

Visual Design and Fluid Navigation

Human Computer Interaction

Luigi De Russis

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

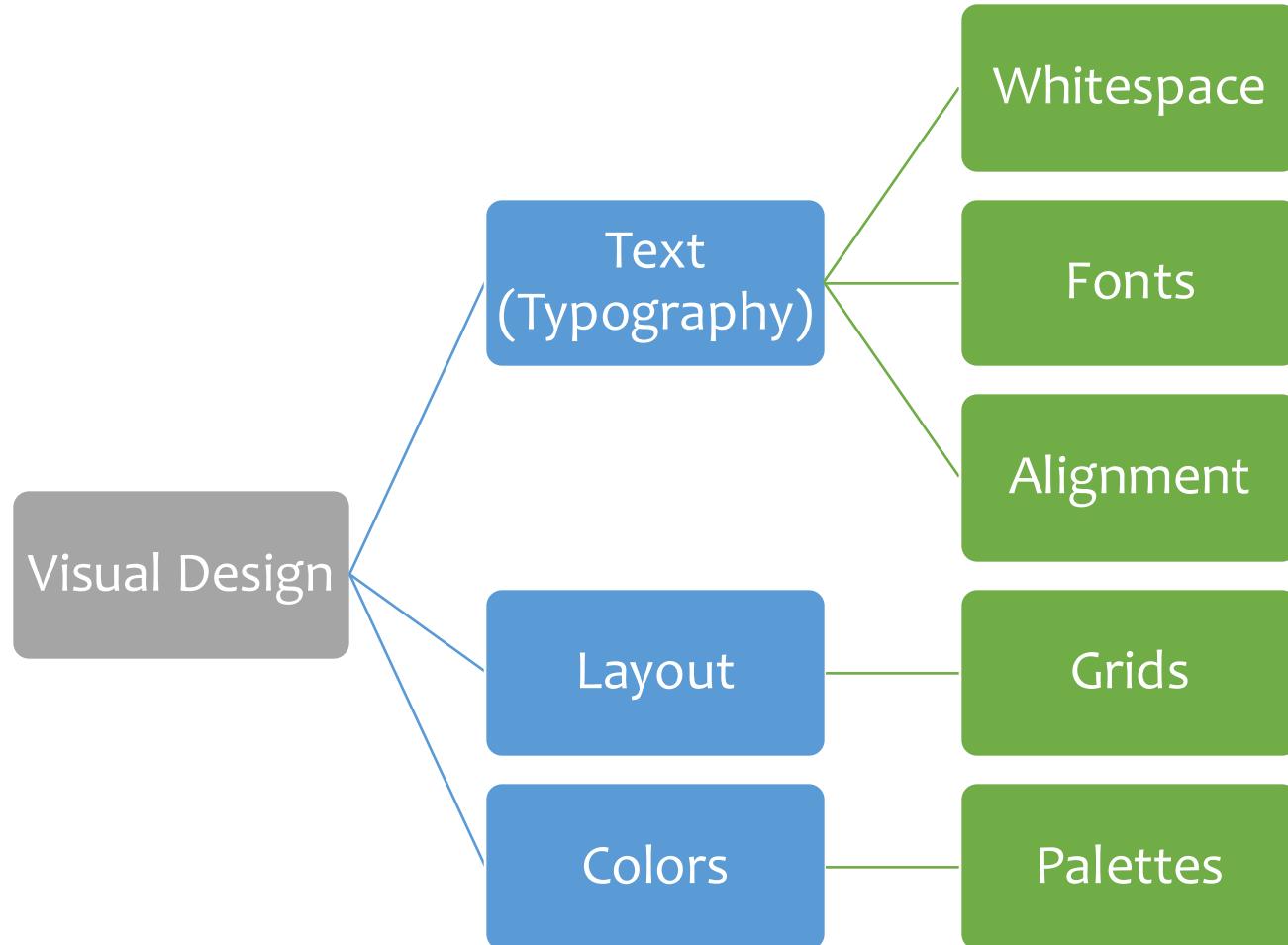
Text

- **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

CNN World US Politics Business Health Entertainment Style Travel Sports Videos Edition ▾

NEW PODCAST: Tug of war | COVID-19: Vaccination tracker | TRENDING: Elon Musk | Oldest surviving Miss America dies | SpaceX toilet problem | Queen |

Brazil has big green plans. But its track record is dismal



The Brazilian government is bringing ambitious promises to the UN climate summit, but can it be believed?

Queen Elizabeth II tells world leaders at COP26 there's 'room for hope' on climate

Biden apologizes to world leaders for Trump's climate actions

How the 'Venice of Africa' is impacted by climate change

DEVELOPING STORY

22-story building collapses in Lagos, Nigeria



Manchin issues warning to Democrats on Biden's economic package

Analysis: Tim Scott confirms he's on the Trump 2024 train

ANALYSIS

'Let's go Brandon,' explained

Two conservative justices seem open to arguments from abortion providers

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

Analysis: Trump escalates Jan. 6 cover-up

Tigrayan forces accused of killing 100 youths

News and buzz



Elon Musk offers to sell Tesla stock 'right now' if UN can show how \$6 billion would

Featured



UNIVERSAL HISTORY ARCHIVE/GETTY IMAGES

Spotlight



Man scheduled to be executed for murder he says he didn't commit seeks clemency

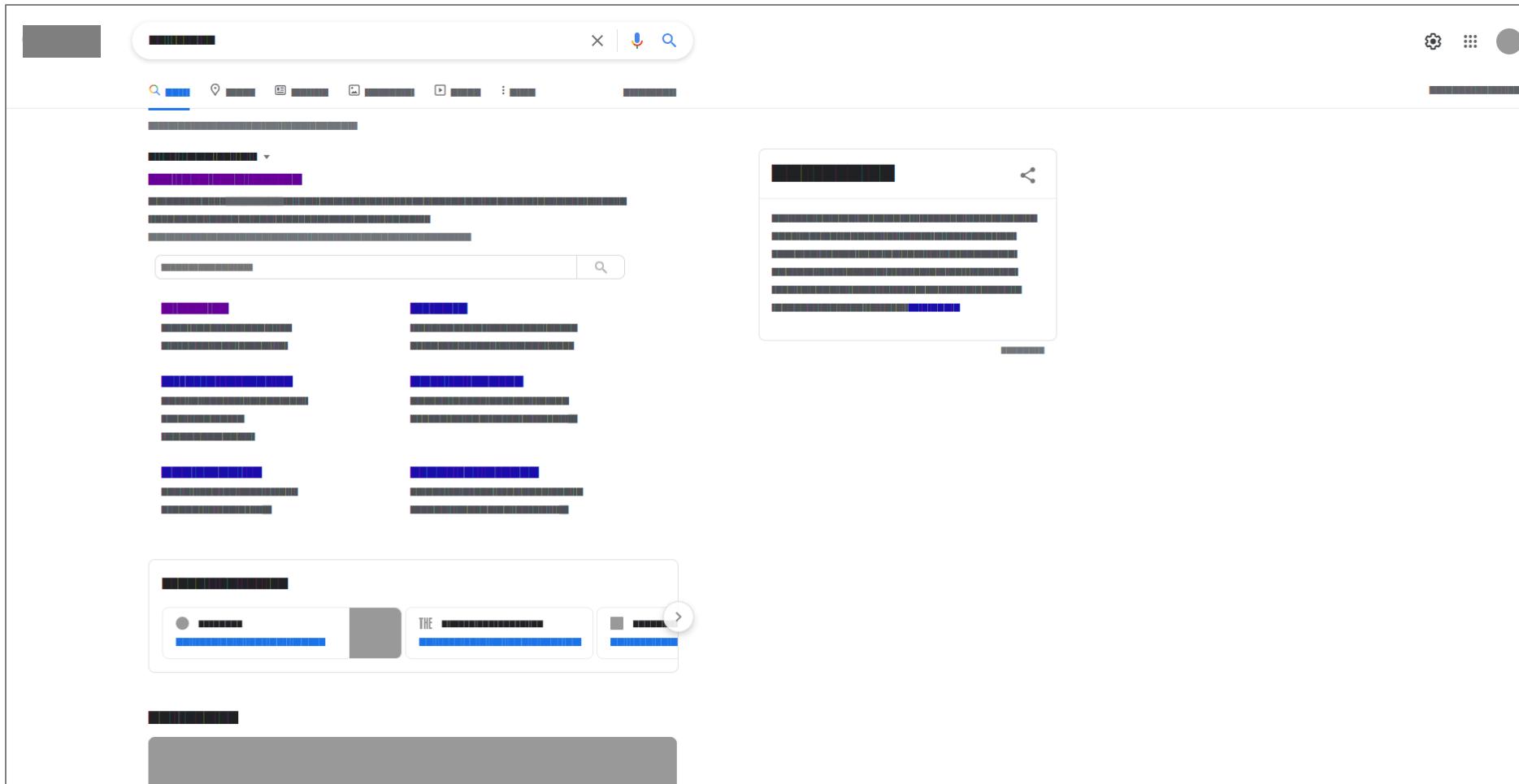


Could Covid-19 vaccines impair a child's future fertility? Officials say no.

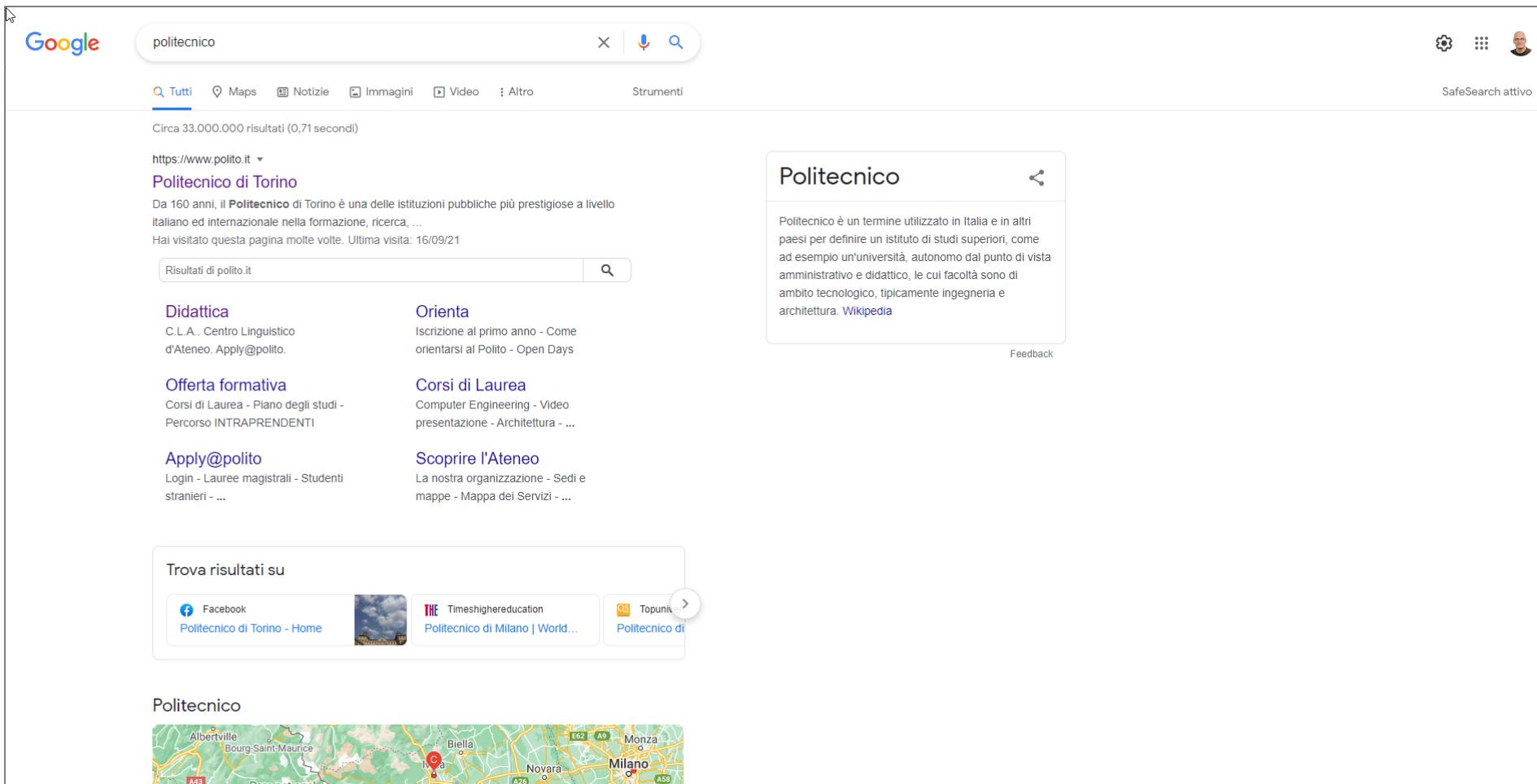


Kal Penn, 'Harold and Kumar' and 'House' star, comes out as gay

Recognizable Page Structure



Recognizable Page Structure



Recognizable Page Structure



Recognizable Page Structure

The screenshot shows the homepage of Stack Overflow. The left sidebar includes links for Home, PUBLIC Questions (selected), Tags, Users, COLLECTIVES (Explore Collectives), FIND A JOB (Jobs, Companies), and TEAMS (Stack Overflow for Teams - Collaborate and share knowledge with a private group, Create a free Team, What is Teams?). The main content area displays a list of 'All Questions' with 21,855,928 entries. Each question card includes the title, number of votes and answers, a snippet of the question, tags, and the user who asked it. To the right of the main content are several sidebar boxes: 'The Overflow Blog' (Podcast 388: Software for your second brain, Why SOLID principles are still the foundation for modern software architecture), 'Featured on Meta' (Now live: A fully responsive profile, Please welcome Valued Associates #999 - Bella Blue & #1001 - Salmon of Wisdom, 2021 Community Moderator Election Results), 'Collectives' (Go Language, Google Cloud, GitLab), and 'Related Tags' (javascript, python, java).

All Questions

21,855,928 questions

Newest Active Bountied 326 Unanswered More Filter

0 tasks.json In VS Code
I am trying to debug a C program in VS Code. When I run my program from the command line it works because I can add pthread to the args by typing: gcc -pthread -o Draft1 Draft1.c. However, when I try ...
0 answers c visual-studio visual-studio-code task asked 57 secs ago RAINGUARD 1

0 Android: Push notification and ServerKey
So i was watching few tutorials on whatsapp or chatting apps clone, and all of them are using ServerKey to implement Push notification Serverkey is used inside the app code itself. So i wanted to knew ...
0 answers android push-notification android-push-notification asked 1 min ago Mini 15 6

0 Max profit of Woodcutters
I've got the following problem and couldn't solve it. Maybe someone could help me to find a solution. Daily woodcutters cut trees in the mountains. Every tree trunk is precise 1, 2, 3, etc blocks in ...
0 answers algorithm data-structures dynamic-programming asked 1 min ago John Jonathan 41 3

0 Remove "randomized" and "input" values from a procedural list
first of all sorry if I make mistakes, english is not my mother tongue. I recently played the Werewolf game with some friends, in order to ease the Game Master work I wanted to create a simple Python ...
0 answers python list random input counter asked 1 min ago Kuai 1

0 How to merge data into azure sql database from delta lake (delta tables in data lake)?
I have a delta table in azure data lake. The table has a business key. I want to write data from this delta table to an external sql server (that is not hosted in a synapse sql dedicated pool). What ...
0 answers azure azure-databricks delta-lake sql-merge azure-data-flow asked 1 min ago Crow99 188 1 13

The Overflow Blog

Podcast 388: Software for your second brain

Why SOLID principles are still the foundation for modern software architecture

Featured on Meta

Now live: A fully responsive profile

Please welcome Valued Associates #999 - Bella Blue & #1001 - Salmon of Wisdom

2021 Community Moderator Election Results

Collectives

Go Language 13k Members Join

The official Q&A channel for Google's Go Programming Language

Google Cloud 11k Members Join

Google Cloud provides organizations with leading infrastructure, platform capabilities...

GitLab 3k Members Join

GitLab is the open DevOps platform, delivered as a single application. Our open source...

Related Tags

javascript × 2290823

python × 1824472

java × 1808306

Recognizable Page Structure



Recognizable Page Structure

The screenshot shows the Tripadvisor website interface for searching hotels in New York City. At the top, there's a navigation bar with links for "New York City", "Hotel", "Cose da fare", "Ristoranti", "Voli", "Case vacanza", "Pacchetti vacanza", "Crociere", "Autonoleggio", and a user profile icon. Below the navigation is a map of New York City with a button labeled "Guarda la mappa". The main title "Hotel New York City e alloggi" is centered above a search form with fields for "Arrivo" (Arrival), "Partenza" (Departure), and "Ospiti" (Guests). A message indicates "I migliori alberghi a New York City - Prezzi e recensioni per gli alloggi a New York City". On the left, there are filters for "COVID-19" (checkbox for "Strutture che adottano misure di sicurezza"), "Offerte" (checkboxes for "Cancellazione gratuita", "Prenota ora, paga quando soggiorni", and "Strutture con Offerte Speciali"), "Prezzo" (a range slider from 0 € to 623 € and a dropdown for "Prezzo + tasse e spese"), and "Molto richiesti" (checkboxes for "5 stelle", "Colazione inclusa", "4 stelle", and "3 stelle"). The main content area displays a list of hotel results. The first result is "Fairfield Inn & Suites" with a rating of 4.5 stars, price range of 263 € to 161 €, and a "Vedi l'offerta" button. The second result is "Fairfield Inn & Suites New York Midtown Manhattan/Penn Station" with a rating of 4.5 stars, price of 161 €, and a "Vedi l'offerta" button. To the right of the results, there are sections for "Info sull'hotel" (including a link to the hotel's website, phone number, and address), "Connessione Wi-Fi gratuita", "Bar/Lounge", "Centro fitness", and "Misure di sicurezza adottate".

