

# Visual Design and Fluid Navigation

Human Computer Interaction

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Academic Year 2021/2022

# Visual Design

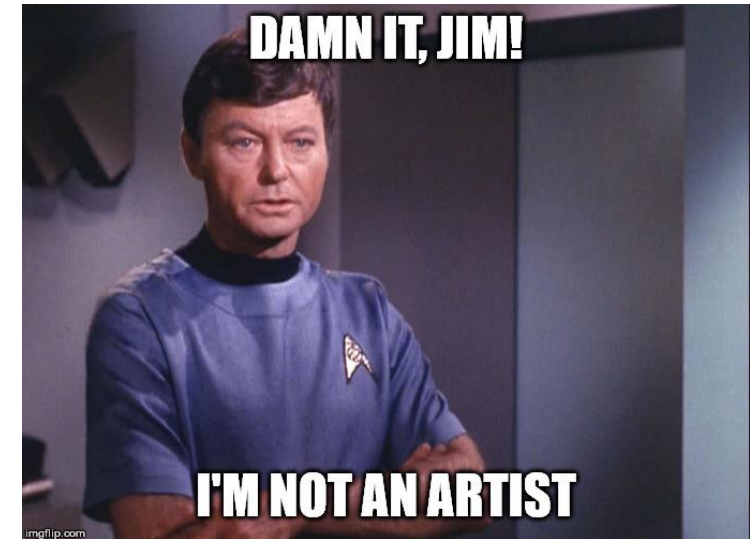
Aesthetics for helping users in understanding and navigating the UI

# 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.

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# The Basics of Visual Design

Basic visual design involves ...

## **Text**

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Next, font size and style differences convey hierarchy.

Finally, alignment is crucial for helping readers scan quickly.

## **Layout**

## **Colors**

# The Basics of Visual Design

## BASIC VISUAL DESIGN

### Text

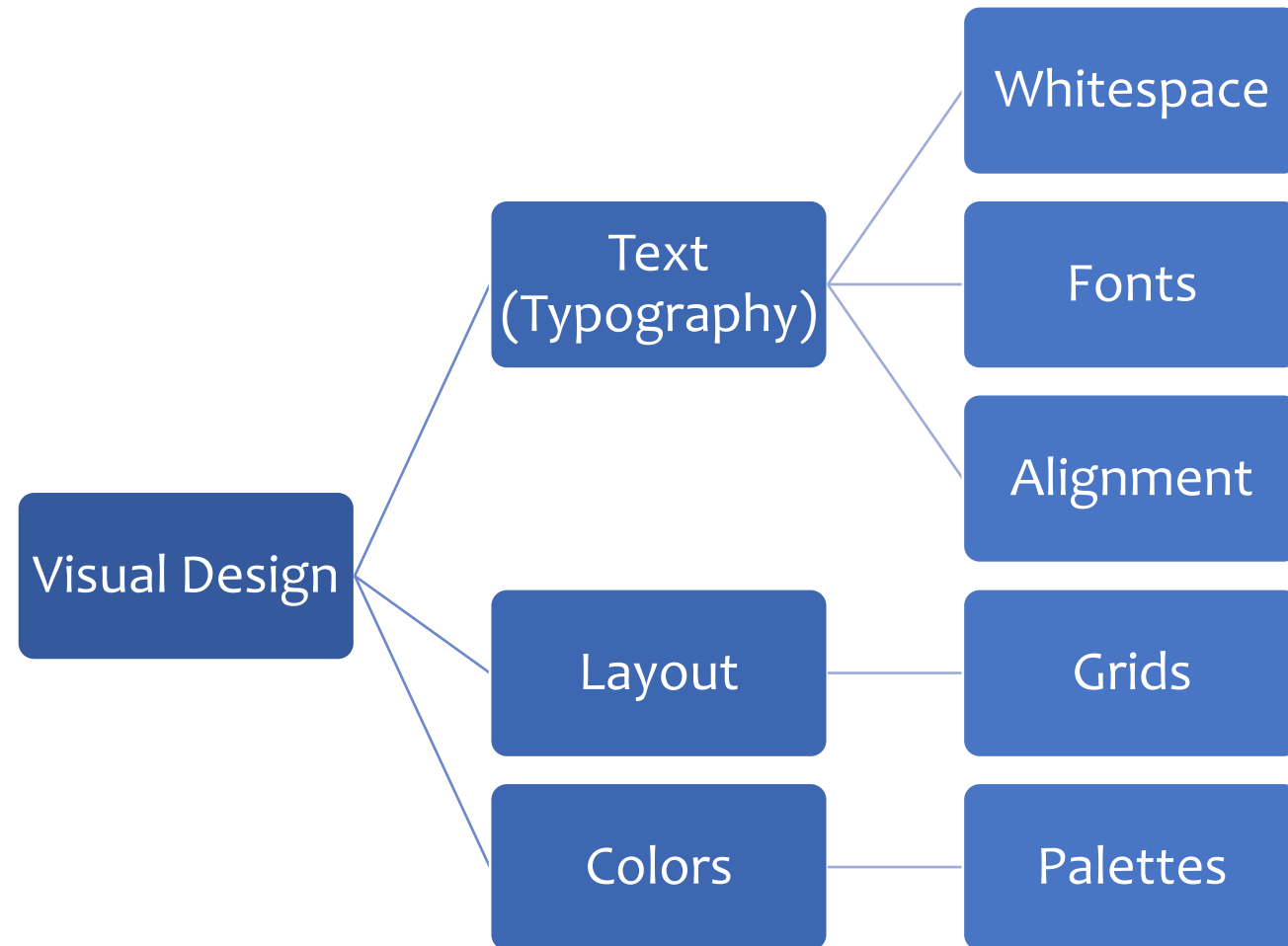
- **Whitespace**: helps separate out logical chunks of content
- **Font**: size and style differences convey hierarchy
- **Alignment**: crucial for helping readers scan quickly

### Layout

### Colors



# Key ingredients



# Recognizable page structure

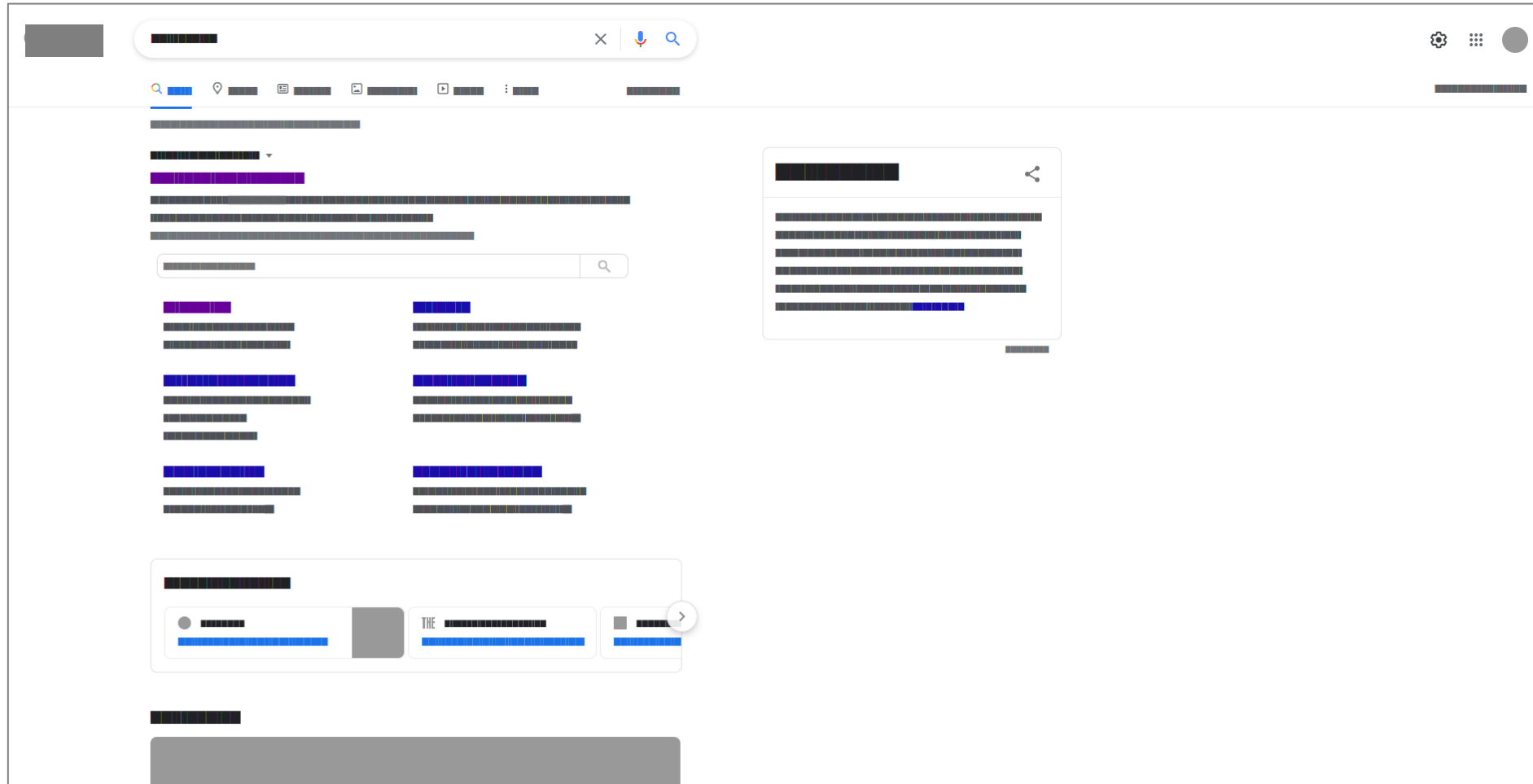


# Recognizable page structure

The screenshot displays the CNN website homepage with a clear grid layout. At the top is a navigation bar with the CNN logo and various category links. Below this is a horizontal menu of trending topics. The main content area is organized into several columns and sections:

- Main Article:** "Brazil has big green plans. But its track record is dismal" with a large image of a forest fire and an "ANALYSIS" tag.
- Developing Story:** "22-story building collapses in Lagos, Nigeria" with an image of a collapsed building.
- Analysis:** "'Let's go Brandon,' explained" with an image of a man wearing a red mask.
- Other News:** "Barclays CEO quits after investigation into links with Jeffrey Epstein", "Missile attack on mosque and religious school kills and injures 29 Yemeni civilians", and "At least 12 people killed and 52 injured in Halloween weekend mass shootings in US".
- Politics:** "Manchin issues warning to Democrats on Biden's economic package" with an image of Senator Manchin.
- Climate:** "Queen Elizabeth II tells world leaders at COP26 there's 'room for hope' on climate" and "Biden apologizes to world leaders for Trump's climate actions".
- Spotlight:** "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".
- News and Buzz:** "Elon Musk offers to sell Tesla stock 'right now' if UN can show how \$6 billion would..." with an image of Elon Musk.
- Featured:** A black and white portrait of a woman.

# 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, navigation tabs (Tutti, Maps, Notizie, Immagini, Video, Altro, Strumenti), and a search count of approximately 33,000,000 results. The main content area is divided into several sections: a primary result for "Politecnico di Torino" with a brief description and a search box for "Risultati di polito.it"; a grid of six navigation links including "Didattica", "Orienta", "Offerta formativa", "Corsi di Laurea", "Apply@polito", and "Scoprire l'Ateneo"; a "Trova risultati su" section with social media and external site links; and a "Politecnico" knowledge panel on the right providing a definition and a "Feedback" link. At the bottom, a map shows the location of Politecnico di Torino near Milan.

# Recognizable page structure



# Recognizable page structure

The screenshot displays the Stack Overflow 'All Questions' page, illustrating a recognizable page structure. The page is organized into several key sections:

- Header:** Includes the Stack Overflow logo, navigation links (About, Products, For Teams), a search bar, and 'Log in' and 'Sign up' buttons.
- Left Sidebar:** Contains navigation options such as 'Home', 'Questions', 'Tags', 'Users', 'Collectives', 'Find a Job', and 'Stack Overflow for Teams'.
- Main Content Area:** Titled 'All Questions', it shows a total of 21,855,928 questions. It features a list of questions with details like vote counts, answer counts, tags, and user avatars. The questions shown include:
  - 'tasks.json In VS Code' (0 votes, 0 answers, 2 views)
  - 'Android: Push notification and ServerKey' (0 votes, 0 answers, 2 views)
  - 'Max profit of Woodcutters' (0 votes, 0 answers, 2 views)
  - 'Remove "randomized" and "input" values from a procedural list' (0 votes, 0 answers, 3 views)
  - 'How to merge data into azure sql database from delta lake (delta tables in data lake)?' (0 votes, 0 answers, 3 views)
- Right Sidebar:** Contains promotional content like 'The Overflow Blog', 'Featured on Meta', 'Collectives' (e.g., Go Language, Google Cloud, GitLab), and 'Related Tags' (e.g., javascript, python, java).

# Recognizable page structure





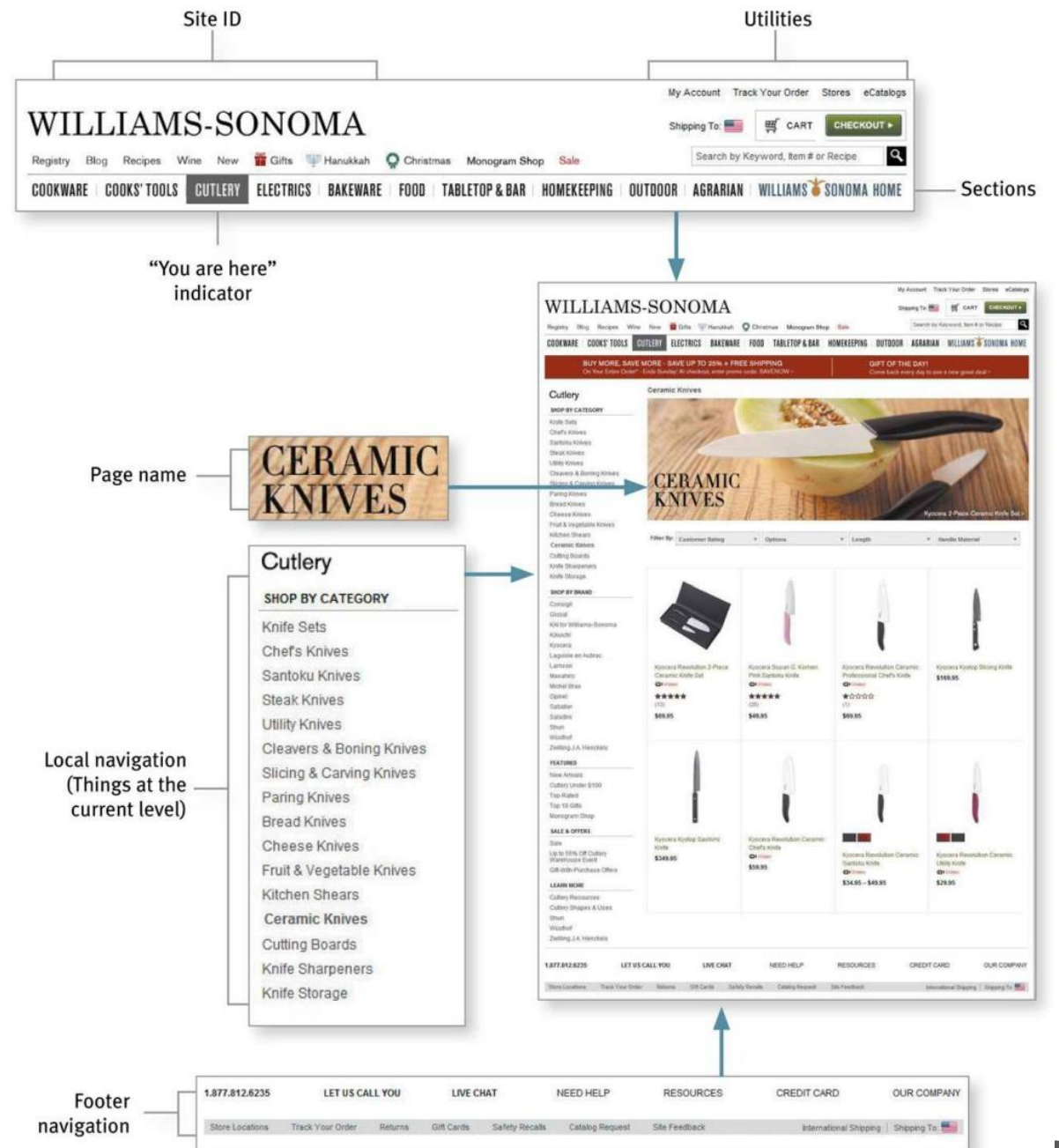
# Recognizable page structure

The screenshot displays the TripAdvisor interface for searching hotels in New York City. At the top, there is a navigation bar with the TripAdvisor logo, a search bar, and links for 'Scrivi una recensione', 'Viaggi', and 'Avvisi'. Below this, a secondary navigation bar lists categories like 'New York City', 'Hotel', 'Cose da fare', etc. The main content area is titled 'Hotel New York City e alloggi' and includes a map of the area, a search bar with arrival and departure dates, and a filter sidebar. The filter sidebar contains sections for 'COVID-19', 'Offerte', 'Prezzo', and 'Molto richiesti'. The main listing area shows 911 structures, with a dropdown for 'Viste di recente a New York City' and a list of hotel results. The first result is 'Fairfield Inn & Suites New York Midtown Manhattan/Penn Station', which is sponsored and has a price of 161 €. The listing includes a photo of the hotel, a rating of 4.0 (1,865 reviews), and a list of amenities such as free Wi-Fi, bar/lounge, and fitness center.

