

Visual Design and Fluid Navigation

Human Computer Interaction

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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

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Layout

Colors

Alignment

BASIC VISUAL DESIGN

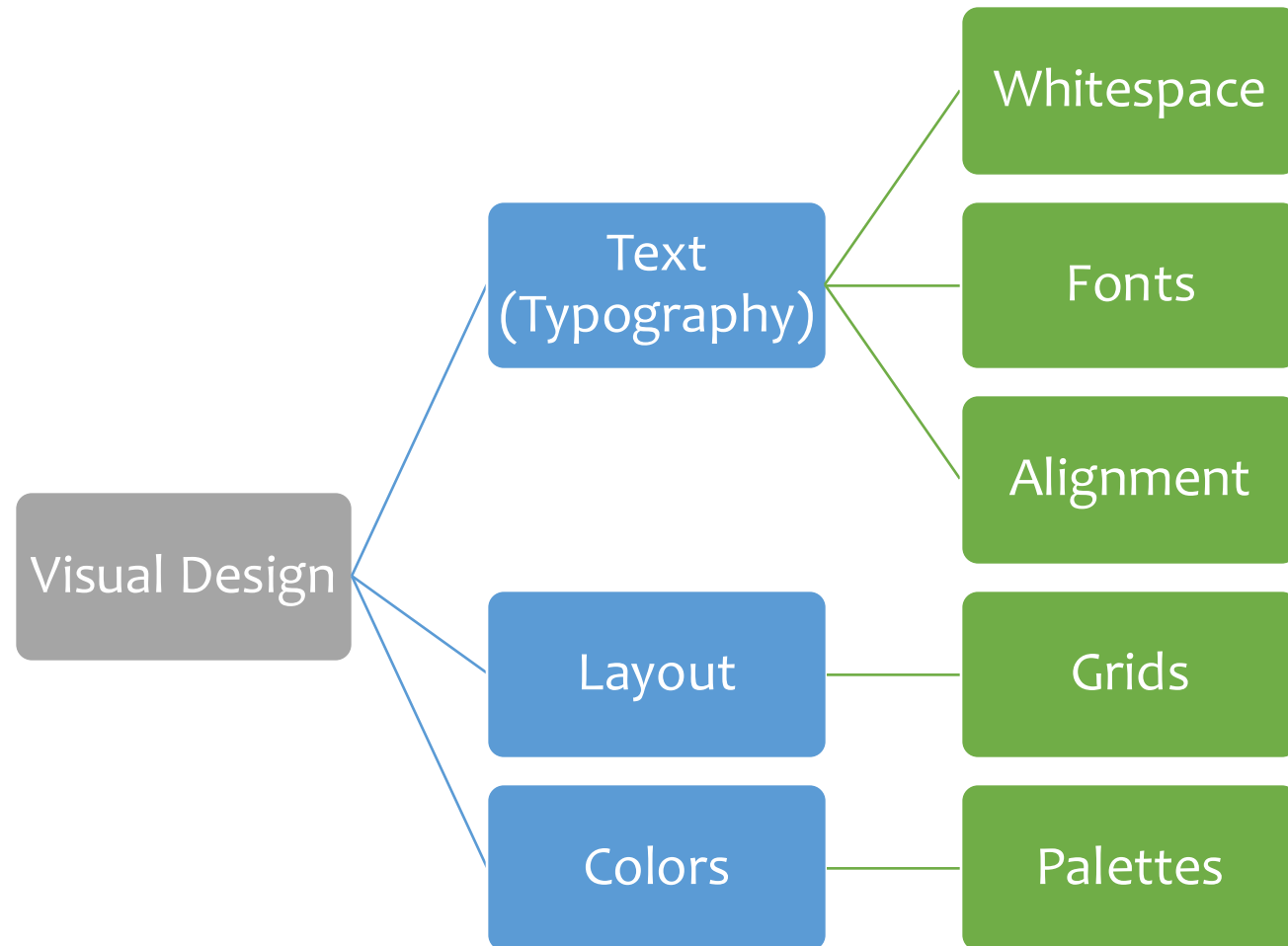
Text

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

Layout

Colors

Key Ingredients



Recognizable Page Structure



Recognizable Page Structure

The image shows a screenshot of the CNN website's homepage, illustrating a recognizable page structure. At the top, there is a navigation bar with the CNN logo and various category links: World, US Politics, Business, Health, Entertainment, Style, Travel, Sports, and Videos. On the right side of the navigation bar, there are options for 'Edition', a search icon, and a user profile icon.

Below the navigation bar, there is a horizontal list of trending topics: NEW PODCAST: Tug of war | COVID-19: Vaccination tracker | TRENDING: Elon Musk | Oldest surviving Miss America dies | SpaceX toilet problem | Queen |

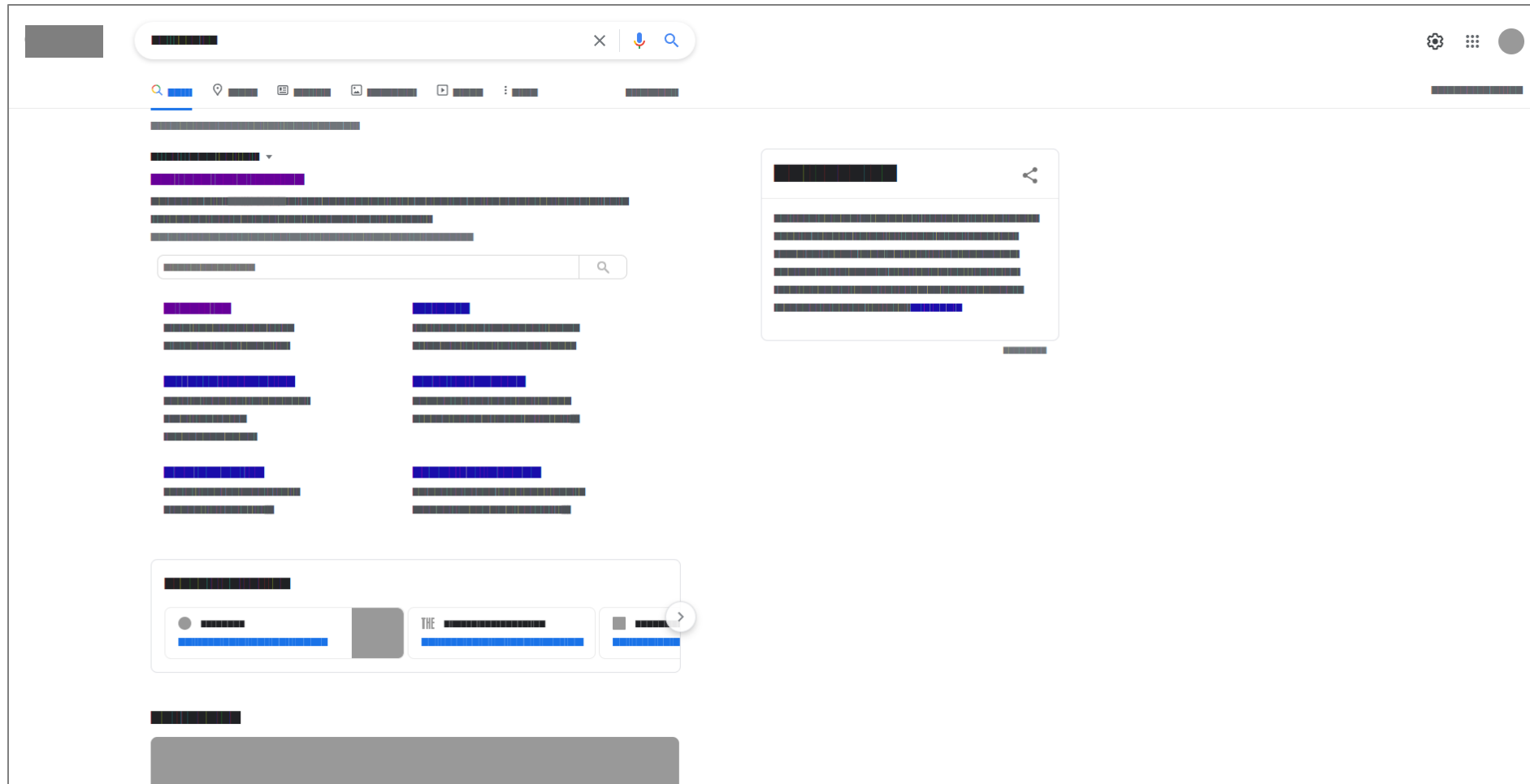
The main content area is organized into several sections:

- Primary Article:** A large article titled "Brazil has big green plans. But its track record is dismal" with a sub-headline "The Brazilian government is bringing ambitious promises to the UN climate summit, but can it be believed?". It features a large image of a forest fire and a small "ANALYSIS" tag.
- Developing Story:** A section titled "22-story building collapses in Lagos, Nigeria" with a "DEVELOPING STORY" tag and an image of a collapsed building.
- Analysis:** A section titled "'Let's go Brandon,' explained" with a sub-headline "Two conservative justices seem open to arguments from abortion providers" and an image of a man wearing a red mask with the text "LET'S GO BRANDON".
- Other News:** Several smaller news items are listed, including "Barclays CEO quits after investigation into links with Jeffrey Epstein", "Missile attack on mosque and religious school kills and injures 29 Yemeni civilians", "At least 12 people killed and 52 injured in Halloween weekend mass shootings in US", "Reporter reveals what Lindsey Graham said during January 6 riot", and "Tigrayan forces accused of killing 100 youths".
- Manchin Warning:** A section titled "Manchin issues warning to Democrats on Biden's economic package" with a sub-headline "Tim Scott confirms he's on the Trump 2024 train".

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

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

Recognizable Page Structure



Recognizable Page Structure

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

Google politecnico

Tutti Maps Notizie Immagini Video Altro Strumenti

SafeSearch attivo

Circa 33.000.000 risultati (0,71 secondi)

https://www.polito.it

Politecnico di Torino

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

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

Risultati di polito.it

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

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

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

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

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

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

Politecnico

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

Trova risultati su

Facebook Politecnico di Torino - Home

Timeshighereducation Politecnico di Milano | World...

