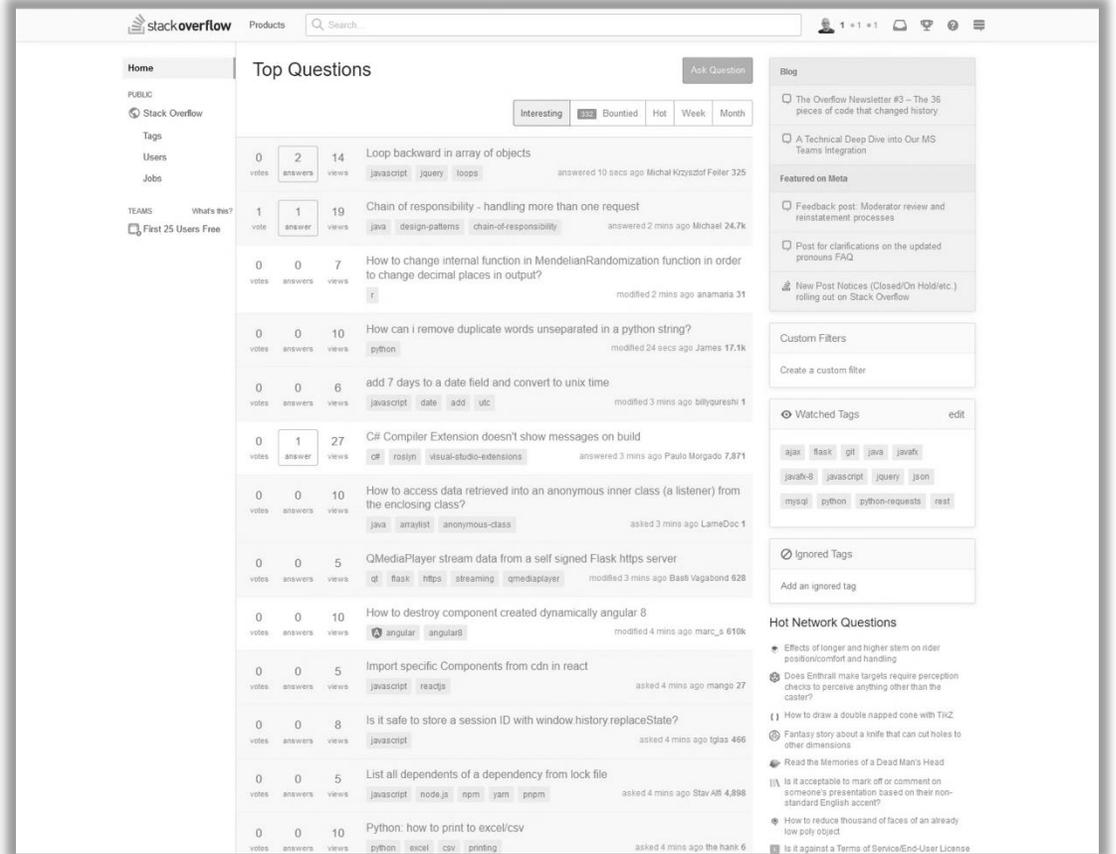
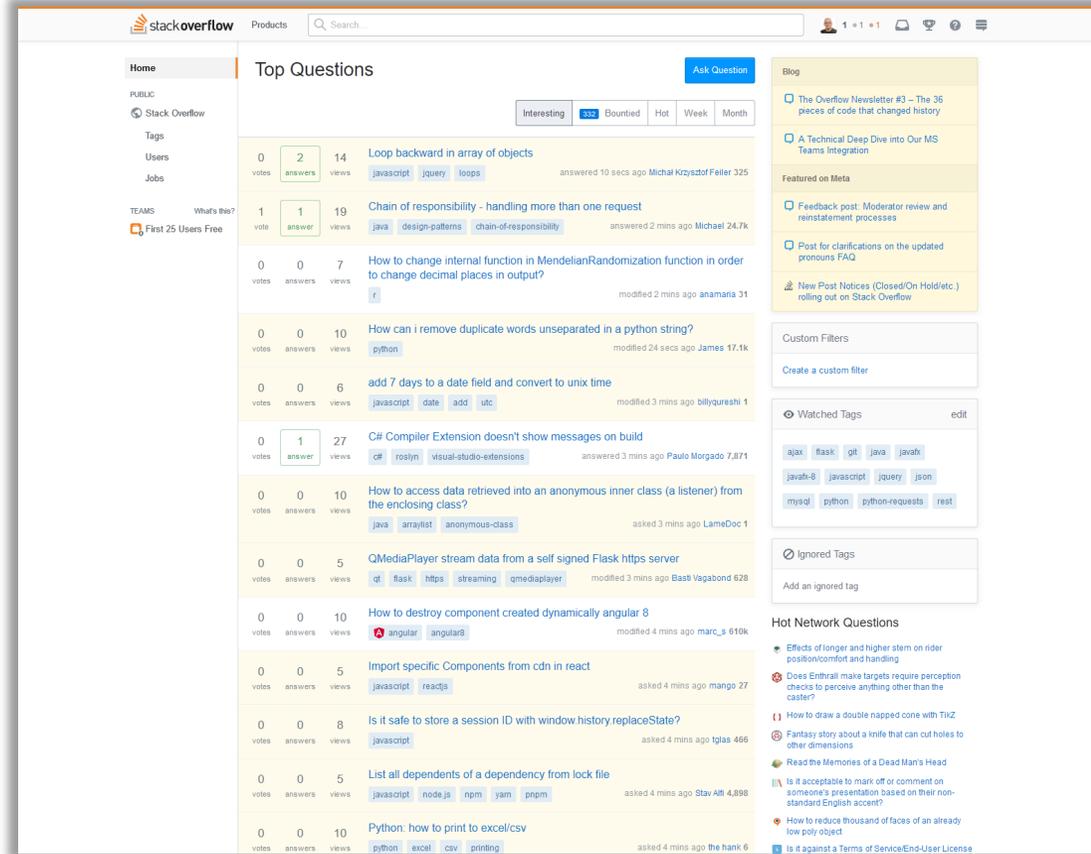
- **Human vision:** a highly complex activity, often the main source of information about the world
- The **eye:** a mechanism for receiving light and transforming it into electrical energy
  - light reflected from objects in the world and their image is focused upside down on the back of the eye
  - then, the receptors in the eye transform it into electrical signals which are passed to the brain
  - the brain detects, finally, patterns and movements

# Color Sensitivity of the Eyes



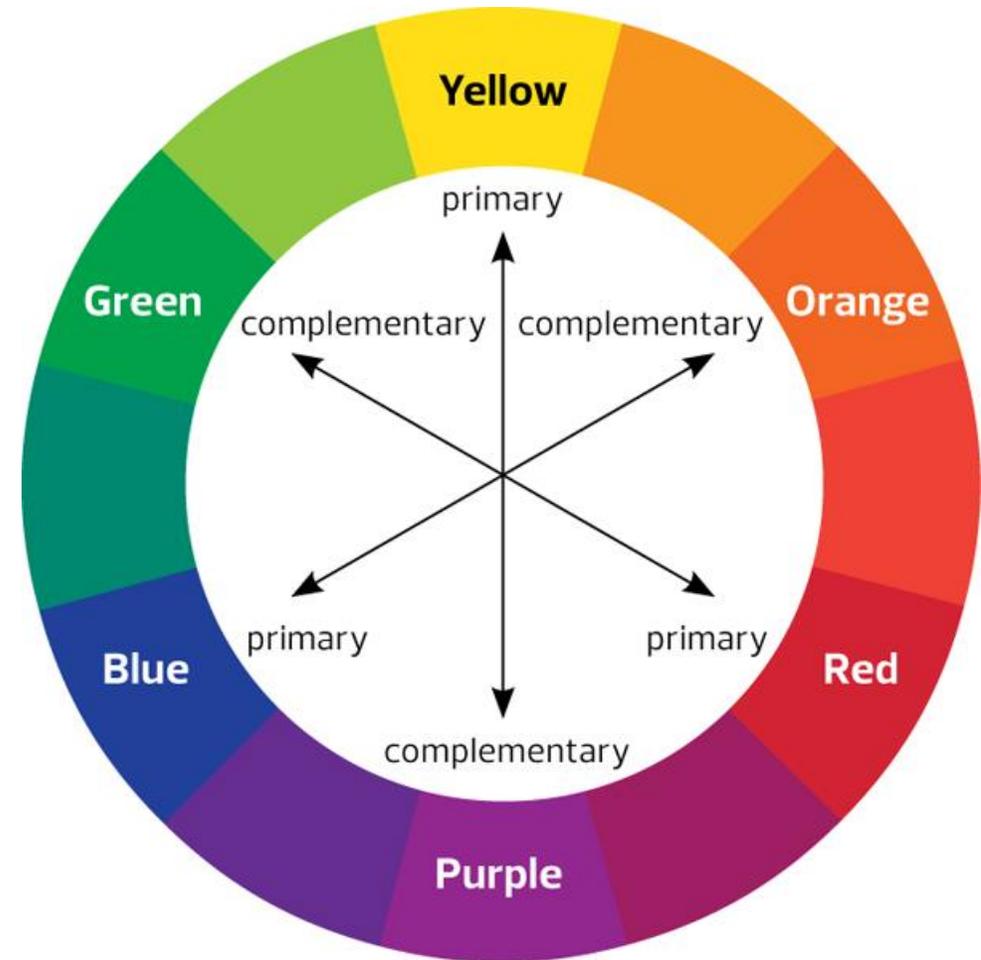
source: <https://askbiologist.asu.edu/rods-and-cones>