# Recognizable page structure

The screenshot shows the TBS News website interface. At the top, there's a header with the TBS News logo and the slogan "リアルタイム経営こそ、IT戦略" (Real-time management is the IT strategy). Below the header is a navigation bar with categories like "社会" (Society), "政治" (Politics), "経済" (Economy), "国際" (International), "スポーツ" (Sports), "列島" (Islands), "天気" (Weather), "連続動画" (Continuous Video), and "報道コラム" (Reporting Column). The main content area features a large video player for a news segment, followed by a text article titled "大手百貨店の三越伊勢丹ホールディングスは、グループの百貨店などにあるレストラン14店で、メニューと違う食材を使った料理を提供していたことを明らかにしました。不適切な表示は、小田急、そごうなどの百貨店にも広がっています。" (A major department store, Sanjitsu Isejima Holdings, has revealed that 14 restaurants in its group department stores used ingredients different from the menu. Inappropriate displays have also spread to department stores like Kodansha and SoGo). To the right of the main article is a promotional banner for Honda's "家族の冒険プロジェクト" (Family Adventure Project) featuring a man's face and the text "総選挙! ドンドン投票してね!" (General Election! Vote away!). Below the main article are several smaller news snippets, including "日本人初の船長・若田さん、きょう宇宙へ" (Japan's first captain, Wakata, to space today) and "特定秘密保護法案" (Special Secrets Protection Bill). At the bottom, there are sections for "社会" (Society), "政治" (Politics), and "経済" (Economy), each with a list of related news items. The footer contains various links and a "JNN" logo.

# Uses Conventions = Recognizable 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*



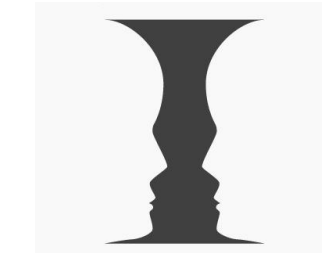
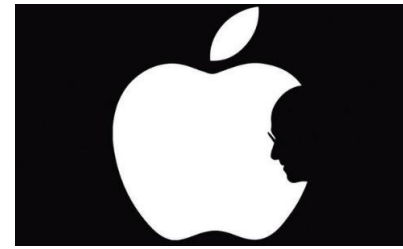
<https://www.interaction-design.org/literature/topics/gestalt-principles>

<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.

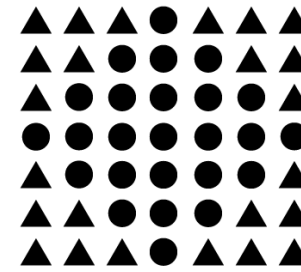
# Examples: figure-ground



This is a screenshot of the Basecamp 3 website. The main content area features a large illustration of a person's head filled with various icons and text bubbles, representing a complex workflow. The text bubbles include 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!". A callout box on the right side of the page, titled "Sign up now for free below", is highlighted with a black arrow pointing to it from the illustration. The callout box contains the text "Just last week, 10,772 companies got started with Basecamp 3!" and a "Sign up using Google" button. Below this, there are input fields for "Your Name" (filled with "Julie Applesseed"), "Your Email" (filled with "julie@widgetco.com"), and "Company/Organization" (filled with "Widget, Co.").

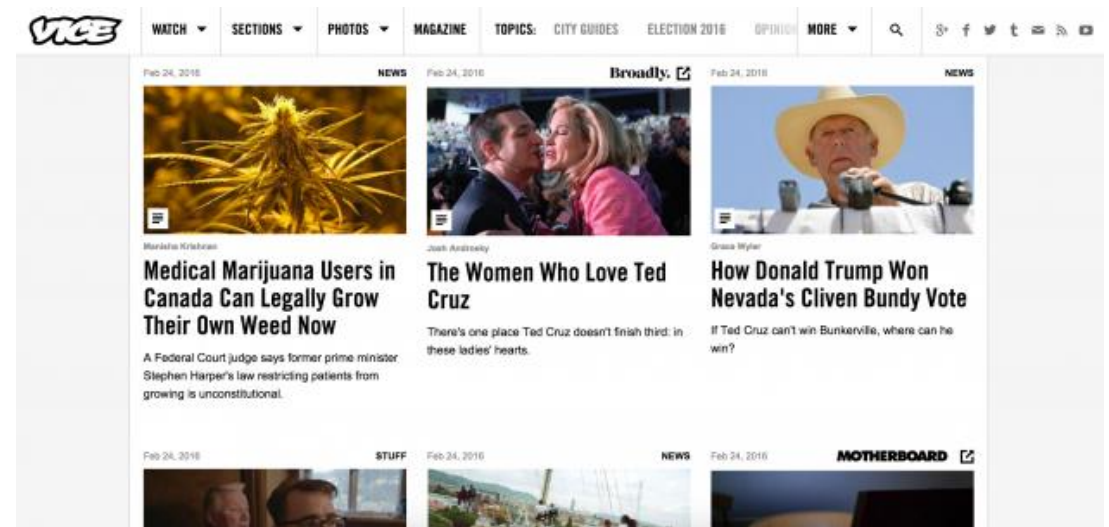
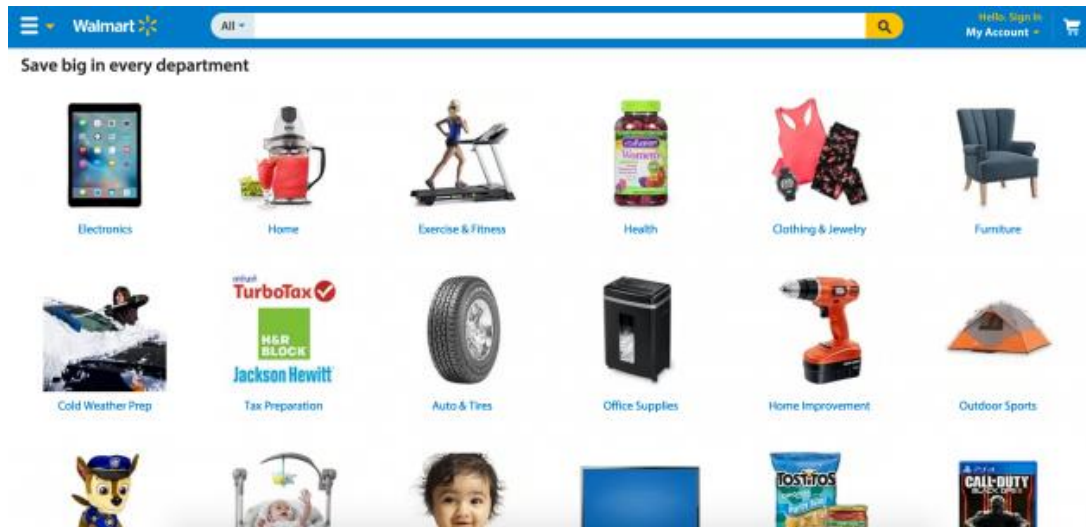
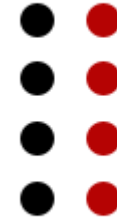
This is a screenshot of the AngelList website. The main header area features the AngelList logo (a peace sign) and the text "Where the world meets startups" over a background image of Earth from space. On the right side of the page, there is a search bar and a navigation menu. The navigation menu is a dark grey box with white text and right-pointing arrows, containing the following items: "Find a Startup Job", "Post a Job", "Raise Money Online", and "Invest in Startups".

# Examples: similarity



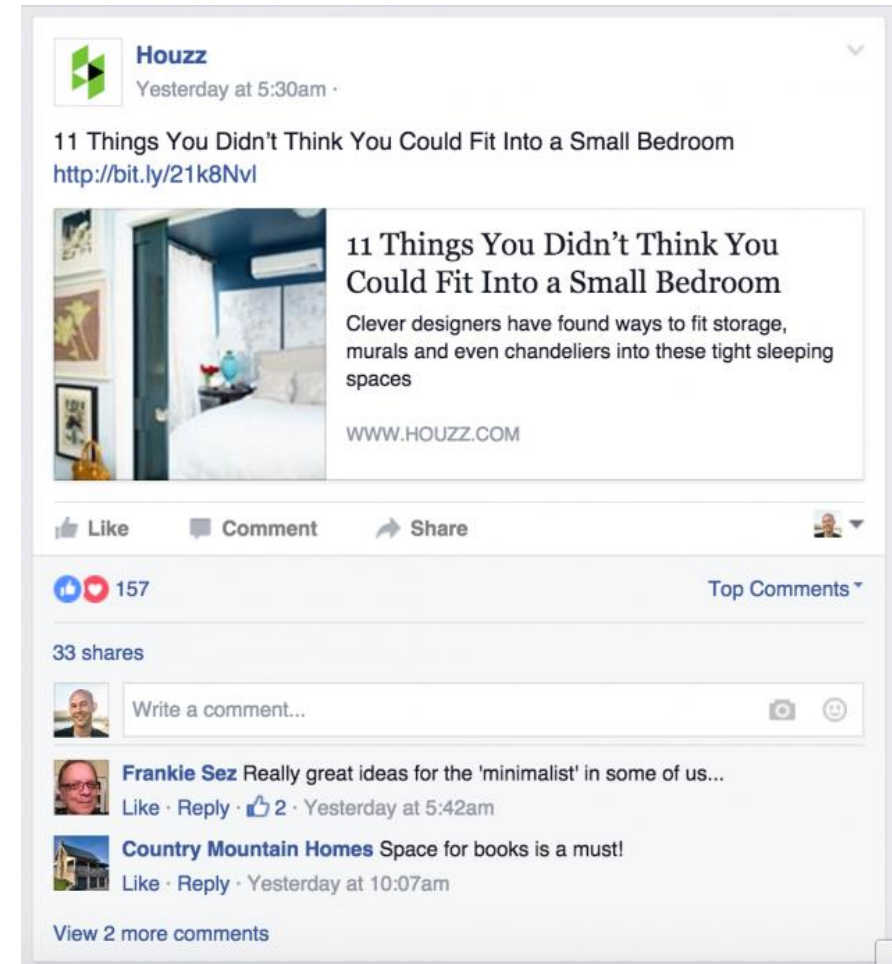
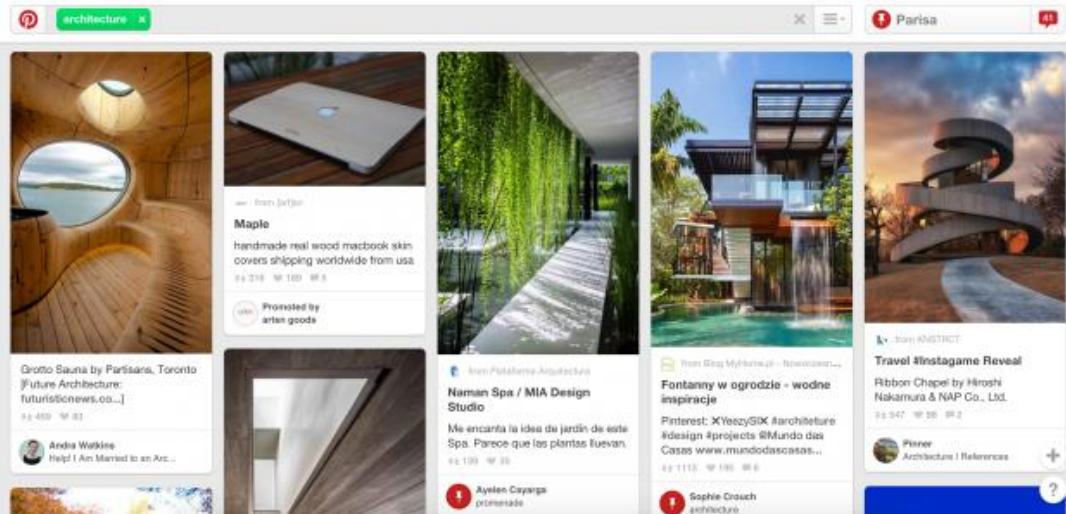
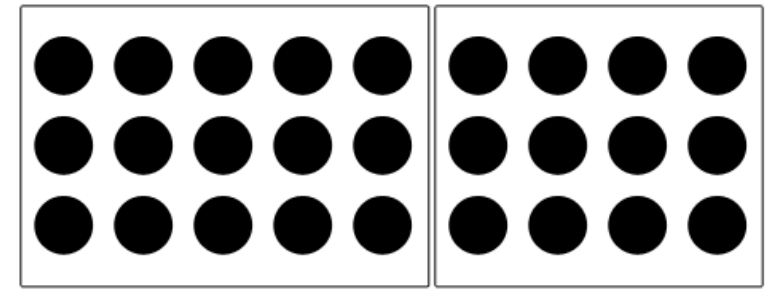


# Examples: proximity

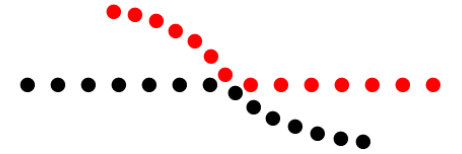


<https://www.usertesting.com/blog/gestalt-principles/>

# Examples: common region



# Examples: continuity



## Customers Who Bought This Item Also Bought

Page 1 of 20

The screenshot shows five book recommendations with their covers and titles:

- 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. \$15.06. Prime.



### Step 1

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



### Step 2

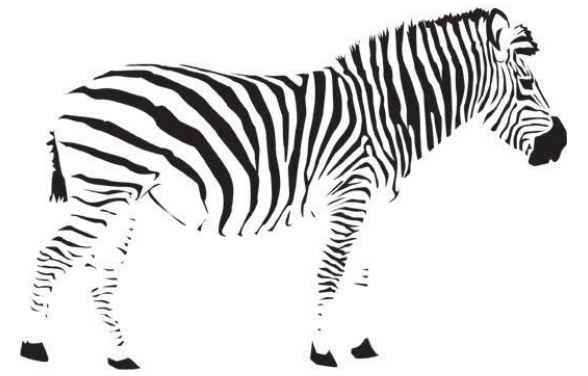
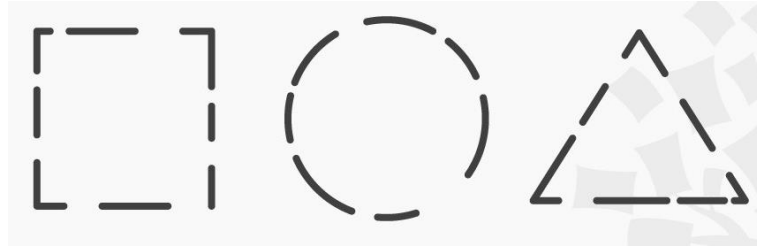
Our friendly servers organize your food for delivery - hot and ready to eat!