Topuni Politecnico di

Politecnico

Map showing locations around Milan, including Albertville, Bourg-Saint-Maurice, Biella, Novara, Monza, and Milano.

Recognizable Page Structure

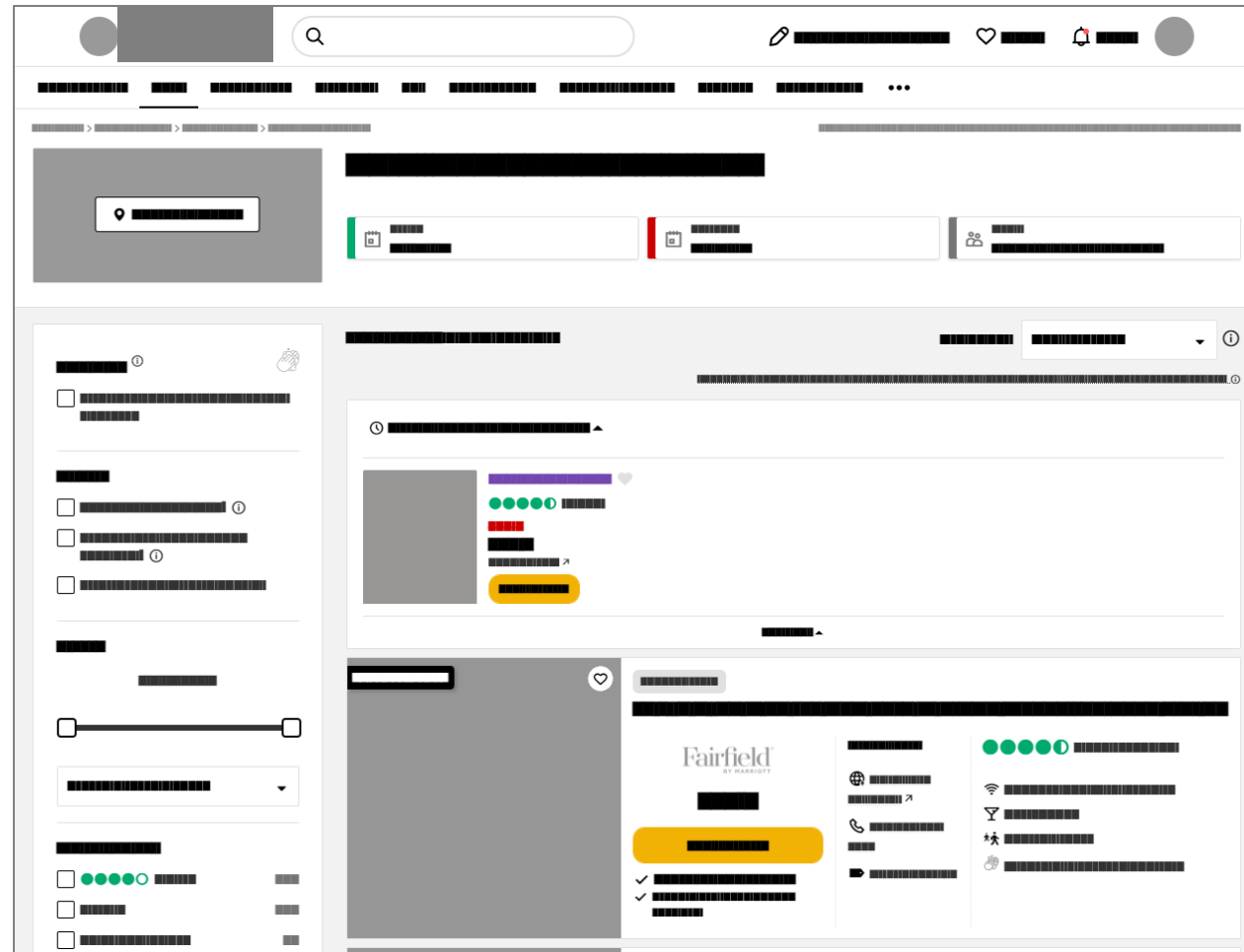


Recognizable Page Structure

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', 'PUBLIC Questions' (with 21,855,928 questions), 'Tags', 'Users', 'COLLECTIVES', 'FIND A JOB', and 'TEAMS'. It also features a 'Stack Overflow for Teams' section with a 'Create a free Team' button.
- Main Content Area:** Titled 'All Questions', it shows a list of questions with filters (Newest, Active, Bountied 326, Unanswered, More) and a 'Filter' button. Each question entry includes the number of votes, the question title, a snippet of the question text, tags, the time since it was asked, and the asker's profile picture and name.
- Right Sidebar:** Features 'The Overflow Blog' with recent posts, 'Featured on Meta' announcements, '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 search bar and navigation links for 'Scrivi una recensione', 'Viaggi', and 'Avvisi'. Below the search bar, a breadcrumb trail shows 'New York City > Hotel'. A secondary navigation bar lists categories like 'Cose da fare', 'Ristoranti', 'Voli', etc. The main content area is titled 'Hotel New York City e alloggi' and includes a map of the city with a 'Guarda la mappa' button. Search filters for arrival and departure dates, and the number of guests (1 room, 2 adults, 0 children) are visible. A sidebar on the left contains filters for COVID-19 safety, offers (like free cancellation), price range (0€ to 623€), and star ratings (316 hotels with 5 stars and above, 148 with 4 stars, etc.). The main results area shows 911 structures, sorted by 'Qualità-prezzo'. A featured hotel, 'Fairfield Inn & Suites New York Midtown Manhattan/Penn Station', is highlighted with a price of 161€ and a 'Vedi l'offerta' button. The hotel card includes a photo, name, rating (1.865 reviews), price, and a list of amenities like free Wi-Fi, bar/lounge, and fitness center.

Recognizable Page Structure

The screenshot shows the TBS News website interface. At the top, there are logos for TBS News and Future Architect, along with the tagline "リアルタイム経営こそ、IT戦略" (Real-time management is the IT strategy). The main navigation bar includes 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 (Report Column). A search bar and RSS/DFP options are also present.

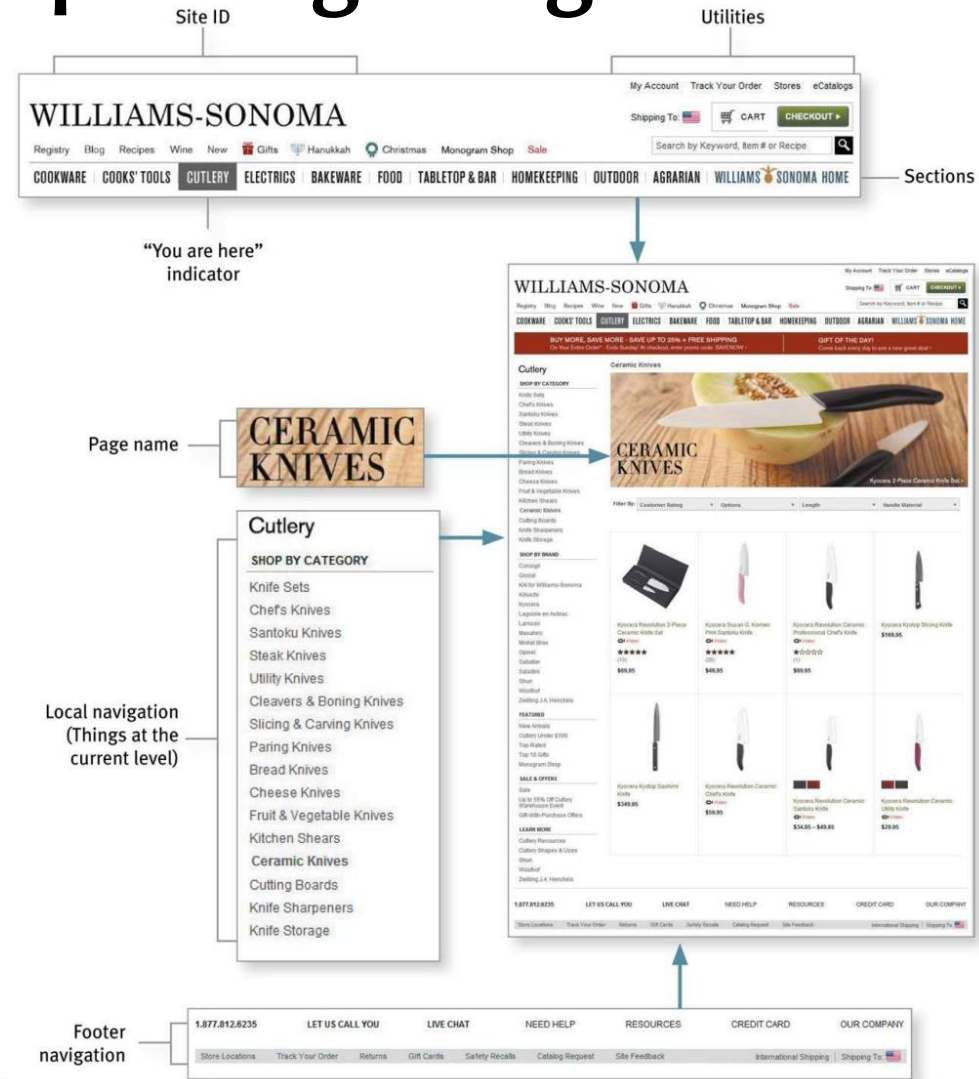
The main content area features a video player for a news segment titled "「三越伊勢丹」も不適切表示、他の百貨店にも拡大" (Mitsukoshi Isetan also inappropriate display, expanded to other department stores). Below the video is a text summary: "大手百貨店の三越伊勢丹ホールディングスは、グループの百貨店などにあるレストラン14店で、メニューと違う食材を使った料理を提供していたことを明らかにしました。不適切な表示は、小田急、そごうなどの百貨店にも広がっています。" (Major department store Mitsukoshi Isetan Holdings has revealed that in 14 restaurants within its group, different ingredients were used for dishes than those on the menu. Inappropriate displays have also spread to department stores like Kodansha and Sogo.)