# Example



# The Color Wheel

- Aka the Hue Circle
- Pick non-adjacent colors
- Opponent colors go well together
  - Complementary colors
  
- Read more at <https://www.canva.com/colors/color-wheel/>



# Palettes - PoliTo

GERARCHIA COLORI



[https://www.politocomunica.polito.it/en/corporate\\_image/brand\\_and\\_visual\\_identity](https://www.politocomunica.polito.it/en/corporate_image/brand_and_visual_identity)

# Palettes Generator

The screenshot shows the Coolors website interface. At the top left is the Coolors logo and a navigation menu with 'Tools', 'Jobs', 'Go Pro', 'Sign in', and a 'Sign up' button. Below the navigation is a toolbar with icons for various functions like 'View', 'Export', and 'Save'. The main content area displays a color palette with five vertical color swatches. Each swatch has a hex code and a name: Tufts Blue (3C91E6), Yellow Green (9FD356), Black Coffee (342E37), Baby Powder (FAFFFD), and Mango Tango (FA824C). A central vertical menu of icons is positioned over the Black Coffee swatch. An advertisement for 'Advertise on Coolors' is visible in the top right corner of the palette area.

coolors YOUR BRAND HERE Advertise on Coolors Promote your brand to passionate creative professionals all over the world. [Try It Out!](#)

Tools Jobs Go Pro Sign in Sign up

Press the spacebar to generate color palettes!

... [Icons]

3C91E6 Tufts Blue

9FD356 Yellow Green

342E37 Black Coffee

FAFFFD Baby Powder

FA824C Mango Tango

YOUR BRAND HERE Advertise on Coolors Promote your brand to passionate creative professionals all over the world. [Try It Out!](#) HIDE

<https://coolors.co>

# ColourLovers



## Share Your Color Ideas & Inspiration.

COLOURlovers is a creative community where people from around the world create and share colors, palettes and patterns, discuss the latest trends and explore colorful articles... All in the spirit of love.

Join the Community!

CONNECT WITH COLOURLOVERS

Follow @COLOURlovers 1.59M followers

### LOVERS PEEK

-  **SadieSews on Vengeful Z25**  
Really nice look, with this! (:
-  **MisteryMoments on CoffeeBerries**  
I love your Template Design Style.. thanks
-  **renniecat on Cold Night**  
Beautiful!
-  **GoldenHuesinBlue on Golden Fall**  
Wow, very nice!
-  **TongrenGirl on Comfort**  
Wow...so beautiful!!!!
-  **TongrenGirl on Extraordinary**  
I love this!!!!
-  **TongrenGirl on Deep Waters**  
Ooooo, fantastic colors!!!!
-  **TongrenGirl on Race to Spring**  
Very nice!!!
-  **TongrenGirl on Race to Spring**  
Thanks so much for coloring my

ALL WEDDING HOME FASHION WEB PRINT CRAFT DIGITAL ART

### LATEST BLOG POSTS

View More >



Why Marketing Automation is Rocket-Fuel for Remote Workforce  
0 Comments



How to Become a Full-Time Creative and Do What You Love  
0 Comments



Colors, Human Growth Hormones, and Creativity  
0 Comments

### PALETTES

Create +



Nineteen  
by Júlia Freire 0



garden palette 2  
by macover 0

### PATTERNS

Create +



try  
by Anomalin 0



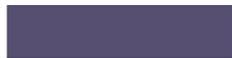
PodCasting  
by Sisters 0

### COLORS

Create +



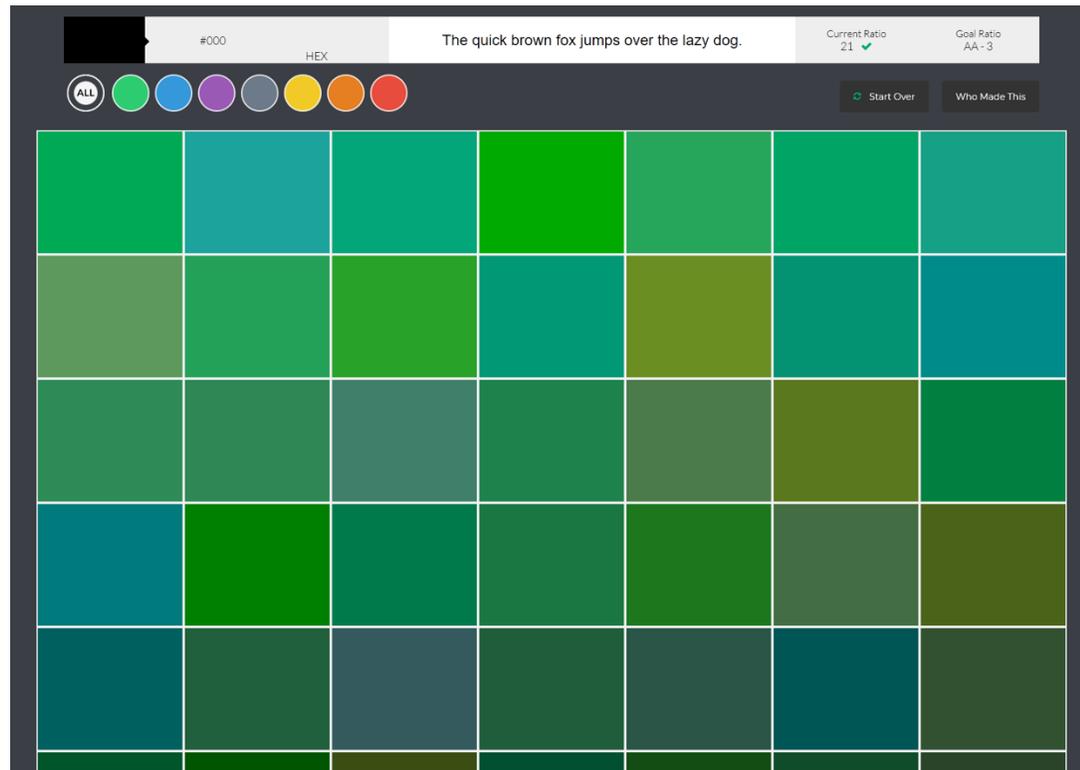
light gray purple  
by macover 0



slate purple  
by macover 0

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

# Color Contrast



<http://coloursafe.co/>

Default type color On light			Default type color On dark		
Primary	#000000	1a	Primary	#FFFFFF	1a
Secondary	#000000	0.54a	Secondary	#FFFFFF	0.54a
Disabled	#000000	0.26a	Disabled	#FFFFFF	0.26a
Link	#3367D6	1a	Link	#7BAAF7	1a
Positive	#0B8043	1a	Positive	#57BB8A	1a
Negative	#C53929	1a	Negative	#E67C73	1a
Warning	#EA6100	1a	Warning	#F7CB4D	1a

Google Chrome Palette

# Example

- Colors needing an explanation legend
- Time intervals are shaded with two different colors
  - “why is the first hour filled with a different color?”
- No indication of the “fill level”

**Turni disponibili - Aule Studio - Sala studio al Secondo Piano di C.so Castelfidardo 39**

Legenda turni prenotazione

Disponibile   Passato   Non prenotabile   Prenotazioni non attive   Turno al quale sei prenotato

Tutti gli orari sono da intendersi espressi secondo il fuso orario italiano

A partire da giorno 15 luglio 2020, è consentito l'uso della seguente Sala Studio della Sede Centrale:  
- Sala studio al Secondo Piano di C.so Castelfidardo 39, codice locale TO\_CIT11\_XP02\_001

Le sale studio sono aperte dalle ore 9.00 alle ore 18.00 dal lunedì al venerdì. L'accesso sarà consentito su due turnazioni orarie, dalle ore 9.00 alle 13.00 e dalle ore 14.00 alle ore 18.00

<< ⤴ Oggi ⤵ >> 21 Set 2020 - 27 Set 2020   1 giorno   3 giorni   Settimana lavorativa   **Settimana**