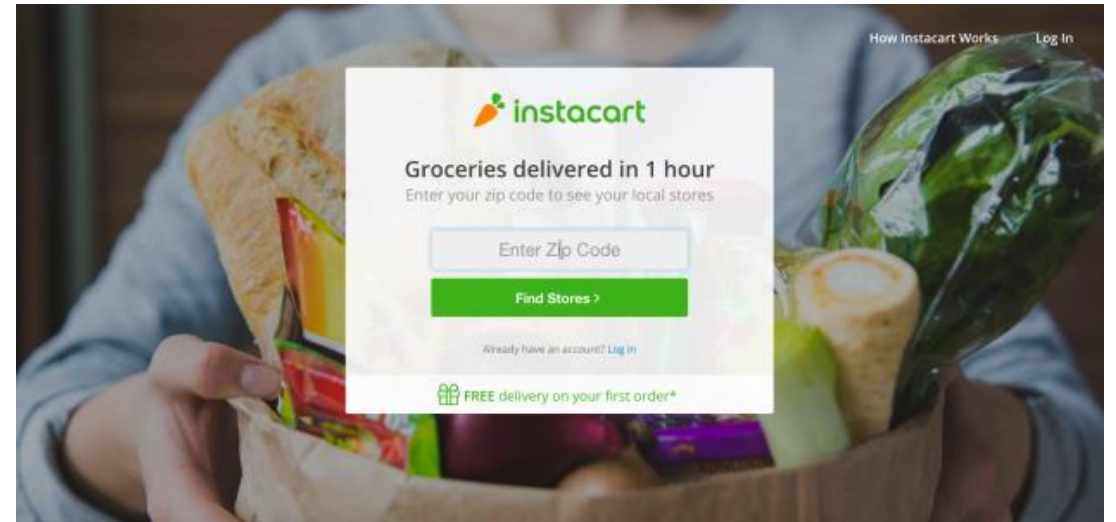
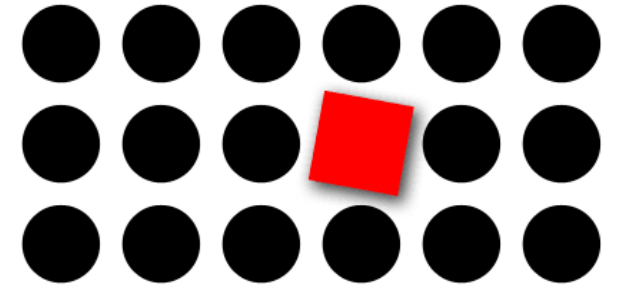
### Step 3

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

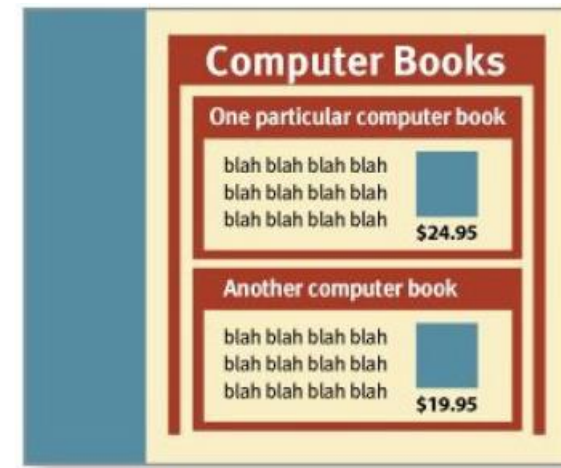
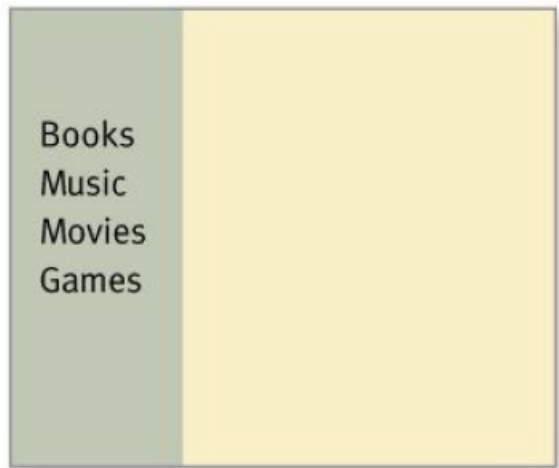
# Examples: closure



# Examples: focal point



# Examples (applying Gestalt)

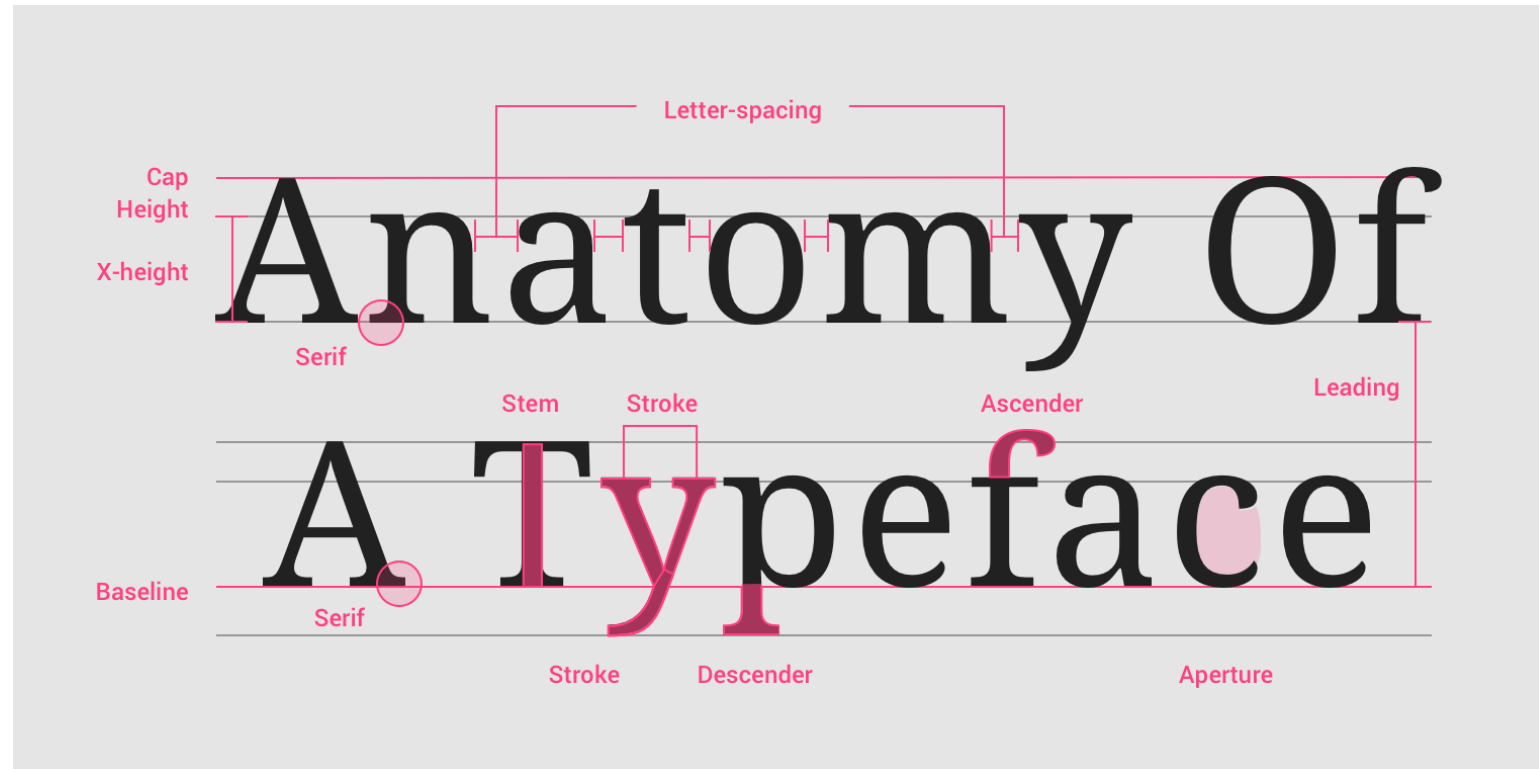


# Typography

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

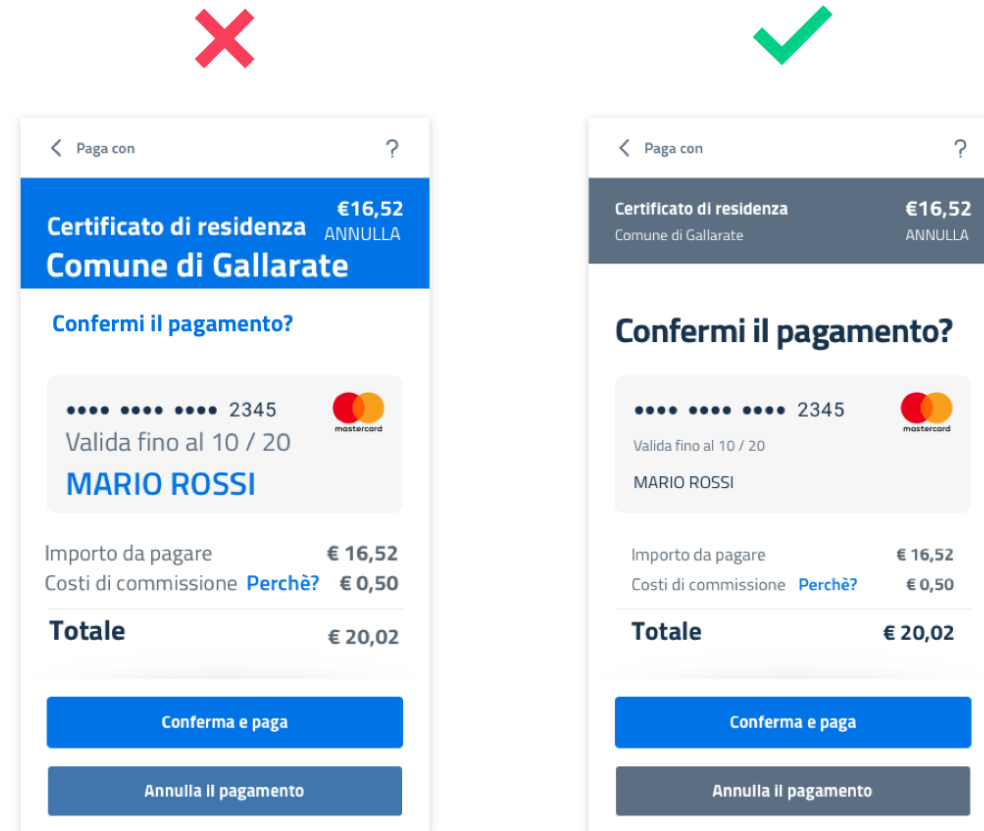
Scale Category	Typeface	Font	Size	Case	Letter spacing
H1	Roboto	Light	96	Sentence	-1.5
H2	Roboto	Light	60	Sentence	-0.5
H3	Roboto	Regular	48	Sentence	0
H4	Roboto	Regular	34	Sentence	0.25
H5	Roboto	Regular	24	Sentence	0
H6	Roboto	Medium	20	Sentence	0.15
Subtitle 1	Roboto	Regular	16	Sentence	0.15
Subtitle 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>

# Example: Text conveys hierarchy

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>

# Example: Text and Layout convey meaning

The image compares two real estate listing UI designs. The left design is marked with a red 'X' and the right with a green checkmark. The right design is annotated with callouts explaining its improvements.

**Left Design (Red X):** A table-like layout with labels on the left and values on the right.

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

**Right Design (Green Checkmark):** A more integrated layout with key information emphasized.

Annotations for the right design:

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

www.refactoringui.com

Refactoring UI

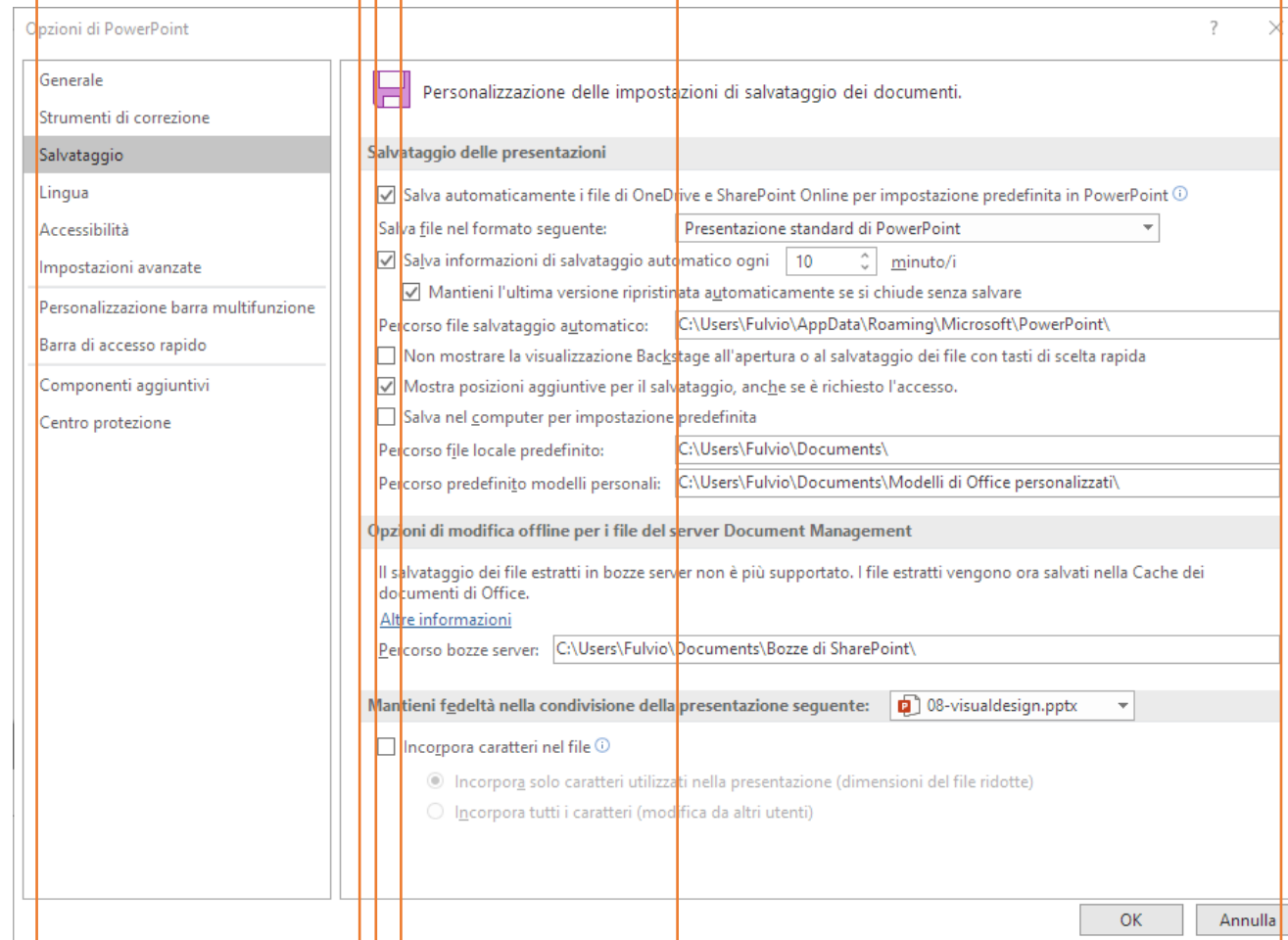
# Grids and Alignment

Exploiting grouping and alignment to convey content, at different levels

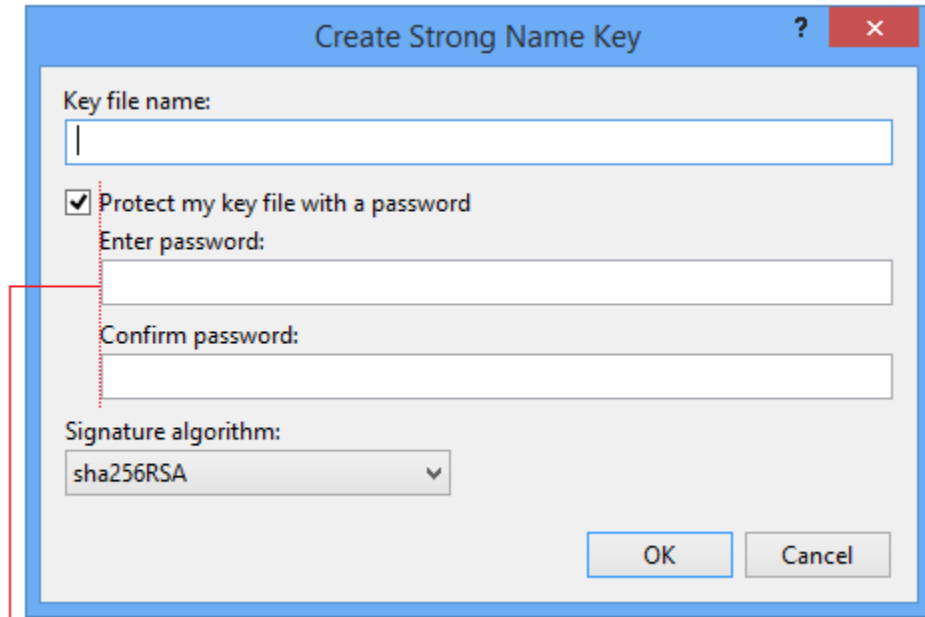
# Alignment

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

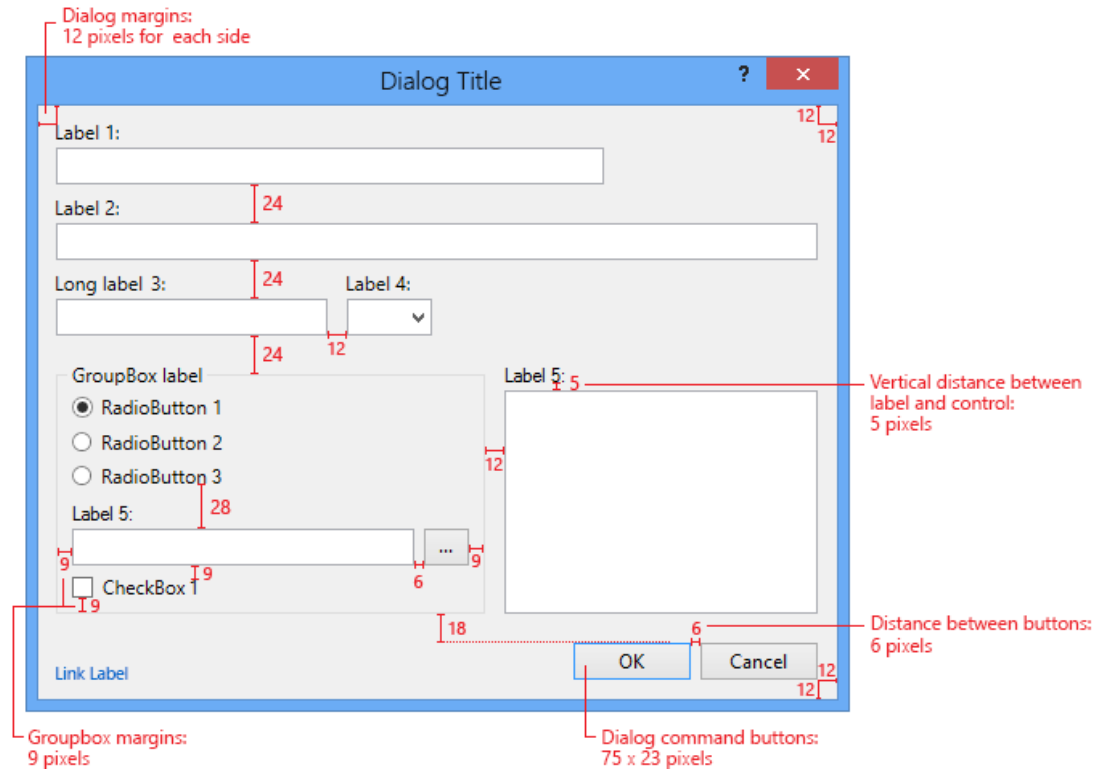
# Example



# Examples

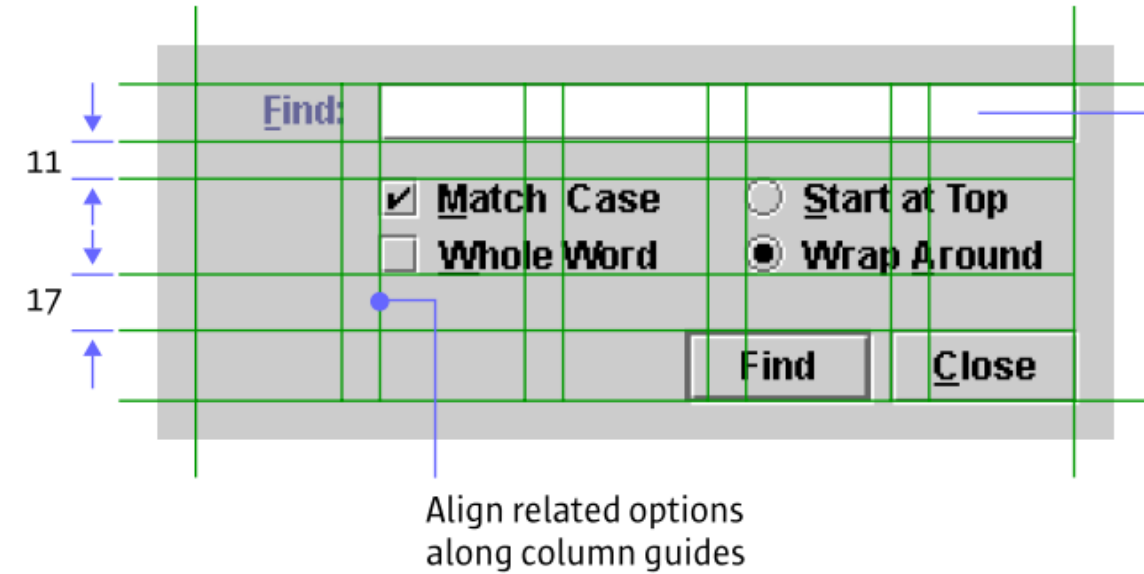


Align labels of nested controls

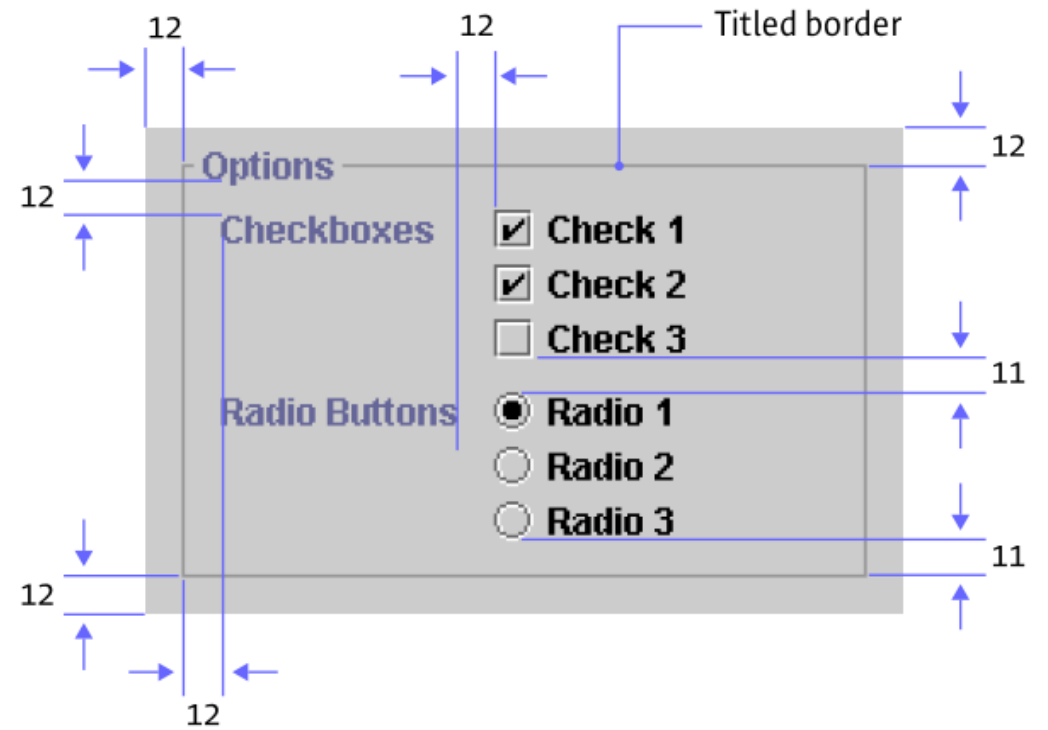


<https://docs.microsoft.com/en-us/visualstudio/extensibility/ux-guidelines/layout-for-visual-studio?view=vs-2019>

# Examples



Place most important option near the top



Titled border

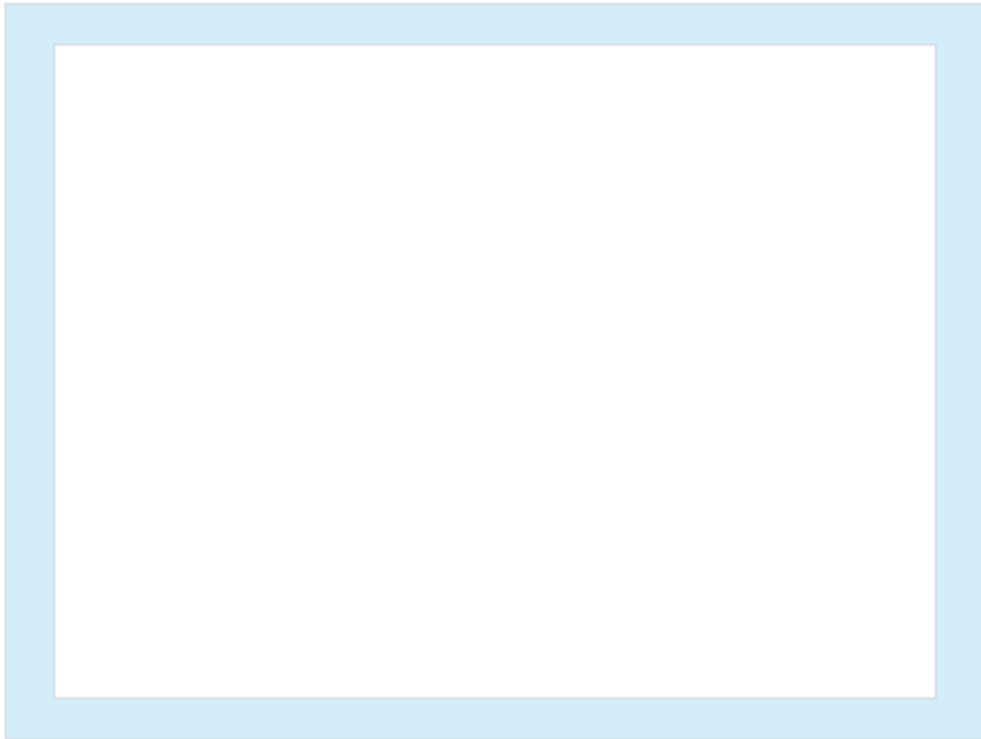


# Grid Layout Ingredients

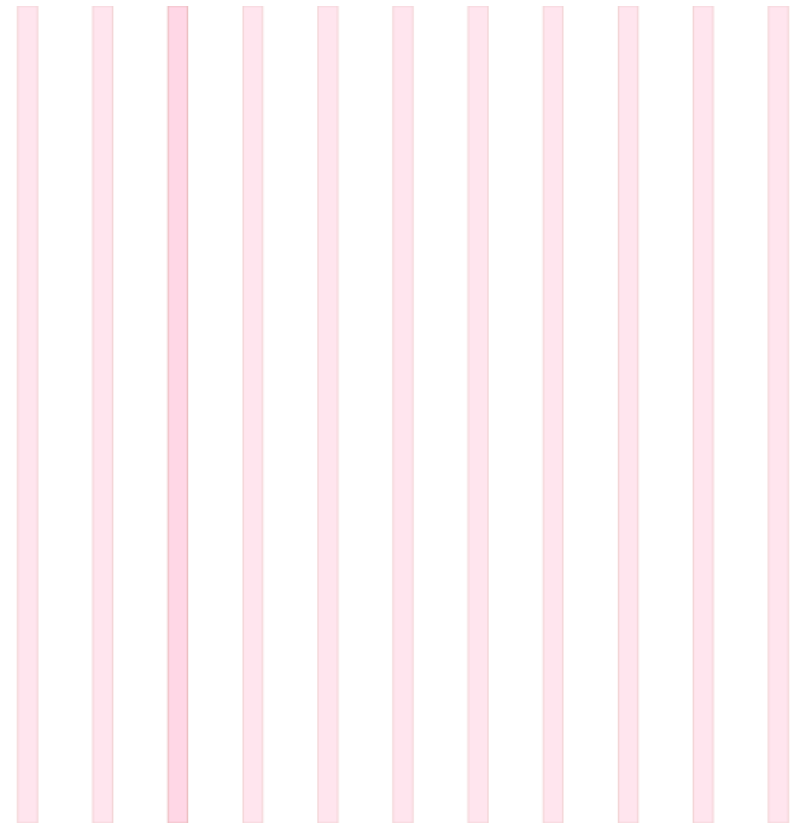
- **Guides:** The edge which you choose to align content with
- **Column:** A vertical division of content
- **Row:** A horizontal division of content
- **Margins:** The area surrounding your content
- **Gutters:** The margins between columns
- **Hang-line:** A horizontal guide to align content to hang 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