Below the main article are several smaller news snippets under "注目キーワード" (Key Words) and "TBSニュース番組ダイジェスト配信中" (TBS News Program Digest Broadcast). These include: "日本人初の船長・若田さん、きょう宇宙へ" (Japanese first captain Wakai, to space today), "「特定秘密保護法案」きょうから国会審議" (Specific Secrets Protection Bill, legislative review from today), "第136回衆議院議員総選挙の結果" (Results of the 163rd General Election), and "山西省連続発火事件、共産党本部狙った計画的犯行か" (Shanxi province consecutive fire incident, planned attack on CPC headquarters?).

On the right side, there are promotional banners for "ステップワゴン" (Honda Stepwagon) and "家族の冒険プロジェクト" (Family Adventure Project), along with "台風情報" (Typhoon Information), "Smart News" (Smart News), "地震情報" (Earthquake Information), and "福島第一原発情報カメラ" (Fukushima Daiichi Nuclear Power Plant Information Camera).

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. A footer contains "関連リンク" (Related Links) and "TBS TOPページ" (TBS Home Page).

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*



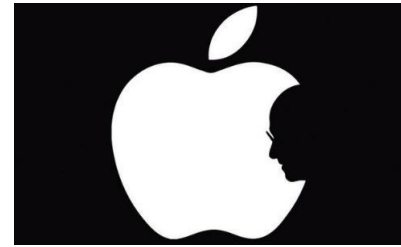
<https://www.interaction-design.org/literature/topics/gestalt-principles>

<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.

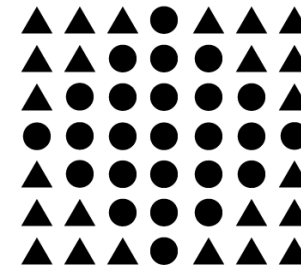
Examples: Figure-ground



This is a screenshot of the Basecamp 3 website. The main content area features a large white box with a cartoon illustration of a person looking frustrated, surrounded by various icons and speech bubbles with questions like "DID WE GET THAT DONE YET?", "WAIT, WHO MADE THAT DECISION?", "WHEN IS THIS DUE?", "WHERE DO I PUT THAT?", "NO ONE TOLD ME THAT!", "WHO SENT THIS TO THE CLIENT?", and "THIS IS EXHAUSTING!". To the right of this box is a sign-up form. A black arrow points from the top of the sign-up form to the text "Sign up now for free below" in a dark grey button. The form itself has a white background and contains 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 background is a dark image of Earth from space. The AngelList logo, which includes a peace sign, is prominently displayed. Below the logo is the tagline "Where the world meets startups". On the right side, there is a dark grey navigation menu with four items: "Find a Startup Job", "Post a Job", "Raise Money Online", and "Invest in Startups", each with a right-pointing arrow. The top of the page has a navigation bar with links for "SYNDICATES", "STARTUPS", "FUNDS", "STARTUP JOBS", "RECRUITING", and "MORE".

Examples: Similarity



GitHub

Search GitHub

Explore Features Enterprise Pricing

Sign up Sign in

Where software is built

Powerful collaboration, code review, and code management for open source and private projects. Public projects are always free. Private plans start at \$7/mo.

Pick a username

Your email

Create a password

Use at least one lowercase letter, one number, and seven characters.

Sign up for GitHub

By clicking "Sign up for GitHub", you agree to our terms of service and privacy policy. We will send you account related emails occasionally.

Want to use GitHub on your servers?

GNN NEWSLETTER

ABBONATI ACCEDI

LA STAMPA

MENU

LEGGI IL QUOTIDIANO TOP NEWS TUTTOLIBRI

Aggiornato alle 22:45 - 04 novembre

La caduta del Muro Serie A Siria Manovra

TORINO EDIZIONI LOCALI

I demoni di Hamilton: "Non è facile come sembra, per me è durissima" STEFANO MANCINI

Lavorare meno per rendere di più: la ricetta funziona davvero EMANUELA GRIGIÉ

Reportage Trombe d'aria, pioggia e fiumi esondati: in Liguria torna l'incubo alluvione MARCO MENDUHI

ArcelorMittal abbandona Taranto e l'ex Ilva. Scoppia la polemica. L'azienda: c'era il diritto di recesso PAOLO BARONI

LA STORIA DI GIOVANNI BELZONI IN UN LIBRO Da Abu Simbel a Giza, l'italiano che inventò l'egittologia MARCO ZATTERIN

Intervista - Calenda: sull'Ilva di Taranto distrutto il lavoro di anni PAOLO BARONI

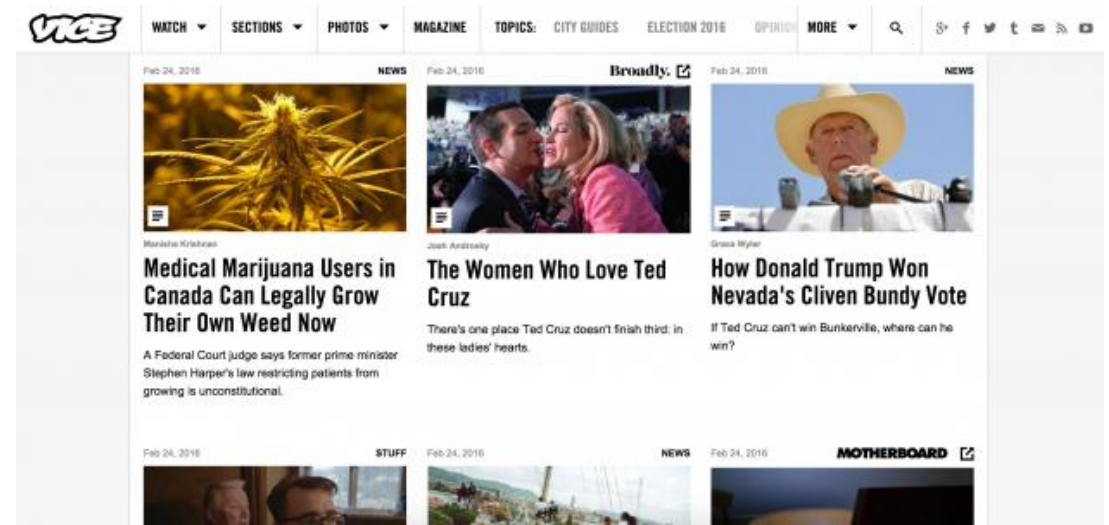
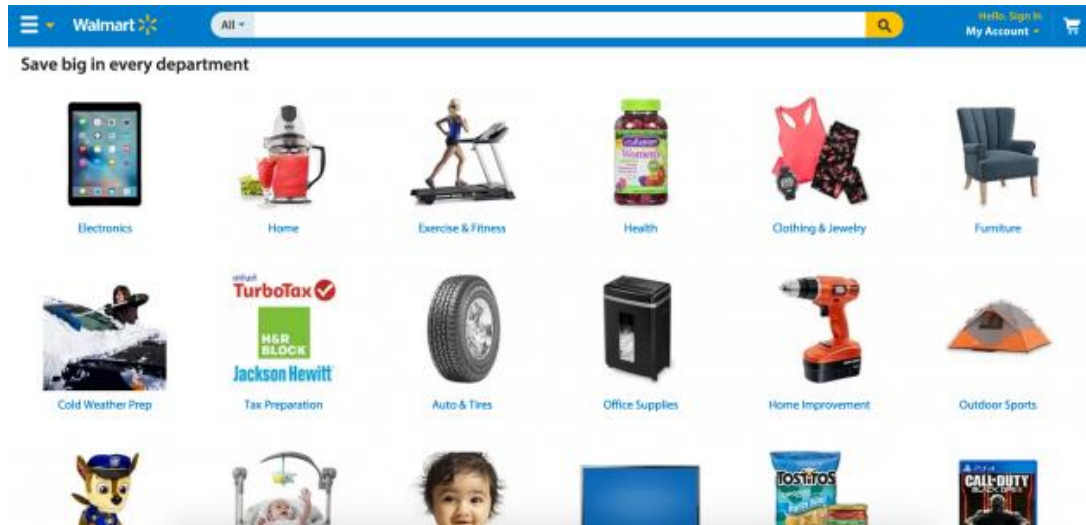
ArcelorMittal si tira indietro sull'Ex Ilva, ecco quanto pesa la decisione su Taranto

La storia dell'acciaieria più grande d'Europa. Ecco l'Ilva dal 2012 a oggi GIULIA CIANCAGLIURI