	Lunedì 21 Set 2020	Martedì 22 Set 2020	Mercoledì 23 Set 2020	Giovedì 24 Set 2020	Venerdì 25 Set 2020	Sabato 26 Set 2020	Domenica 27 Set 2020
09:00	09:00 - 13:00 - prenotazioni: 36/36	09:00 - 13:00 - prenotazioni: 36/36	09:00 - 13:00 - prenotazioni: 35/36	09:00 - 13:00 - prenotazioni: 36/36	09:00 - 13:00 - prenotazioni: 34/36		
10:00							
11:00							
12:00							
13:00							
14:00	14:00 - 18:00 - prenotazioni: 36/36	14:00 - 18:00 - prenotazioni: 36/36	14:00 - 18:00 - prenotazioni: 34/36	14:00 - 18:00 - prenotazioni: 34/36	14:00 - 18:00 - prenotazioni: 26/36		
15:00							
16:00							
17:00							

# Reading and Navigating

«Informavores» must quickly find the information they need

# Navigation

- Enables users to know where they are and to steer themselves to their intended destination
- Is about getting work done (or having fun) through a series of actions
- May consist of
  - **Task navigation**: successfully operating interactive applications, such as installing a mobile app, completing an on-line survey, or purchasing a ticket
  - **Web navigation**: finding information on a website or browsing social media
  - **Command menu navigation**: finding the action needed in a desktop application
- Has nothing to do with visual elegance / graphic shininess

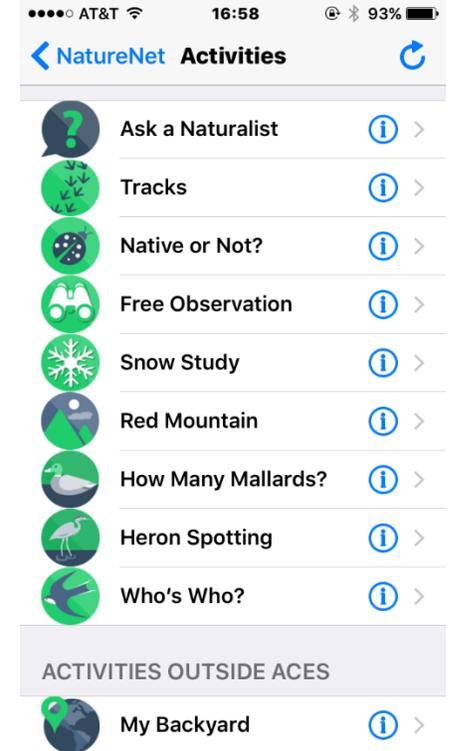
# Navigation By Selection

- Menu bars, pop-up menus, toolbars, palettes and ribbons
- Shortcuts and gestures for rapid interaction
- Long lists
- Linear versus simultaneous presentation

For an extra \$5  
you can add a gift wrap  
selected from dozens of choices

Add gift wrap

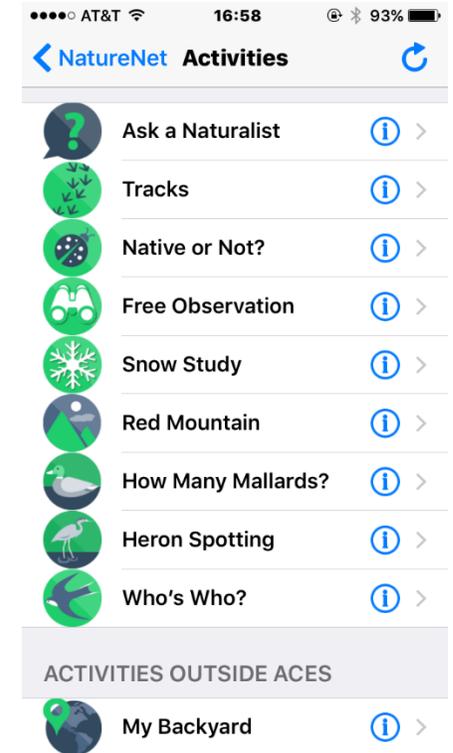
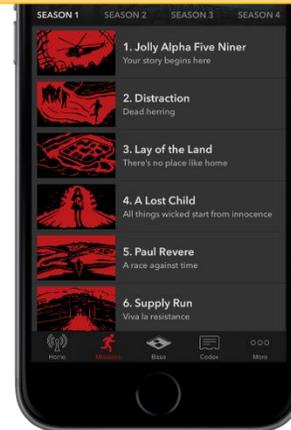
No thanks



# Navigation By Selection

- Menu bars, pop-up menus, toolbars, palettes and ribbons
- **Shortcuts and gestures for rapid interaction**
- Long lists
- Linear versus simultaneous presentation

- Tap
- Long press
- Double tap
- Small swipe
- Large swipe
- Rapid swipe (fling)
- Pinch and spread
- 2-finger swipe
- ...



# Navigation By Selection

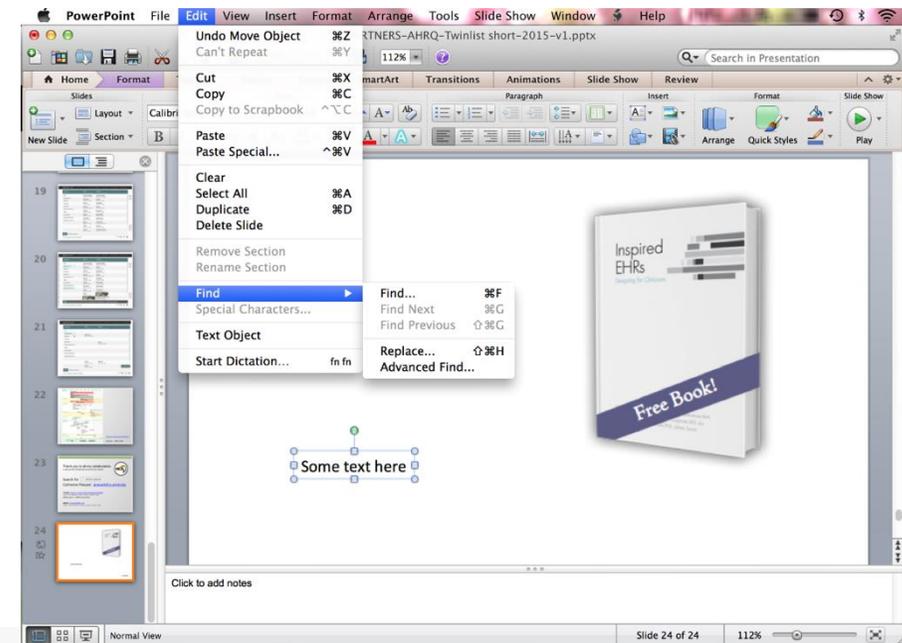
- Radio Buttons and Checkboxes
- Menu bars, pop-up menus, toolbars, palettes and ribbons

Does anyone in your household currently smoke?