Recognizable Page Structure

TBS Newsi Tokyo Broadcasting System, News Portal Site

リアルタイム経営こそ、IT戦略 FUTURE[®] Architect
経営とITをデザインする、フューチャーアーキテクト。

News10 アラフト元議員の骨からイロニウム検出。暗喩の可能性高まる 11/07 04:20 RSS/RDF配信 文字サイズ 中 大

社会 政治 経済 國際 スポーツ 列島 天気 連続動画 報道コラム ニュース検索 検索

注目キーワード: [メニュー表示問題] [みずほ基盤] [原発] [米超競争]

最終更新: 2013年11月7日(木) 04時34分

【NEW】「三越伊勢丹」も不適切表示、他の百貨店にも拡大



00:00 / -> ■

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、メニューと一緒に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。

続きを読む

ステップワゴン スズメ! 家族の冒険プロジェクト
ニッポン 家族冒険スポット
総選挙!
ドンドン投票してね!
HONDA

TBSニュース番組ダイジェスト配信中

 TBS ニューストア	 NEWS 23
 NRG	 JNN

台風情報
Smart News
スマートニュース
地震情報
福島第一原発情報カメラ

NEW 日本人初の船長・若田さん、きょう宇宙へ


日本人で初めて国際宇宙ステーションの船長を務める若田光一さんが、日本時間7日午後の...
NEW 特定秘密保護法案「きょうから国会審議


政府が指定する特定秘密を漏らした公務員らへの罰則強化する特定秘密保護法案は、きょ...
NEW 豚肉議員、金正恩氏の従兄人・張成沢氏と会談


北朝鮮訪問中のアンチオ猪木議員らが、金正恩(キム・ジョンウ)第一書記の...
NEW 山西省連続暴事件、共産党本部狙った計画的犯行か

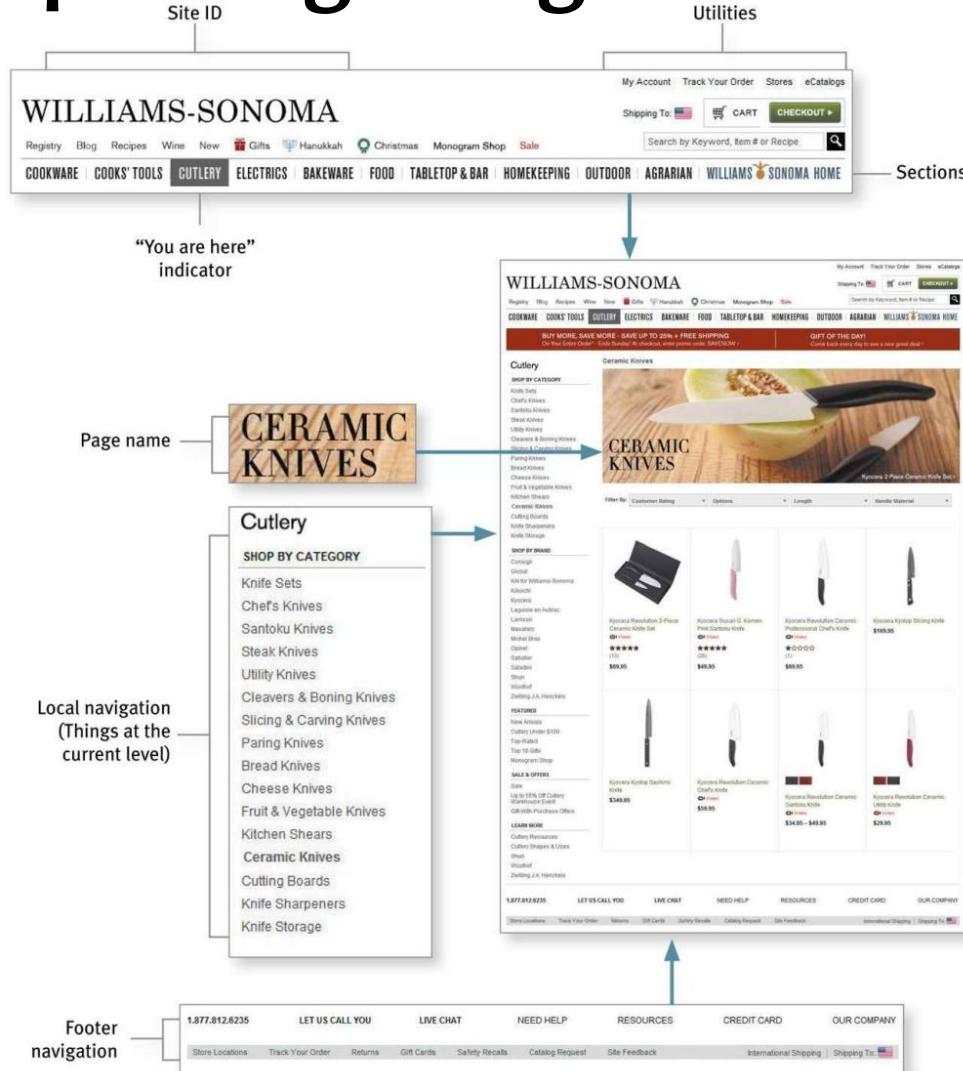

6日、中国・山西省の共産党本部ビルで起きた連続暴事件です。爆弾カバンの数か所...
NEW 社会 >> 一覧へ

薬ネット販売、23品目「3年間安全調査法」解禁へ
福島第一原発4号機を公開、燃料取り出しへ高いハードル
「もんじゅ」で核物質管理に不備、原子力機構に厳重注意
温熱効率ガスの平均温度、過去最高値記録
カルガモから鳥インフル、北海道で今シーズン初
一軒 食材偽装を認める、「三笠」運営会社の社長辞任へ
安泰楽牧場「和牛丼法」、闇営業などを撲滅へ
表示適正化対策、消費者庁が業界3団体に要請文
「嵐」など芸能人の偽サイン販売、容疑の親子らを3人逮捕
大阪・川に少年突き落とし、遺体は下着姿
歌舞伎町のホスト変死、向死者が暴行か
NEW 小学校の4階から小6男児転落、意識不明の重体
NEW 政治 >> 一覧へ

NEW「特定秘密保護法案」きょうから国会審議
日本版NSC法案、衆院特別委で可決
自衛隊が離島防衛演習、沖縄・宮古島に地対艦ミサイル展開
岸田外相、中国・韓国との民間交流が重要という認識示す
「婚外子」遺産相続の民法改正案、自公が成立目指す
原発事故の対応見直し、国が積極的関与へ
NEW 経済 >> 一覧へ

NEW「三越伊勢丹」も不適切表示、他の百貨店にも拡大
東武鉄道系ホテルでもメニュー表示と異なる食材を使用
食材「虚偽」問題で注目、「成型肉」とは?
NEW 関連リンク | TBS NEWS | 新聞 | ウェブサイト | 時事報道 | 新聞動画 | ニュースカード | グローバルナビ | フォト | リンククリック | TBS TOPページ | TBS報道番組一覧 | ニュース

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.

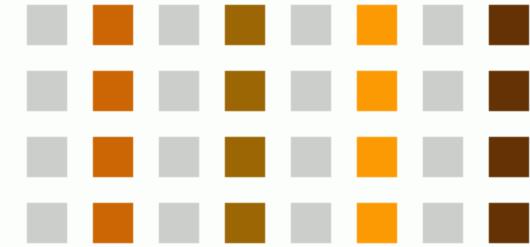
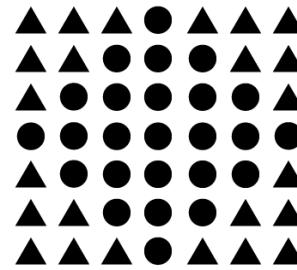
Examples: Figure-ground



The Basecamp 3 landing page features a central cartoon illustration of a character overwhelmed by multiple communication channels, including email, phone calls, and messages. The character is surrounded by speech bubbles containing text like "DID WE GET THAT DRAFT YET?", "WAIT, WHO MADE THAT DECISION?", "WHERE DO I PUT THAT?", "WHEN IS THIS DUE?", "WHO SENT THIS TO THE CLIENT?", and "NO ONE TOLD ME THAT! THIS IS EXHAUSTING!". Above the illustration, a banner reads "Working with other people? Struggling to keep everyone on the same page?". To the right of the illustration is a sign-up form with a button labeled "Sign up now for free below". Below the form, a message states "Just last week, 10,772 companies got started with Basecamp 3!". The form includes fields for "Your Name" (Jule Applesseed), "Your Email" (jule@widgetco.com), and "Company/Organization" (Widget, Co.).

The AngelList homepage has a dark background featuring a stylized image of Earth from space. At the top, there is a navigation bar with links for SYNDICATES, STARTUPS, FUNDS, STARTUP JOBS, RECRUITING, and MORE. On the right side, there is a search bar and links for JOIN and LOG IN. A prominent call-to-action button says "Find a Startup Job". To the right of the main content area, there is a sidebar with links for "Post a Job", "Raise Money Online", and "Invest in Startups".

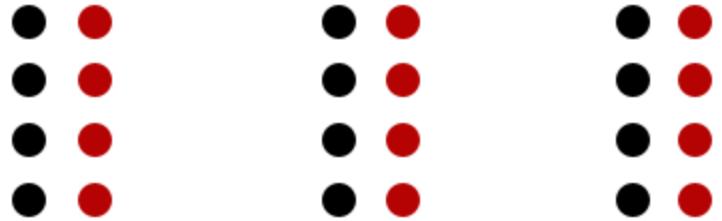
Examples: Similarity



The GitHub sign-up page features a dark background with a grid of code snippets. At the top, there's a search bar and navigation links for Explore, Features, Enterprise, Pricing, Sign up, and Sign in. The main area has fields for Pick a username, Your email, and Create a password, with a note about character limits. A large green 'Sign up for GitHub' button is prominent. Below it, a small note about terms of service and privacy policy is visible. A blue banner at the bottom asks 'Want to use GitHub on your servers?'. The overall design is clean and modern.

The LA STAMPA news website homepage has a light-colored header with the site name and social media links. The main content area is a grid of news items. Each item includes a thumbnail image, a title, a brief description, and the author's name. The news topics range from politics to industry and culture. The layout is clean and organized, typical of a digital news platform.

Examples: Proximity



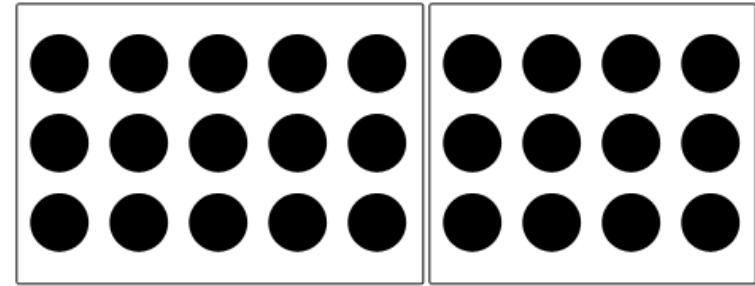
The screenshot shows the Walmart homepage with a navigation bar at the top. Below it, a banner says "Save big in every department". A grid of products includes: Electronics (iPad), Home (coffee maker), Exercise & Fitness (woman on treadmill), Health (vitamin bottle), Clothing & Jewelry (pink top), Furniture (blue armchair); Cold Weather Prep (person in snow), Tax Preparation (TurboTax logo), Auto & Tires (tire), Office Supplies (black bin), Home Improvement (drill), Outdoor Sports (tent); and Toys (Paw Patrol dog, baby bouncer, baby face, blue square, Tostitos chips, Call of Duty game).

The screenshot shows the VICE news homepage with a navigation bar at the top. Below it, a grid of news articles: 1. "Medical Marijuana Users in Canada Can Legally Grow Their Own Weed Now" by Marisa Kishchenko, dated Feb 24, 2016, with a photo of a cannabis plant. 2. "The Women Who Love Ted Cruz" by Josh Antweiler, dated Feb 24, 2016, with a photo of a woman kissing another woman. 3. "How Donald Trump Won Nevada's Cliven Bundy Vote" by Grace Myler, dated Feb 24, 2016, with a photo of a man in a cowboy hat. Other sections like WATCH, SECTIONS, PHOTOS, MAGAZINE, TOPICS, CITY GUIDES, ELECTION 2016, OPINION, and MORE are visible.



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

Examples: Common Region



Pinterest search results for 'architecture' showing various architectural projects and designs.

Houzz Article: 11 Things You Didn't Think You Could Fit Into a Small Bedroom

Clever designers have found ways to fit storage, murals and even chandeliers into these tight sleeping spaces

WWW.HOUZZ.COM

Like 157 | Comment | Share

Top Comments

33 shares

Frankie Sez Really great ideas for the 'minimalist' in some of us...
Like · Reply · 2 · Yesterday at 5:42am

Country Mountain Homes Space for books is a must!
Like · Reply · Yesterday at 10:07am

View 2 more comments



Examples: Continuity

Customers Who Bought This Item Also Bought

The screenshot shows a grid of book covers and their details. The books are: 'CROSSING THE CHASM' by Geoffrey A. Moore, 'THE LEAN STARTUP' by Eric Ries, 'The Innovator's Dilemma' by Clayton M. Christensen, 'THE INNOVATOR'S SOLUTION' by Clayton M. Christensen, and 'How Will You Measure Your Life?' by Clayton M. Christensen.

Book Title	Author	Rating	Price
CROSSING THE CHASM	Geoffrey A. Moore	★★★★★ 72	\$12.35 ✓Prime
THE LEAN STARTUP	Eric Ries	★★★★★ 1,062	\$16.66 ✓Prime
The Innovator's Dilemma	Clayton M. Christensen	★★★★★ 209	\$16.66 ✓Prime
THE INNOVATOR'S SOLUTION	Clayton M. Christensen	#1 Best Seller in Industrial Management... Paperback	\$10.06 ✓Prime
How Will You Measure Your Life?	Clayton M. Christensen	★★★★★ 583 Hardcover	\$18.33 ✓Prime

Page 1 of 20



Step 1

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



Step 2

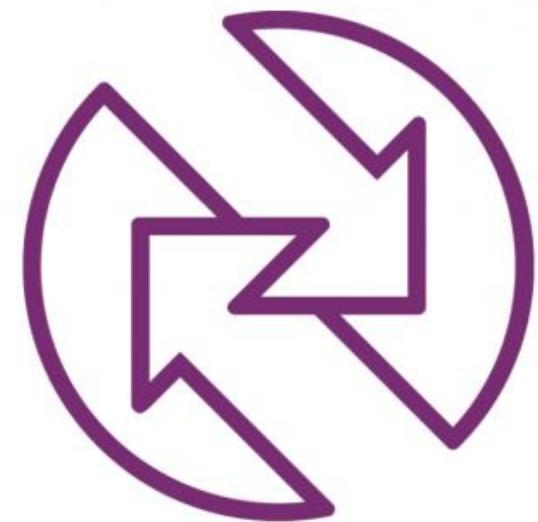
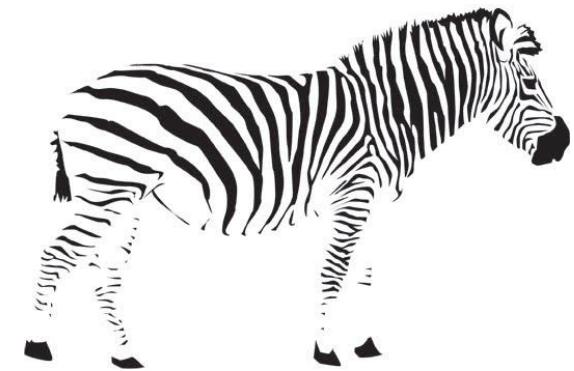
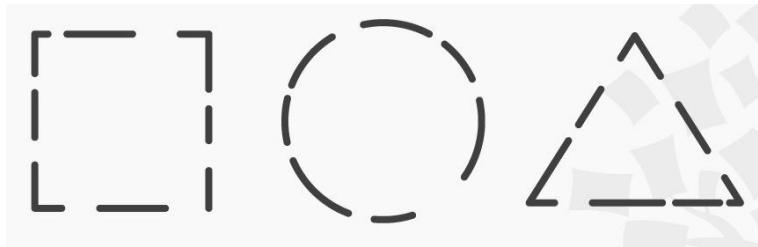
Our friendly servers organize your food for delivery - hot and ready to eat!



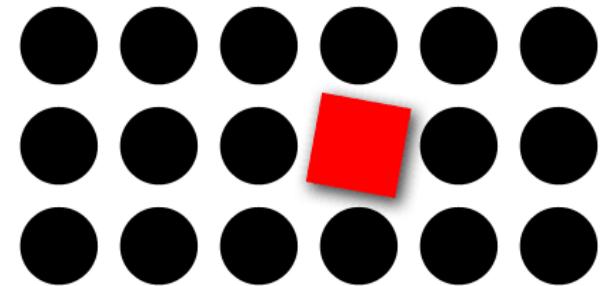
Step 3

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

Examples: Closure



Examples: Focal Point



The Twilio homepage features a dark background image of a busy street scene. At the top, the Twilio logo is on the left, followed by navigation links: PRODUCTS & PRICING, USE CASES, API & DOCS, NOT A DEVELOPER?, SIGN UP, and LOG IN. Below the navigation, a large white text area reads "BUILD APPS THAT COMMUNICATE WITH EVERYONE IN THE WORLD". Underneath this, smaller text says "A Messaging, Voice, Video and Authentication API for every application". At the bottom, there are two buttons: "See Use Cases" and "Get a free API key".