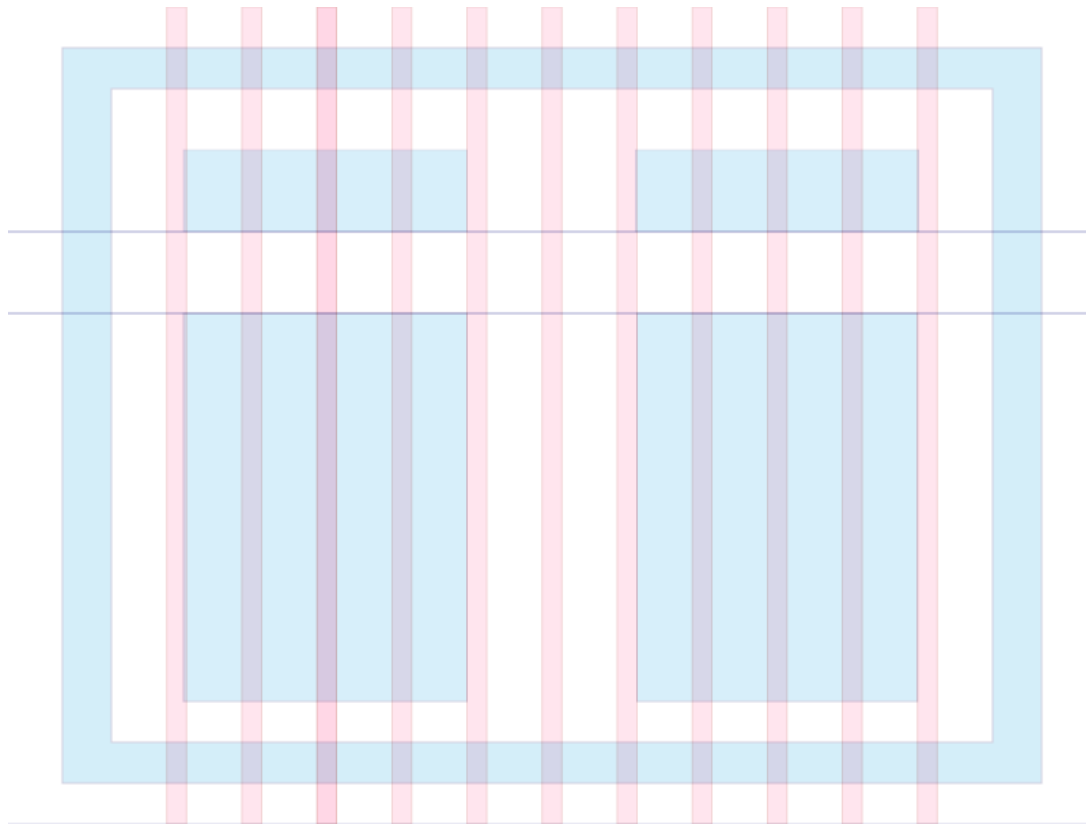


## Columns & Gutters



# Grid Layout Ingredients

## Hanglines and Baselines

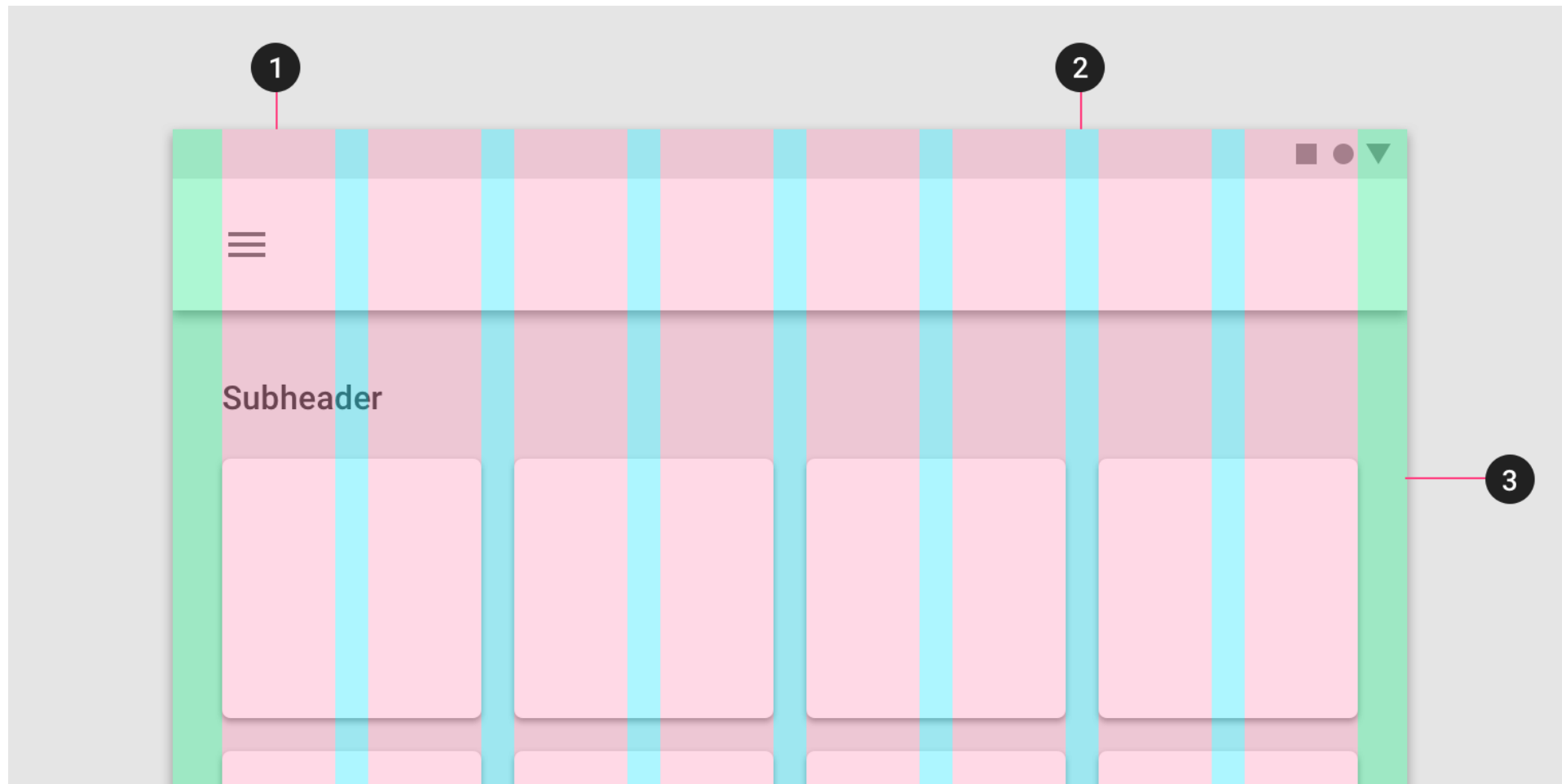


## Baseline Grids



# Example Grid-based layout

1. Columns
2. Gutters
3. Margins



# Example: Bootstrap grid

Always 12 columns in total

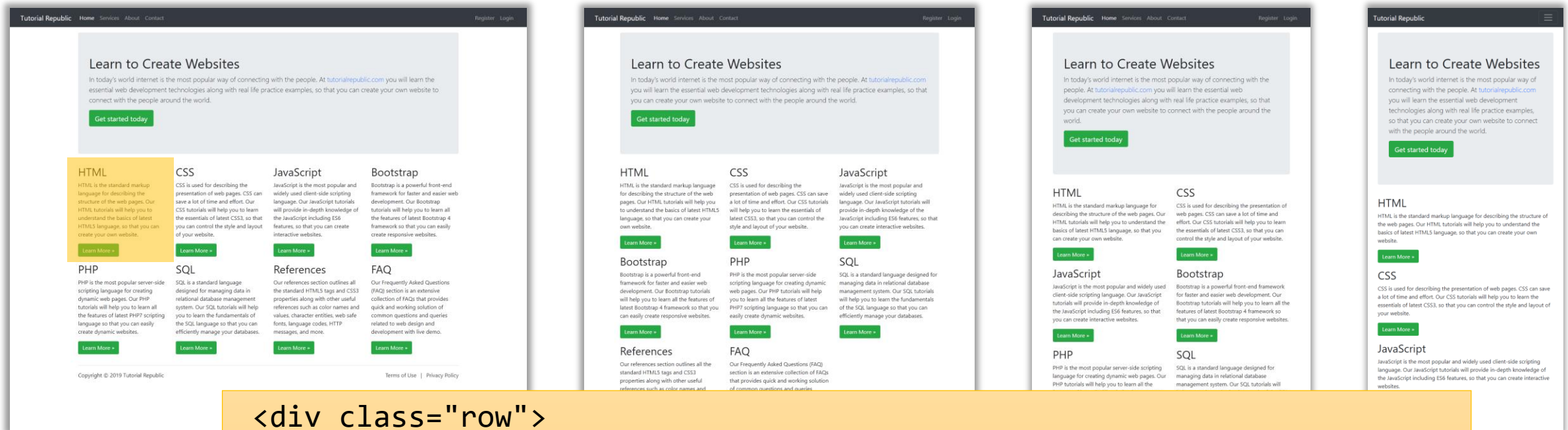
May choose to span a group of columns

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

960 grid (fixed width, 12 or 16 col)

If you want a responsive grid framework, check out [Unsemantic.com](#)

Twitter

# 960 GRID SYSTEM

Download - CSS, sketch paper, and templates for: Acorn, Fireworks, Flash, InDesign, GIMP, Inkscape, Illustrator, OmniGraffle, Photoshop, QuarkXPress, Visio, Exp Design. Repository at [GitHub](#)

Big ol' DOWNLOAD button :)

the changelog INTERVIEW ABOUT 960.gs VIEW SLIDES ABOUT THE 960 GRID SYSTEM

ADAPT.JS - ADAPTIVE CSS CUSTOM CSS GENERATOR GRID OVERLAY BOOKMARK

**Essence**  
The 960 Grid System is an effort to streamline web development workflow by providing commonly used dimensions, based on a width of 960 pixels. There are two variants: 12 and 16 columns, which can be used separately or in tandem. [Read more](#)

**Dimensions**  
The 12-column grid is divided into portions that are 60 pixels wide. The 16-column grid consists of 40 pixel increments. Each column has 10 pixels of margin on the left and right, which creates 20 pixel wide gutters between columns. [View demo](#)

**Purpose**  
The premise of the system is ideally suited to rapid prototyping, but it would work equally well when integrated into a production environment. There are printable sketch sheets, design layouts, and a CSS file that have identical measurements.

**More Columns**  
For those more comfortable designing on a 24-column grid, an alternative version is also included. It consists of columns 30 pixels wide, with 10 pixel gutters, and a 5 pixel buffer on each side of the container. This keeps text from touching browser chrome — helpful for devices like the iPhone, where a lower-case "r" or "t" might be easily missed. [View demo](#)

**Source Order**  
By utilizing the `push_XX` and `pull_XX` classes, elements can be rearranged, independent of the order in which they appear in the markup. This allows you to keep more pertinent info higher in the HTML, without sacrificing precision in your page layout. For instance, view the source code of this page to see how the `H1` tag has been re-positioned.

Sony Music — 16 col SHOW GRID Drupal — 12 col SHOW GRID

<https://960.gs/>

Unsemantic (responsive, based on %)

# unsemantic

Home About Demo CSS Documentation Sass Documentation

Download Here GitHub Repo

**What is it?**  
Un·se·man·tic [*ˈʌnsəˈmɑntɪk*]  
adjective  
1. A [nonexistent](#) word that [developers use](#) to critique the work of their peers.  
noun  
2. Now, it's also a CSS framework. I mean hey... "If the shoe fits, wear it." [@](#)

**Example Usage**

```
<div class="grid-container">  
  <div class="grid-25">  
    I am 25% wide.  
  </div>  
  <div class="grid-50">  
    I am 50% wide.  
  </div>  
  <div class="grid-25">  
    I am 25% wide.  
  </div>  
</div>
```

**Successor to 960.gs**  
Unsemantic is a fluid grid system that is the successor to the [960 Grid System](#). It works in a similar way, but instead of being a set number of columns, it's entirely based on percentages.

**SE-Oh?**  
By using `push-x` and `pull-x` classes, you can rearrange the visual layout of page, without affecting its source order. While SEO is a bit of a "moving target", this has been known to help search engines determine the most relevant content on a page.

**Built with Sass**  
Unsemantic was built with extensibility in mind, using [Sass](#). While you can use the CSS as is, some developers prefer to use their own class names, and want only the bare minimum CSS required for a particular page.

**Responsive Demo**  
These demos use `@media` queries.

- [Responsive Demo](#)
- [Responsive Demo - RTL text](#)

**Adapt.js Demo**  
These demos use [Adapt.js](#).

- [Adapt.js Demo](#)
- [Adapt.js Demo - RTL text](#)

**Browser Support**  
Unsemantic supports all major browsers: Chrome, Firefox, Internet Explorer (7+), Opera, and Safari.

If you think you've found a bug, and can verify that it is reproducible, file a ticket on [GitHub](#).

Note: If you reached this site by mistake, perhaps you are seeking Unsemantic's arch nemesis... [Semantic.com](#)

Licensed under [GPL](#) and [MIT](#) Created by [Nathan Smith](#) Built with [Sass](#) Hosted by [Dreamhost](#)

<https://unsemantic.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

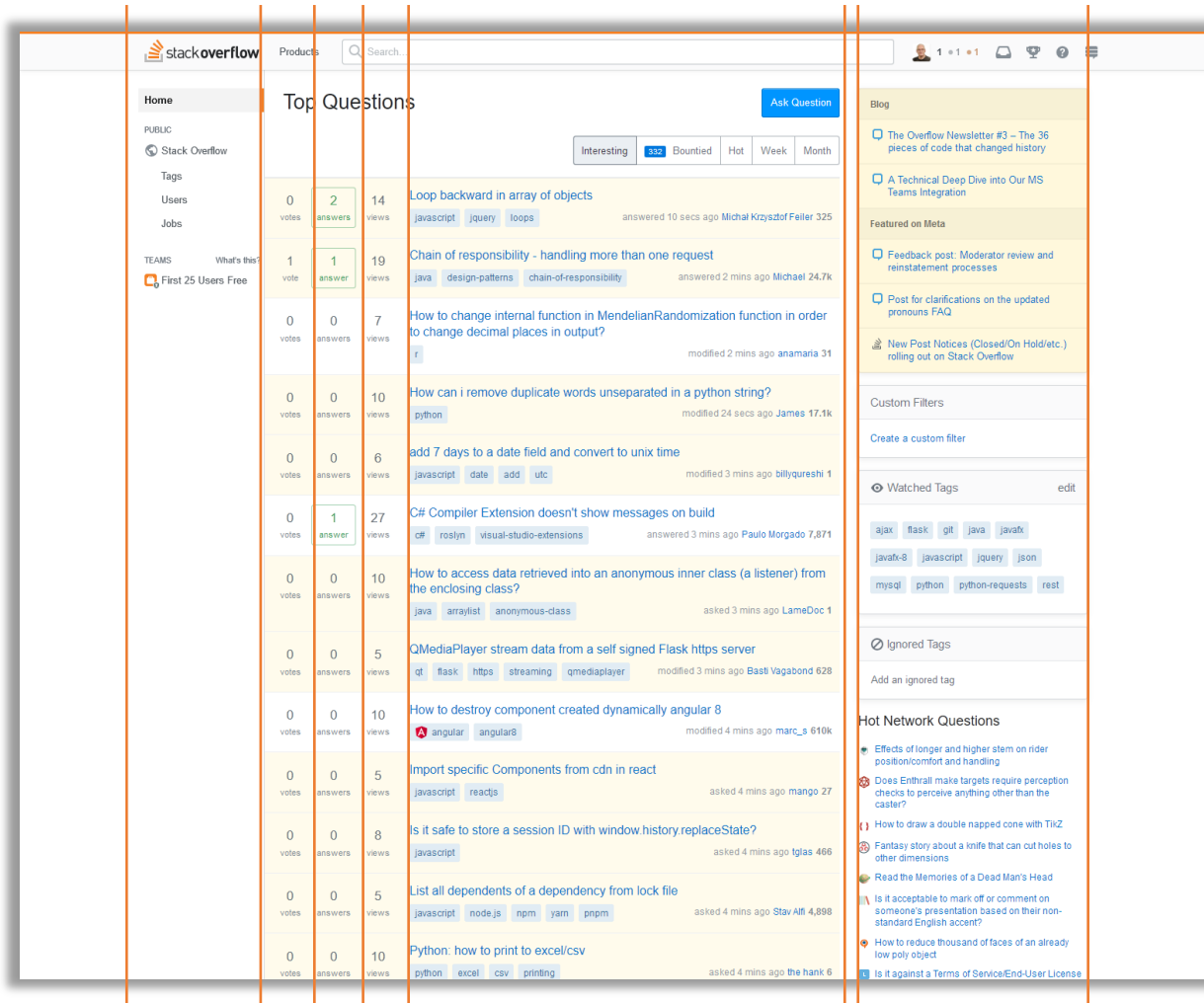


# Grid structure

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	01PDWOV	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	02LSEOV	EN	Computer architectures ING-INF/05 (10)	10	P. Montuschi			
1	01SQJOV	EN	Data Science and Database Technology ING-INF/05 (8)	8	S. Chiusano			
1	01SQMOV	IT	Data Science e Tecnologie per le Basi di Dati ING-INF/05 (8)	8	E. Baralis			
1	01OTWOV	EN	Computer network technologies and services ING-INF/05 (6) Oppure	6	M. Baldi			
1	02KPNOV	IT	Tecnologie e servizi di rete ING-INF/05 (6)	6	G. Marchetto			
2	02JEUOV	EN	Formal languages and compilers ING-INF/05 (6)	6	R. Sisto			
2	05BIDOV	IT	Ingegneria del software ING-INF/05 (8) Oppure	8	G. Bruno			
2	04GSOV	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	01UDUOV	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				
1	04CFDOV	IT	...	6				

# Example (same page in 2020)

Software

1° anno 2020/2021

Periodo	Codice	SSD	Insegnamento	Lingua	Crediti	Docente	Note	Orario
1	01PDWVOV	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	015QMOV	ING-INF/05 (8)	Data Science e Tecnologie per le Basi di Dati	🇮🇹	8	E. Baralis (254 iscr.)	🟢 🟢	🕒
1	01OTWVOV	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	04GPOV	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	01TXVOV	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	015QNOV	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 guidelines

- 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

# Colors...

**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

**AUDI**

**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**

**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 7). 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!**

**Fiat 500**

- 1.2 Pop 8v (69bhp) (4 seats) Hatchback 3dr 1242cc Petrol Manual (5 Speed)
- RENT NEW £127/mth** including VAT
- 3 year cheap car leasing
- 9+35

**Renault Clio**

- 0.9 TCE Iconic 12v (90bhp) Hatchback 5dr 898cc Petrol Manual (5 Speed)
- RENT NEW £152/mth** including VAT
- 3 year cheap car leasing
- 6+35

**Citroen C3**

- 1.2 PureTech 12v (83bhp) Flair Hatchback 5dr Manual 1199cc
- RENT NEW £157/mth** including VAT
- 2 year cheap car leasing
- 6+23

**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**

**1 DELIVERY TODAY**

- Ford Ka+ <sup>10</sup> Arthur ATTLEBOROUGH, NR17

**21 DELIVERIES IN LAST WEEK**

- Renault Captur <sup>10</sup> Cath PONTEFRAC, WF81
- Mercedes GLC Coupe <sup>10</sup> Bill BEDLINGTON, NE22
- BMW 2 Series Convert... <sup>10</sup> Pingu DERBY, DE56
- Nissan Qashqai <sup>10</sup> Arlene GLASGOW, G11
- Volvo XC60 Estate <sup>10</sup> Saif MILTON KEYNES, MK8
- Seat Leon <sup>10</sup> Ben BARNSELY, S70
- Skoda Kodiaq Estate <sup>10</sup> Hannah HAY-ON-WYE, HR3
- Renault Clio <sup>10</sup> Paul MIDDLEBROUGH, T57
- Renault Clio <sup>10</sup> Paul MIDDLEBROUGH, T57
- Seat Arona <sup>10</sup> Steve LONDON, SE18
- Seat Leon <sup>10</sup> Adam HATFIELD, AL10
- Audi A3 Sportback <sup>10</sup> Chris WYMONDHAM, NR18

# Colors

- Be careful, don't 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



# Example

The screenshot shows the Stack Overflow homepage with the following elements:

- Header:** Stack Overflow logo, search bar, and user profile icons.
- Left Sidebar:** Home button, PUBLIC Stack Overflow, Tags, Users, Jobs, TEAMS, and First 25 Users Free.
- Main Content:** "Top Questions" section with a list of questions. Each question entry includes the number of votes, answers, and views, the question title, tags, and the user who asked it.
- Right Sidebar:** Blog section with a list of articles, "Featured on Meta" section, Custom Filters, Watched Tags, Ignored Tags, and Hot Network Questions.