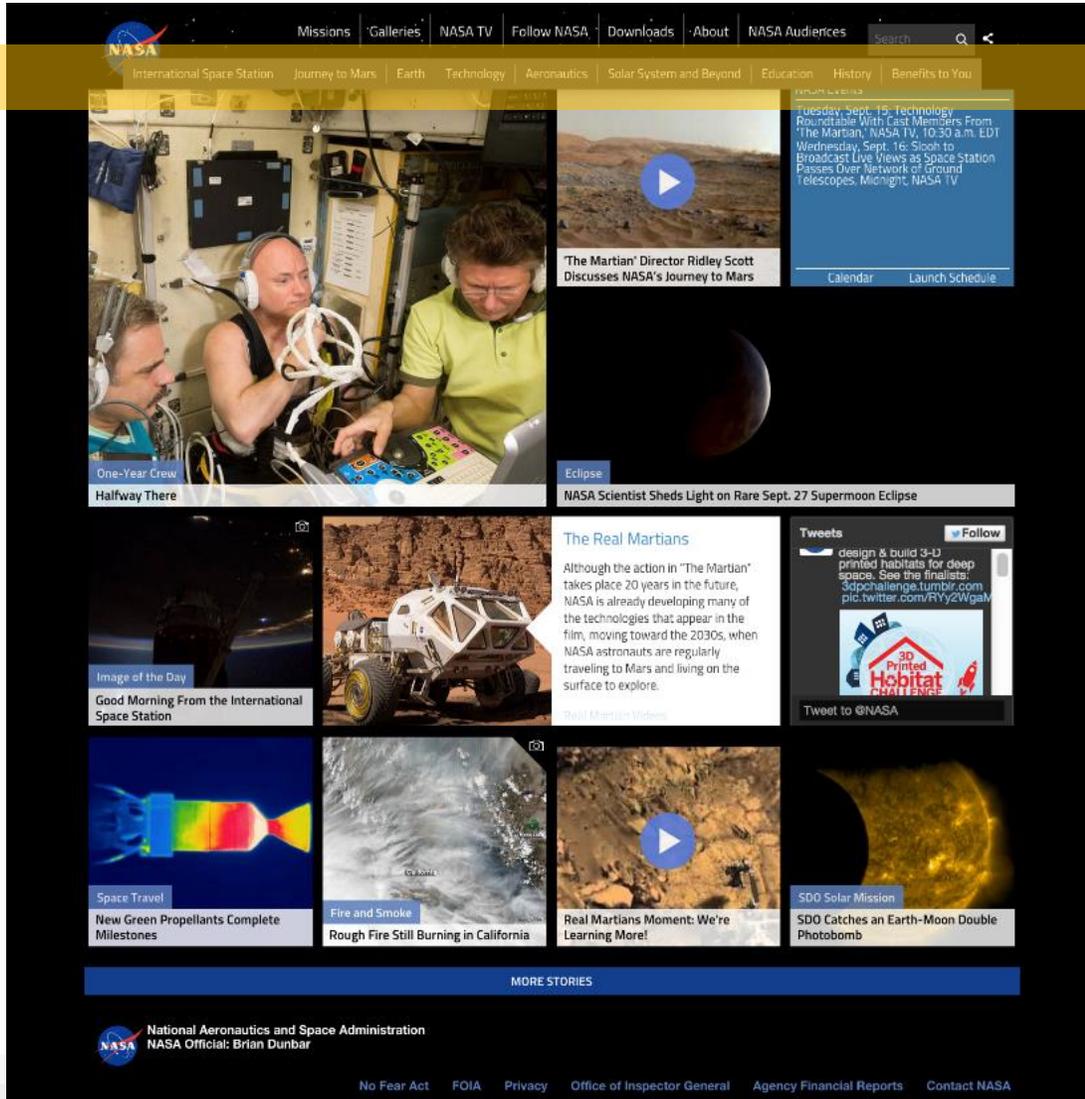
- Yes, someone does
- No, no one does
- Not sure

What treatment would you like to discuss with a nurse?

- Surgery
- Physical therapy
- Medication
- Acupuncture (not available in your area)



# Menus



# Content Organization

- Organizing menus in a meaningful structure results in faster selection time and higher user satisfaction
- Approaches:
  - Linear sequence (e.g., in a wizard or survey)
  - Hierarchical structure (tree) that is natural and comprehensible (e.g., a store split into departments)
  - Network structure when choices may be reachable by more than one path (e.g., websites)

# Tree-like Content Organization

The screenshot displays the REI website's navigation and product listing structure. At the top, there's a utility bar with links for Help, Wish List, Gift Registry, Classes & Events, Store Locator, and Checkout. Below this is the REI logo, a search bar, and a promotional message: "Welcome to REI! | Log In or Register" and "FREE SHIPPING With \$50 minimum purchase." The main navigation bar includes categories like SHOP REI, SHOP REI OUTLET, TRAVEL WITH REI, LEARN, BLOG, MEMBERSHIP, and STEWARDSHIP. A secondary navigation bar lists sub-categories such as Camp & Hike, Climb, Cycle, Fitness, Run, Paddle, Snow, Travel, Men, Women, Kids, Footwear, and More. The "Cycle" category is expanded, showing a tree-like structure with sub-sections: Bikes (Mountain Bikes, Road Bikes, Hybrid Bikes, Kids' Bikes), Bike Helmets (Road Helmets, Mountain Bike Helmets, Kids Helmets), Cycling Clothing (Jerseys, Jackets, Shorts, Tights and Pants, Accessories), Cycling Shoes (Road Shoes, Mountain Bike Shoes), Bike Accessories (Computers, Lights, Locks, Pumps, Racks, Trailers, Trainers, Messengers/Backpacks, Panniers/Bike Bags), and Bike Components (Brakes, Saddles/Seat Posts, Tires, Tubes and Wheels, Tools and Maintenance, Drivetrain Components, Pedals, Handlebars). A promotional banner for "GIVE THE GIFT OF GEAR ANYTIME, ANYWHERE" is also visible. Below the navigation, a list of products is shown with filters for Features (Moisture wicking, Quick drying, Sun-protective fabric, Waterproof, Insulated, Earflaps, Made in USA) and Brand (686). Three product cards are highlighted: REI Rainwall Rain Jacket - Girls' (5 stars, \$31.83 - \$64.50), REI Rainwall Rain Pants - Kids' (4.5 stars, \$49.50), and REI Sahara Convertible Pants - Girls' (5 stars, \$44.50). Each card includes a "Compare" button and a "ONLY AT REI" badge.

# Rules for Tree-like Organization

- Use **task semantics** to organize menus
- Limit the **number of levels** (i.e., prefer broad–shallow to narrow–deep)
- Create groups of **logically similar** items: e.g., Level 1: countries, Level 2: states, Level 3: cities
- Form groups that **cover all possibilities**: e.g., Age ranges: [0–9] [10–19] [20–29] and [ $\geq$  30]
- Make sure that items are **non-overlapping**: e.g., use “Concerts” and “Sports.” over “Entertainment” and “Events”
- Arrange items in each branch by **natural sequence** (not alphabetically) or **group** related items
- Keep **ordering** of items **fixed** (or possibly duplicate frequent items in dedicated section of the menu)

# Example



### Tool Prenotazioni

Selezionare l'ambito per il quale ci si intende prenotare

**Ambiti per i quali è possibile effettuare una prenotazione**

- Aule Studio
- Biblioteca
- Segreteria generale studenti



### Tool Prenotazioni

Selezionare l'ambito per il quale ci si intende prenotare

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**Aule Studio - Seleziona Aula Studio**

- Sala studio al Secondo Piano di C.so Castelfidardo 39
- Sala studio sotto l'aula 7



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A partire da giorno 15 luglio 2020, è consentito l'uso della seguente Sala Studio della Sede Centrale:  
- Sala studio al Secondo Piano di C.so Castelfidardo 39, codice locale TO\_CIT11\_XP02\_001

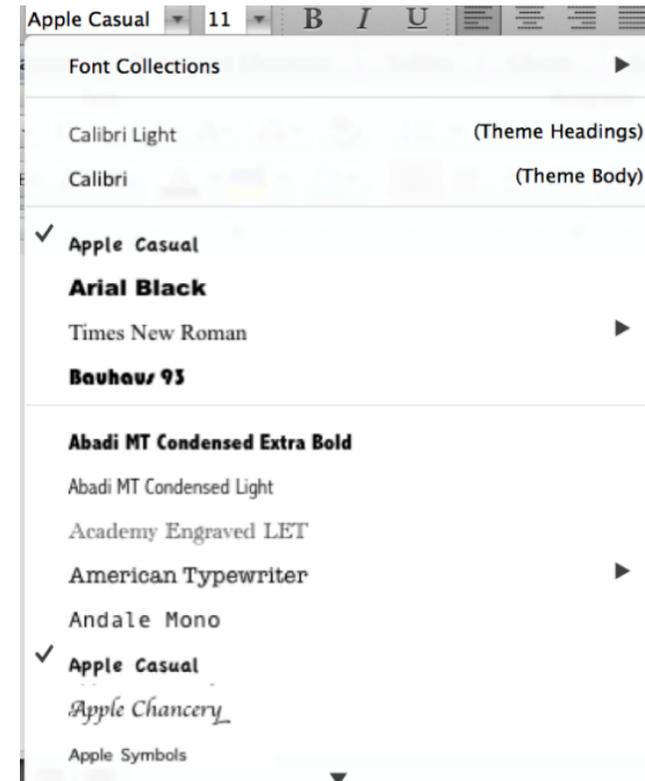
Le sale studio sono aperte dalle ore 9.00 alle ore 18.00 dal lunedì al venerdì. L'accesso sarà consentito su due turnazioni orarie, dalle ore 9.00 alle 13.00 e dalle ore 14.00 alle ore 18.00

<< Oggi >> **14 Set 2020 - 18 Set 2020**   1 giorno   3 giorni   **Settimana lavorativa**   Settimana

	Lunedì 14 Set 2020	Martedì 15 Set 2020	Mercoledì 16 Set 2020	Giovedì 17 Set 2020	Venerdì 18 Set 2020
09:00	09:00 - 13:00 - prenotazioni: 36/36	09:00 - 13:00 - prenotazioni: 33/36	09:00 - 13:00 - prenotazioni: 36/36	09:00 - 13:00 - prenotazioni: 32/36	09:00 - 13:00 - prenotazioni: 35/36
10:00					
11:00					
12:00					
13:00					

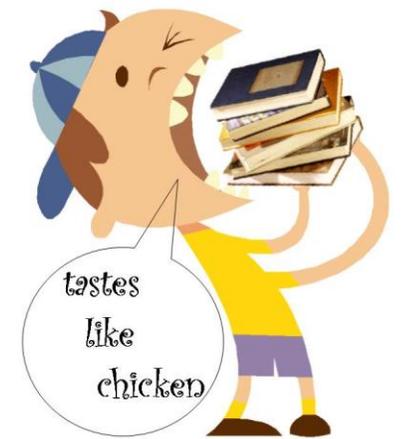
# Menu Grouping: example

- 3 groups
  - Template styles
  - Frequently used fonts
  - All fonts
- Alphabetical order within each group
  - Lack of a semantic ordering
- Preview for recognition
- Scrollable list



# Information Scent

- Informavores orient themselves using *information scent*
- How can we figure out how to get the information we want?
- Do we realize what options are available to us?
- Web pages (and UIs general) provide *cues* to suggest where to find information
  - Icons, Menus, Breadcrumbs, Color coding, ...