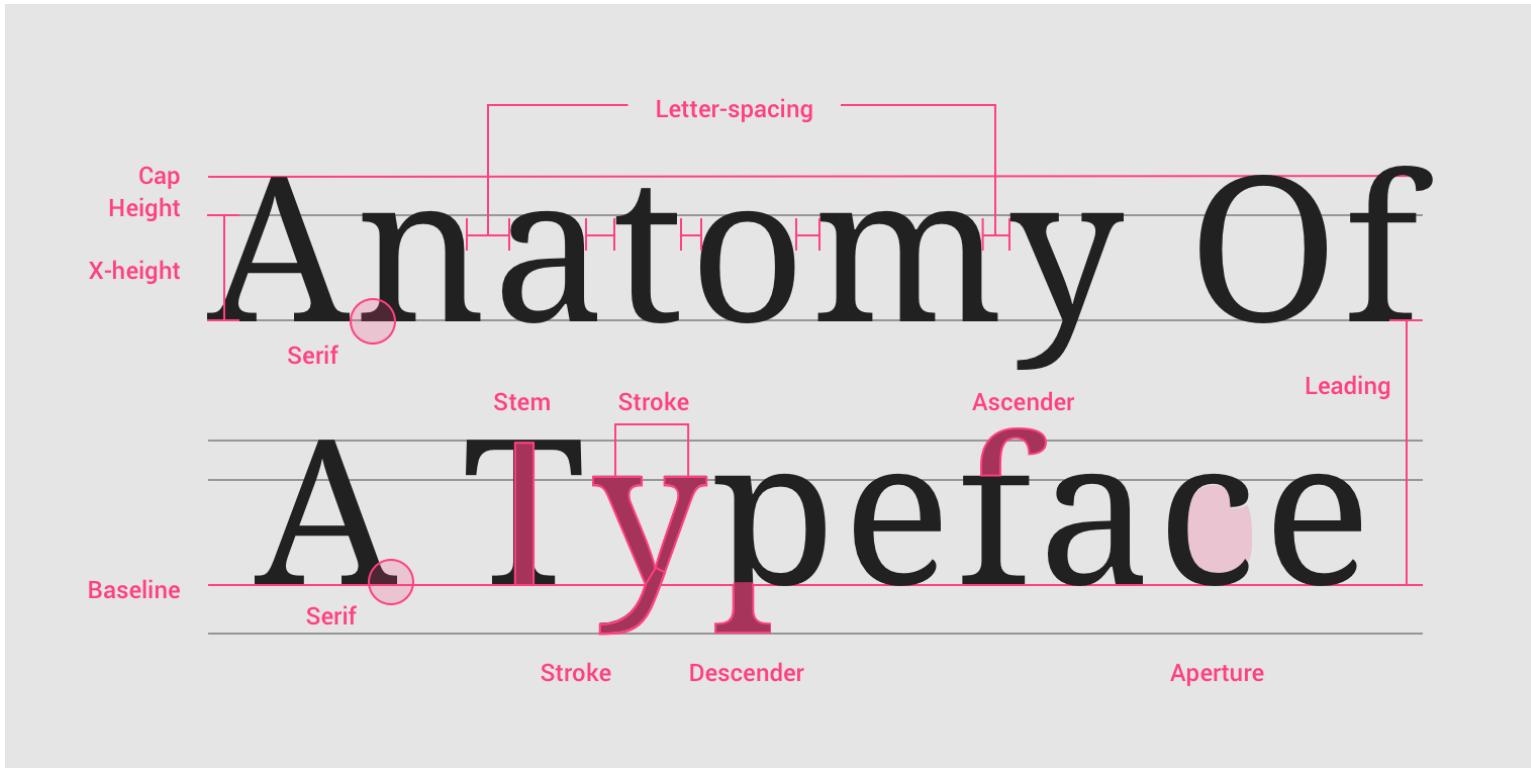
The Instacart homepage features a background image of a person holding a grocery bag filled with food items like a sandwich and vegetables. Overlaid on this is a white rectangular form. At the top of the form is the Instacart logo. Below it, the text "Groceries delivered in 1 hour" and "Enter your zip code to see your local stores". There is a text input field labeled "Enter Zip Code" and a green button labeled "Find Stores". At the bottom of the form, there is small text "Already have an account? Log in" and a note "FREE delivery on your first order*".

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

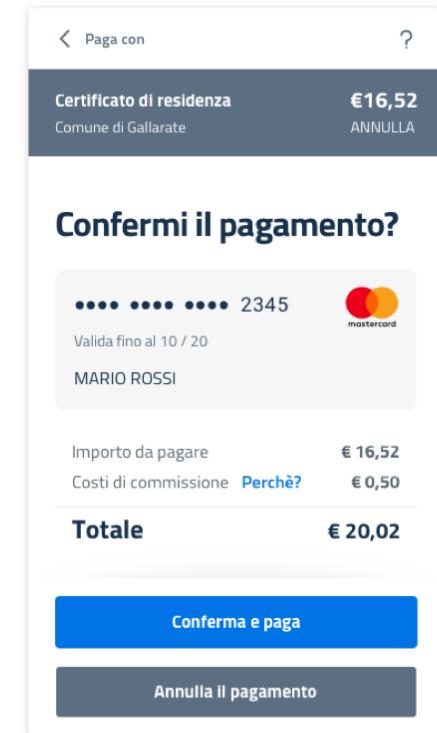
Reusable categories of text, each with an intended application and meaning

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




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




DETACHED HOUSE - 5Y OLD
\$750,000
742 Evergreen Terrace

REALTOR
 Tiffany Heffner
(555) 555-4321

3 Bedrooms 2 Bathrooms

Present data in a more useful way
Emphasize the most important content
Combine labels and values into human-readable phrases

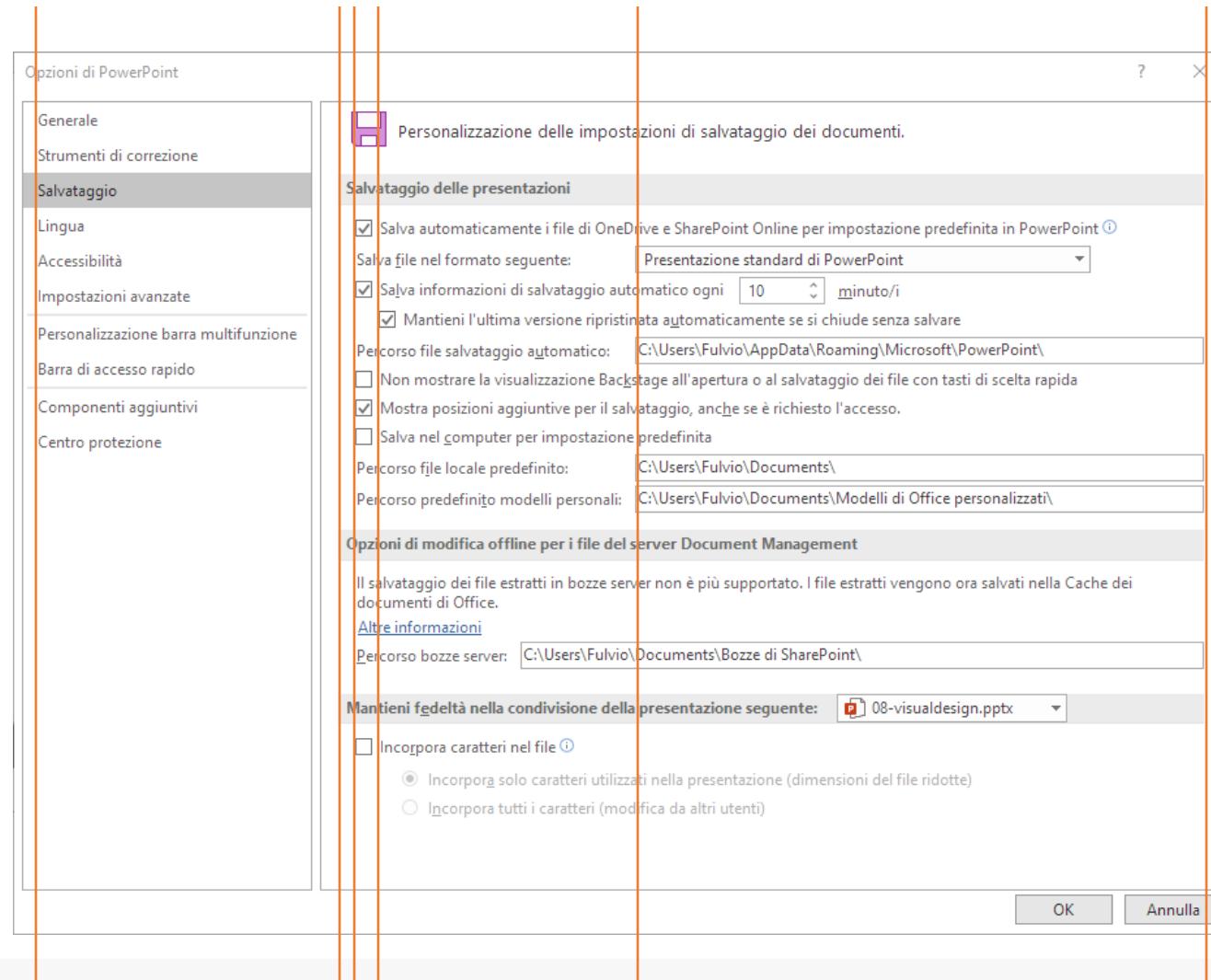
Grids and Alignment

Exploiting grouping and alignment to convey content, at different levels

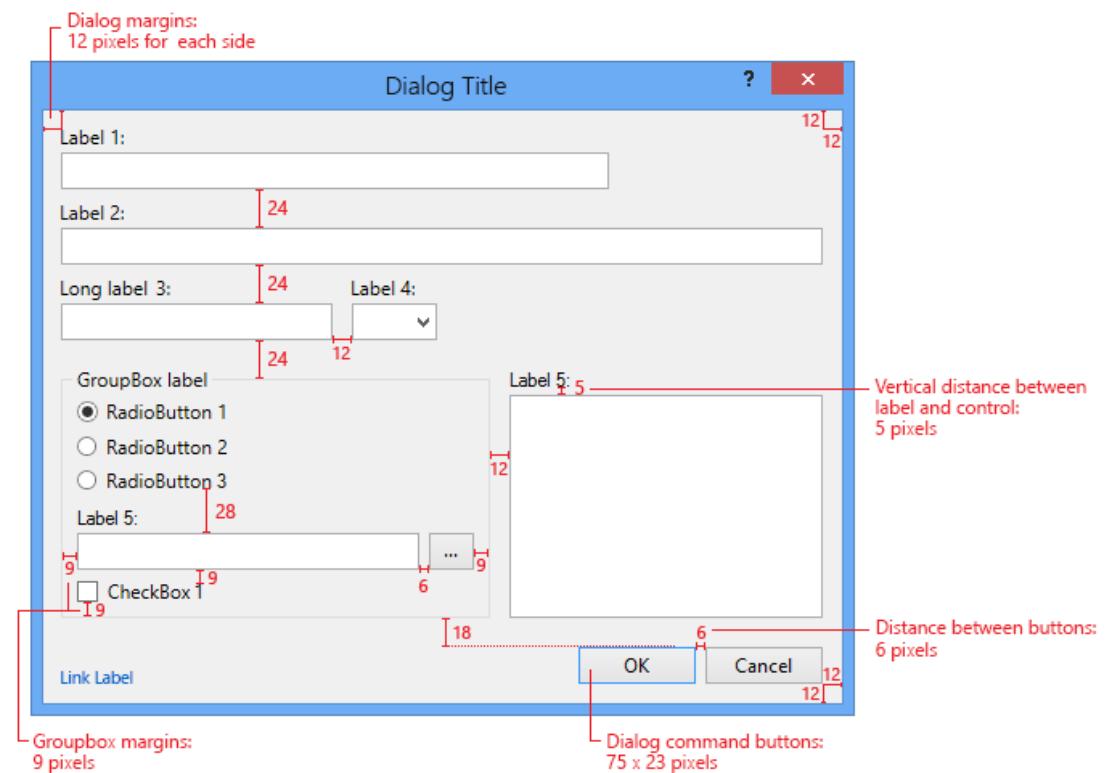
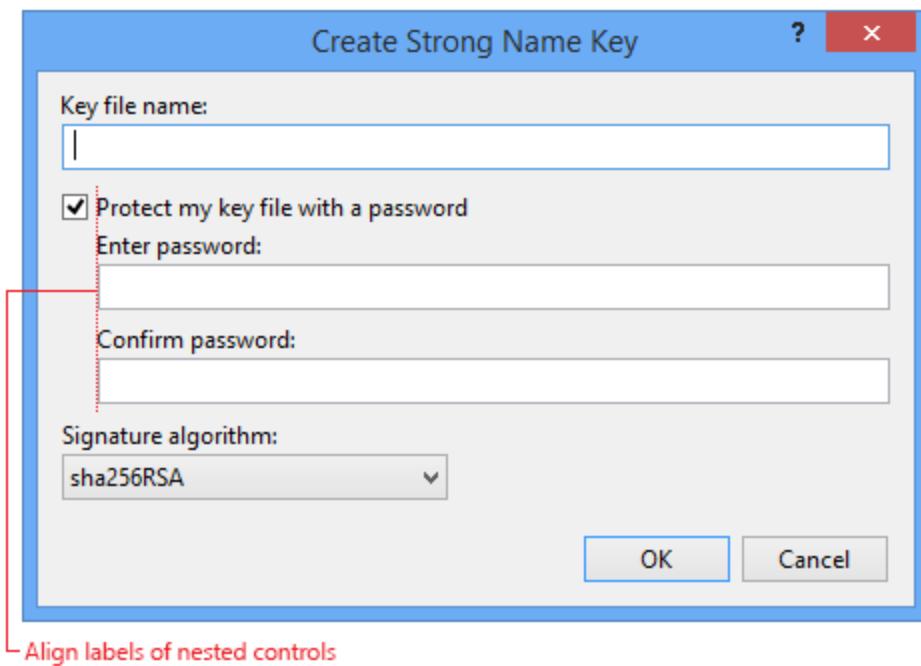
Alignment

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

Example

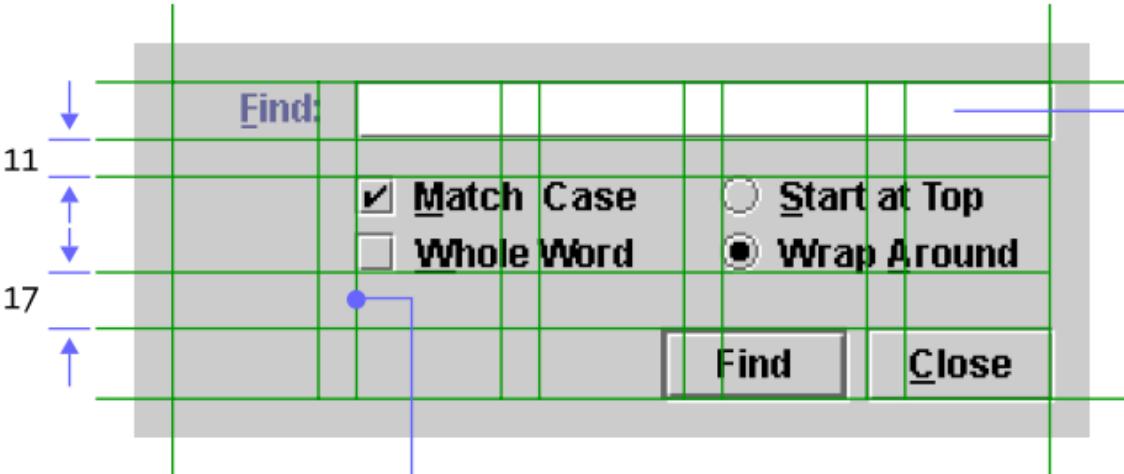


Examples

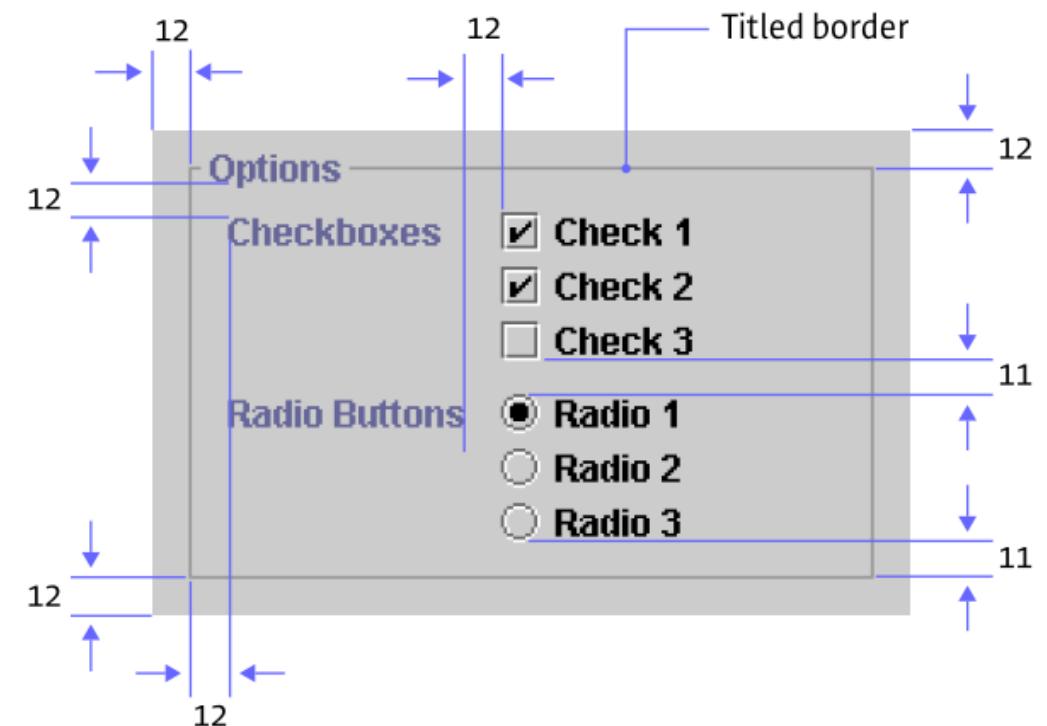


<https://docs.microsoft.com/en-us/visualstudio/extensibility/ux-guidelines/layout-for-visual-studio?view=vs-2019>