This screenshot is identical to the one on the left, showing the Stack Overflow homepage with the same layout and content.

# Example

ITA | ENG | Login | argomenti o persona

SCOPRIRE L'ATENEO | DIDATTICA E STUDENTI | IL MONDO DELLA RICERCA | INNOVAZIONE PER LE IMPRESE | CAMPUS INTERNAZIONALE

## festival della TECNOLOGIA

TORINO, 7-10 NOV 2019

*Tecnologia è Umanità*

È online il programma del Festival della Tecnologia

**EVENTI** Tutti gli eventi

Dal 14.06	Walking Beyond: camminate urbane attraverso la città contemporanea <small>Giugno - Dicembre 2019</small>	Dal 23.10	The Polar oceans and global climate change <small>23 October - 18 November 2019</small>
Dal 04.11	Network dynamics in the social, economic and financial sciences <small>4-8 November 2019</small>	Dal 05.11	OptArch2019 <small>5 - 7 November 2019</small>

**ACCESSO RAPIDO**

- Apply@Polito iscrizioni online
- Orientamento
- Corsi di studio
- Orario delle lezioni
- Tasse e riduzioni
- Dottorato di ricerca
- Dipartimenti
- Centri interdipartimentali
- Per le imprese
- Servizi web Amministrazione
- Sedi e mappe
- Concorsi e selezioni
- PoliToComunica
- Rassegna stampa
- Alumni

**AVVISI E SCADENZE** Tutti gli avvisi

<small>10 settembre 2019</small> Comitato Leonardo: nuovi bandi per i Premi di Laurea	<small>Scadenza presentazione abstract 15 novembre 2019</small> AI4CH - Artificial Intelligence in geomatics for cultural heritage
<small>Scadenza Call for participation: 15 novembre 2019</small> Progetti resilienti di natura in città in Francia e in Italia	<small>Deadline online registration: 18 November 2019</small> Wireless charging of vehicles (WCV2019)

ITA | ENG | Login | argomenti o persona

SCOPRIRE L'ATENEO | DIDATTICA E STUDENTI | IL MONDO DELLA RICERCA | INNOVAZIONE PER LE IMPRESE | CAMPUS INTERNAZIONALE

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# Palettes



## BLU

PANTONE

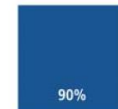


288 CVP

CMYK



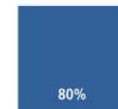
100/80/0/30



90%



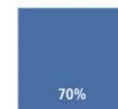
90%



80%



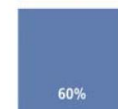
80%



70%



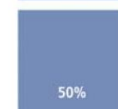
70%



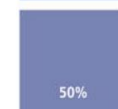
60%



60%



50%



50%

## ARANCIO

PANTONE



ORANGE 021



137 CVP



130 CVP



123 CVP



0/30/90/0



0/70/90/0



0/60/90/0



0/50/90/0



0/40/90/0



0/70/100/0



0/60/100/0



0/50/100/0



0/40/100/0



130 CVP

## COMBINAZIONI

CMYK



100/80/0/30



100/80/0/30



100/80/0/30



100/80/0/30



0/70/100/0



0/60/100/0



0/50/100/0



0/40/100/0



0/30/100/0

# 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

-  **SadieSows on Vengeful 225**  
Really nice look, with this! (:
-  **MistryMoments 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 +

PATTERNS

Create +

COLORS

Create +



Nineteen  
by Julia Freire



try  
by Anomalin



light gray purple  
by macarver



garden palette 2  
by macarver



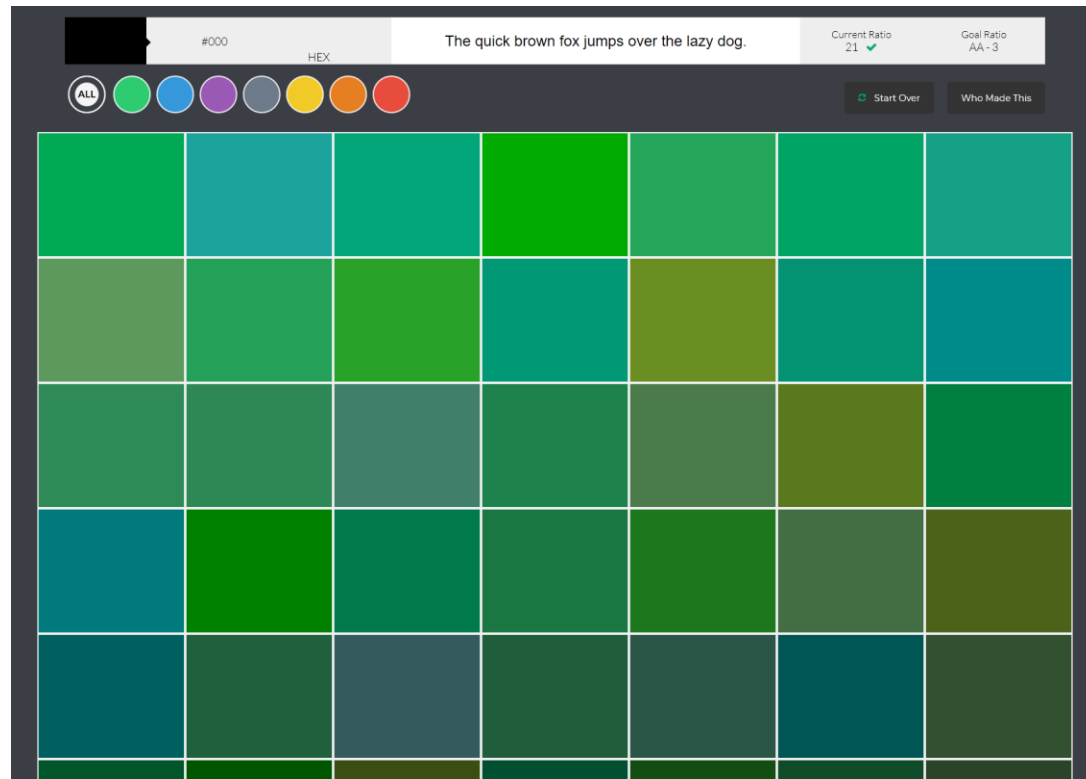
PodCasting  
by Sisters



slate purple  
by macarver

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

# Color contrast



<http://colorsafe.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 2 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



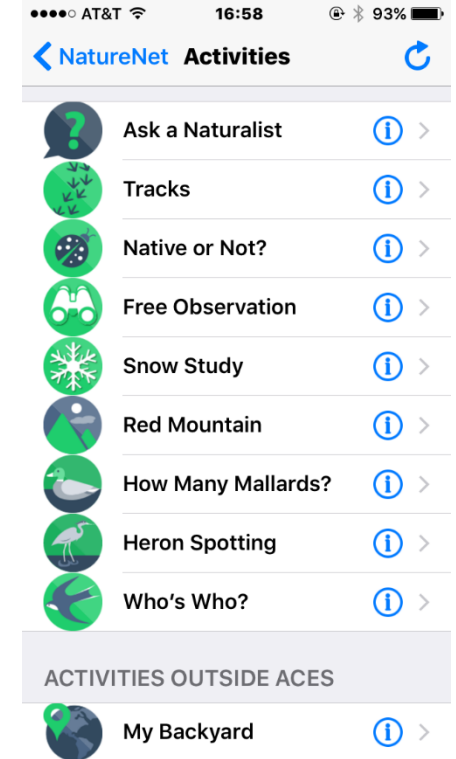
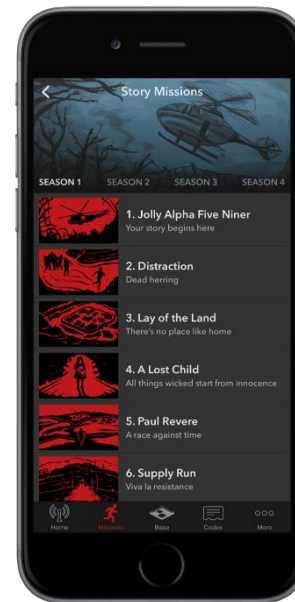
# Navigation by selection

- 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

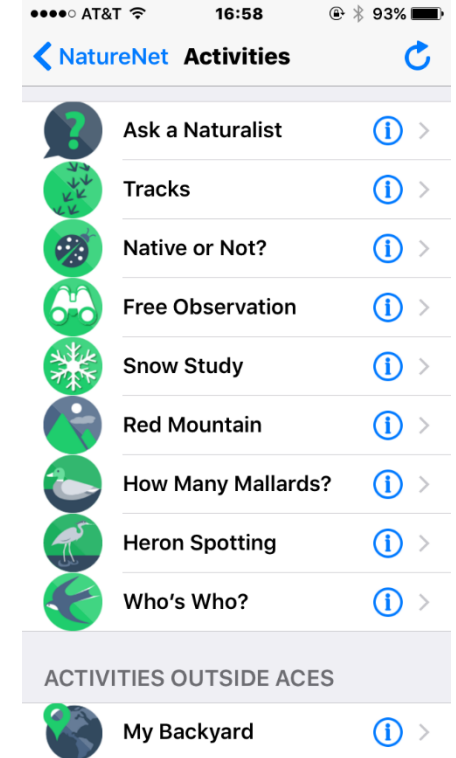
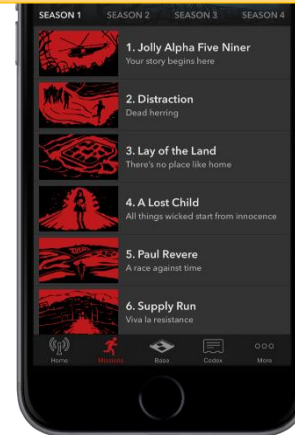
No thanks



# 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

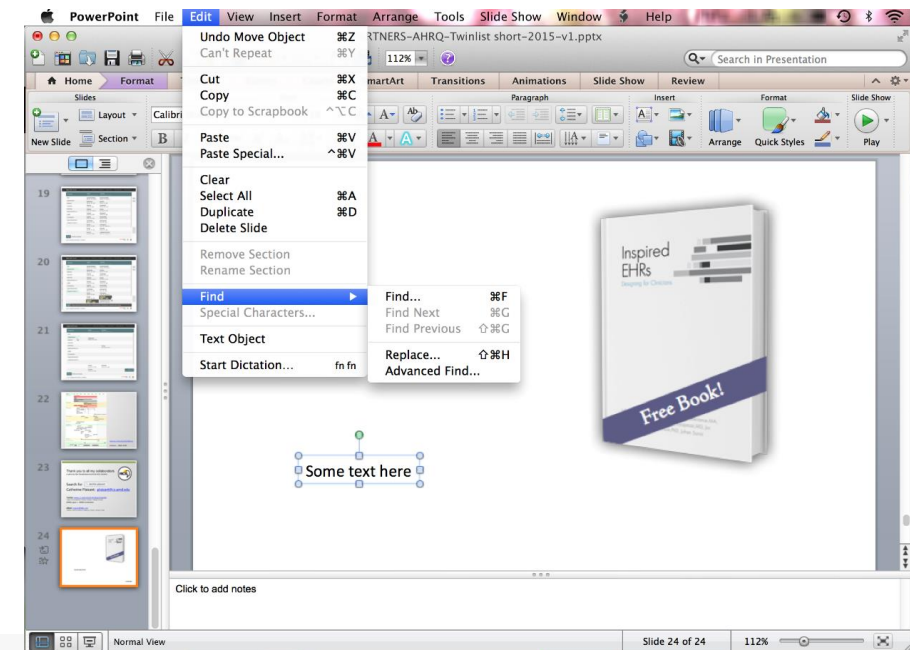
- Radio Buttons and Checkboxes
- Menu bars, pop-up menus, toolbars, palettes and ribbons

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

The screenshot shows the NASA website homepage with a yellow navigation bar at the top. The navigation bar includes the NASA logo, a search bar, and a list of menu items: Missions, Galleries, NASA TV, Follow NASA, Downloads, About, NASA Audiences, International Space Station, Journey to Mars, Earth, Technology, Aeronautics, Solar System and Beyond, Education, History, and Benefits to You. The main content area is a grid of news stories and images. The top-left story is titled "The Martian' Director Ridley Scott Discusses NASA's Journey to Mars" and features a play button icon. Below it is a story about a "Supermoon Eclipse" with a play button icon. To the right is a "Tweets" section with a tweet about 3-D printed habitats. The bottom of the page features the NASA logo, the text "National Aeronautics and Space Administration" and "NASA Official: Brian Dunbar", and a footer with links for "No Fear Act", "FOIA", "Privacy", "Office of Inspector General", "Agency Financial Reports", and "Contact NASA".

The screenshot shows the NASA TV website interface. At the top, there is a search bar and a menu icon. Below the navigation bar is a large video player showing a scene from the International Space Station with the text "One-Year Crew Halfway There". Below the video player is another smaller video player showing a scene from the International Space Station with the text "One-Year Crew Halfway There".

# 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 is 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-categories: 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, including REI Rainwall Rain Jacket - Girls', REI Rainwall Rain Pants - Kids', and REI Sahara Convertible Pants - Girls'. Each product listing includes a star rating, price, and a "Compare" button. A "Features" section on the left lists attributes like Moisture wicking, Quick drying, Sun-protective fabric, Waterproof, Insulated, Earflaps, and Made in USA. A "Brand" section is also present.

▼ Help | Wish List | Gift Registry | Classes & Events | Store Locator | Checkout

REI | Find great gear and clothing | Welcome to REI! | Log In or Register | FREE SHIPPING With \$50 minimum purchase.