Il surriscaldamento climatico è arrivato nel profondo delle Alpi NICOLA PINNA

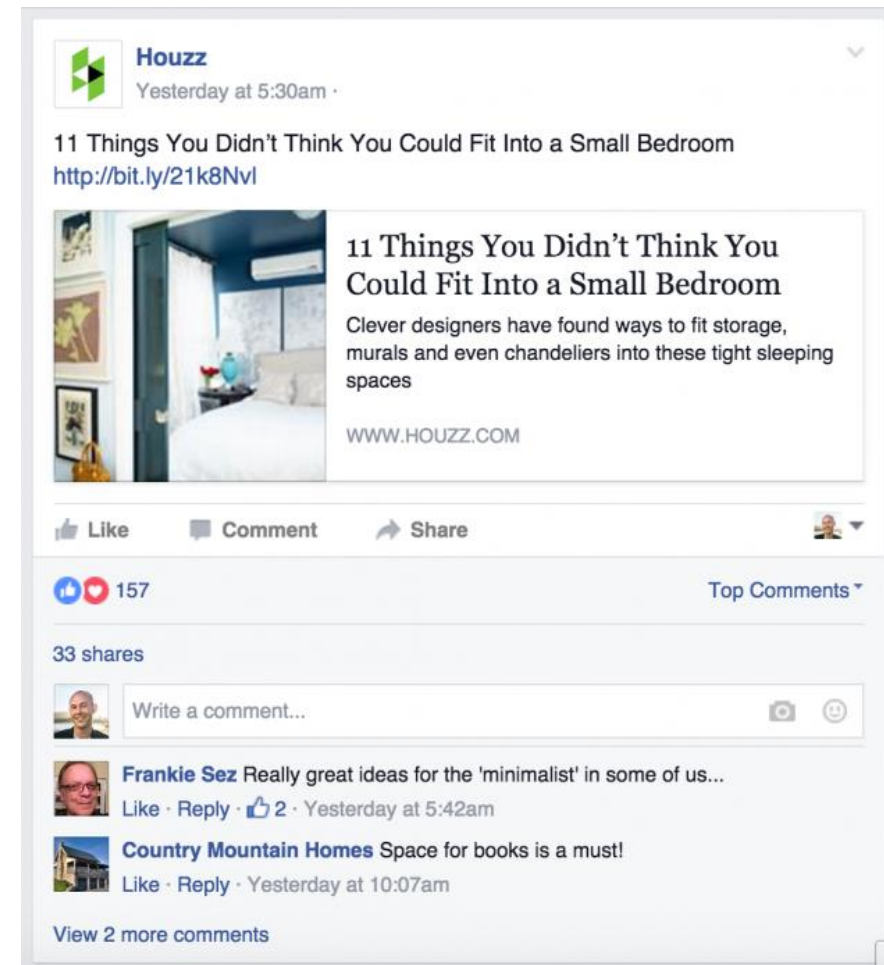
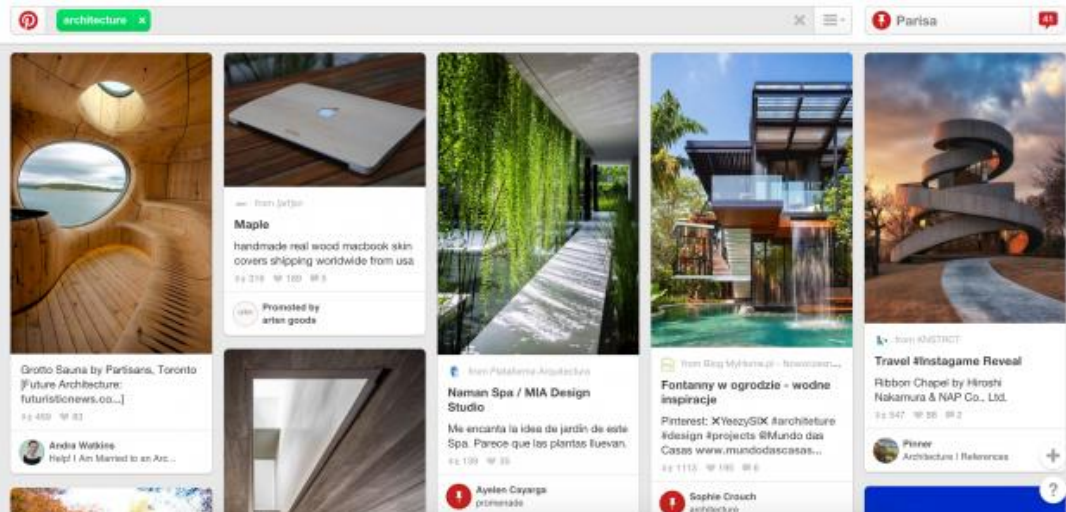
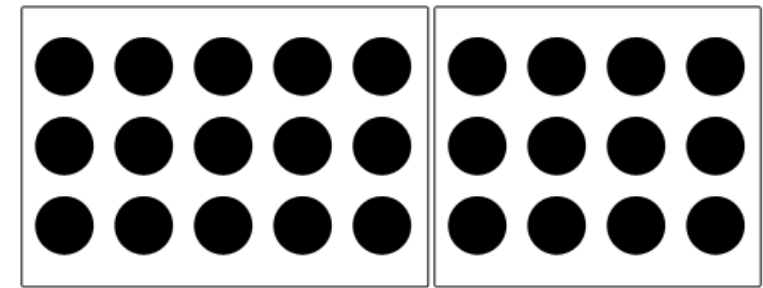
SECONDO NOI Sud svuotato e senza lavoro: lo Svinmez lancia l'allarme recessione MARCO SODANO

Examples: Proximity

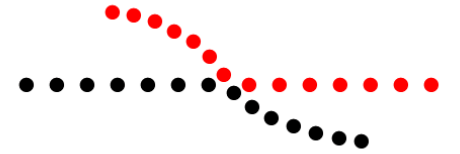


<https://www.usertesting.com/blog/gestalt-principles/>

Examples: Common Region



Examples: Continuity



Customers Who Bought This Item Also Bought

Page 1 of 20

Customers Who Bought This Item Also Bought

Page 1 of 20

- Crossing the Chasm, 3rd Edition: Marketing and Selling Disruptive Products**
by Geoffrey A. Moore
★★★★★ 72
Paperback
\$12.35 ✓Prime
- THE LEAN STARTUP**
by ERIC RIES
★★★★★ 1,062
Hardcover
\$16.66 ✓Prime
- The Innovator's Dilemma: The Revolutionary Book That Will Change the Way That We Manage**
by Clayton M. Christensen
★★★★★ 209
#1 Best Seller in Industrial Management
Paperback
\$10.06 ✓Prime
- THE INNOVATOR'S SOLUTION: Creating and Sustaining Successful Growth**
by Clayton M. Christensen
★★★★★ 22
Hardcover
\$18.33 ✓Prime
- How Will You Measure Your Life?**
by Clayton M. Christensen
★★★★★ 583
Hardcover
\$15.86 ✓Prime



Step 1

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



Step 2

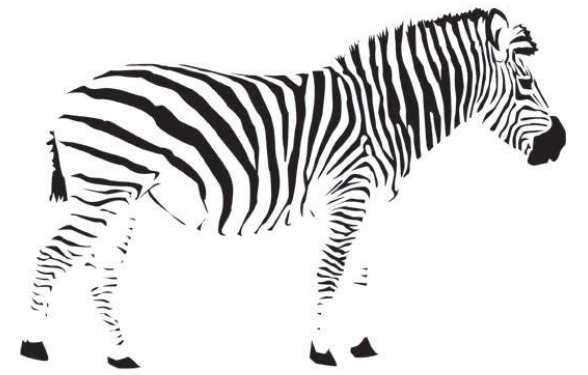
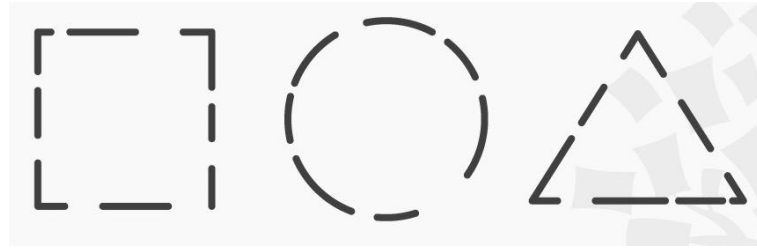
Our friendly servers organize your food for delivery - hot and ready to eat!



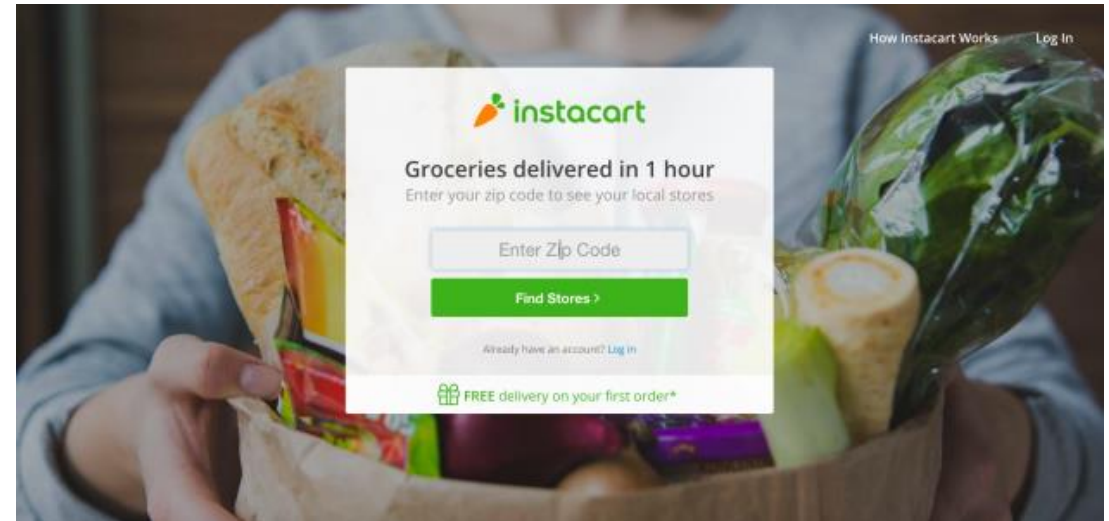
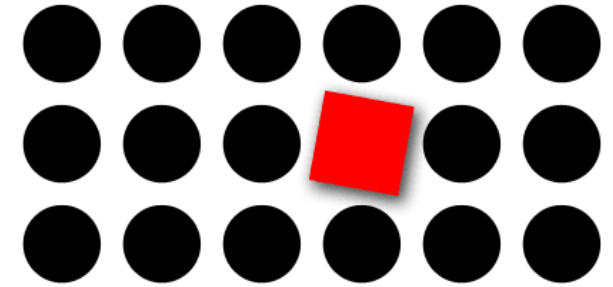
Step 3