*Informavore*, an organism that consumes information

# Poor Information Scent

- Users flailing around...
  - Do not know where to go
- Low confidence
  - Users are not sure of their actions, both before executing it and after they see its effects
- Back button
  - When it's used too often...

# Example

The screenshot shows the 'Teaching portal' of the Politecnico di Torino. The header includes navigation links for 'The Politecnico', 'Teaching', 'Research', 'Business', and 'International Campus', along with language options 'ITA | ENG', a login button, and a search bar. The main content area is a grid of service tiles:

- Course catalogue:** Course catalogue, curricula, course syllabi. Special projects: Young Talent Project and Alta Scuola Politecnica.
- Student Guide:** Find the Student Guide of your degree programme.
- Student services:** Exam dates, course finder, lecture rooms, libraries, course timetables, Language Centre, thesis proposals, support services, cultural activities and much more.
- Notice board:** News and events from the Office of the University Registrar, the Office of Student Services and the various degree programmes.
- Apply@polito:** Politecnico di Torino online application service (all levels and programmes).
- Orientation:** Choosing your degree programme, application information and services for PoliTO and high school students.
- Fees, scholarships and prizes:** Tuition fees and reductions, IELTS payment policy, scholarships and financial aid, part-time on-campus jobs, university residences and much more.
- Study abroad:** International mobility for students, faculty and staff; calls for applications for study periods at foreign universities, thesis and internships abroad, teaching mobility, international.
- News - events - notices:** For further informations click here.
- Career service:** Internships and job placements for students and graduates, recruiting services for employers.
- Graduates:** State examination for professional practice, alumni, AlmaLaurea.
- Regulations / Student discipline:** Regulations, Disciplinary Board.
- Teaching Quality Assurance:** Teaching Quality Assurance, Joint Committee on Teaching, regional accreditation.

The footer contains contact information: 'Posta Studenti email', 'Ente Regionale per il Diritto allo Studio Universitario', 'Contact us', 'Lezioni online demo', 'osservatorio regionale', 'PoliTO App', and social media icons. It also includes the copyright notice: '© Politecnico di Torino Corso Duca degli Abruzzi, 24 - 10129 Torino, ITALY'.

# Example

Bachelor's degree programmes	Young Talent Project
Master's degree programmes	Alla Scuola Politecnica
Specializing Master's programmes and Lifelong Learning	Ph.D. programmes
	Postgraduate School
Curricula and course syllabi of current and previous years	Summer School

POLITECNICO DI TORINO STUDENT GUIDE (2019 - 2020)

ITA | ENG

All guides

Area	Course
Architecture 1 <sup>st</sup> level	Bachelor's degree programme in ARCHITECTURE Location: Torino - Class: ARCHITECTURE
Architecture 1 <sup>st</sup> level	Bachelor's degree programme in ARCHITECTURE Location: Torino - Class: ARCHITECTURE
Architecture 1 <sup>st</sup> level	Bachelor's degree programme in DESIGN AND COMMUNICATION Location: Torino - Class: INDUSTRIAL DESIGN
Architecture 1 <sup>st</sup> level	Bachelor's degree programme in DESIGN AND VISUAL COMMUNICATION Location: Torino - Class: INDUSTRIAL DESIGN
Architecture 1 <sup>st</sup> level	Bachelor's degree programme in TERRITORIAL, URBAN, ENVIRONMENTAL AND LANDSCAPE PLANNING Location: Torino - Class: TOWN, REGIONAL AND ENVIRONMENTAL PLANNING
Architecture 2 <sup>nd</sup> level	Master's degree programme in ARCHITECTURE CONSTRUCTION CITY Location: Torino - Class: ARCHITECTURE AND ARCHITECTURAL ENGINEERING
Architecture 2 <sup>nd</sup> level	Master's degree programme in ARCHITECTURE FOR THE SUSTAINABILITY DESIGN Location: Torino - Class: ARCHITECTURE AND ARCHITECTURAL ENGINEERING
Architecture 2 <sup>nd</sup> level	Master's degree programme in ARCHITECTURE HERITAGE PRESERVATION AND ENHANCEMENT Location: Torino - Class: ARCHITECTURE AND ARCHITECTURAL ENGINEERING
Architecture 2 <sup>nd</sup> level	Master's degree programme in ECOSYSTEM DESIGN Location: Torino - Class: DESIGN
Architecture 2 <sup>nd</sup> level	Master's degree programme in SYSTEMIC DESIGN Location: Torino - Class: DESIGN
Architecture 2 <sup>nd</sup> level	Master's degree programme in TERRITORIAL, URBAN, ENVIRONMENTAL AND LANDSCAPE PLANNING Location: Torino - Class: REGIONAL, URBAN AND ENVIRONMENTAL PLANNING
Engineering 1 <sup>st</sup> level	Bachelor's degree programme in AEROSPACE ENGINEERING Location: Torino - Class: INDUSTRIAL ENGINEERING

Exam dates	Course finder	C.L.A. Language Center	Course Timetables
Thesis proposals	Support services	Research Labs	Campus maps
Student teams	Register of student societies	Libraries	Study rooms
Student projects	Donations (5X1000)	University residences	Free room finder
Mobility and Cultural	Sports activities	Polito Wi-Fi	

## Teaching portal

Find the Degree Course of your degree programme	Find the Degree Course of your degree programme	Find the Degree Course of your degree programme	Find the Degree Course of your degree programme
Find the Degree Course of your degree programme	Find the Degree Course of your degree programme	Find the Degree Course of your degree programme	Find the Degree Course of your degree programme
Find the Degree Course of your degree programme	Find the Degree Course of your degree programme	Find the Degree Course of your degree programme	Find the Degree Course of your degree programme
Find the Degree Course of your degree programme	Find the Degree Course of your degree programme	Find the Degree Course of your degree programme	Find the Degree Course of your degree programme

Generale	Area dell'Architettura Corsi di Laurea di 1° livello	Area dell'Architettura Corsi di Laurea Magistrale
Studenti	Area dell'Ingegneria Corsi di Laurea di 1° livello	Area dell'Ingegneria Corsi di Laurea Magistrale

Welcome to Apply@polito - the online application service of the Politecnico di Torino

Bachelor Italian students	M.S. Italian students	Students with a foreign qualification
Ph.D.	Specializing master	Exchange programmes
Stato esami		

Online application form  
Privacy - Information  
Forgot your password?

Fees and Reductions University fees, exemptions and reductions.	Part-time Collaborations part-time collaborations for remunerative activities supporting education and services.	Halls of residence Accommodation solutions, services, benefits.
Researching activity announcements Scholarships willing to work in the university and in the field of researching.	Scholarships and prizes Scholarships and prizes to help deserving students financially.	External Institutions' announcements Scholarships and prizes supported by external institutions addressed to students and graduates.
News - events - notices		

Home

Come orientarsi al Polito

Iscrizione al primo anno

Materiali informativi

Attività con la scuola media superiore

Registrazione ad apply@polito

Link correlati



Consulta le graduatorie per l'ammissione all'a.a. 2019/20

Come orientarsi al Polito	Iscrizione al primo anno	Materiali informativi	Attività con la scuola media superiore
---------------------------	--------------------------	-----------------------	--

STUDENTS & GRADUATES  
Check all the opportunities to build your career

EMPLOYERS  
Find out how to get in touch with our talents

EVENTS

HIGHLIGHTS:

Tech Talk VISHAY  
L'evoluzione della E-Mobility  
07 Novembre 2019  
ore 17:30 - Aula 4P

VIDEO GALLERY:

LA BELLEZZA DI FARE IMPRESA

Career Day 2018 | I consigli delle aziende per il collegio di lavoro

Career Day 2018 | L'importanza delle esperienze curriculari

Almaeaura Consorto interuniversitario per l'Università e il mondo del lavoro.	Esami di stato Presso il Politecnico di Torino è possibile conseguire l'abilitazione all'esercizio delle professioni di Architetto e Ingegnere.	Ex allievi Associazione fondata nel 1908. Accumunati dalla formazione politecnica, dall'interesse per la cultura scientifica e l'innovazione tecnologica.	Certificati e autocertificazioni Le procedure per ottenere i certificati e presentare le autocertificazioni sono disponibili nell'omonima sezione della guida dello studente.
--	--	--	--

# Example

The screenshot shows the Survey@Polito administration interface. At the top, it says "Administration -- Logged in as: corno". Below this is a navigation bar with icons for home, key, tools, download, document, calendar, and map. On the right, there's a "Surveys:" dropdown menu set to "Smart Home Survey" and a power button. Below the navigation bar, there's a "Survey Smart Home Survey (ID:365355)" section with a "Question groups:" dropdown set to "Please choose...". The main content area displays the following information:

- Title:** Smart Home Survey (ID 365355)
- Survey URL (English):** <https://survey.polito.it/365355/lang-en>
- Description:** This very short survey aims at exploring the future and expected user interaction between user and smart environments, in particular smart homes. The research goal is to update, and compare, the research findings of a similar survey held in year 2010 (5 years ago). The expected completion time for this survey is 5 minutes or less.
- Welcome:** Thank you for agreeing to take part in this survey. All the answers you give are anonymous, and the data-set will be released as open data after the survey ends. You may choose to reply in any of the supported languages, preferably your mother tongue.
- End message:** Thanks for completing the survey. The results will be available on the website <http://elite.polito.it> The paper describing the previous survey (in 2010) is available at: <http://porto.polito.it/2380988/>
- Administrator:** Fulvio Corno ([fulvio.corno@polito.it](mailto:fulvio.corno@polito.it))
- Start date/time:** -
- Expiry date/time:** -
- Template:** default
- Base language:** English
- Additional languages:** French, German, Italian, Portuguese, Spanish
- End URL:** [e-Lite research group webpage](#)
- Number of questions/groups:** 11/3
- Survey currently active:** Yes
- Survey table name:** beta\_survey\_365355
- Hints:** Answers to this survey are anonymized. It is presented group by group. Participants can save partially finished surveys. Basic email notification is sent to: [fulvio.corno@gmail.com](mailto:fulvio.corno@gmail.com). Regenerate question codes: [Straight] [By group]

At the bottom, there's a LimeSurvey logo and version information: "LimeSurvey Version 1.92+ Build 120919". On the right, there's a "Like it? Donate to LimeSurvey" button.

# Common Problems

- Unexpected categories
- Short links
- Hidden navigation
- Icons are too generic, or not easily recognizable

# Icons

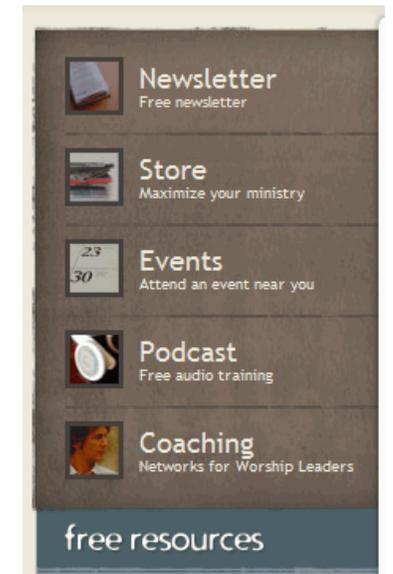
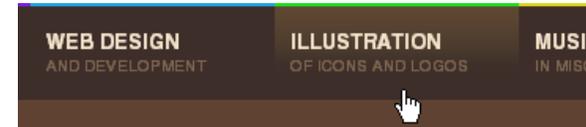
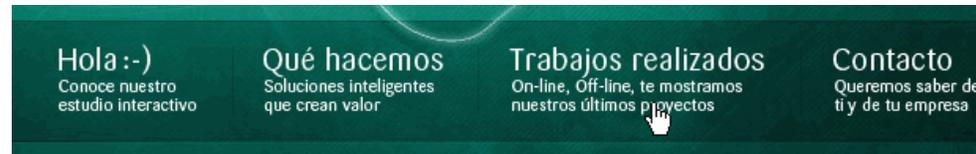
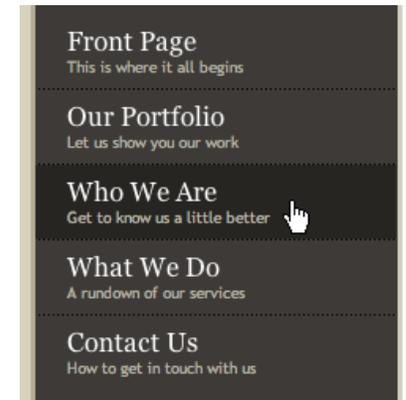
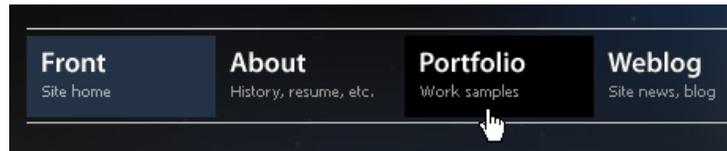
- Icons facilitate recognition over recall
  - When they are consistently used, and frequently visible
- Redundant coding helps recognition and memorization
  - Icon + Text + Tooltip + Context



# Links

- Always use multi-word links
  - Download the [next assignment template](#)
  - Assignment template: click [here](#)
- Straight language, not jargon
  - [Scor-o-matic](#) download
  - Download the [spreadsheet for computing scores](#)

# “Speaking” block navigation



# Forms

- Logical field grouping
  - Sections
    - Dividers
    - Columns (spacing)
  - Titles
- Real-time error checking and validation feedback
  - Suggestions for correction
- Explicit submit button

The screenshot displays a web form titled "Create an IEEE Account" with a close button in the top right corner. The form is organized into three main sections:

- Provide your personal information:** This section contains three text input fields: "Given/First name" (with the value "Catherine"), "Middle name" (empty), and "Last/Family/Surname" (with the value "Plaisant").
- Enter e-mail address & password:** This section includes four text input fields: "E-mail address" (with the value "cplaisant@" and a red border indicating an error), "Re-enter e-mail address" (empty), "Password" (with masked characters "\*\*\*\*\*"), and "Confirm password" (empty). To the right of these fields, there are two feedback messages: a yellow warning box stating "The e-mail address provided is not in a valid e-mail format (for example: j.doe@nomain.com). Please try again." and a green success box stating "Your password is good" with a note that passwords must be between 8 and 64 characters and include at least one number, with a "More..." link.
- Set security questions:** This section explains that two security questions are required. It contains two sets of controls, each consisting of a dropdown menu for the question and a text input field for the answer.

At the bottom of the form, there is a link for "Privacy & Opting Out of Cookies" and a prominent orange button labeled "Create Account and Continue Joining" next to a "Cancel" link.

# Form Elements and UI Elements

Text input fields let you input text

NonFederal (99)  
 Federal (57)

Yes  No

Find your state or...  Go

List boxes  
Are like dropdowns  
But they let  
You make  
Multiple selections  
Like checkboxes do

General Settings  
**Your Profile**  
Sign Out

SEP 18<sup>th</sup> 2010

22 JUN

Send Post Tweet

Navigation arrows

ON OFF

Calendar for Sep, 2010

JUN 22

Grid of icons

Mobile navigation icons

Menu Item Messages About Us

This is a box  
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Fusce metus. Pellentesque sit amet velit. Phasellus non quam. Nulla diam purus, tristique quis, eleifend ac, molestie eu, sapien. Vestibulum ante ipsum primis.  
Vestibulum ante ipsum primis. [READ MORE](#)

Navigation styles: Crystal Clear, Menu, Soft Style, Class, Classic  
Search options: Search Option One, Search Option Two, Search Option Three  
Search dropdown: Search: Everything, Entries, Photos, Videos, Audio

Progress indicators: 1-3 steps, 1-5 steps, 1-3 steps with labels

Horizontal scroll indicator

Tags: Costs (72), Health Conditions (54), Improving Care (53), Prevention (50), Rights, Protections and Benefits (135), Insurance Coverage (141)

Page navigation: 1-10, Next, Previous, 246-247, Next, Prev, 1-10, Next

Buttons: Clean, Fresh, Modern, Unique, +

# Example: Redesign This

Attenzione, i seguenti insegnamenti sono in corso di spegnimento potranno essere sostenuti entro la sessione sotto indicata. Se terminata la sessione d'esame non risulteranno ancora superati, verranno sostituiti con l'insegnamento riportato in tabella.