SHOP REI | SHOP REI OUTLET | TRAVEL WITH REI | LEARN | BLOG | MEMBERSHIP | STEWARDSHIP

Camp & Hike | Climb | Cycle | Fitness | Run | Paddle | Snow | Travel | Men | Women | Kids | Footwear | More | Deals

**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

**Bike Components**  
Brakes  
Saddles/Seat Posts  
Tires, Tubes and Wheels  
Tools and Maintenance  
Drivetrain Components  
Pedals  
Handlebars

**GIVE THE GIFT OF GEAR ANYTIME, ANYWHERE**  
REI gift & e-gift cards  
Buy now ▶

Car Racks | Novara Cycling | Cycling Deals | All Cycling

Deals (31)

▼ Features

- Moisture wicking (27)
- Quick drying (26)
- Sun-protective fabric (22)
- Waterproof (15)
- Insulated (11)
- Earflaps (6)
- Made in USA (5)

See 8 More

▼ Brand

Clear

- 686 (6)

REI Rainwall Rain Jacket - Girls' \$31.83 - \$64.50

REI Rainwall Rain Pants - Kids' \$49.50

REI Sahara Convertible Pants - Girls' \$44.50

ONLY AT REI

# 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
- Biblioteca
- Segreteria generale studenti

**Aule Studio - Seleziona Aula Studio**

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



### Tool Prenotazioni

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**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

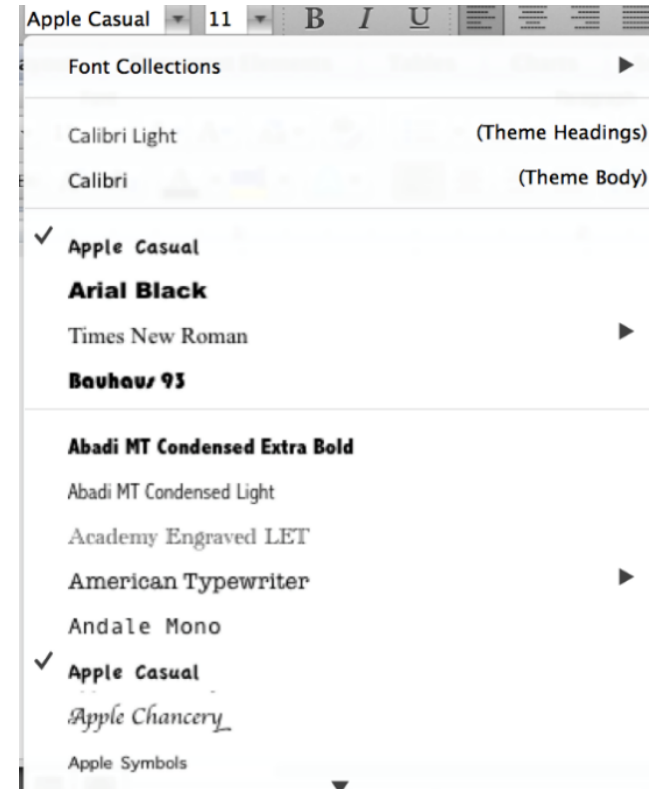
<< Oggi >> **14 Set 2020 - 18 Set 2020**   1 giorno   3 giorni   **Settimana lavorativa**   Settimana

	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...
  - Don't 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. Copyright information: '© 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
Curricula and course syllabi of current and previous years	Postgraduate School
	Summer School

STUDENT GUIDE (2019 - 2020)

All guides

Area: 1 ↑

Course: ↓

Level: 1 ↑

- Bachelor's degree programme in ARCHITECTURE  
Location: Torino - Class: ARCHITECTURE
- Bachelor's degree programme in ARCHITECTURE  
Location: Torino - Class: ARCHITECTURE
- Bachelor's degree programme in DESIGN AND COMMUNICATION  
Location: Torino - Class: INDUSTRIAL DESIGN
- Bachelor's degree programme in DESIGN AND VISUAL COMMUNICATION  
Location: Torino - Class: INDUSTRIAL DESIGN
- Bachelor's degree programme in TERRITORIAL, URBAN, ENVIRONMENTAL AND LANDSCAPE PLANNING  
Location: Torino - Class: TOWN, REGIONAL AND ENVIRONMENTAL PLANNING
- Master's degree programme in ARCHITECTURE CONSTRUCTION CITY  
Location: Torino - Class: ARCHITECTURE AND ARCHITECTURAL ENGINEERING
- Master's degree programme in ARCHITECTURE FOR THE SUSTAINABILITY DESIGN  
Location: Torino - Class: ARCHITECTURE AND ARCHITECTURAL ENGINEERING
- Master's degree programme in ARCHITECTURE HERITAGE PRESERVATION AND ENHANCEMENT  
Location: Torino - Class: ARCHITECTURE AND ARCHITECTURAL ENGINEERING
- Master's degree programme in ECOCESION  
Location: Torino - Class: DESIGN
- Master's degree programme in SYSTEMIC DESIGN  
Location: Torino - Class: DESIGN
- Master's degree programme in TERRITORIAL, URBAN, ENVIRONMENTAL AND LANDSCAPE PLANNING  
Location: Torino - Class: REGIONAL, URBAN AND ENVIRONMENTAL PLANNING
- Bachelor's degree programme in AEROSPACE ENGINEERING  
Location: Torino - Class: INDUSTRIAL ENGINEERING

Exam dates	Course finder	C.I.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

Course catalogue

Student Guide

Student services

Notice board

Apply@polito

Orientation

Fees, scholarships and prizes

Study abroad

News - events - notices

Career service

Graduation

Regulations / Student discipline

Teaching Quality Assurance

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
- State exams

Online application form

Privacy - Information

Forgot your password?

Fees and Reductions	Part-time Collaborations	Halls of residence
Researching activity announcements	Scholarships and prizes	External Institutions' announcements
News - events - notices		

Almaurea	Esami di stato	Ex allievi	Certificati e autocertificazioni
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STUDENTS & GRADUATES

EMPLOYERS

EVENTS

TECH TALK VISHAY

VIDEO GALLERY

Home

Come orientarsi al Politecnico

Iscrizione al primo anno

Materiali informativi

Attività con le scuole medie superiori

Registrazione ad apply@polito

Link contatti

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

Come orientarsi al Politecnico

Iscrizione al primo anno

Materiali informativi

Alumni network

# Example

The screenshot displays the Survey@Polito administration interface. At the top, it shows the user is logged in as 'cornio'. Below this is a navigation bar with various icons for survey management. The main content area displays the following details for the 'Smart Home Survey (ID 365355)':

- 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 Como (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. Regenerate question codes: [Straight] [By group]

The interface also shows a 'Surveys' dropdown menu set to 'Smart Home Survey' and a 'Question groups' dropdown menu set to 'Please choose...'. The footer includes the LimeSurvey logo, version information (Version 1.92+ Build 120919), and 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

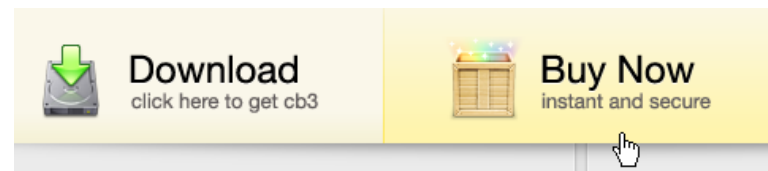
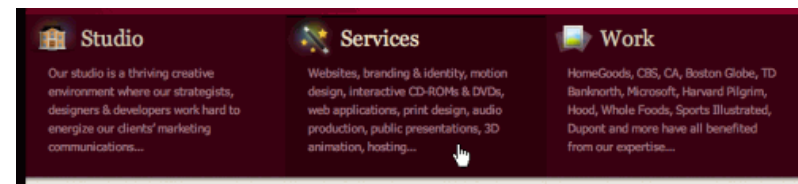
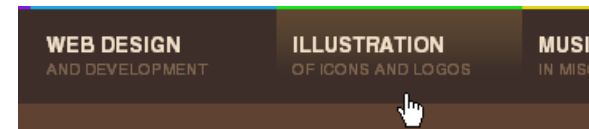
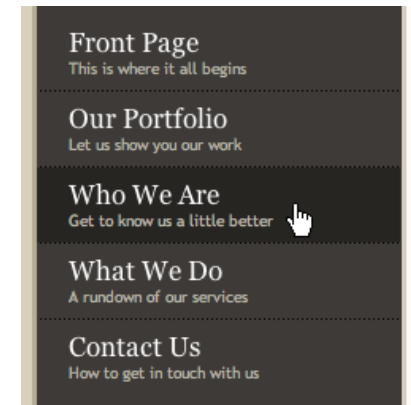
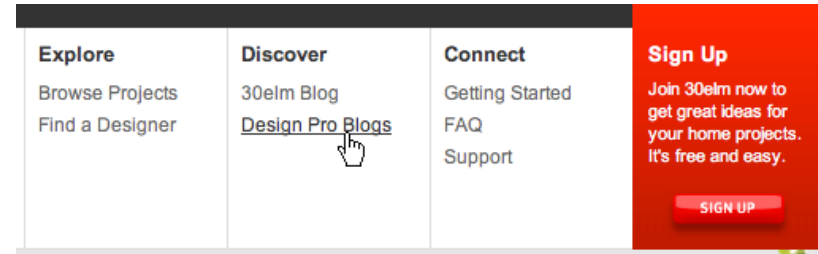
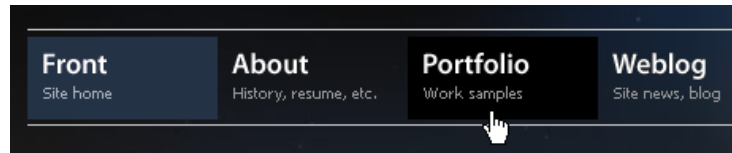




# Links

- 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 two main columns for logical field grouping.

**Left Column: Provide your personal information**

- \* Required field**
- \* Given/First name:** Input field containing "Catherine".
- Middle name:** Empty input field.
- \* Last/Family/Surname:** Input field containing "Plaisant".

**Right Column: Enter e-mail address & password**

- Text: "The e-mail provided here will be the username of your account."
- \* E-mail address:** Input field containing "cplaisant@" with a red border indicating an error.
- \* Re-enter e-mail address:** Empty input field.
- \* Password:** Input field with masked characters ".....".
- \* Confirm password:** Empty input field.

**Validation Feedback:**

- A yellow warning box on the right states: "The e-mail address provided is not in a valid e-mail format (for example: j.doe@nomail.com). Please try again."
- A green success box on the right states: "Your password is good". Below it, text reads: "Passwords must be between 8 and 64 characters, and include at least one number. [More...](#)"

**Set security questions**

- Text: "For your security, IEEE Accounts are required to have two security questions and answers."
- \* Security question 1:** Dropdown menu with "Select" selected.
- \* Type your answer:** Empty input field.
- \* Security question 2:** Dropdown menu with "Select" selected.
- \* Type your answer:** Empty input field.

**Footer:**

- [Privacy & Opting Out of Cookies](#)
- Create Account and Continue Joining** (orange button)
- [Cancel](#)

# 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

Settings menu:  
General Settings  
Your Profile  
Sign Out

SEP 18<sup>th</sup> 2010

22 JUN

Send Post Tweet

Navigation arrows

ON OFF

Calendar: 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:  
Navigation Crystal Clear  
Navigation Menu  
Navigation Soft Style  
Navigation Class  
Navigation Plastic

Search bar with options:  
Search Option One Search Option Two Search Option Three

Search bar with category dropdown:  
Category  
Search: Everything, Entries, Photos, Videos, Audio

Horizontal carousel with arrows and dots

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

Progress indicators:  
1. Skills 2. Location 3. Finish  
1 Step 2 Step 3 Step

Page navigation:  
1 2 3 4 5 6 7 8 9 10 next  
Previous 1 2 3 4 5 6 7 8 9 10 ... 245 247 Next  
Prev 1 2 3 4 5 6 ... 33 34 Next

Clean Fresh Modern  
Unique x +

<https://www.usability.gov/how-to-and-tools/methods/user-interface-elements.html>

# 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



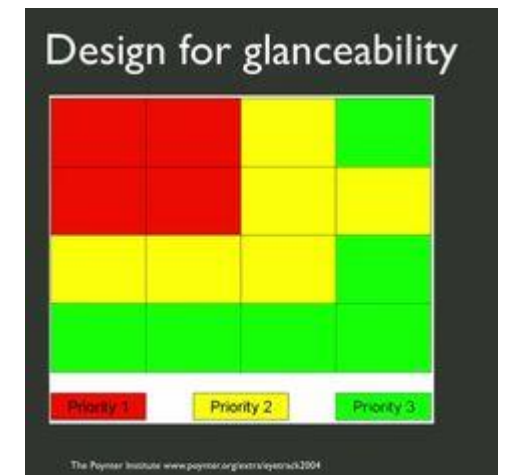
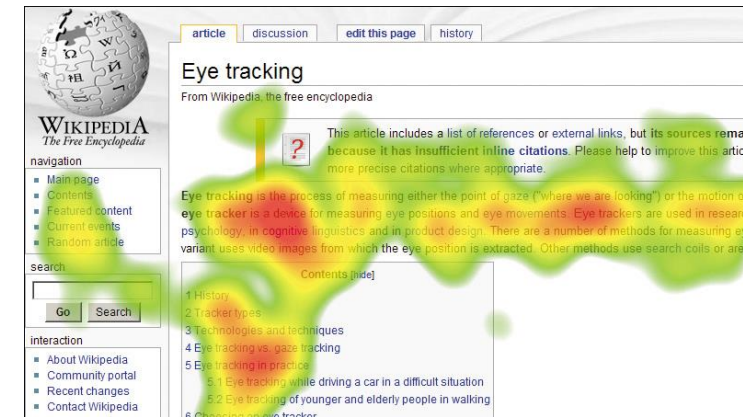
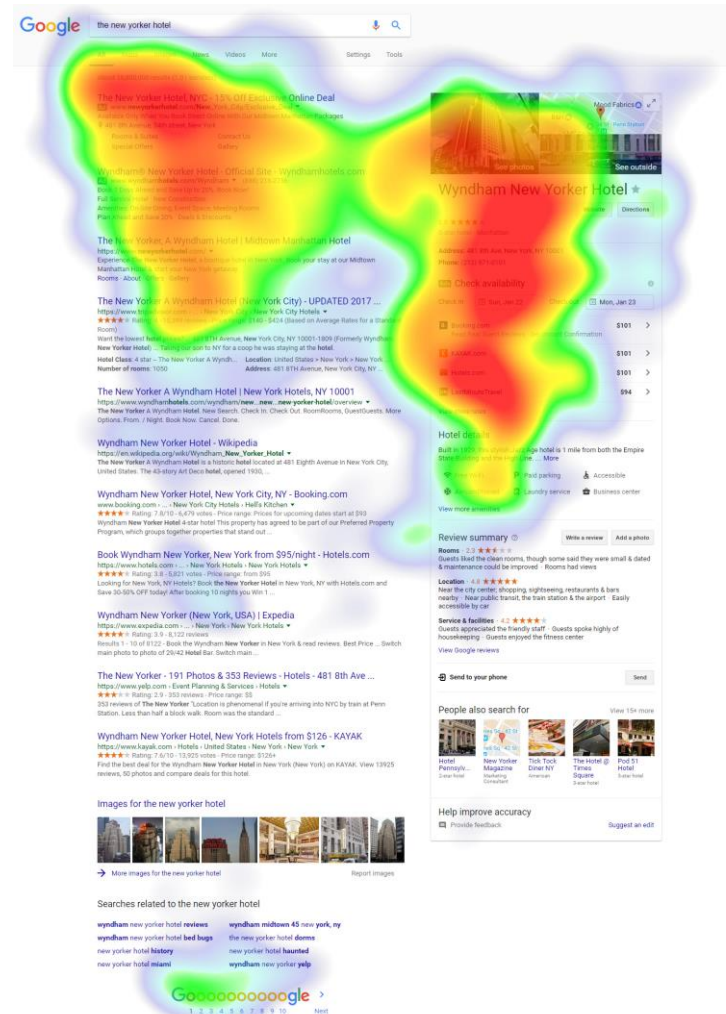
# Location on the page

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



# Did anyone ever look at the product name?

A woman in a red bikini sits on a boat, holding a bottle of 303 sunscreen. A heatmap overlay is centered on her torso, showing high attention on her chest and midsection. The text "LOOK AT ALL THAT SHINY SKIN. HOPE SHE CAN SWIM." is overlaid on the heatmap.

**BECAUSE YOU KNOW IT'S NOT ONLY THE SUN THAT THREATENS YOUR BOAT.**

303® products are scientifically formulated for superior protection. Like Aerospace Protectant, which not only provides the ultimate UV resistance against fading and cracking, it also prevents staining from dreaded sunscreen. Its no-residue finish repels dust, grime, salt and soiling to keep your boat looking newer, longer. Obsessively protective. Just like you.