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

Examples: Closure



Examples: Focal Point

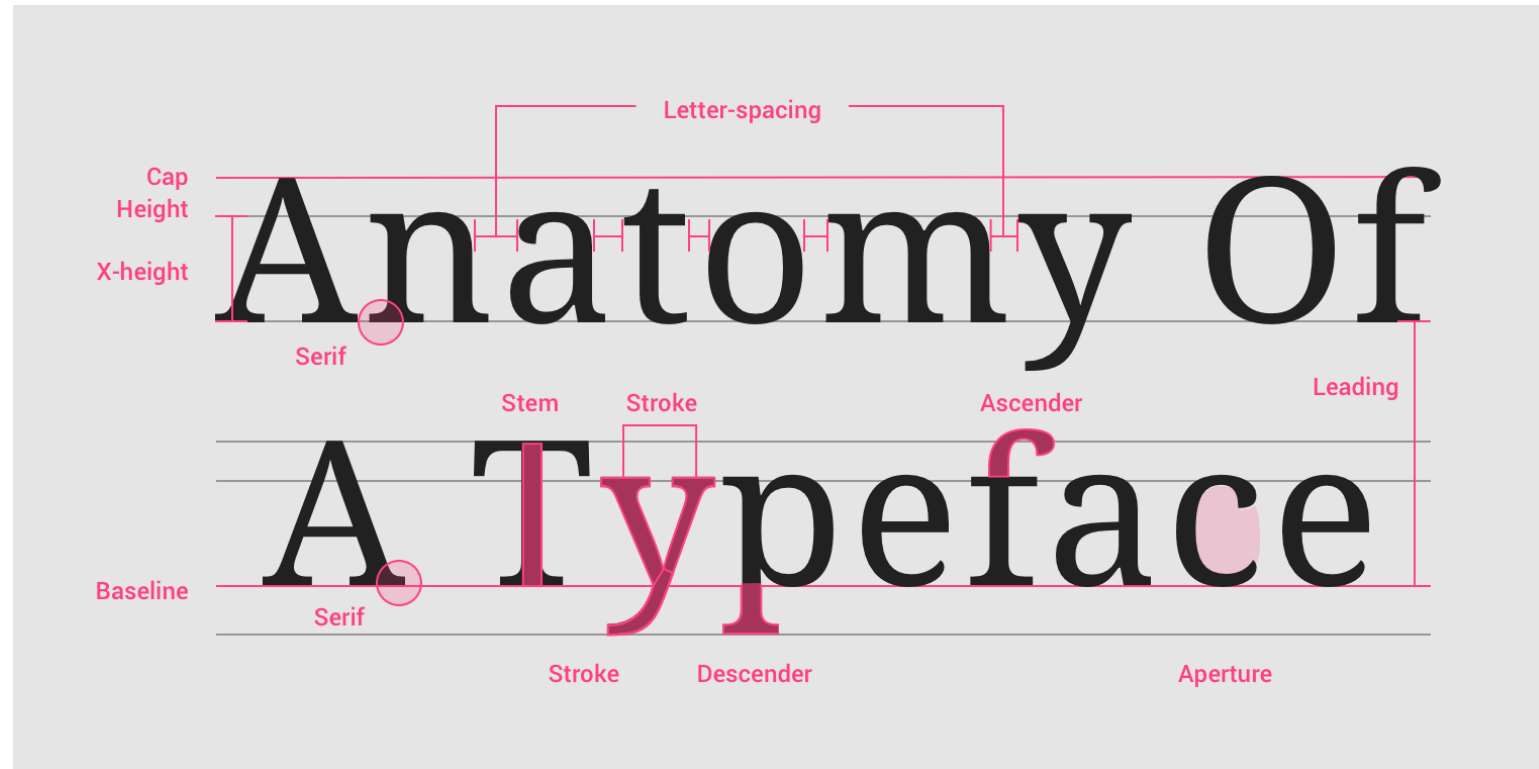


Typography

Property of text

Characteristics of Text

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



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

Example: Material Design Type Scale

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

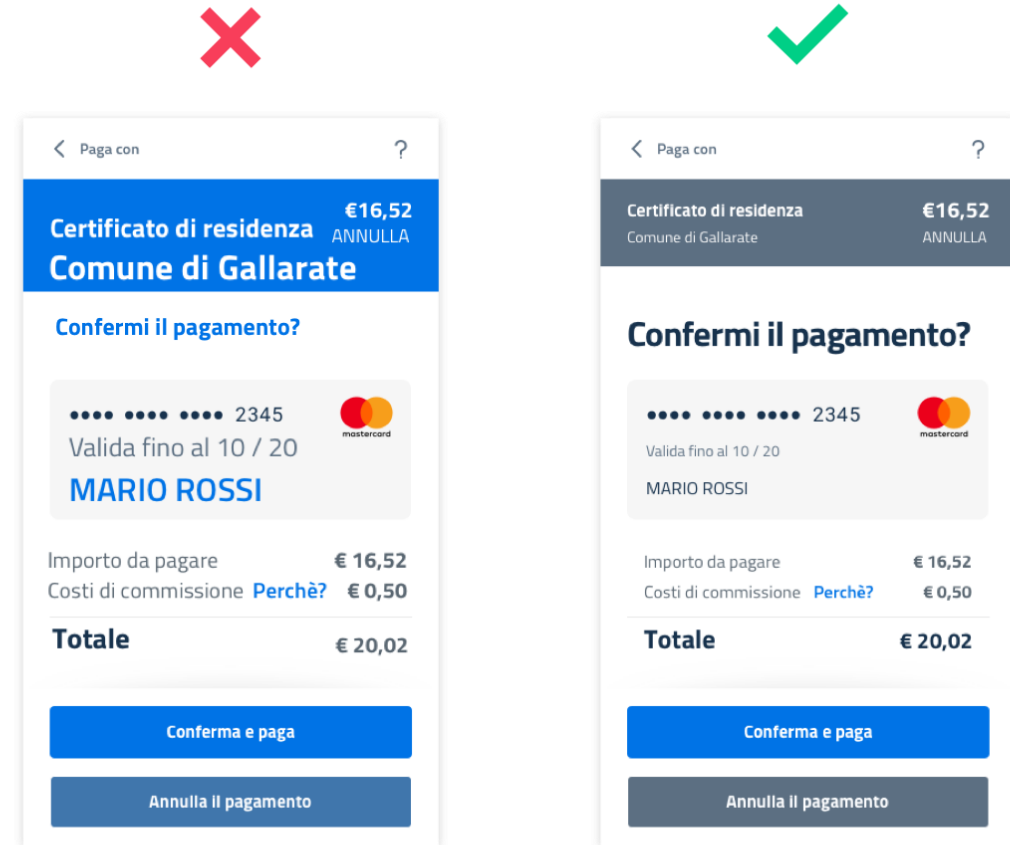
Reusable categories of text, each with an intended application and meaning

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

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

Text

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



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

Text and Layout Convey Meaning

The image compares two real estate listing UI designs. The left design is marked with a red 'X' and the right with a green checkmark. Annotations on the right design highlight improvements in data presentation, emphasis of key content, and readability.

Design	Annotations
Left (Red X)	None
Right (Green Checkmark)	<ul style="list-style-type: none">Present data in a more useful way (points to 'DETACHED HOUSE - 5Y OLD')Emphasize the most important content (points to '\$750,000')Combine labels and values into human-readable phrases (points to '3 Bedrooms 2 Bathrooms')

Left Design (Red X):

- 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):

- DETACHED HOUSE - 5Y OLD
- \$750,000**
- 742 Evergreen Terrace
- 3 Bedrooms 2 Bathrooms
- REALTOR
- Tiffany Heffner**
- (555) 555-4321