Examples



Place most important option
near the top

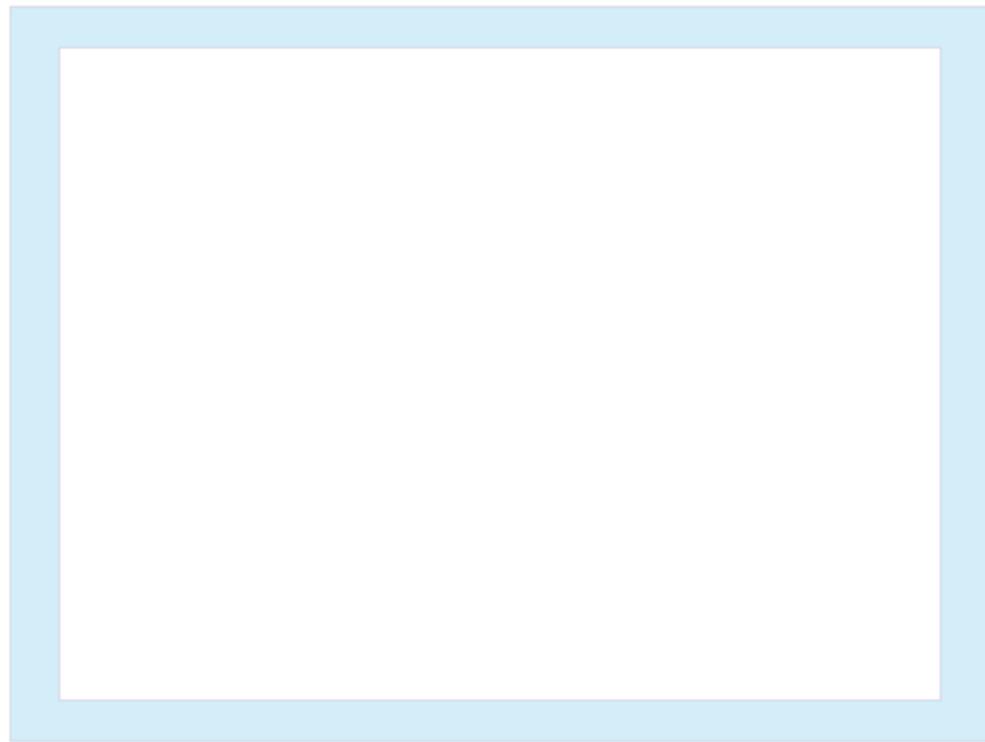


Grid Layout Ingredients

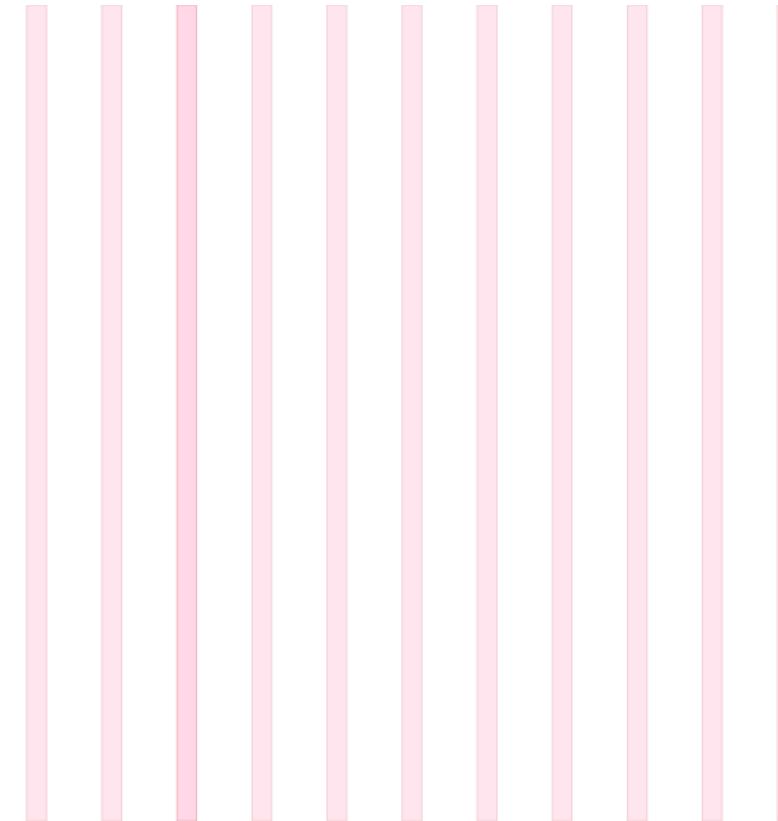
- **Guides:** The edge which you choose to align content with
- **Column:** A vertical division of content
- **Row:** A horizontal division of content
- **Margins:** The area surrounding your content
- **Gutters:** The margins between columns
- **Hang-line:** A horizontal guide to align content to hang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

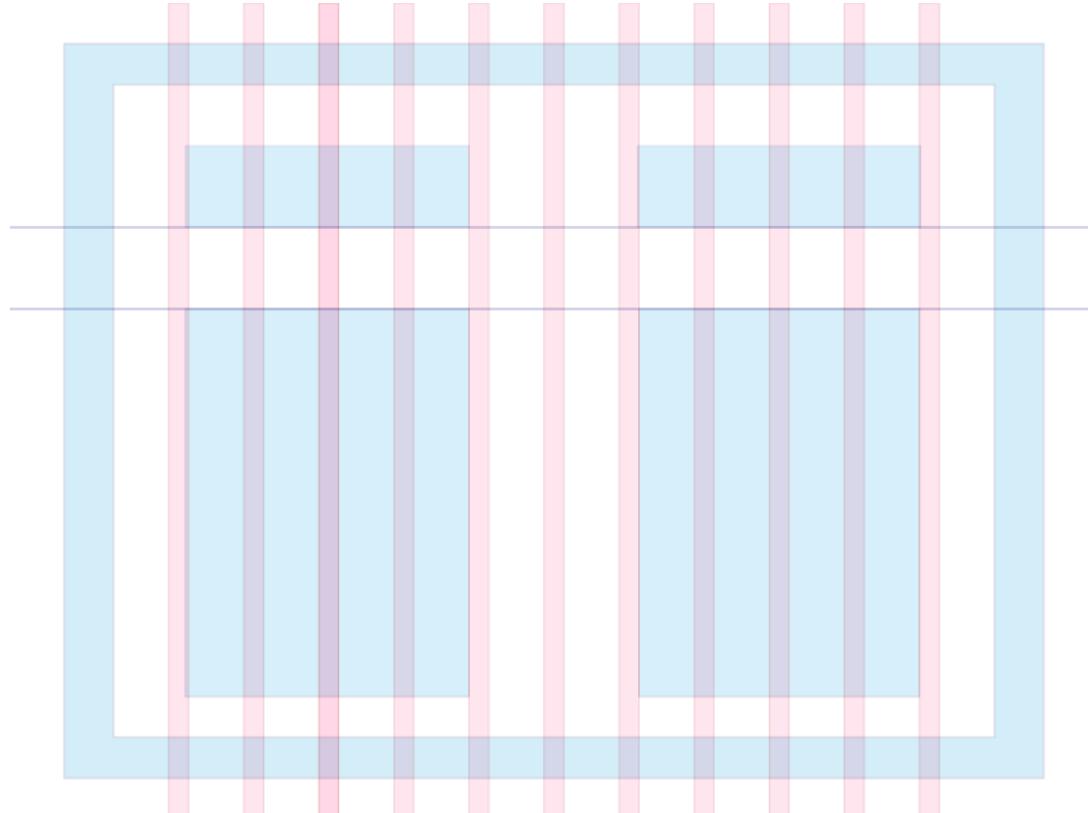


Columns & Gutters



Grid Layout Ingredients

Hanglines and Baselines

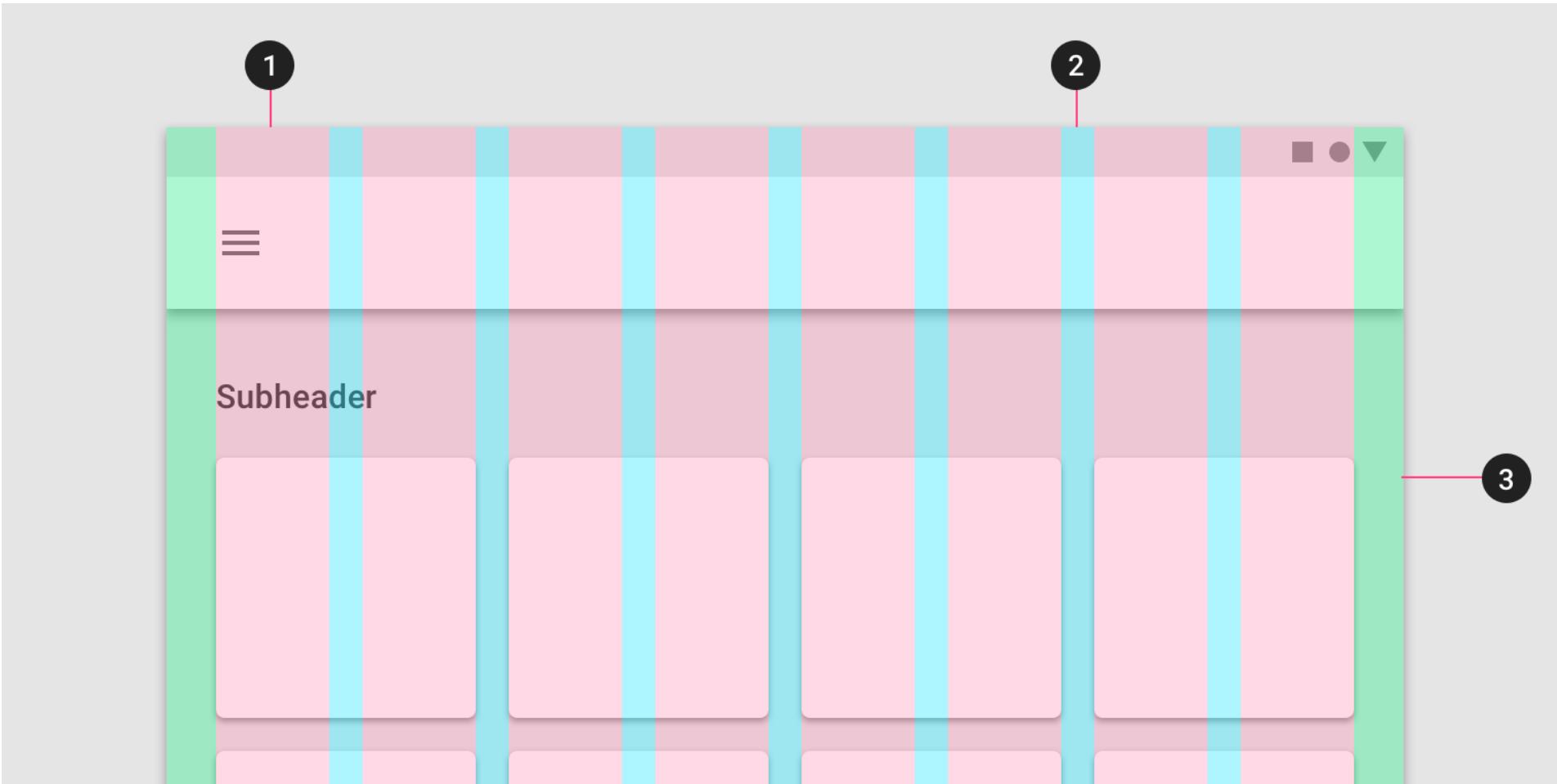


Baseline Grids



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

The image displays four screenshots of a website's homepage, illustrating a responsive grid layout using Bootstrap. The website has a dark header with navigation links and a 'Get started today' button. Below the header, there are sections for various technologies:

- HTML:** Described as the standard markup language for describing the structure of web pages. It includes a brief description and a 'Learn More' button.
- CSS:** Described as used for describing the presentation of web pages. It includes a brief description and a 'Learn More' button.
- JavaScript:** Described as the most popular and widely used client-side scripting language. It includes a brief description and a 'Learn More' button.
- Bootstrap:** Described as a powerful front-end framework for faster and easier development. It includes a brief description and a 'Learn More' button.
- PHP:** Described as the most popular server-side scripting language for creating dynamic web pages. It includes a brief description and a 'Learn More' button.
- SQL:** Described as a standard language designed for managing data in relational database management systems. It includes a brief description and a 'Learn More' button.
- References:** A section containing frequently asked questions (FAQ) and a 'Learn More' button.
- FAQ:** A section containing frequently asked questions (FAQ) and a 'Learn More' button.

At the bottom of each screenshot, there are links for 'Terms of Use' and 'Privacy Policy'. A copyright notice at the bottom left of the first screenshot reads 'Copyright © 2019 Tutorial Republic'.

A yellow callout box highlights the **HTML** section of the first screenshot, containing the following code:

```
<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>
```

<https://www.tutorialrepublic.com/twitter-bootstrap-tutorial/bootstrap-responsive-layout.php>

Other Grid Systems

Unsemantic (responsive, based on %)

The screenshot shows the Unsemantic website. At the top, there's a navigation bar with links for Home, About, Demo, CSS Documentation, and Sass Documentation. Below the navigation is a button labeled "Download Here" and a GitHub Repo link. The main content area has two sections: "What is it?" and "Example Usage". The "What is it?" section defines "Unsemantic" as an adjective and noun, with a note that it's a nonexistent word used by developers. The "Example Usage" section shows a snippet of CSS code for a grid system:

```
<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>
```

Below these sections are three columns: "Successor to 960.gs", "SE-Oh?", and "Built with Sass". The "Successor to 960.gs" column discusses the fluid grid system. The "SE-Oh?" column explains how to use push and pull classes. The "Built with Sass" column discusses the extensibility of the framework. Further down are sections for "Responsive Demo", "Adapt.js Demo", and "Browser Support". A note at the bottom states: "Note: If you reached this site by mistake, perhaps you are seeking Unsemantic's arch nemesis: Semantic.com". The footer includes links for GitHub and MIT license, and credits for Nathan Smith and Serev.

<https://unsemantic.com>

tailwindcss (responsive, flexible)

The screenshot shows the TailwindCSS website. At the top, there's a navigation bar with links for Docs, Components, Blog, Showcase, and a search bar. The main headline reads "Rapidly build modern websites without ever leaving your HTML." Below the headline, a subtext states: "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's a "Get started" button and a search bar. On the right, there's a testimonial box featuring a portrait of Sarah Dayan, a Staff Engineer at Algolia, who says: "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." Below the testimonial is a block of CSS code:

```
1  <figure class="bg-slate-100 rounded-xl p-8 dark:bg-slate-800">
2    
3    <div class="pt-6 space-y-4">
4      <blockquote>
5        <p class="text-lg">
6          "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."
7        </p>
8      </blockquote>
9      <div>
10        <img alt="Sarah Dayan" class="w-12 h-12 rounded-full" />
11        <div>
12          <p>Sarah Dayan</p>
13          <p>Staff Engineer, Algolia</p>
14        </div>
15      </div>
16    </div>
17  </figure>
```

<https://tailwindcss.com>

Grid Structure

Main body:
Mix of 2x and 3x
columns

Alternating row
types



Title area outside the grid

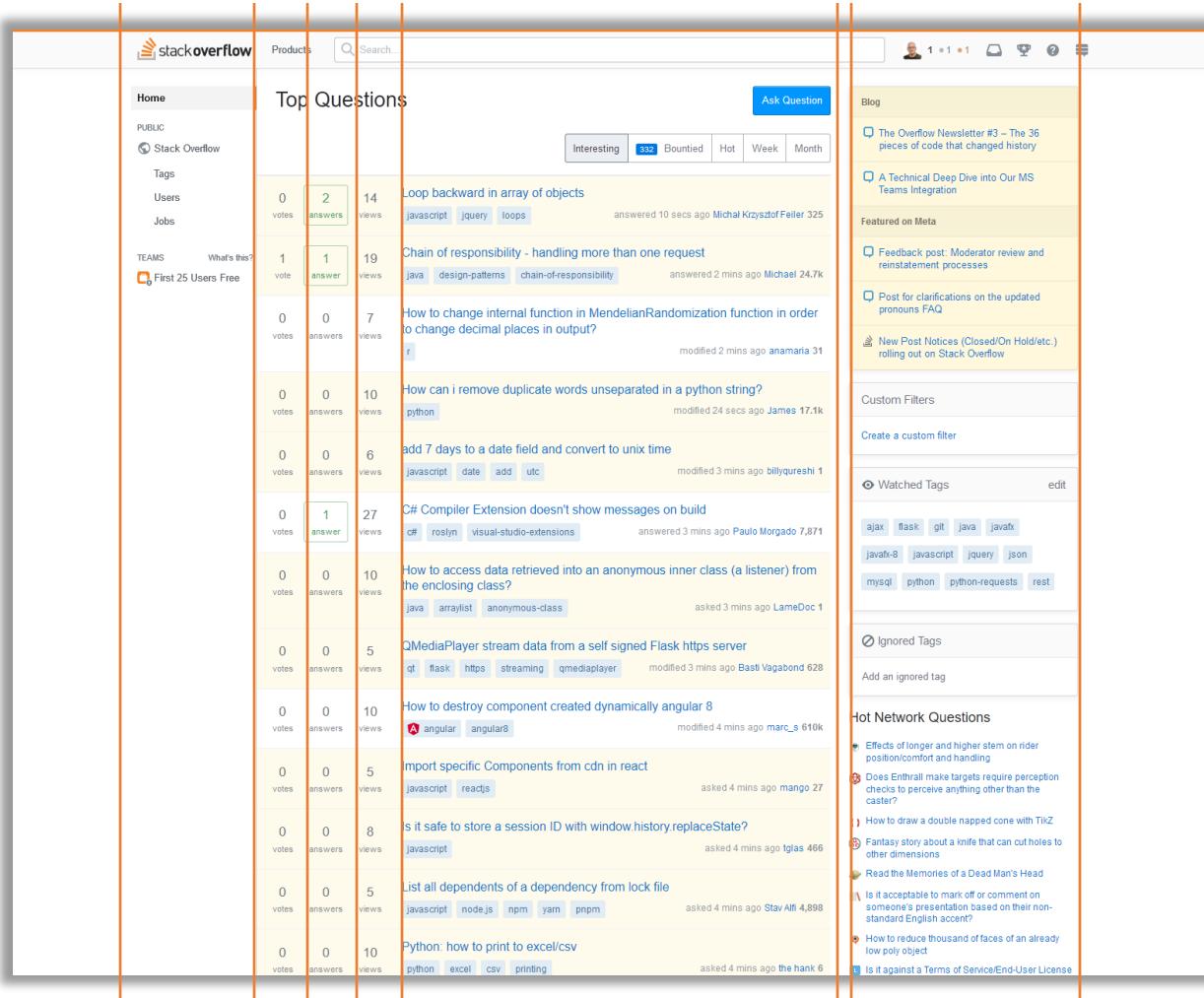
Right column for other types of articles

Grid Structure

Main content
(center, wide)

Navigation
(left, smaller)

Related content
(right, smaller)



Example (2019)