Codice	Nome insegnamento	Crediti	Cod Ins Sostituto	Nome Ins Sostituto	Crediti sostituto	Scadenza esame
12BHDLZ	Informatica	8	14BHDLZ	Informatica	8	9/2021

Se non è ancora stato specificato un sostituto, il referente del corso provvederà in seguito a segnalare con quali esami sostituire gli spenti

# Reading Content

Organizing text and content for maximum visibility

# Reading Content

“How people  
read on-line?”

“They don’t”

How Users Read on the Web

by Jakob Nielsen on September 30, 1997

<https://www.nngroup.com/articles/how-users-read-on-the-web/>

# Eye Tracking



- Observe eye movements
  - One or more cameras
  - Usually in infra-red
- Infer where the user was looking (on the screen)
- Record the positions where your gaze will go
- Combine observations from many users

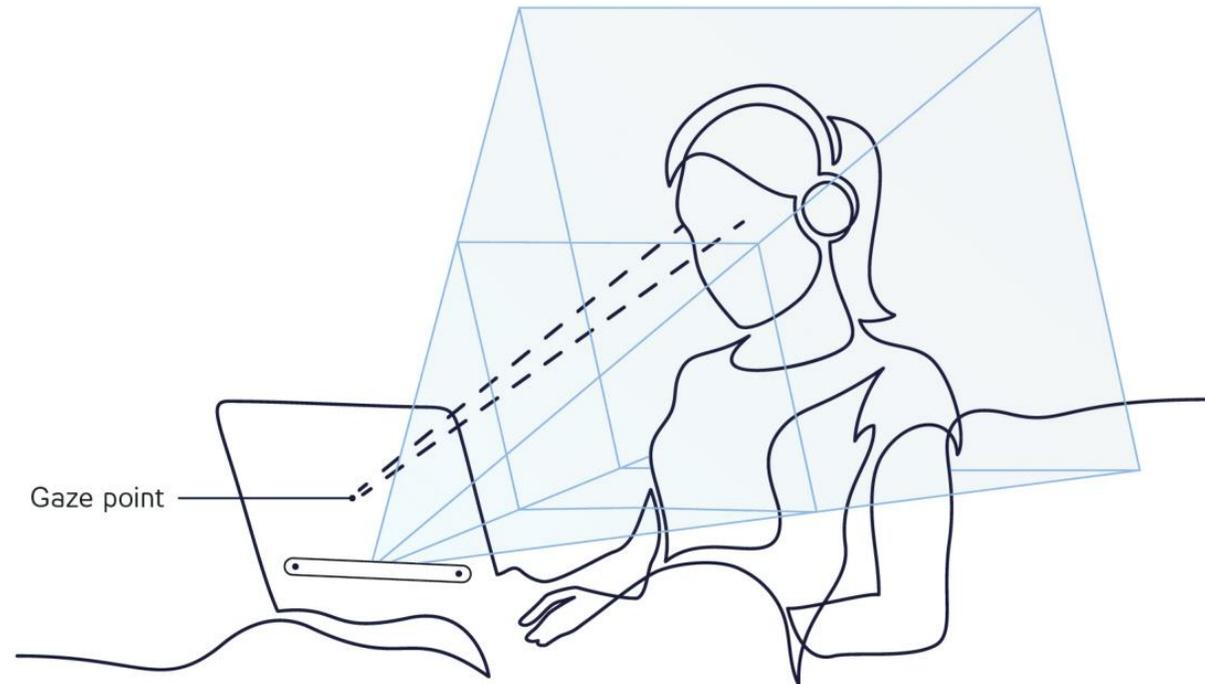
# Eye Trackers



source: <https://www.tobii.com>

# Eye Tracker: How It Works

- 1 An eye tracker consists of cameras, projectors and algorithms.
- 2 The projectors create a pattern of near-infrared light on the eyes.
- 3 The cameras take high-resolution images of the user's eyes and the pattern.
- 4 Machine learning, image processing and mathematical algorithms are used to determine the eyes' position and gaze point.

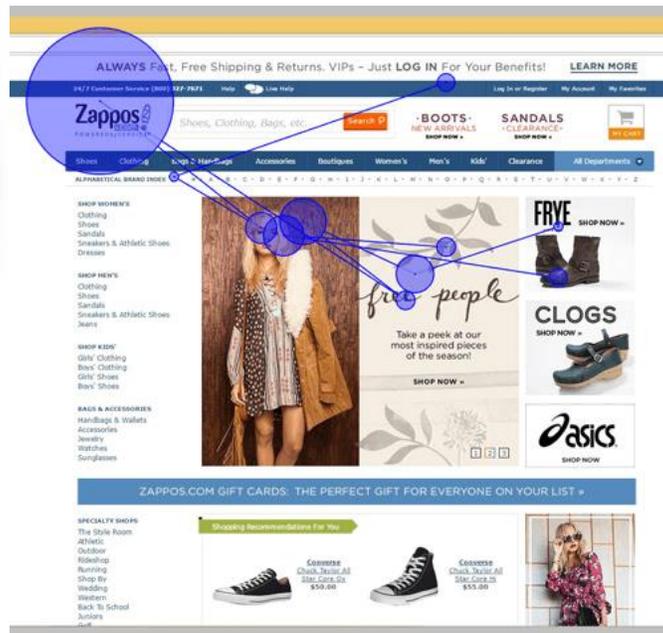


source: <https://www.tobii.com/group/about/this-is-eye-tracking/>

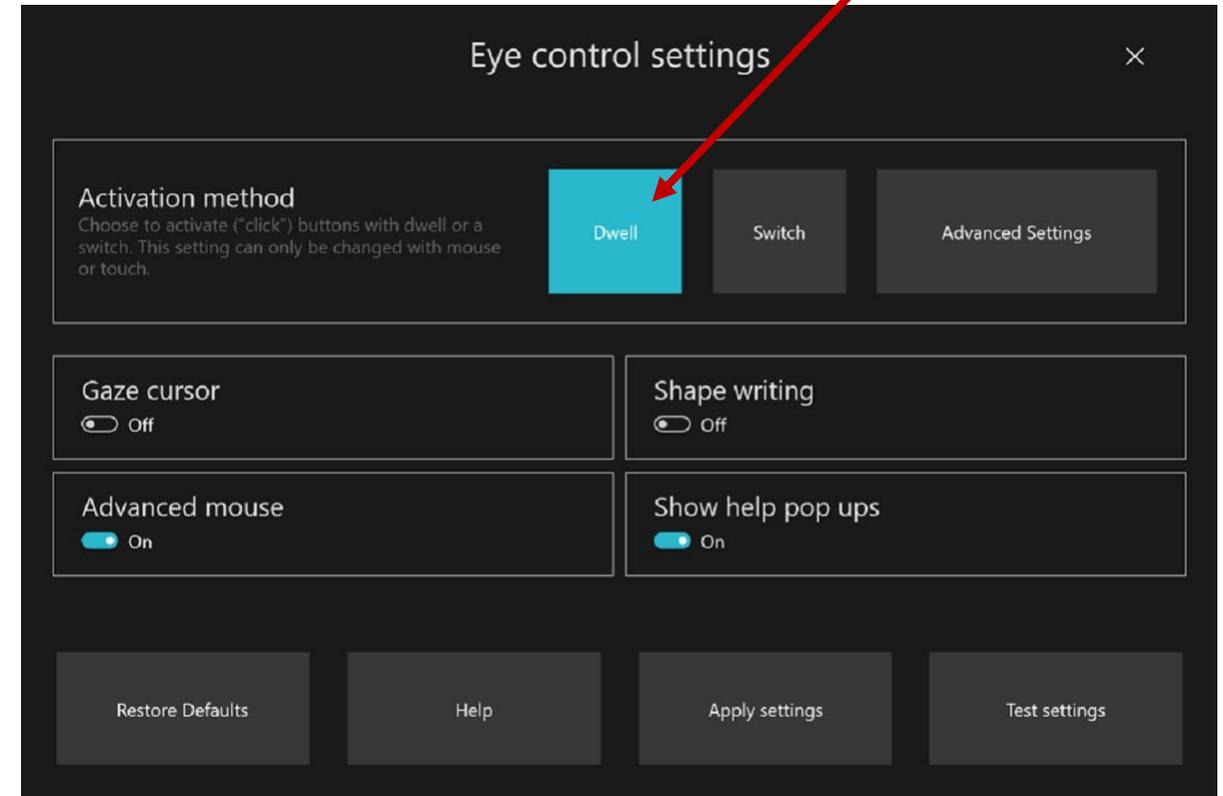
# Eye Tracker: Examples



Heatmap and scan path analysis



Beware the Midas' Touch!