www.refactoringui.com

Refactoring UI

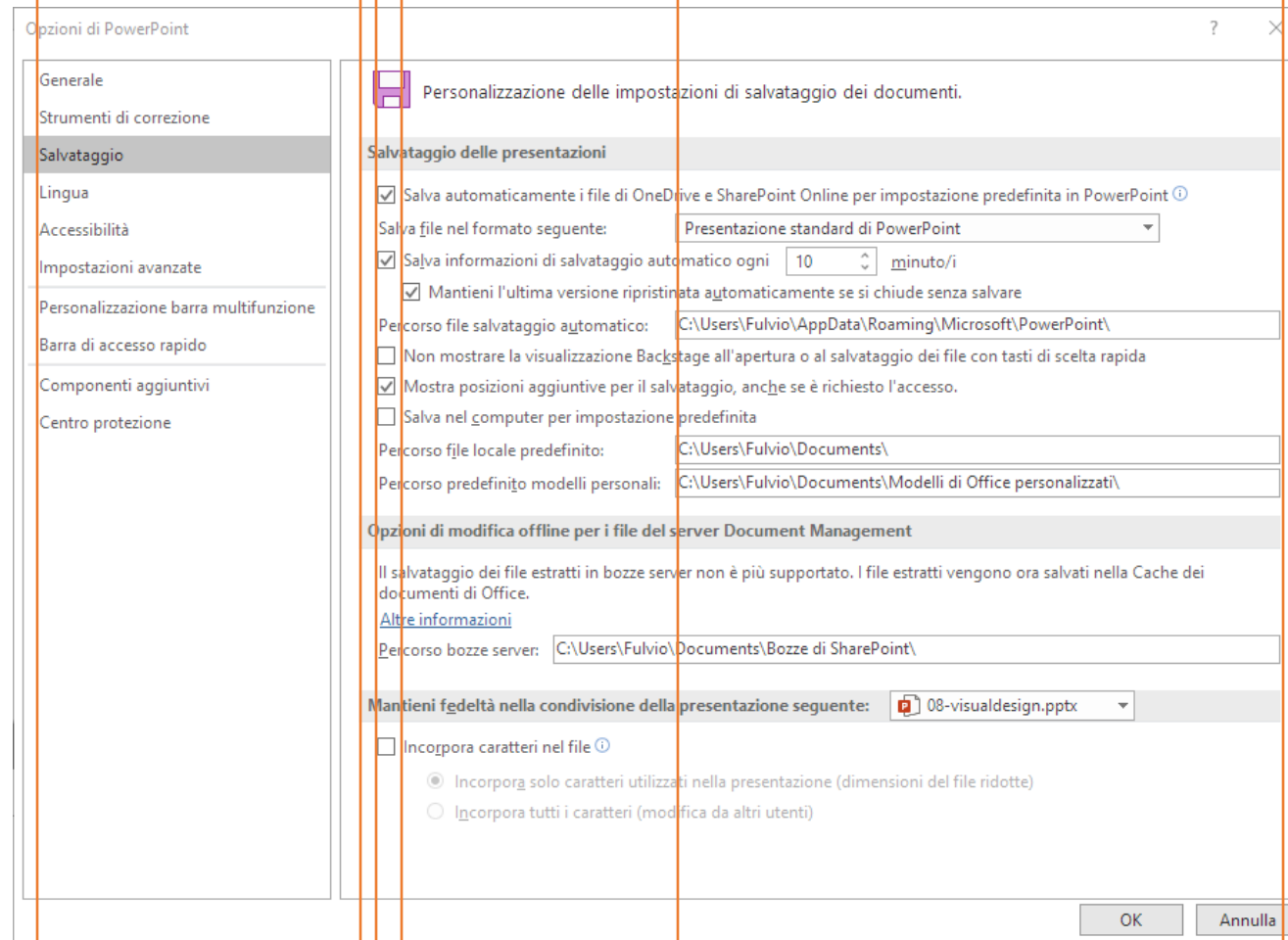
Grids and Alignment

Exploiting grouping and alignment to convey content, at different levels

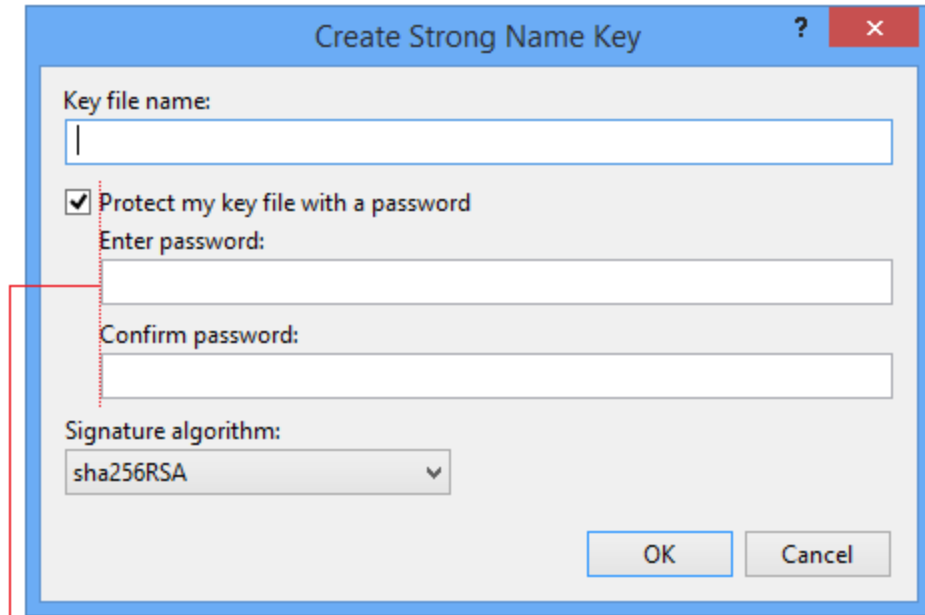
Alignment

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

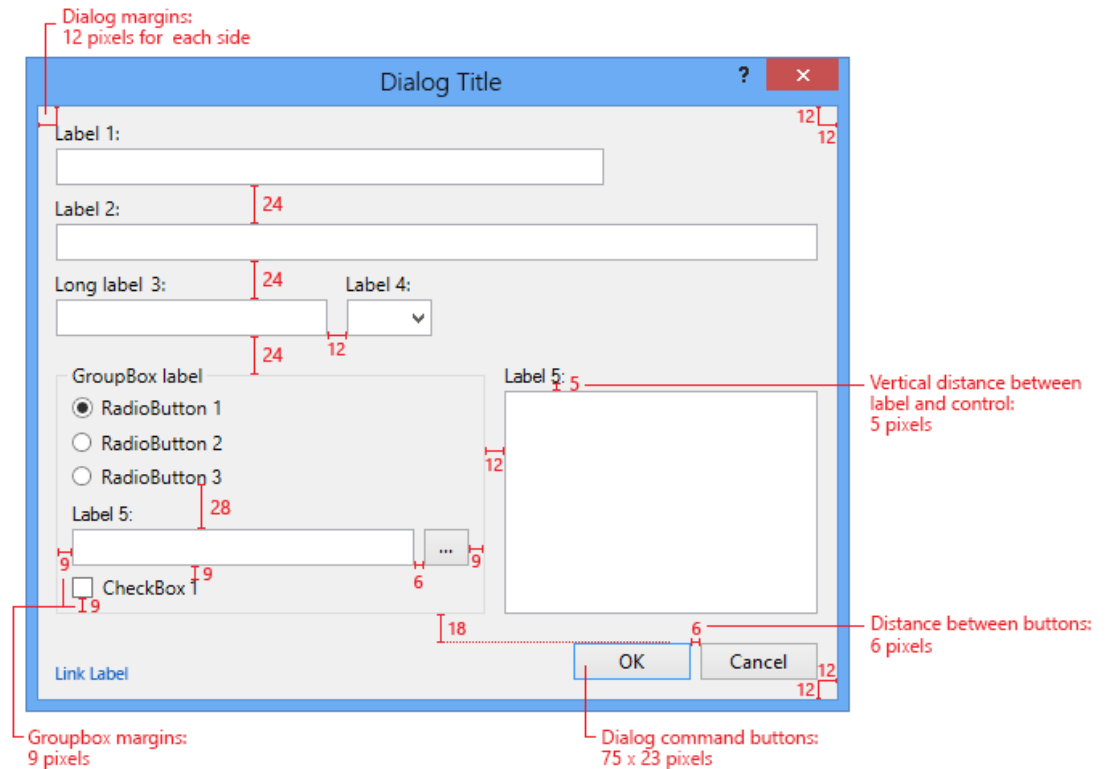
Example



Examples

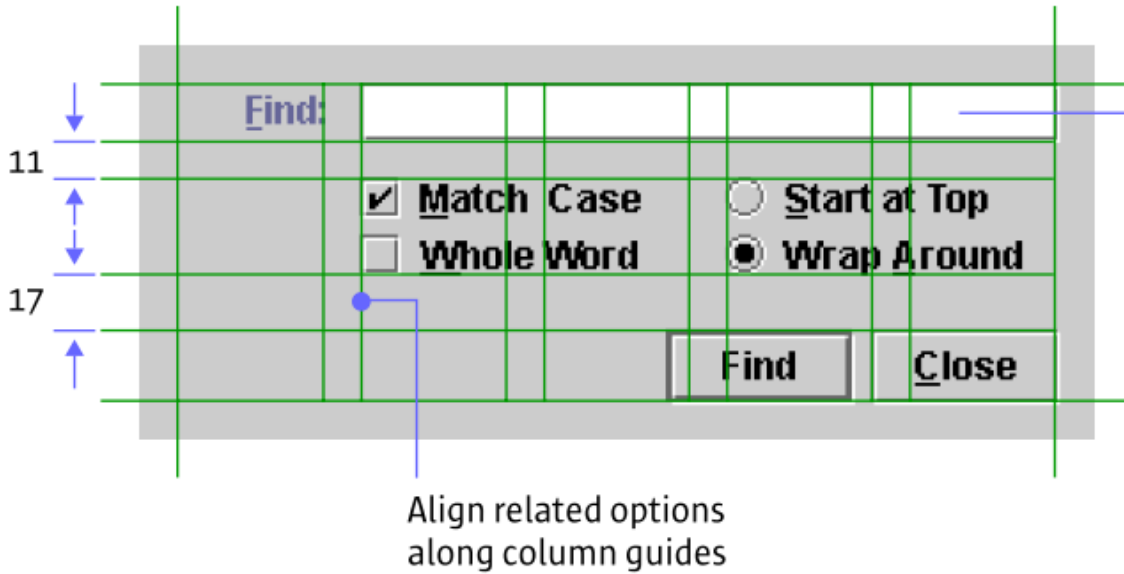


Align labels of nested controls

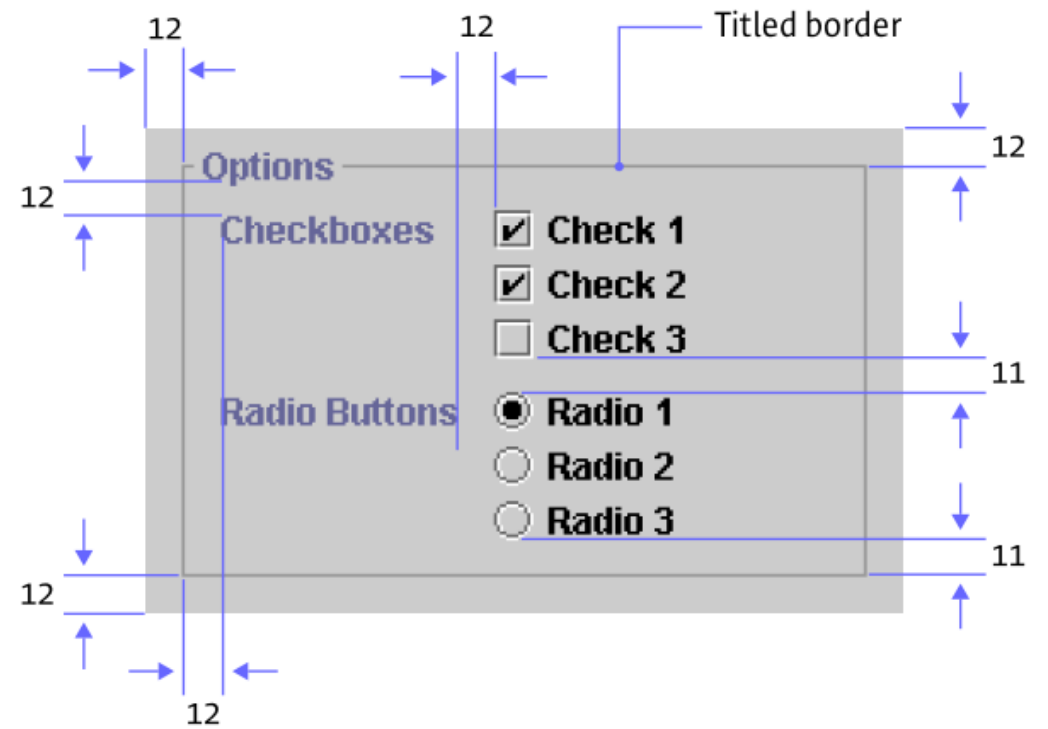


<https://docs.microsoft.com/en-us/visualstudio/extensibility/ux-guidelines/layout-for-visual-studio?view=vs-2019>