Software								Top
1° anno								
Periodo	Codice	Lingua	Insegnamento	Crediti	Docente	Note	Vincoli	
1	01PDWOW	IT	Information systems ING-INF/05 (6) Oppure	6	M. Morisio	View		
1	02GOLOV	IT	Architetture dei sistemi di elaborazione ING-INF/05 (10) Oppure	10	P. Bernardi E. Sanchez Sanchez	View		
1	02LSEOV	IT	Computer architectures ING-INF/05 (10) Oppure	10	P. Montuschi	View		
1	01SQJ0V	IT	Data Science and Database Technology ING-INF/05 (6) Oppure	8	S. Chiusano	View		
1	01SQMOV	IT	Data Science e Tecnologie per le Basi di Dati ING-INF/05 (8) Oppure	8	E. Baralis	View		
1	01OTW0V	IT	Computer network technologies and services ING-INF/05 (6) Oppure	6	M. Baldi	View		
1	02KPN0V	IT	Tecnologie e servizi di rete ING-INF/05 (6) Oppure	6	G. Marchetto	View		
2	02JEU0V	IT	Formal languages and compilers ING-INF/05 (6) Oppure	6	R. Sisto	View		
2	05BIDOV	IT	Ingegneria del software ING-INF/05 (8) Oppure	8	G. Bruno	View		
2	04GSPOV	IT	Software engineering ING-INF/05 (8) Oppure	8	M. Morisio	View		
2	01UDFOV	IT	Applicazioni Web I ING-INF/05 (6) Oppure	6	E. Masala	View		
2	01TXY0V	IT	Web Applications I ING-INF/05 (6) Oppure	6	F. Corno	View		
2	02GRSOV	IT	Programmazione di sistema ING-INF/05 (10) Oppure	10	G. Cabodi	View		
2	01NYH0V	IT	System and device programming ING-INF/05 (10) Oppure	10	S. Quer	View		
2° anno								
Periodo	Codice	Lingua	Insegnamento	Crediti	Docente	Note	Vincoli	
1	01TYMOV	IT	Insegnamento a scelta 1 Information systems security ING-INF/05 (6) Oppure	6		View		
1	01UDUOV	IT	Sicurezza dei sistemi informativi ING-INF/05 (6) Oppure	6		View		
1	01SQNOV	IT	Software Engineering II ING-INF/05 (6) Crediti liberi	6		View		
1,2	29EBHOV		Tesi Insegnamento a scelta 2	30				
2				6				
Insegnamento a scelta 1								
Periodo	Codice	Lingua	Insegnamento	Crediti	Docente	Note	Vincoli	
1	01TYDOV	IT	Cloud Computing ING-INF/05 (6) Oppure	6		View		
1	01PDCOV	IT	Digital control technologies and architectures ING-INF/04 (6) Oppure	6		View		
1	01TXZ0V	IT	Distributed systems programming ING-INF/05 (6) Oppure	6		View	Si	
1	01NWPOV	IT	Elaborazione dell'audio digitale ING-INF/05 (6) Oppure	6		View		
1	01UDGOV	IT	Energy management for IoT ING-INF/05 (6) Oppure	6		View	Si	
1	02JSK0V	IT	Human Computer Interaction ING-INF/05 (6) Oppure	6		View		
1	01SQJ0V	IT	Machine Learning and Artificial Intelligence ING-INF/05 (6) Oppure	6		View		
1	01PDX0V	IT	Modern design of control systems ING-INF/04 (6) Oppure	6		View		
1	01OUUV0V	IT	Optimization methods and algorithms ING-INF/04 (6) Oppure	6		View		
1	0ACET0V	IT	MAT/09 (6) Oppure	6		View		

Example (same page in 2020)

Software

▼ 1° anno 2020/2021

Periodo	Codice	SSD	Insegnamento	Lingua	Crediti	Docente	Note	Orario
1	01PDWOW	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 (253 iscr.)	🕒	
1	01OTWOW	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	04GSPOV	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:

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

Weekend Delivery:

Security Access Code:
For buildings or gated communities

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

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 live inside my car leasing website all day Monday to Friday 9am-6pm. I lease the cheapest PCP and contract hire cars in the UK! - I am Ling, accept no substitutes

LINGS CARS .com

Leader of the Pack - The UK's favorite car leasing website!

Contract hire cars from Ling Valentine. LINGS CARS is the UK's favourite car leasing website - On 2016 I leased over £85 million in cars!

Stop

BETTY

PUBLIC PICCADILLY

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!**

Car Leasing Online Service Response Times

75 CUSTOMERS IN 'PROPOSAL' **129 CUSTOMERS IN 'ORDER'**

0:03 07 **0:05 03**

CARS A-Z

ABARTH

ABARTH

124 Spider Convertible
595 Convertible
595 Hatchback
695 Convertible

ALFA ROMEO

Giulia Saloon
Giulietta
Stelvio Estate

AUDI

1.2 Pop dV (69bhp) (4 seats)
Hatchback 5dr 124cc Petrol Manual (5 Speed)

RENT NEW **£127/mth** including VAT
3 year cheap car leasing **9+35**

1.0 TCE Iconic 12v (90bhp)
Hatchback 5dr 899cc Petrol Manual (5 Speed)

RENT NEW **£152/mth** including VAT
3 year cheap car leasing **6+35**

1.2 PureTech 12v (83bhp) Flair
Hatchback 5dr Manual 1199cc

RENT NEW **£157/mth** including VAT
2 year cheap car leasing **6+23**

Ling replies in...

Renault Clio

Citroen C3

Seat Leon

Skoda Kodiaq Estate

Renault Clio

Seat Arona

Seat Leon

Audi A3 Sportback

1 DELIVERY TODAY

Ford Ka+ to Arthur ATTBEDBROUGH, NR17

21 DELIVERIES IN LAST WEEK

- Renault Captur to Cath PONTEFRACT, WF81**
- Mercedes GLC Coupe to Bill BEDLINGTON, NE22**
- BMW 2 Series Convert... to Pingu DERBY, DE56**
- Nissan Qashqai to Arlene GLASGOW, G11**
- Volvo XC60 Estate to Saif MILTON KEYNES, MK8**
- Seat Leon to Ben BARNESLEY, S70**
- Skoda Kodiaq Estate to Hannah HAY-ON-WYE, HR3**
- Renault Clio to Paul MIDDLEBROUGH, TS7**
- Renault Clio to Paul MIDDLEBROUGH, TS7**
- Seat Arona to Steve LONDON, SE18**
- Seat Leon to Adam HATFIELD, AL10**
- Audi A3 Sportback to Chris WYMONDHAM, NR18**

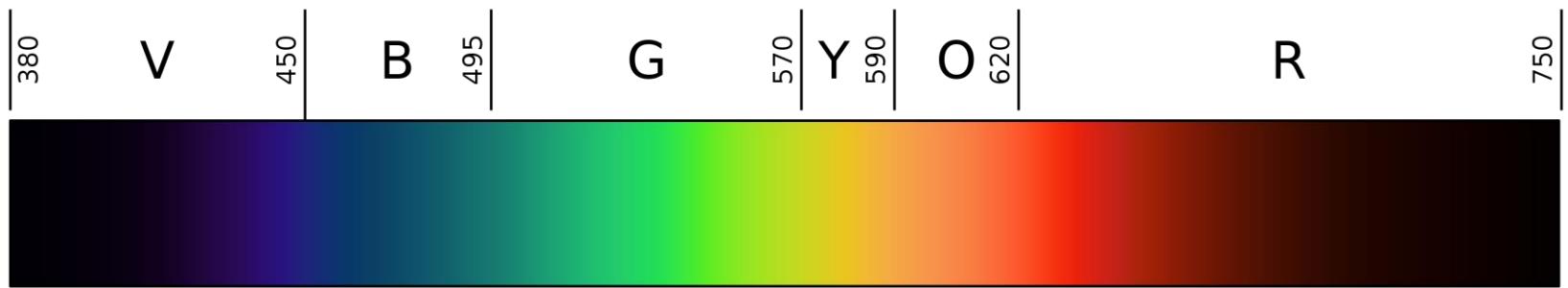
Colors

- 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

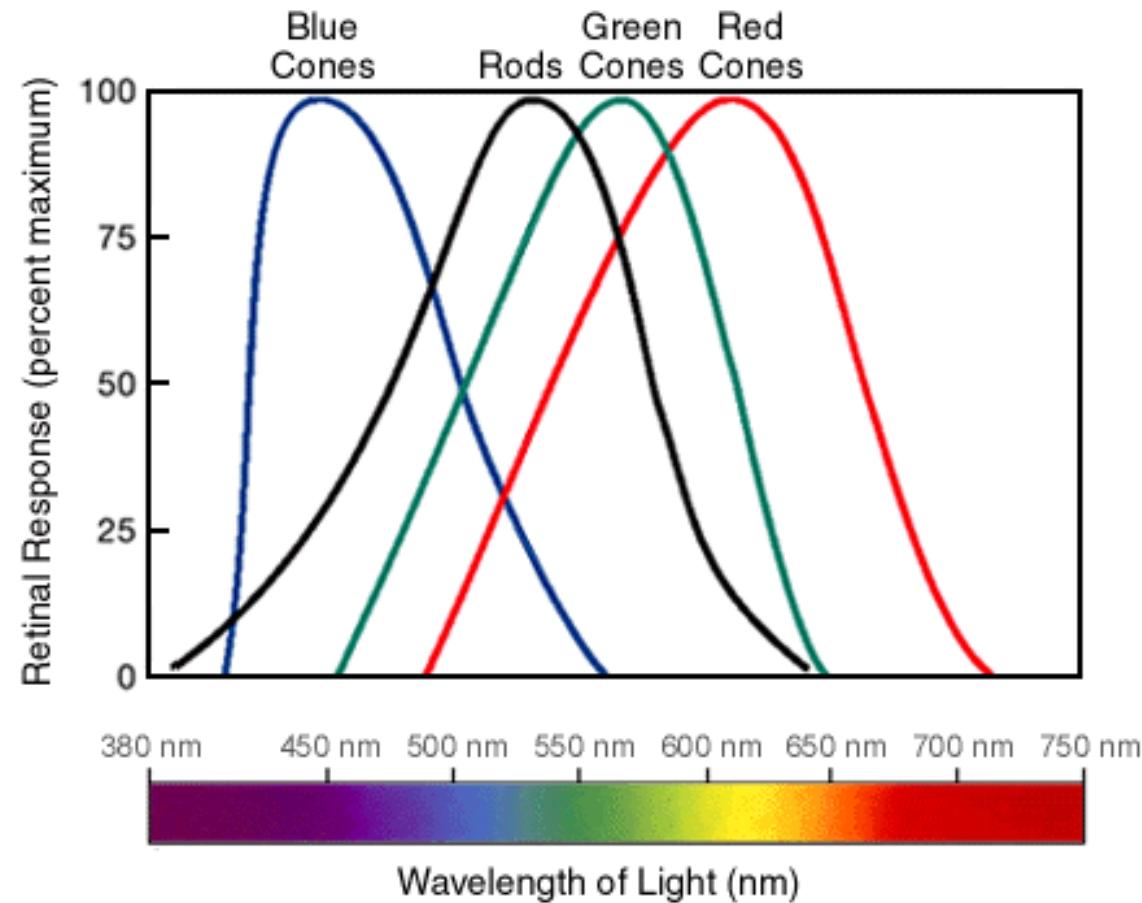


- UV spectrum ends on the left, IR starts on the right
- Wavelengths are in nm
- Source: https://commons.wikimedia.org/wiki/File:Linear_visible_spectrum.svg

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 signal which are passed to the brain
 - the brain detects, finally, pattern and movements

Color Sensitivity of the Eyes



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

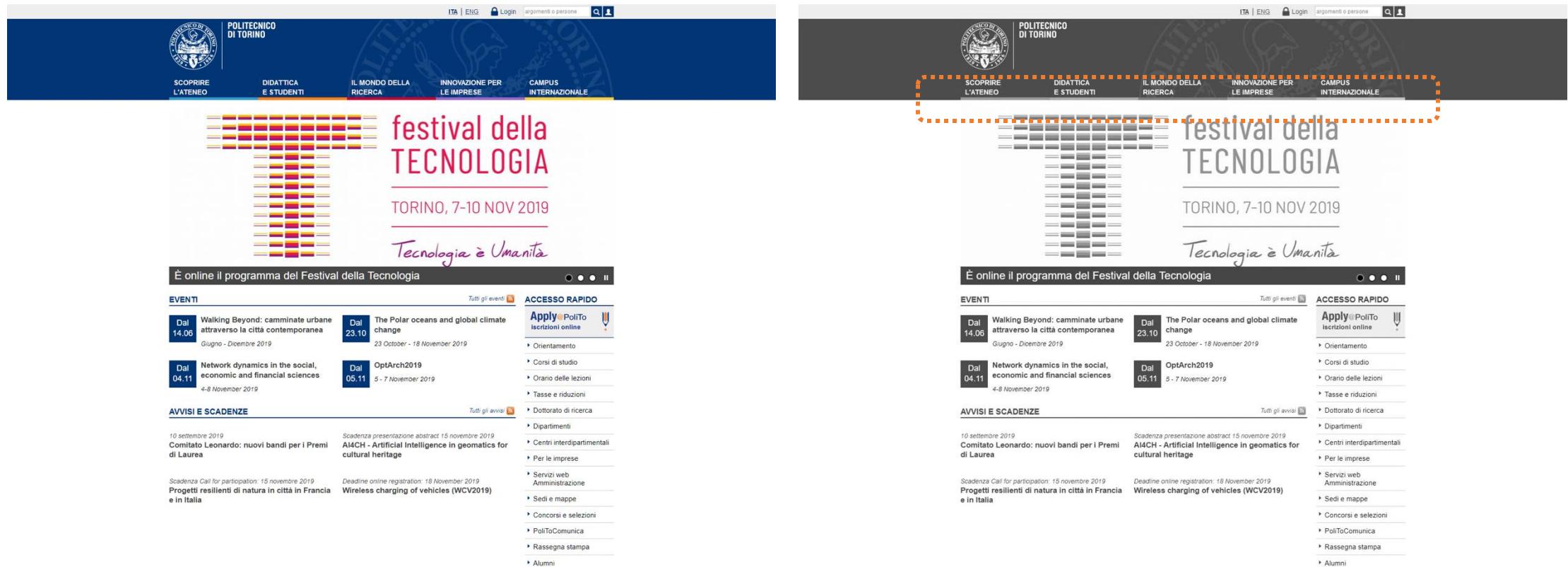
Example

The image displays two identical screenshots of the Stack Overflow homepage, illustrating a design comparison between two different visual styles.

Left Screenshot (Original Style):

- Header:** Shows the Stack Overflow logo, navigation links for Home, Products, and Search, and user stats (1 post, 1 answer, 14 views).
- Top Questions:** A list of the top questions on the site, including:
 - "Loop backward in array of objects" by Michal Krzysztof Feifer, 325 views.
 - "Chain of responsibility - handling more than one request" by Michael 24.7k, 19 views.
 - "How to change internal function in MendelianRandomization function in order to change decimal places in output?" by anamaria 31, 7 views.
 - "How can I remove duplicate words unseparated in a python string?" by James 17.1k, 10 views.
 - "add 7 days to a date field and convert to unix time" by billyqureshi 1, 6 views.
 - "C# Compiler Extension doesn't show messages on build" by Paulo Morgado 7,871, 27 views.
 - "How to access data retrieved into an anonymous inner class (a listener) from the enclosing class?" by LameDoc 1, 10 views.
 - "QMediaPlayer stream data from a self signed Flask https server" by Basil Vagabond 628, 5 views.
 - "How to destroy component created dynamically angular 8" by marc_s 610k, 8 views.
 - "Import specific Components from cdn in react" by mango 27, 5 views.
 - "Is it safe to store a session ID with window.history.replaceState?" by tglass 466, 8 views.
 - "List all dependents of a dependency from lock file" by Stav Alli 4,898, 5 views.
 - "Python: how to print to excel/csv" by the hanik 6, 10 views.
- Blog:** A sidebar section featuring recent blog posts:
 - "The Overflow Newsletter #3 – The 36 pieces of code that changed history"
 - "A Technical Deep Dive into Our MS Teams Integration"
 - "Feedback post: Moderator review and reinstatement processes"
 - "Post for clarifications on the updated pronouns FAQ"
 - "New Post Notices (Closed/On Hold/etc.) rolling out on Stack Overflow"
- Custom Filters:** A section for creating custom filters.
- Watched Tags:** A section for managing watched tags.
- Ignored Tags:** A section for managing ignored tags.
- Hot Network Questions:** A sidebar section featuring other popular questions from the network:
 - "Effects of longer and higher stem on rider position/comfort and handling"
 - "Does Entrail make targets require perception checks to perceive anything other than the caster?"
 - "How to draw a double napped cone with TikZ"
 - "Fantasy story about a knife that can cut holes to other dimensions"
 - "Read the Memories of a Dead Man's Head"
 - "Is it acceptable to mark off or comment on someone's presentation based on their non-standard English accent?"
 - "How to reduce thousand of faces of an already low poly object"
 - "Python: how to print to excel/csv"
 - "Is it against a Terms of Service/End-User License?"

Example



The image displays two side-by-side screenshots of the Politecnico di Torino website. Both screenshots show the homepage for the 'festival della TECNOLOGIA' event, which is scheduled for November 7-10, 2019, in Turin. The festival's theme is 'Tecnologia è Umanità'. The top navigation bar includes links for 'SCOPRIRE L'ATENEO', 'DIDATTICA E STUDENTI', 'IL MONDO DELLA RICERCA', 'INNOVAZIONE PER LE IMPRESE', and 'CAMPUS INTERNAZIONALE'. The right screenshot has a red dashed rectangle highlighting the top navigation bar area.