303products.com WE'VE GOT YOUR NUMBER™

A person in a Reebok shirt performs a handstand against a blue wall. A heatmap overlay is centered on the person's torso and arms, showing high attention on their midsection and shoulders. The text "PAIN IS TEMPORARY. REEBOK IS FOREVER." is overlaid on the heatmap.

**PAIN IS TEMPORARY.  
REEBOK IS FOREVER.**

At 2000, Reebok's mission was to help you live. As over 100 kg and 1.8 meters tall, I was the poster child for "Tough Viking." I was challenged to go through a 15-day "Tough Viking" challenge. I was challenged to go through 1.5 miles of "Tough Viking" challenge. I was challenged to go through 1.5 miles of "Tough Viking" challenge. I was challenged to go through 1.5 miles of "Tough Viking" challenge.

Reebok  
Read the full story at ReebokForever.com

# Scanning

## WHAT DESIGNERS BUILD...



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- Tracking of your points and miles



How do I check my frequent flyer miles?

# Experiment

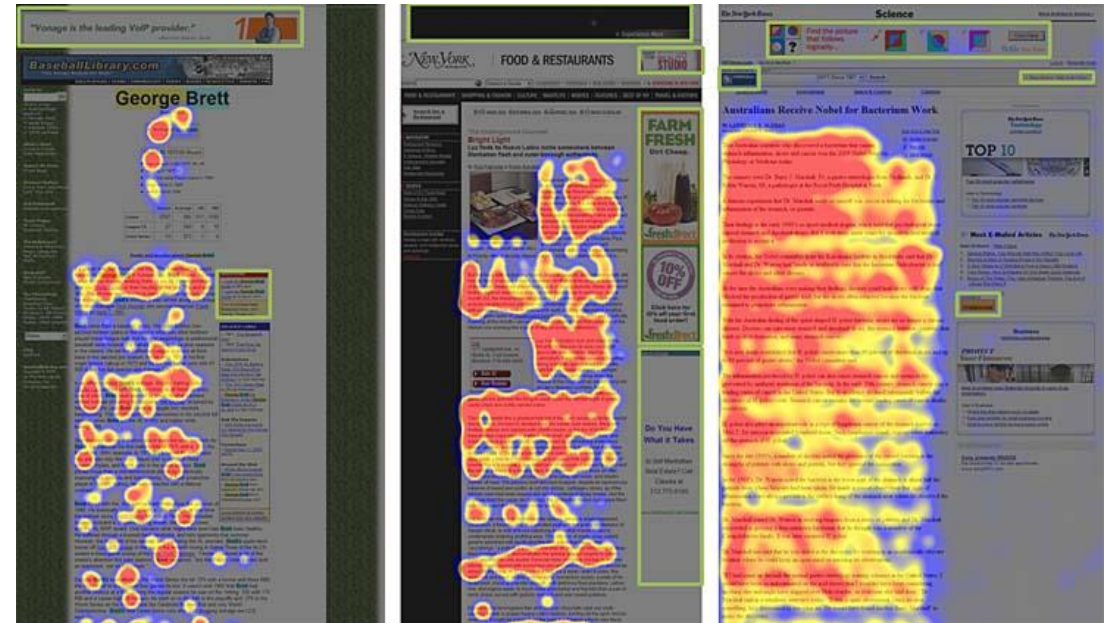
Site Version	Sample Paragraph	Usability Improvement (relative to control condition)
<b>Promotional writing (control condition)</b> using the "marketese" found on many commercial websites	Nebraska is filled with internationally recognized attractions that draw large crowds of people every year, without 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, don't 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)



# The Design System of the Italian Public Administration

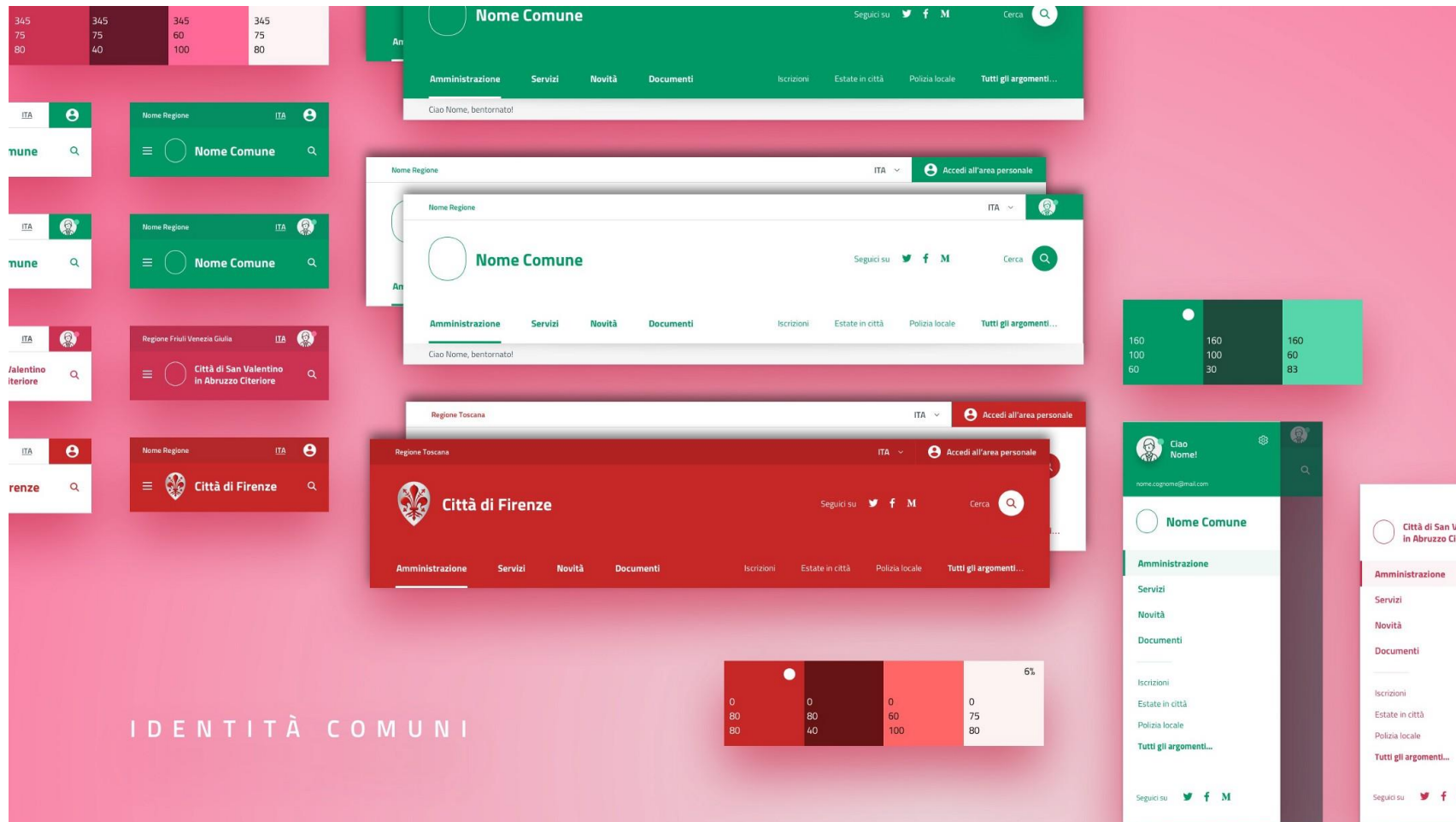
An example toolkit for visual design (targeted at Public Administration websites and services, mainly)

<https://designers.italia.it/>

The screenshot shows the homepage of the website **designers Italia**. The header is blue with navigation links: AgID + Team Digitale, Piano Triennale, Developers, Designers (active), Forum, Docs, and GitHub. Below the header, a teal banner contains the text "The Design System of the Italian Public Administration" and a link to "read on Speaker Deck". The main content area features the logo "designers Italia" with the tagline "dalla parte dei cittadini". To the right, there are social media icons for Bè, Twitter, Facebook, and LinkedIn. A navigation menu includes "Home", "Chi siamo", "Le guide", "I kit", "I progetti", "Le storie", "La roadmap", and "I contatti". On the right side of the menu, there are links for "Come lo uso" and "Come partecipo". The main headline reads: "Disegniamo **servizi digitali semplici** per **risolvere i problemi dei cittadini** e restituire il **buonumore** ;-)". Below this, there is a paper airplane graphic on the left. On the right, there are two call-to-action boxes: "Iscriviti alla newsletter" with an email input field and an "ISCRIVITI" button, and "Approfondisci su Medium" with a "LEGGI IL POST" button. A short paragraph of text follows, describing the website's purpose, and ends with a link "per saperne di più >".

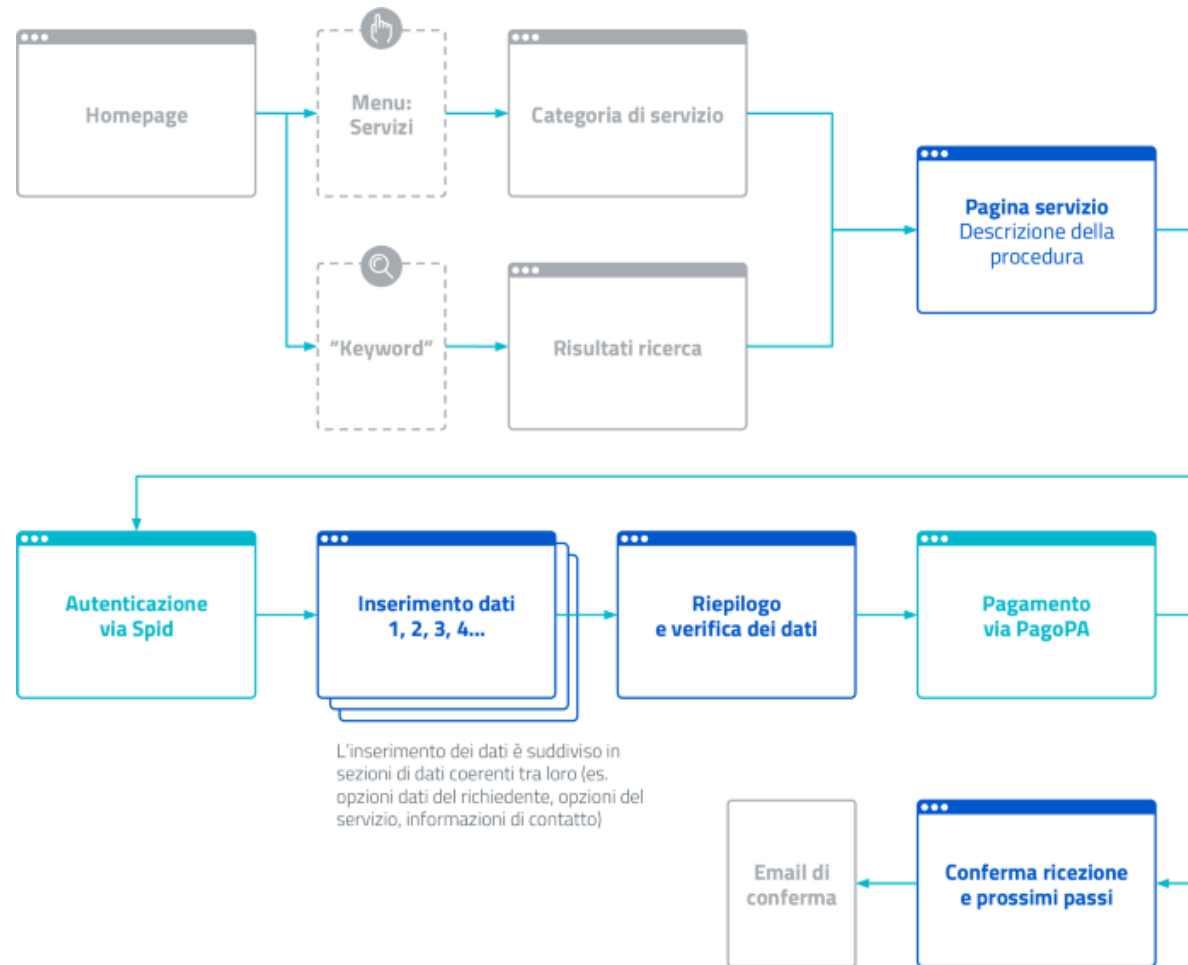


# Application of the Design Kit: a City Website

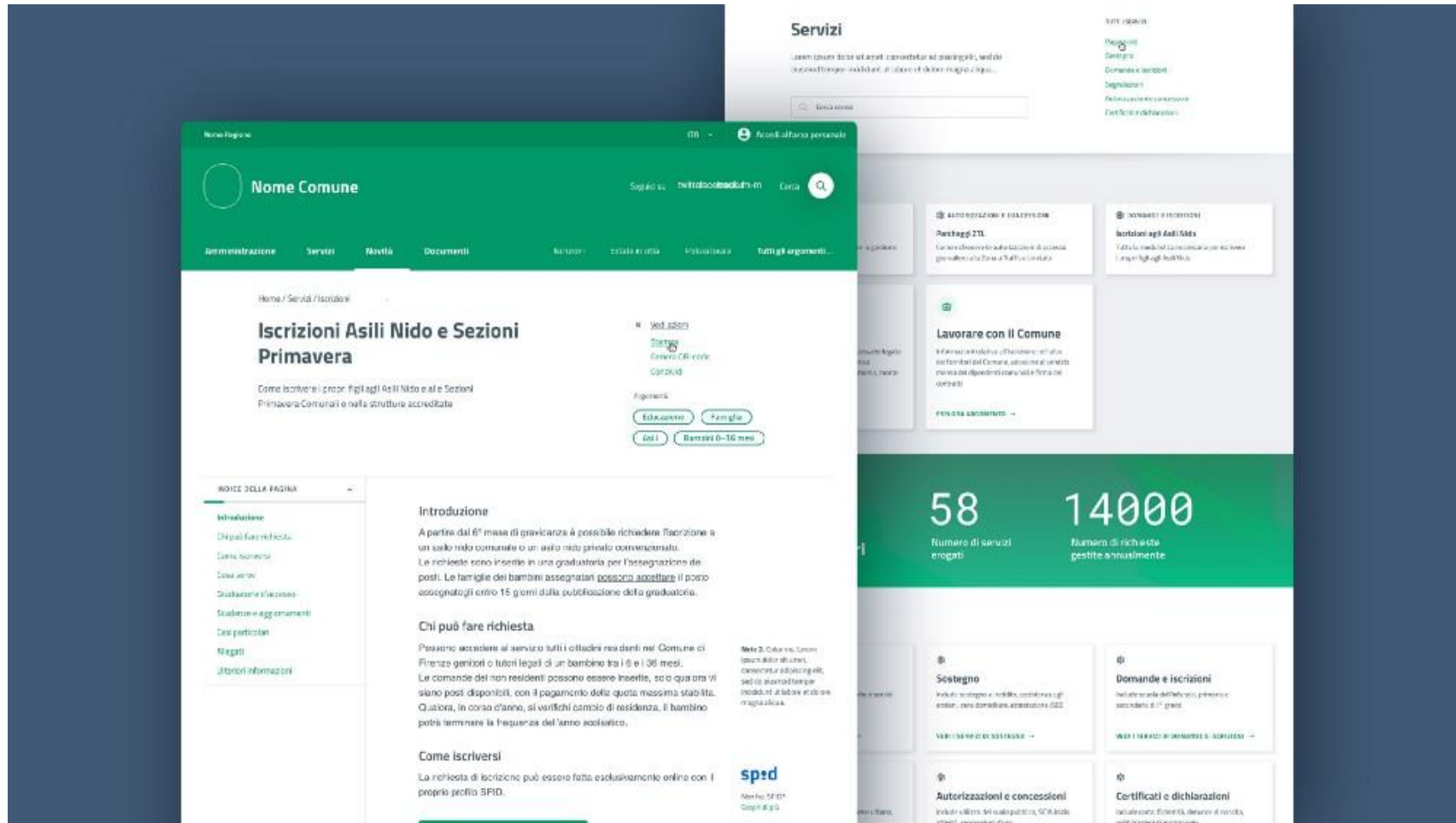


<https://medium.com/designers-italia/un-progetto-non-comune-175f1fe8cab5>

# A City Website: standard navigation path



# A City Website: example page



# References

- 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)



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