Examples



Place most important option near the top

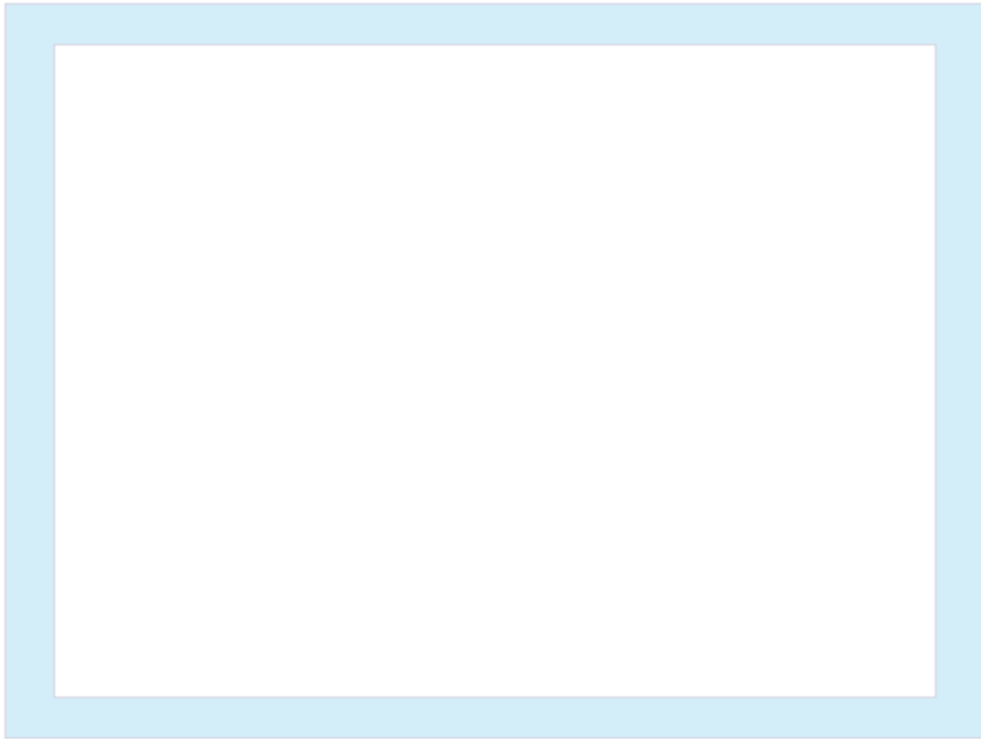


Grid Layout Ingredients

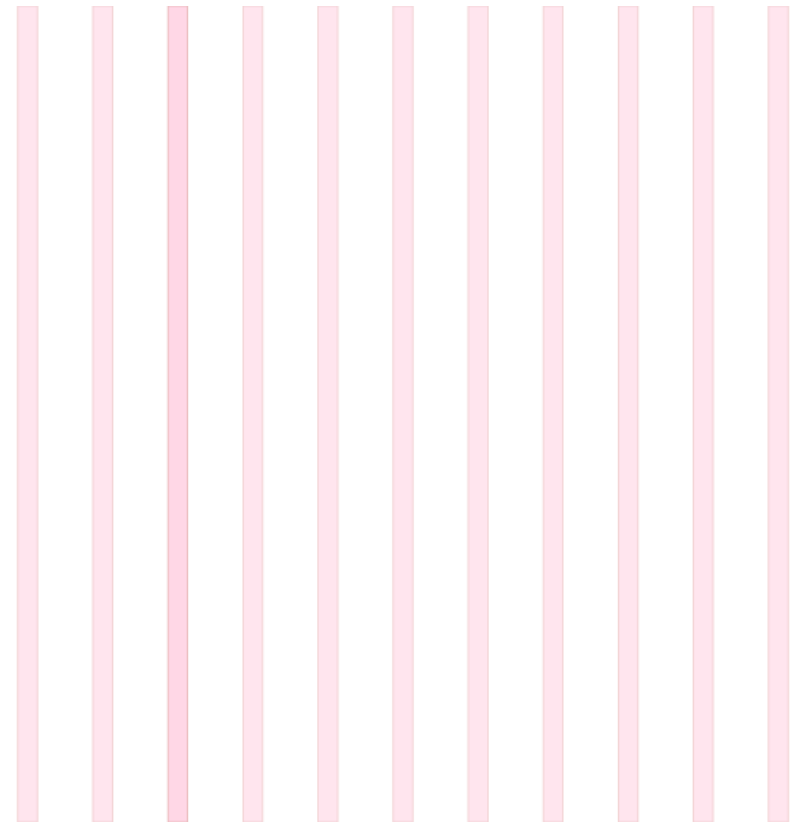
- **Guides:** The edge which you choose to align content with
- **Column:** A vertical division of content
- **Row:** A horizontal division of content
- **Margins:** The area surrounding your content
- **Gutters:** The margins between columns
- **Hang-line:** A horizontal guide to align content to hang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