Left Screenshot (Original Design):

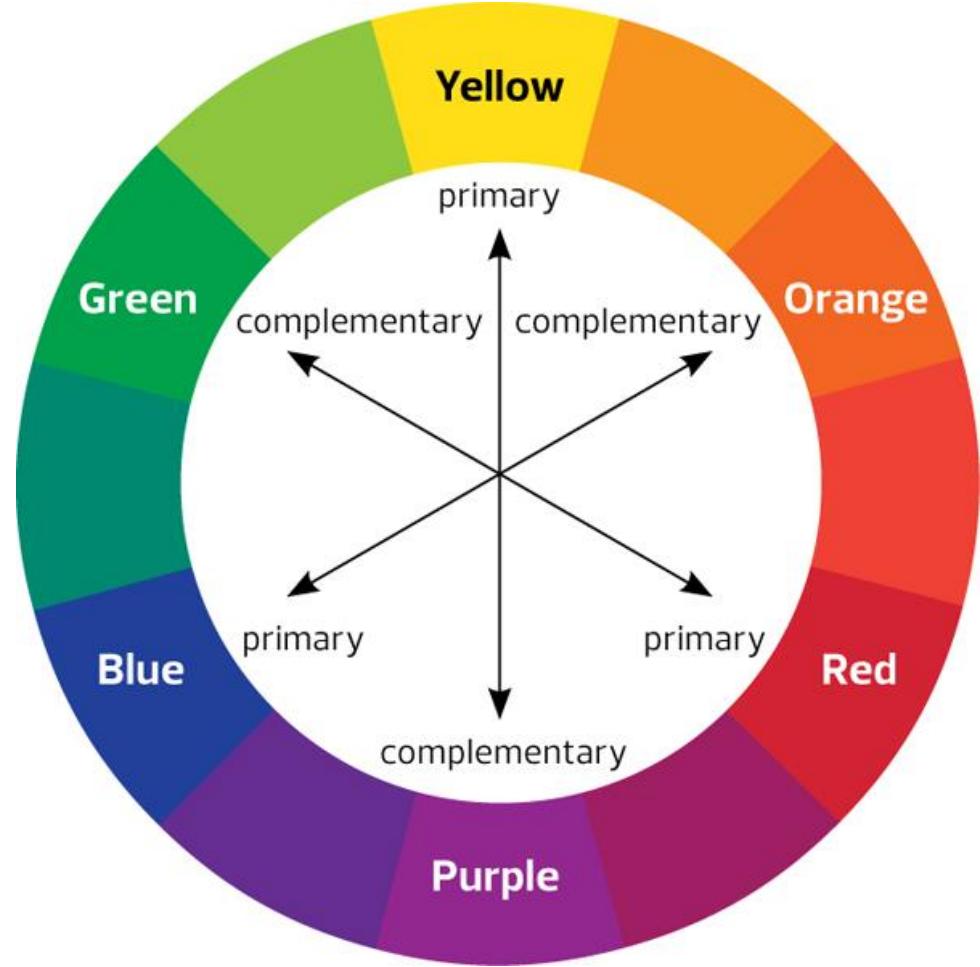
- Header:** Includes the Politecnico di Torino logo, 'POLITECNICO DI TORINO' text, and a search bar.
- Main Content:** Features a large graphic of the letter 'T' composed of small vertical bars, followed by the text 'festival della TECNOLOGIA' and 'TORINO, 7-10 NOV 2019'. Below this is the tagline 'Tecnologia è Umanità'.
- Events Section:** Shows two events:
 - Walking Beyond: camminate urbane attraverso la città contemporanea** (From June 14 to December 2019)
 - The Polar oceans and global climate change** (From October 23 to November 18, 2019)
- Accesso Rapido (Quick Access) sidebar:** Includes links for 'Apply@PolTo', 'Iscrizioni online', 'Orientamento', 'Corsi di studio', 'Orario delle lezioni', 'Tasse e riduzioni', 'Dottorato di ricerca', 'Dipartimenti', 'Centri interdipartimentali', 'Per le imprese', 'Servizi web', 'Ammistrazione', 'Sedi e mappe', 'Concorsi e selezioni', 'PolToComunica', 'Rassegna stampa', and 'Alumni'.
- Announcements Section:** Lists several announcements and deadlines, such as 'Scadenza Leonardo: nuovi bandi per i Premi di Laurea' (Deadline: September 10, 2019) and 'Scadenza Call for participation: 15 novembre 2019 Progetti resilienti di natura in città in Francia e in Italia' (Deadline: November 15, 2019).

Right Screenshot (Modified Design):

- Header:** Same as the left screenshot.
- Main Content:** Same as the left screenshot.
- Events Section:** Same as the left screenshot.
- Accesso Rapido (Quick Access) sidebar:** Same as the left screenshot.
- Announcements Section:** Same as the left screenshot.

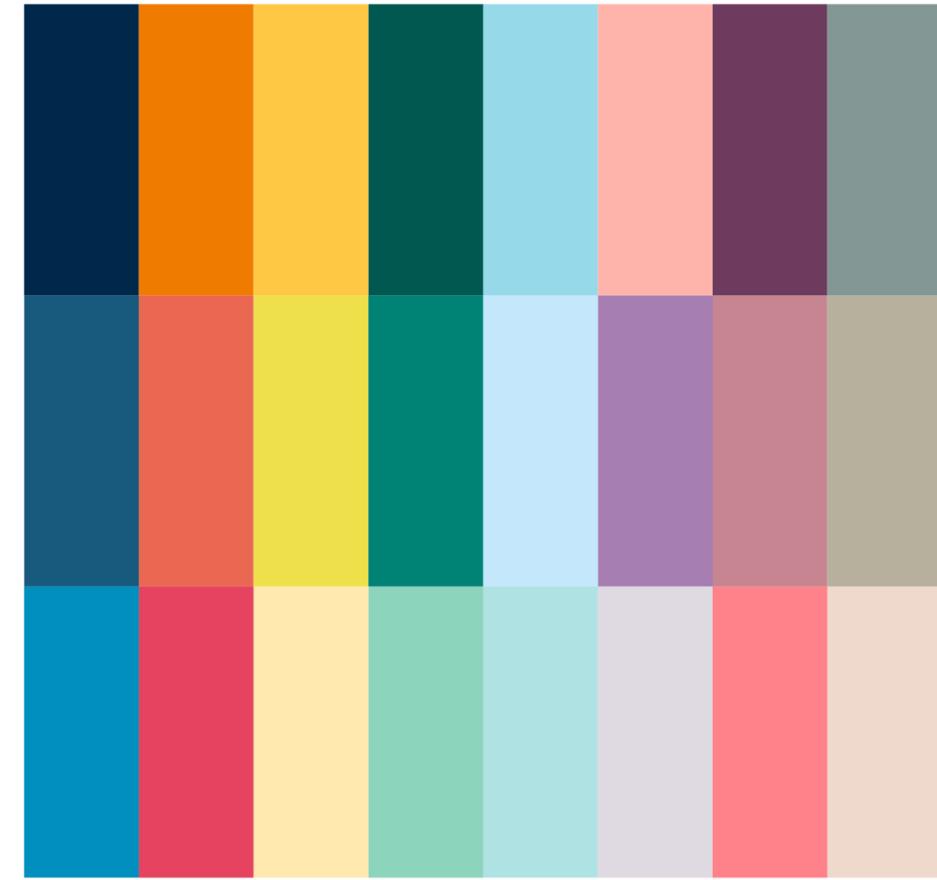
The Color Weel

- 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/>



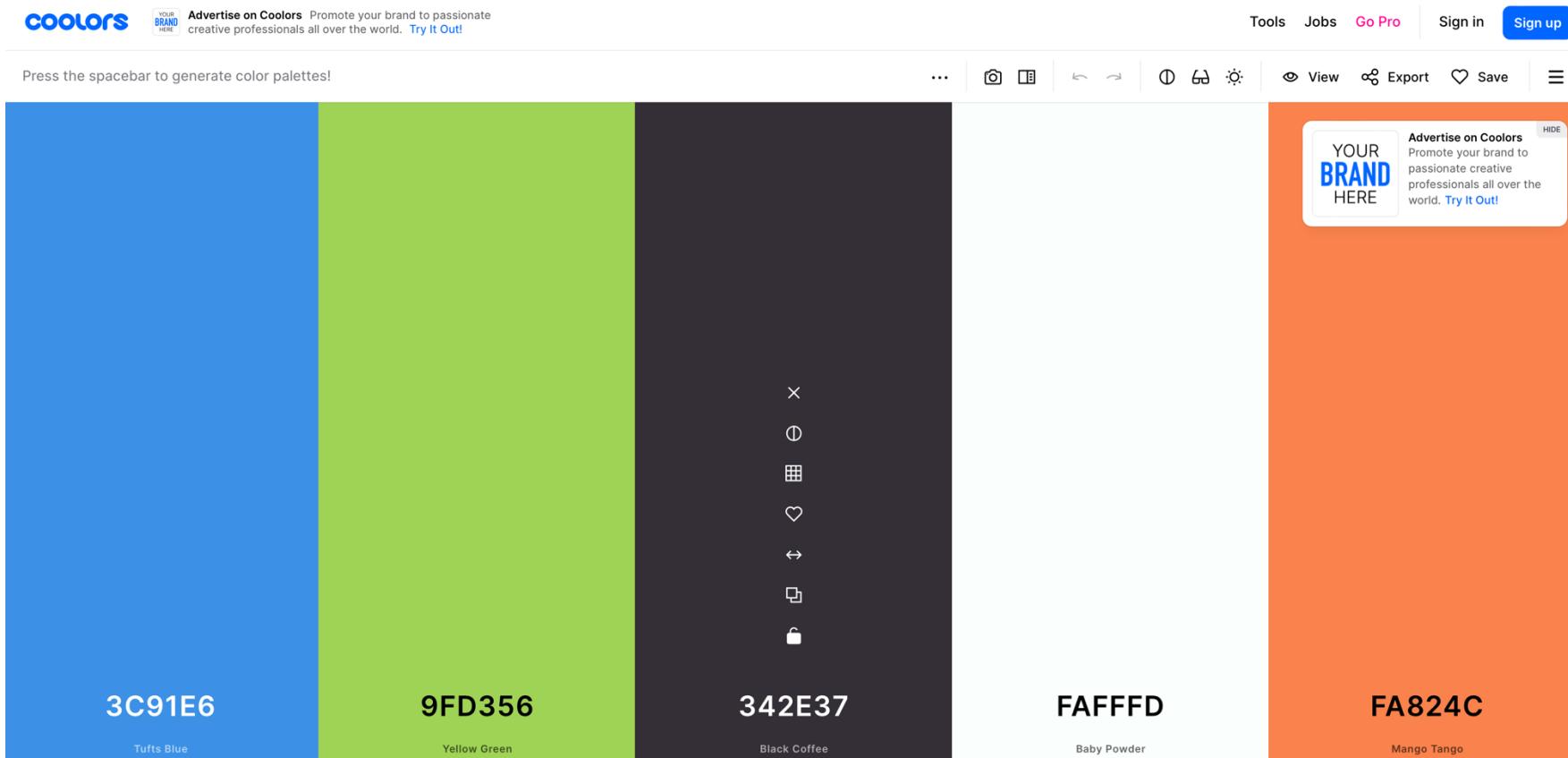
Palettes - PoliTo

GERARCHIA COLORI



https://www.politocomunica.polito.it/en/corporate_image/brand_and_visual_identity

Palettes Generator



<https://coolors.co>

ColourLovers

COLOURLovers [Browse](#) [Community](#) [Channels](#) [Trends](#) [Tools](#)

Search palettes... [Palettes](#) [Create](#) [Sign Up](#) [Log In](#)

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 PEAK

SadieSews on Vengeful 225
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

Why Marketing Automation is Rocket-Fuel for Remote Workforce [View More](#)

How to Become a Full-Time Creative and Do What You Love [View More](#)

Colors, Human Growth Hormones, and Creativity [View More](#)

PALETTES Create +

Nineteen by Júlia Freire 0

garden palette 2 by macarver 0

PATTERNS Create +

try by Anomalin 0

PodCasting by 3sisters 0

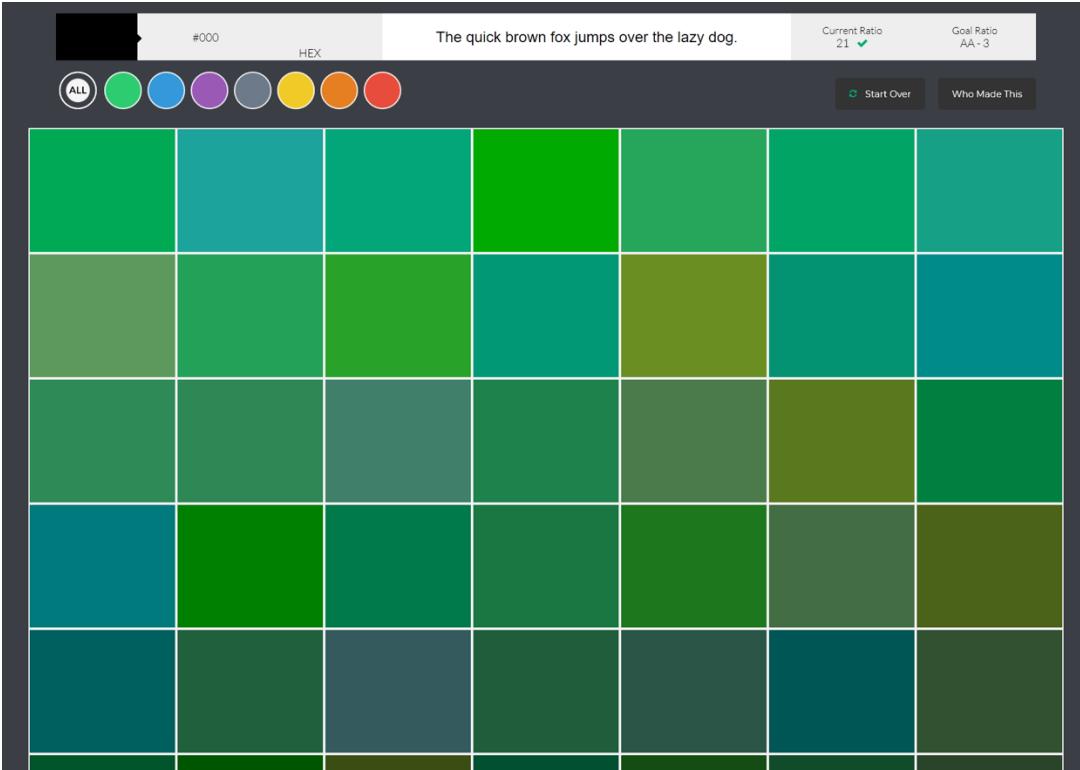
COLORS Create +

light gray purple by macarver 0

slate purple by macarver 0

<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 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

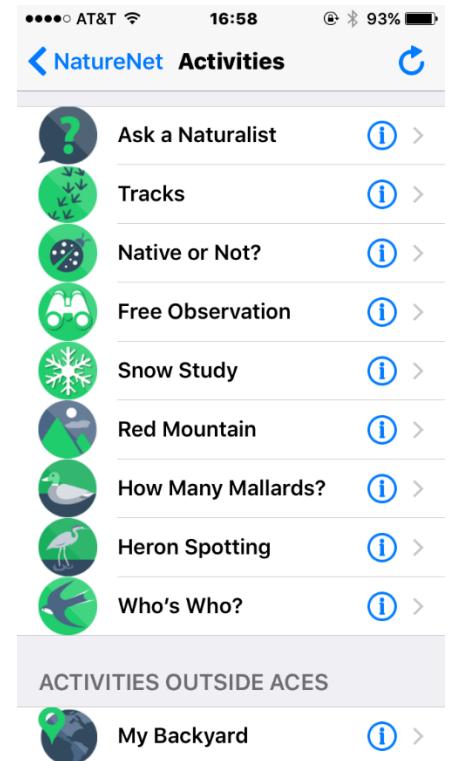
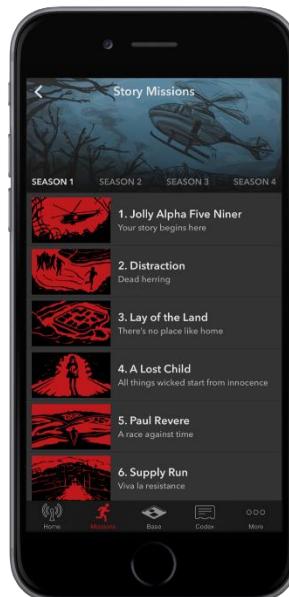
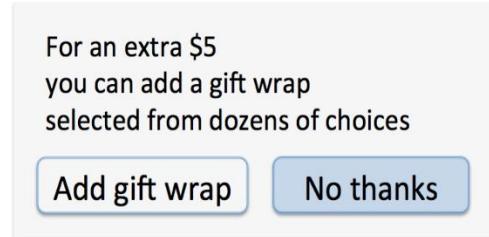
«Informavores» must quickly find the information they need

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

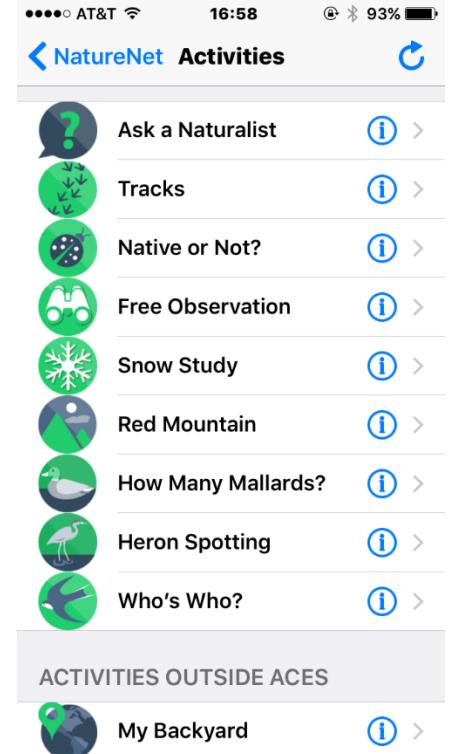
- Menu bars, pop-up menus, toolbars, palettes and ribbons
- Shortcuts and gestures for rapid interaction
- Long lists
- Linear versus simultaneous presentation