Windows 10 Eye Control Settings

# Location on the Page

Eye tracking studies show where the users actually look on the page

Search “eye tracking heat map” and see the major patterns

Users “glance” and spend limited amount of time on each page.

F-shaped pattern

Google the new yorker hotel

Wyndham New Yorker Hotel - Official Site - wyndhamhotels.com

The New Yorker A Wyndham Hotel | Midtown Manhattan Hotel

The New Yorker A Wyndham Hotel (New York City) - UPDATED 2017 ...

The New Yorker A Wyndham Hotel | New York Hotels, NY 10001

Wyndham New Yorker Hotel - Wikipedia

Wyndham New Yorker Hotel, New York City, NY - Booking.com

Book Wyndham New Yorker, New York from \$95/night - Hotels.com

Wyndham New Yorker (New York, USA) | Expedia

The New Yorker - 191 Photos & 355 Reviews - Hotels - 481 8th Ave ...

Wyndham New Yorker Hotel, New York Hotels from \$126 - KAYAK

Images for the new yorker hotel

Searches related to the new yorker hotel

wyndham new yorker hotel reviews wyndham midtown 45 new york, ny

wyndham new yorker hotel bed bugs the new yorker hotel doors

new yorker hotel history new yorker hotel restaurant

new yorker hotel instant wyndham new yorker help

Wyndham New Yorker Hotel

Check availability

Hotel details

Review summary

Send to your phone

People also search for

Help improve accuracy

WIKIPEDIA The Free Encyclopedia

Eye tracking

From Wikipedia, the free encyclopedia

This article includes a list of references or external links, but its sources remain unclear because it has insufficient inline citations. Please help to improve this article by adding more precise citations where appropriate.

Eye tracking is the process of measuring either the point of gaze ("where we are looking") or the motion of the eye tracker is a device for measuring eye positions and eye movements. Eye trackers are used in research psychology, in cognitive linguistics and in product design. There are a number of methods for measuring eye movement, with each method using different techniques. Other methods use search coils or are

1 History

2 Tracker types

3 Technologies and techniques

4 Eye tracking vs. gaze tracking

5 Eye tracking in practice

5.1 Eye tracking while driving a car in a difficult situation

5.2 Eye tracking of younger and elderly people in walking

6 Precision on-line tracker

Design for glanceability

Priority 1 Priority 2 Priority 3

The Paynter Institute www.paynter.org/instr/instrtbl2004



# Scanning

## WHAT DESIGNERS BUILD...



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- 📅 Plan A Meeting
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- Exclusive travel deals for biztravel.com members



I want to buy a ticket.



**Track My Miles**

- Tracking of your points and miles



How do I check my frequent flyer miles?

# Experiment

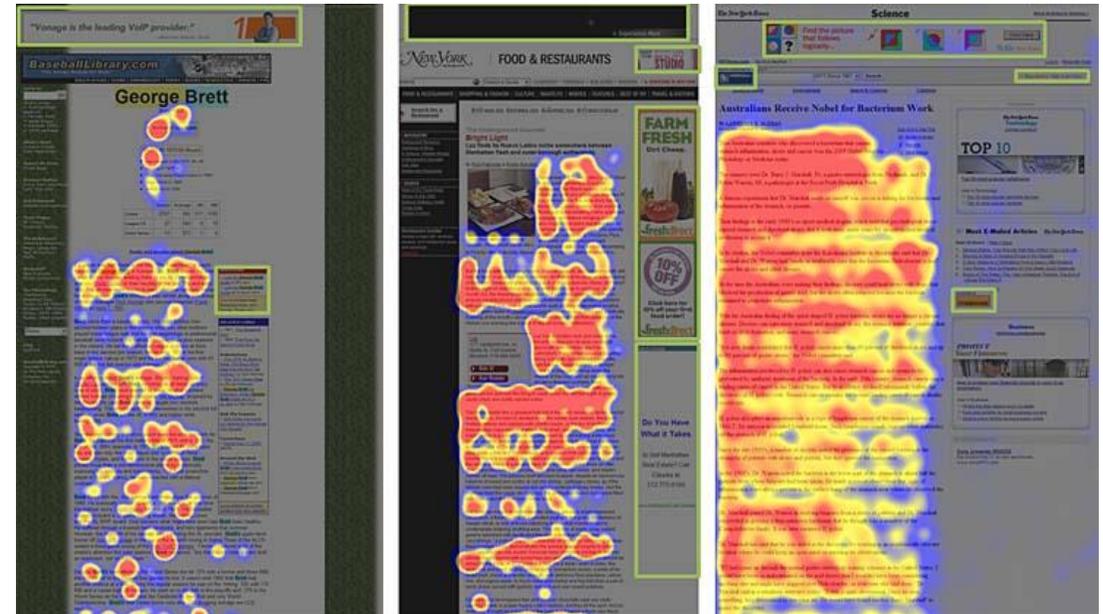
Site Version	Sample Paragraph	Usability Improvement (relative to control condition)
<b>Promotional writing (control condition)</b> using the "marketese" found on many commercial websites	Nebraska is filled with internationally recognized attractions that draw large crowds of people every year, without fail. In 1996, some of the most popular places were Fort Robinson State Park (355,000 visitors), Scotts Bluff National Monument (132,166), Arbor Lodge State Historical Park & Museum (100,000), Carhenge (86,598), Stuhr Museum of the Prairie Pioneer (60,002), and Buffalo Bill Ranch State Historical Park (28,446).	0% (baseline)
<b>Concise text</b> with about half the word count as the control condition	In 1996, six of the best-attended attractions in Nebraska were Fort Robinson State Park, Scotts Bluff National Monument, Arbor Lodge State Historical Park & Museum, Carhenge, Stuhr Museum of the Prairie Pioneer, and Buffalo Bill Ranch State Historical Park.	+58%
<b>Scannable layout</b> using the same text as the control condition in a layout that facilitated scanning	Nebraska is filled with internationally recognized attractions that draw large crowds of people every year, without fail. In 1996, some of the most popular places were: <ul style="list-style-type: none"> <li>•Fort Robinson State Park (355,000 visitors)</li> <li>•Scotts Bluff National Monument (132,166)</li> <li>•Arbor Lodge State Historical Park &amp; Museum (100,000)</li> <li>•Carhenge (86,598)</li> <li>•Stuhr Museum of the Prairie Pioneer (60,002)</li> <li>•Buffalo Bill Ranch State Historical Park (28,446).</li> </ul>	+47%
<b>Objective language</b> using neutral rather than subjective, boastful, or exaggerated language (otherwise the same as the control condition)	Nebraska has several attractions. In 1996, some of the most-visited places were Fort Robinson State Park (355,000 visitors), Scotts Bluff National Monument (132,166), Arbor Lodge State Historical Park & Museum (100,000), Carhenge (86,598), Stuhr Museum of the Prairie Pioneer (60,002), and Buffalo Bill Ranch State Historical Park (28,446).	+27%
<b>Combined version</b> using all three improvements in writing style together: concise, scannable, and objective	In 1996, six of the most-visited places in Nebraska were: <ul style="list-style-type: none"> <li>•Fort Robinson State Park</li> <li>•Scotts Bluff National Monument</li> <li>•Arbor Lodge State Historical Park &amp; Museum</li> <li>•Carhenge</li> <li>•Stuhr Museum of the Prairie Pioneer</li> <li>•Buffalo Bill Ranch State Historical Park</li> </ul>	+124%

# Best Locations to Put Content

- Above the fold
  - Prioritize, do not cram
- Where people expect
  - Where other pages put similar content
  - **Not** where the ads usually go
- Users will scroll down if the first content is interesting

# Banner Blindness

- The brain learns to avoid uninteresting content
- Banners and Advertisements are recognized subconsciously (by their appearance) and are never considered
  - Ads also “poison” adjacent elements
- Lesson learned: never create a message / title / warning / etc. that might look like an ad. (Faux ads)



# References and Acknowledgment

- Scott MacKenzie: Human-Computer Interaction - An Empirical Research Perspective, Morgan Kaufmann
  - Chapter 3: Interaction Elements
- Ben Shneiderman, Catherine Plaisant, Maxine S. Cohen, Steven M. Jacobs, and Niklas Elmqvist, Designing the User Interface: Strategies for Effective Human-Computer Interaction
  - Chapter 8: Fluid Navigation
- COGS120/CSE170: Human-Computer Interaction Design, videos by Scott Klemmer, [https://www.youtube.com/playlist?list=PLLsT5z\\_DsK\\_nusHL\\_Mjt87THSTlgrsyJ](https://www.youtube.com/playlist?list=PLLsT5z_DsK_nusHL_Mjt87THSTlgrsyJ)
- Most of the slides are adapted from those used in the "Human Computer Interaction" course of Politecnico di Torino
  - <http://bit.ly/polito-hci>



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