Navigation By Selection

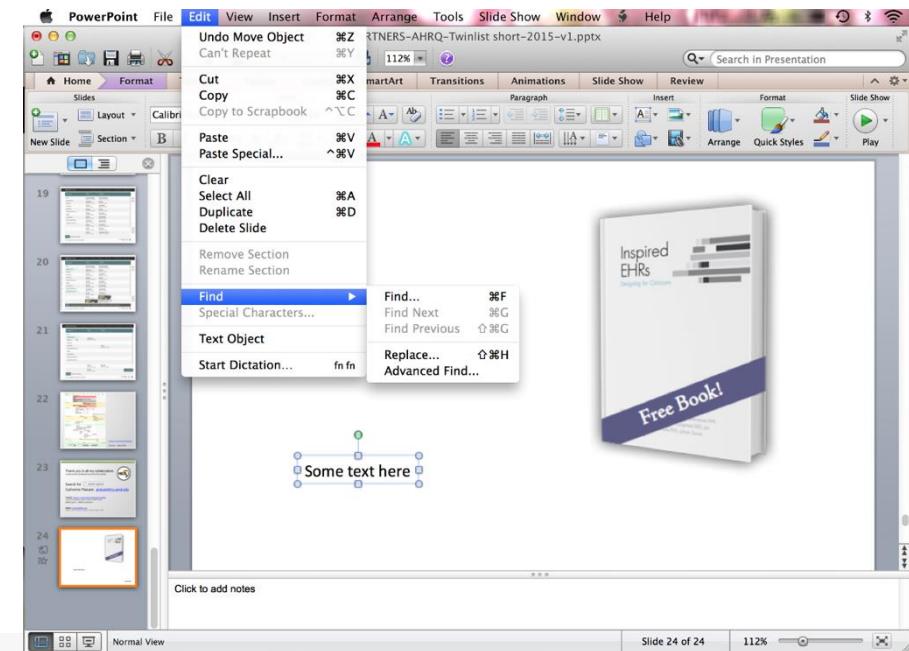
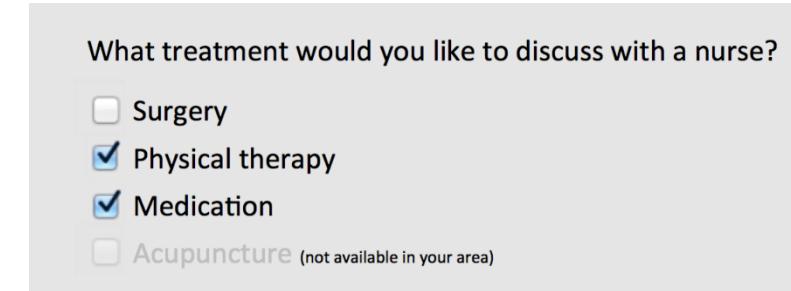
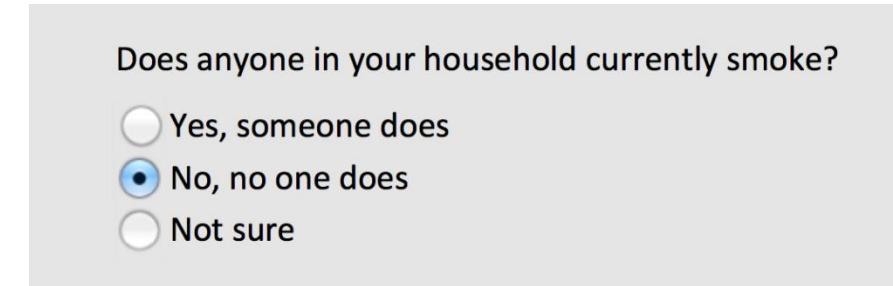
- Menu bars, pop-up menus, toolbars, palettes and ribbons
- **Shortcuts and gestures for rapid interaction**
- Long lists
- Linear versus simultaneous presentation

- 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



Menus

The screenshot shows the official NASA website homepage. At the top, there is a horizontal navigation bar with links to "Missions", "Galleries", "NASA TV", "Follow NASA", "Downloads", "About", and "NASA Audiences". Below this is a secondary navigation bar with links to "International Space Station", "Journey to Mars", "Earth", "Technology", "Aeronautics", "Solar System and Beyond", "Education", "History", and "Benefits to You". A search bar is located at the top right. The main content area features several news stories and images. One prominent story is about the "One-Year Crew" on the International Space Station. Another story discusses the "Martian" Director Ridley Scott's comments on NASA's journey to Mars. There are also sections for an "Eclipse", "NASA Scientist Sheds Light on Rare Sept. 27 Supermoon Eclipse", "The Real Martians", "Space Travel", and "SDO Solar Mission". The footer contains the NASA logo, the text "National Aeronautics and Space Administration", and links to "NASA Official: Brian Dunbar", "No Fear Act", "FOIA", "Privacy", "Office of Inspector General", "Agency Financial Reports", and "Contact NASA".

The screenshot shows the NASA TV website. The top navigation bar includes links to "Home", "www.nasa.gov", "NASA TV", a search bar, and a menu icon. The main content area displays a video player showing two astronauts working on the International Space Station. Below the video, there is a caption that reads "One-Year Crew" and "Halfway There". Further down the page, there is another video player showing three people in a laboratory setting.

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

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

Welcome to REI! | [Log In](#) or [Register](#)

FREE SHIPPING With \$50 minimum purchase.

REI Find great gear and clothing 

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
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)





 (1)
REI Rainwall Rain Jacket - Girls'
\$31.83 - \$64.50 [Compare](#)

 (1)
REI Rainwall Rain Pants - Kids'
\$49.50 [Compare](#)

 (9)
REI Sahara Convertible Pants - Girls'
\$44.50 [Compare](#)





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 [≥ 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

Ambiti per i quali è possibile effettuare una prenotazione

- Aule Studio
- Biblioteca
- Segreteria generale studenti

Aule Studio - Selezione Aula Studio

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

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

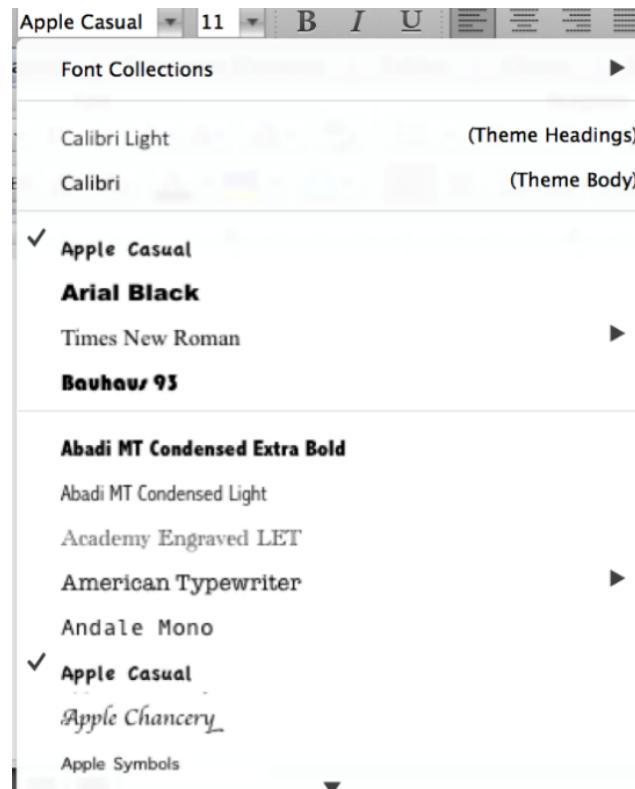
A partire da giorno 15 luglio 2020, è consentito l'uso della seguente Sala Studio della Sede Centrale:
- Sala studio al Secondo Piano di C.so Castelfidardo 39, codice locale TO_CIT11_XP02_001

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

		14 Set 2020 - 18 Set 2020						
		Lunedì 14 Set 2020	Martedì 15 Set 2020	Mercoledì 16 Set 2020	Giovedì 17 Set 2020	Venerdì 18 Set 2020		
		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		
09:00								
10:00								
11:00								
12:00								
13:00								

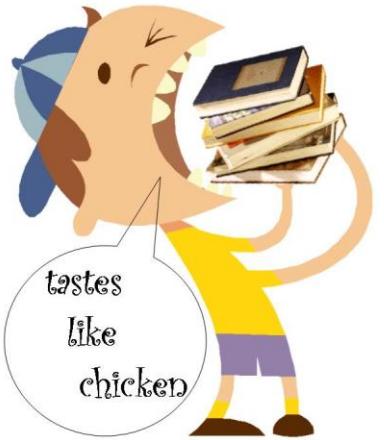
Menu Grouping: example

- 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...

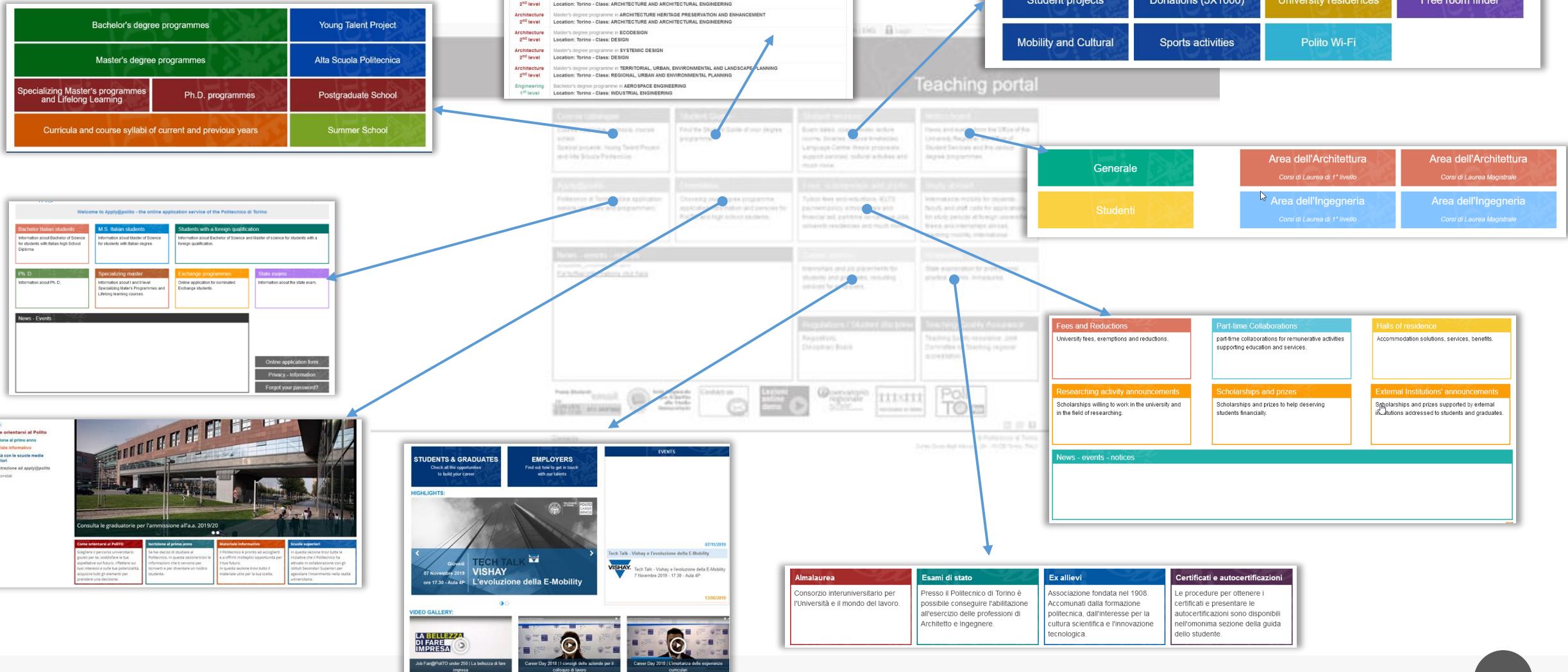
Example

The screenshot shows the homepage of the Politecnico di Torino Teaching portal. At the top, there is a navigation bar with links for 'The Politecnico' (selected), 'Teaching', 'Research', 'Business', and 'International Campus'. It also includes language links ('ITA | ENG'), a 'Login' button, and a search bar. The main header features the Politecnico di Torino logo and the text 'POLITECNICO DI TORINO'. Below the header, a large blue banner reads 'Teaching portal'. The page is divided into several sections:

- 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.

At the bottom, there are links for 'Posta Studenti', 'email' (with a phone number 010-33300 011-897965), 'Ente Regionale per il Diritto allo Studio Universitario' (with a logo), 'Contact us' (with an envelope icon), 'Lezioni online demo' (with a play button icon), 'Osservatorio regionale' (with a green icon), 'POLITECNICO DI TORINO' (with a blue icon), and 'PoliTO App' (with a blue icon). There are also social media icons for YouTube, Facebook, and Twitter, along with a question mark icon. A copyright notice at the bottom right states: © Politecnico di Torino Corso Duca degli Abruzzi, 24 - 10129 Torino, ITALY.

Example



Example

Survey@Polito

Administration -- Logged in as: corno

Survey Smart Home Survey (ID:365355)

Title: Smart Home Survey (ID 365355)
Survey URL (English): <https://survey.polito.it/365355/lang-en> [EN] [DE] [IT] [FR] [ES]

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/2380988/> The paper describing the previous survey (in 2010) is available at: <http://porto.polito.it/2380988/>

Administrator: Fulvio Corno (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]

LimeSurvey
Version 1.92+ Build 120919

Like it? Donate to LimeSurvey

Common Problems

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

Icons

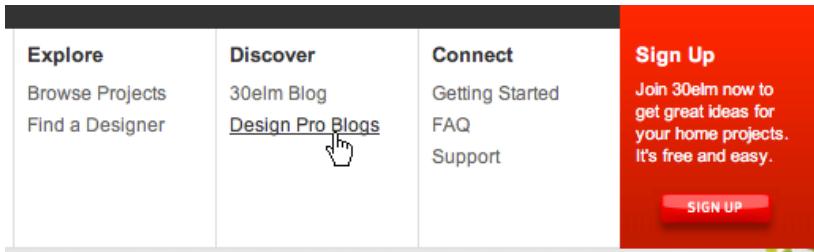
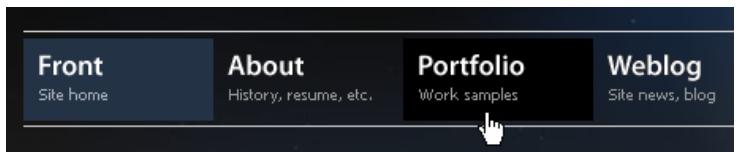
- Icons facilitate recognition over recall
 - When they are consistently used, and frequently visible
- Redundant coding helps recognition and memorization
 - Icon + Text + Tooltip + Context



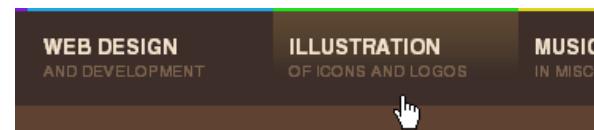
Links

- 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



A vertical navigation menu on the right side of the page. It includes links for 'Front Page', 'Our Portfolio', 'Who We Are', 'What We Do', and 'Contact Us'. A mouse cursor is hovering over the 'Who We Are' link.



A vertical navigation menu on the right side of the page. It includes links for 'Newsletter', 'Store', 'Events', 'Podcast', and 'Coaching'. A mouse cursor is hovering over the 'Events' link.

Forms

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

Create an IEEE Account [?](#) [X](#)

* Required field

Provide your personal information

* Given/First name: Catherine

Middle name:

* Last/Family/Surname: Plaisant

Enter e-mail address & password

The e-mail provided here will be the username of your account.

* E-mail address: cplaisant@

* Re-enter e-mail address:

* Password: Your password is good

* Confirm password:

⚠ The e-mail address provided is not in a valid e-mail format (for example: j.doe@nomail.com). Please try again.

Passwords must be between 8 and 64 characters, and include at least one number. [More...](#)

Set security questions

For your security, IEEE Accounts are required to have two security questions and answers.

* Security question 1: Select

* Type your answer:

* Security question 2: Select

* Type your answer:

[Privacy & Opting Out of Cookies](#)

[Create Account and Continue Joining](#) [Cancel](#)

Form Elements and UI Elements

The collage illustrates a variety of user interface elements:

- Checkboxes: NonFederal (99) and Federal (57).
- Radio buttons: Yes and No.
- Dropdown menu: Find your state or... Go.
- Date picker: SEP 18th 2010.
- Social sharing buttons: Send, Post, Tweet.
- Slider: ON OFF.
- List box: Are like dropdowns. But they let you make multiple selections. Like checkboxes do.
- Navigation bar: General Settings, Your Profile, Sign Out.
- Calendar: Sep. 2010, Jun 22.
- Icon set: Various icons for file operations.
- Image gallery: A grid of five images with left and right arrows.
- Page navigation: 1 2 3 4 5 6 7 8 9 10 next, Previous, Next.
- Tags: Costs (72), Health Conditions (54), Improving Care (53), Prevention (50), Rights, Protections and Benefits (135), Insurance Coverage (141).
- Search interface: Navigation Crystal Clear, Search Option One, Search Option Two, Search Option Three, Enter Keywords, Category, Search.
- File search: Search, Everything, Entries, Photos, Videos, Audio.
- Progress bar: A horizontal progress bar with five segments and numbered circles (1, 2, 3, 4, 5).
- Step navigation: Step 1 Select your plan, Step 2 Select your plan, Step 3 Select your plan.
- Text input field: Text input fields let you input text.
- Information box: 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.
- Page footer: https://www.usability.gov/how-to-and-tools/methods/user-interface-elements.html, Human Computer Interaction, 90.

Example: Redesign This

Attenzione, i seguenti insegnamenti sono in corso di sospensione 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

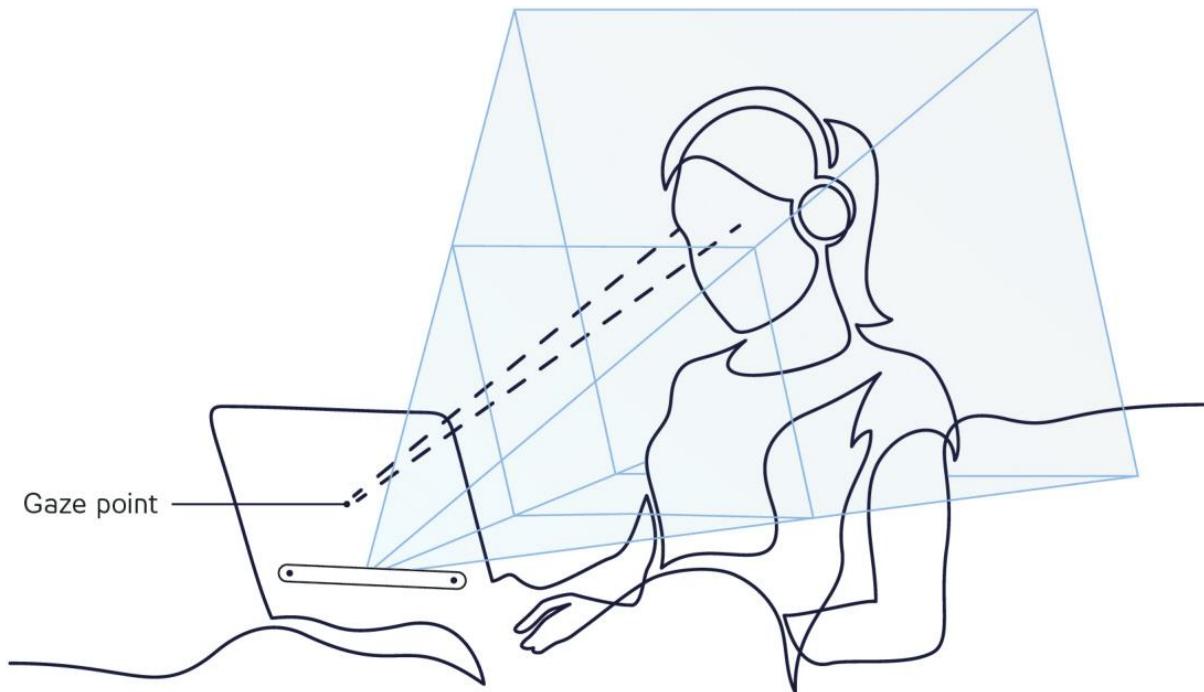
Eye Trackers



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.

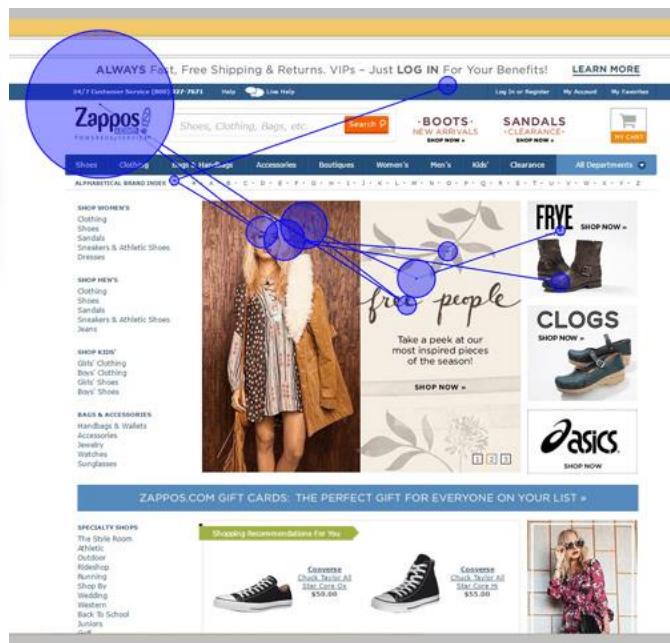


source: <https://www.tobii.com/group/about/this-is-eye-tracking/>

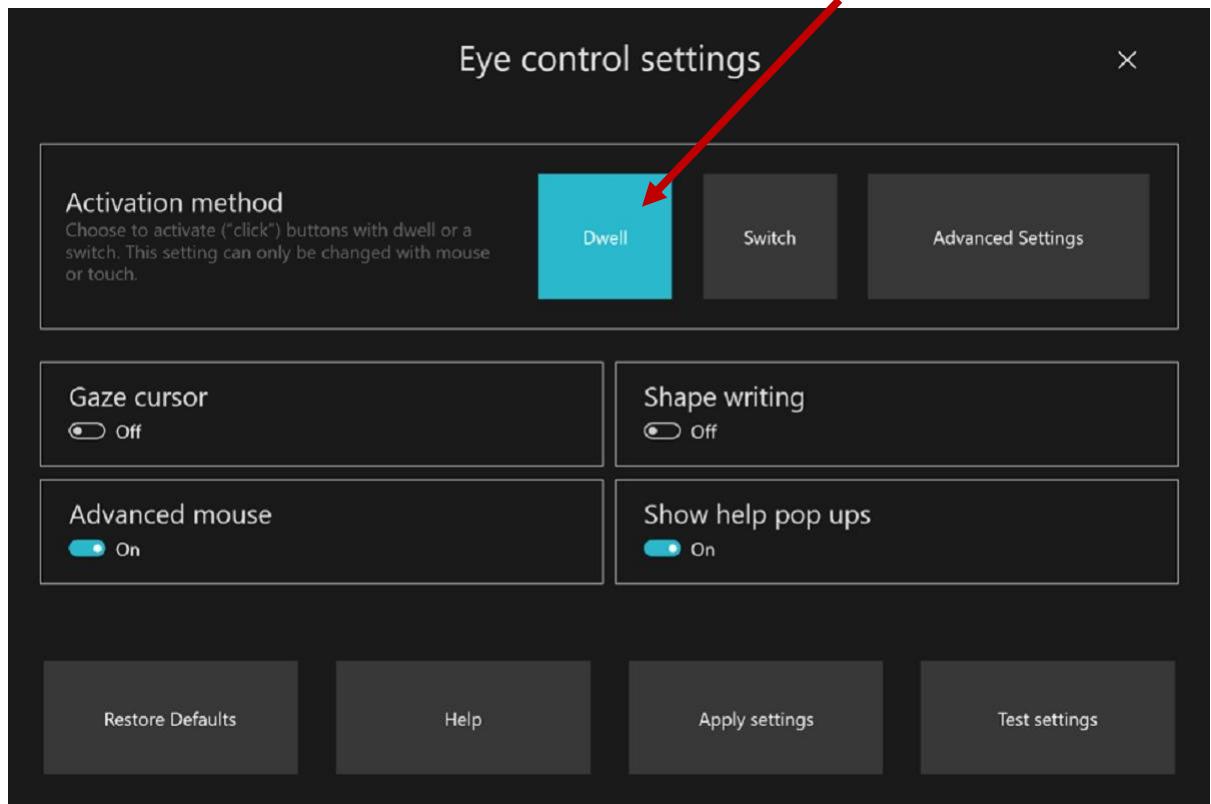
Eye Tracker: Examples



Heatmap and scan path analysis



Beware the Midas' Touch!



Windows 10 Eye Control Settings

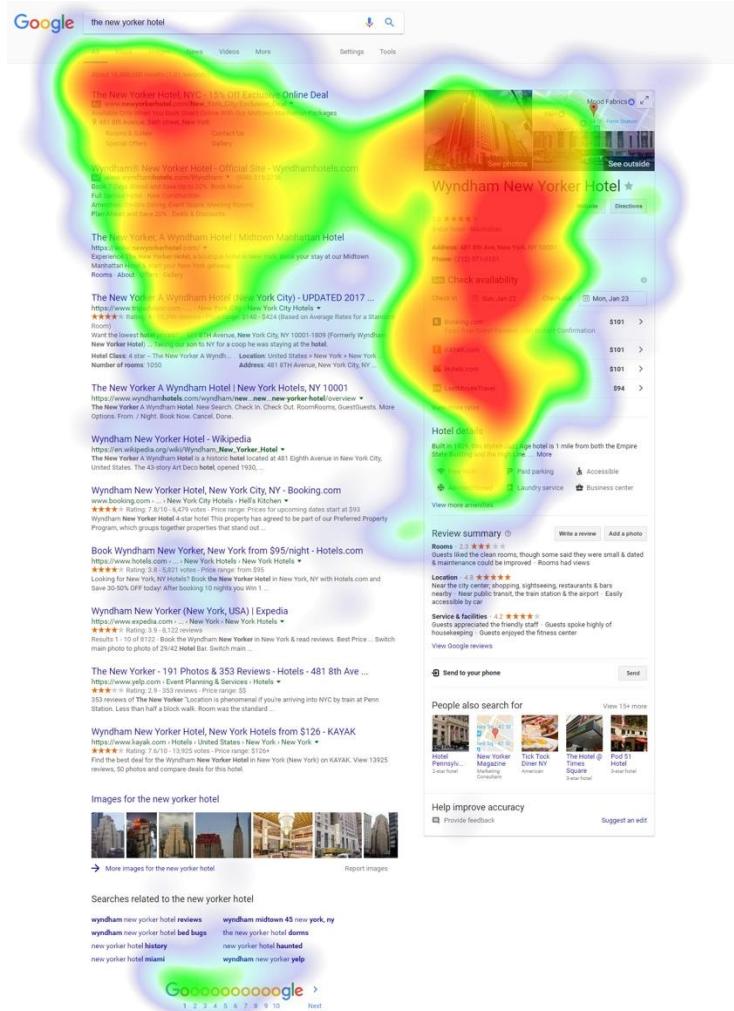
Location on the Page

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

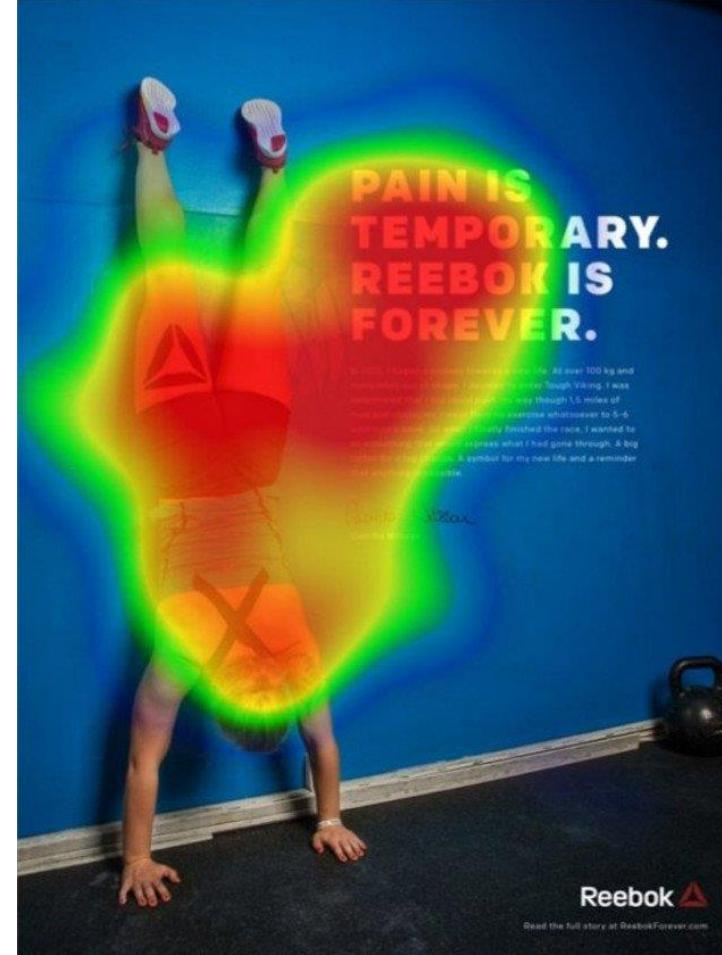
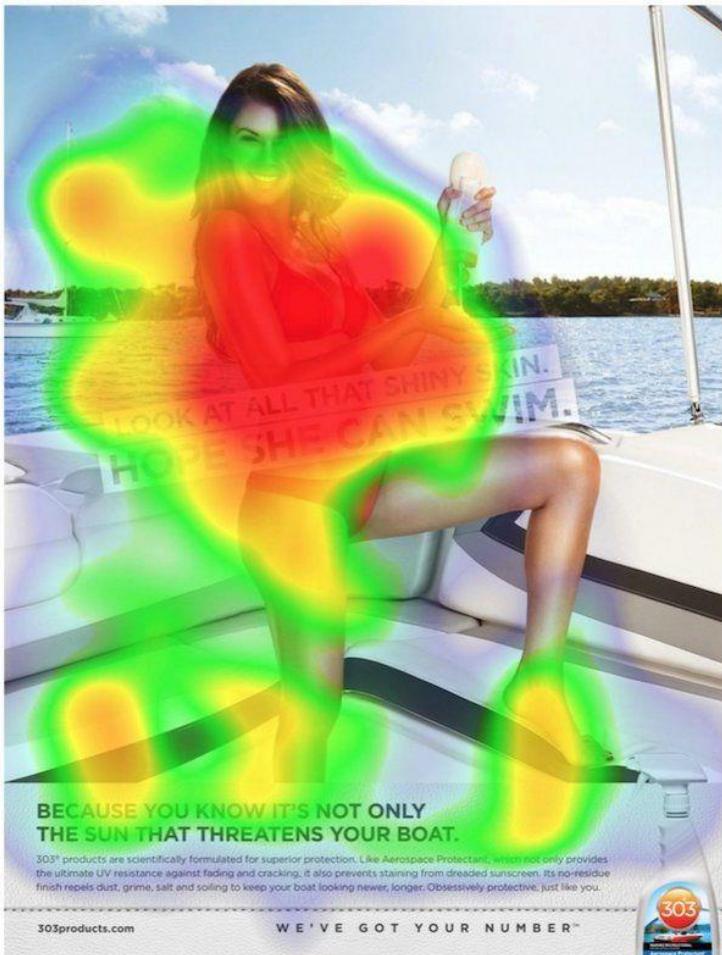
Search “eye tracking heat map” and see the major patterns

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

F-shaped pattern



Did Anyone Ever Look at the Product Name?

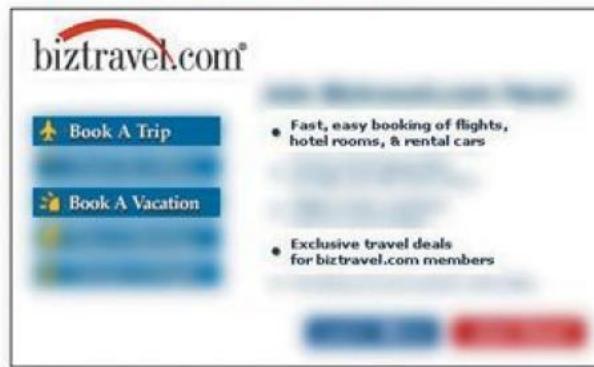


Scanning

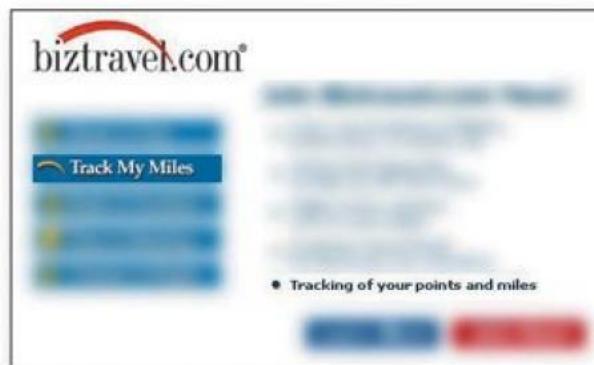
WHAT DESIGNERS BUILD...



WHAT USERS SEE...



I want to
buy a
ticket.



How do I
check my
frequent
flyer miles?

Experiment

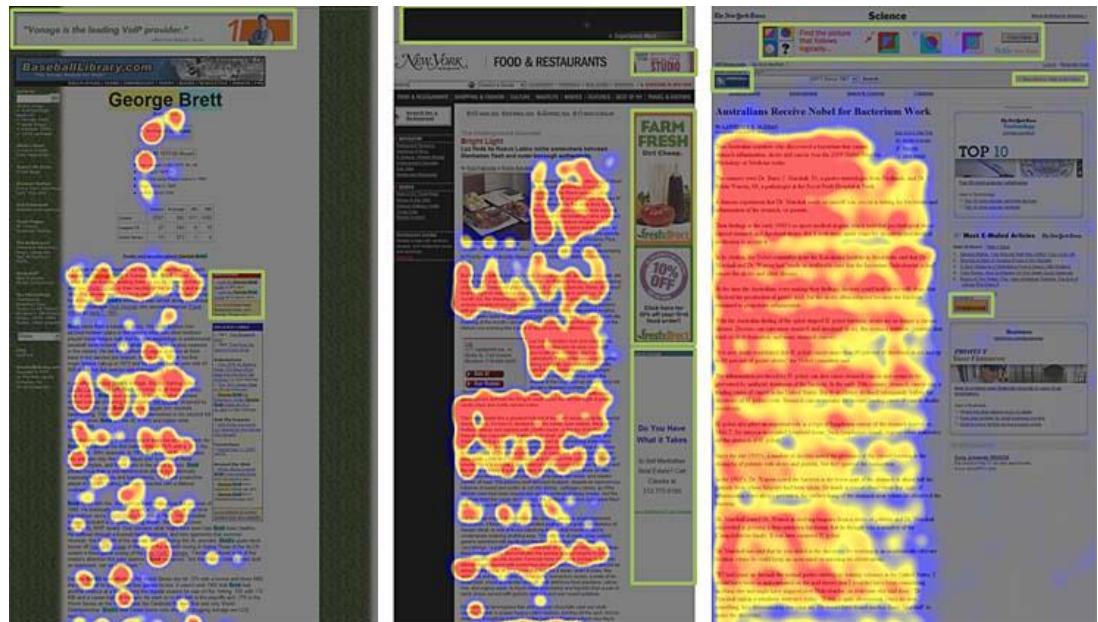
Site Version	Sample Paragraph	Usability Improvement (relative to control condition)
Promotional writing (control condition) using the "marketese" found on many commercial websites	Nebraska is filled with internationally recognized attractions that draw large crowds of people every year, without fail. 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)
Concise text 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%
Scannable layout 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"> •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) •Buffalo Bill Ranch State Historical Park (28,446). 	+47%
Objective language 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%
Combined version 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"> •Fort Robinson State Park •Scotts Bluff National Monument •Arbor Lodge State Historical Park & Museum •Carhenge •Stuhr Museum of the Prairie Pioneer •Buffalo Bill Ranch State Historical Park 	+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=PLLssT5z_DsK_nuHL_Mjt87THSTIgrsyJ
- Thanks to Fulvio Corno, past teacher of the course, for his work on some of these slides



License

- These slides are distributed under a Creative Commons license “**Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0)**”
- **You are free to:**
 - **Share** — copy and redistribute the material in any medium or format
 - **Adapt** — remix, transform, and build upon the material
 - The licensor cannot revoke these freedoms as long as you follow the license terms.
- **Under the following terms:**
 - **Attribution** — You must give appropriate credit, provide a link to the license, and indicate if changes were made. You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.
 - **NonCommercial** — You may not use the material for commercial purposes.
 - **ShareAlike** — If you remix, transform, or build upon the material, you must distribute your contributions under the same license as the original.
 - **No additional restrictions** — You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits.
- <https://creativecommons.org/licenses/by-nc-sa/4.0/>