Grid Layout Ingredients

Margins

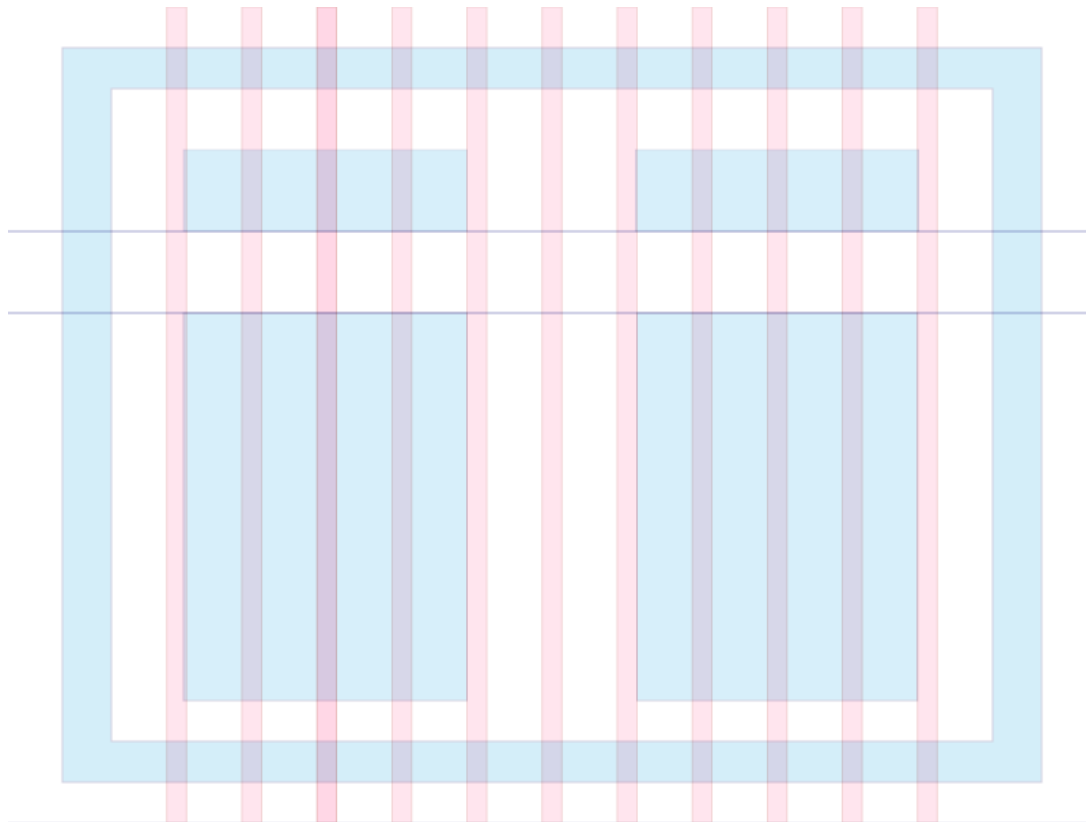


Columns & Gutters



Grid Layout Ingredients

Hanglines and Baselines

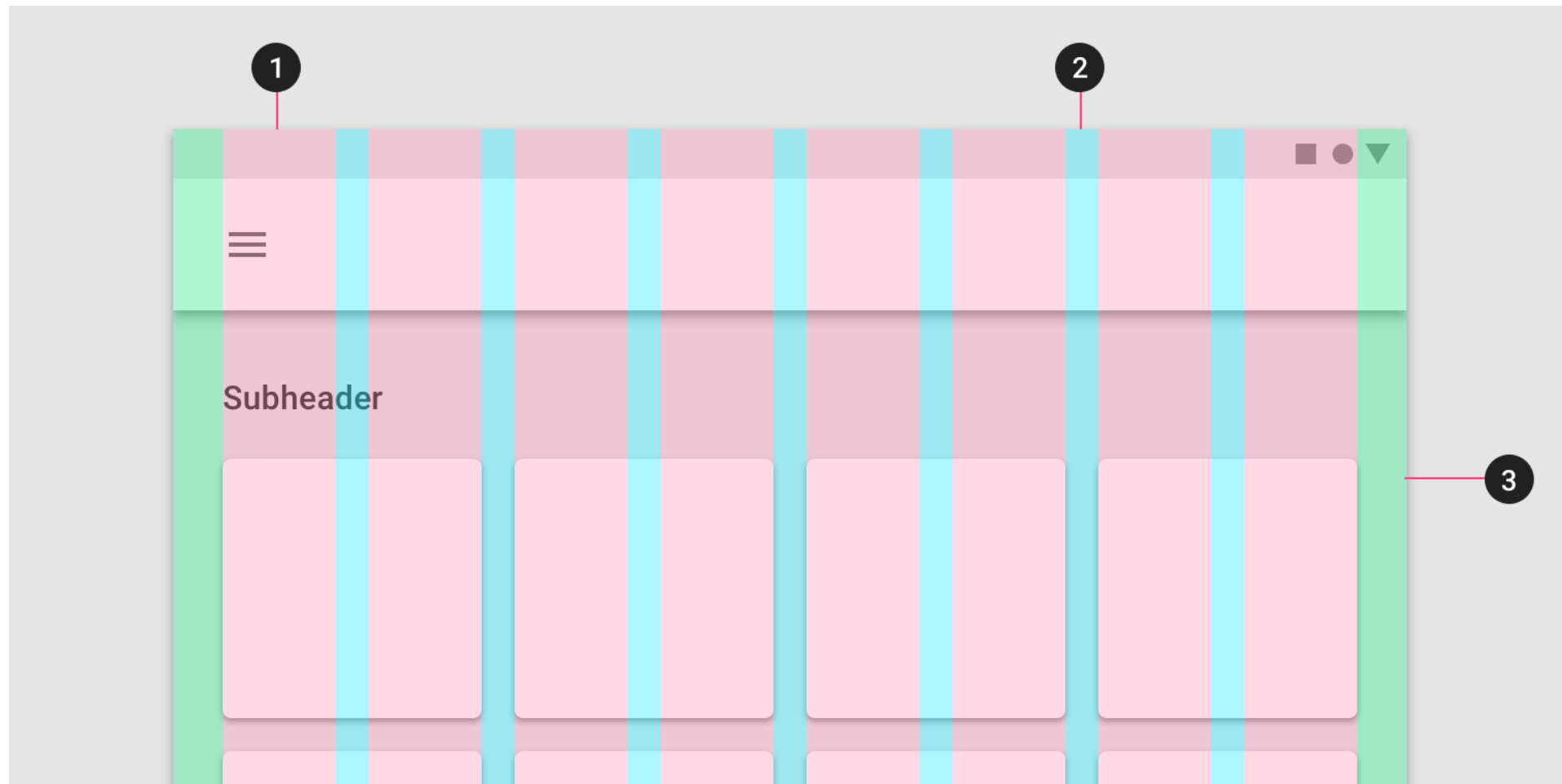


Baseline Grids



Example Grid-based layout

1. Columns
2. Gutters
3. Margins



Example: Bootstrap grid

Always 12 columns in total

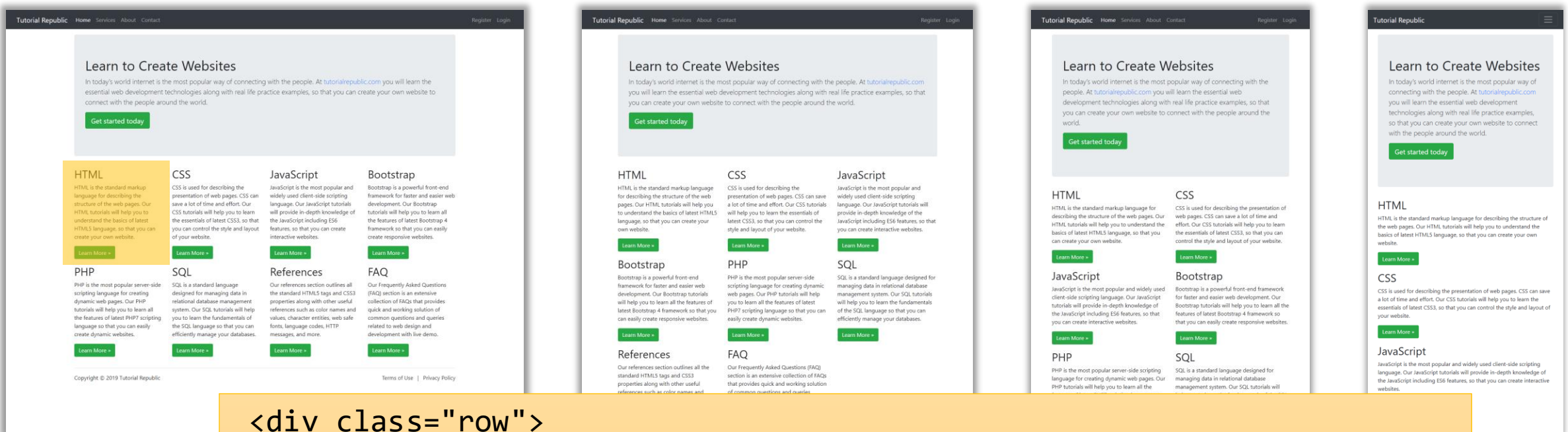
May choose to span a group of columns

Each column is tagged according to the screen size:

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

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

Responsive Grid Layout



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

Other Grid Systems

Unsemantic (responsive, based on %)

The screenshot shows the homepage of unsemantic.com. At the top is the 'unsemantic' logo. Below it is a navigation bar with links for Home, About, Demo, CSS Documentation, and Sass Documentation. There are two buttons: 'Download Here' and 'GitHub Repo'. The main content area is divided into sections: 'What is it?' with a definition and example usage of the grid system; 'Successor to 960.gs' explaining its responsive nature; 'SE-Oh?' discussing search engine optimization; 'Built with Sass' detailing the styling approach; 'Responsive Demo' with links to various demos; 'Adapt.js Demo' for JavaScript integration; and 'Browser Support' listing supported browsers. A footer contains licensing and creation information.

<https://unsemantic.com>

tailwindcss (responsive, flexible)

The screenshot shows the homepage of tailwindcss.com. It features the Tailwind CSS logo and a navigation bar with links for Docs, Components, Blog, and Showcase. The main headline reads 'Rapidly build modern websites without ever leaving your HTML.' Below this is a sub-headline: 'A utility-first CSS framework packed with classes like flex, pt-4, text-center and rotate-90 that can be composed to build any design, directly in your markup.' There is a 'Get started' button and a search bar. A testimonial from Sarah Dayan, Staff Engineer at Algolia, is displayed with her photo and a quote. To the right, a code editor shows HTML code using Tailwind CSS utility classes. The footer contains a note about the site's origin.

<https://tailwindcss.com>

Grid Structure

Main body:
Mix of 2x and 3x
columns

Alternating row
types



Title area outside the
grid

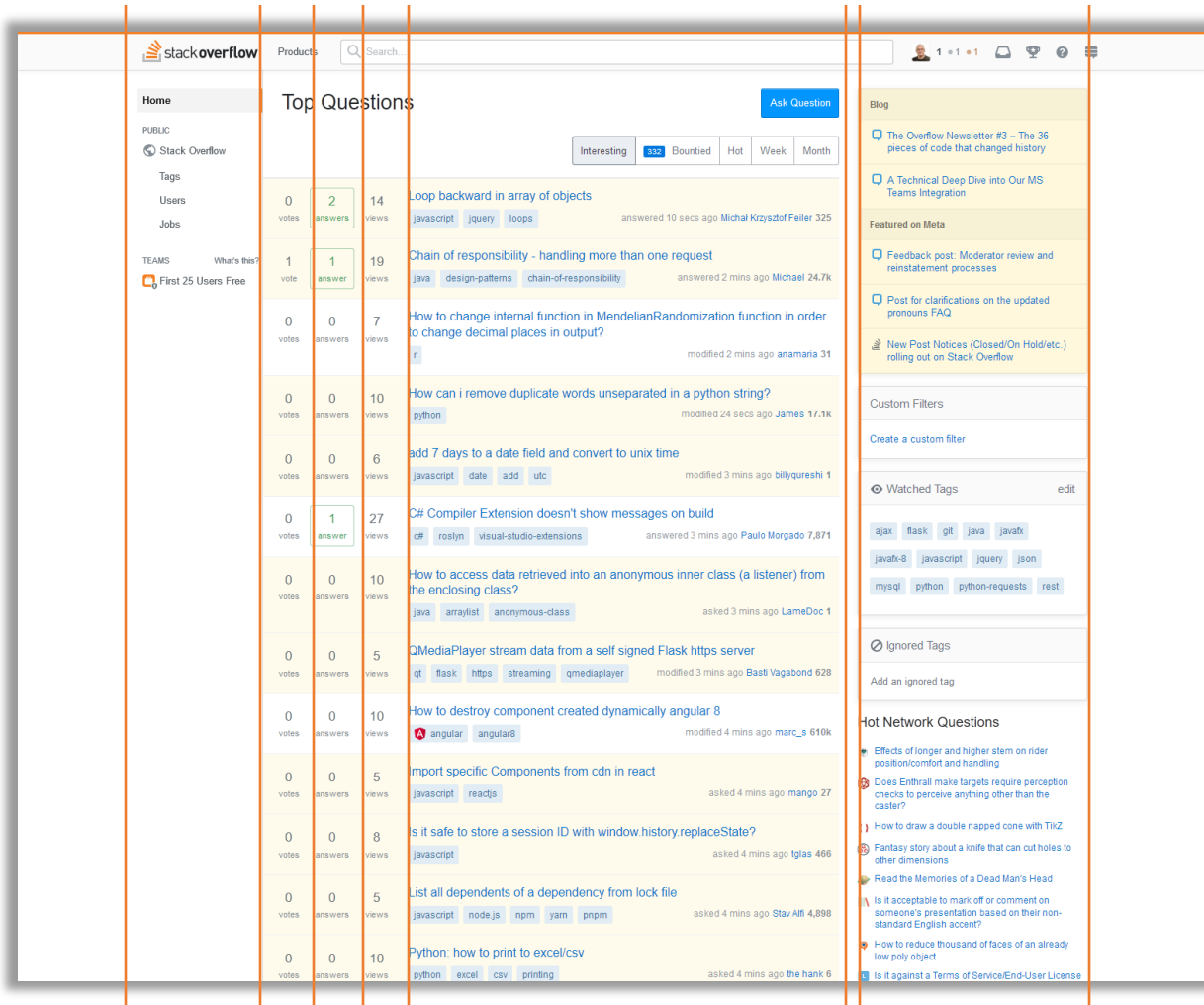
Right column for
other types of
articles

Grid Structure

Main content
(center, wide)

Navigation
(left, smaller)

Related content
(right, smaller)



Example (2019)

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

Example (same page in 2020)

Software								
1° anno 2020/2021								
Periodo	Codice	SSD	Insegnamento	Lingua	Crediti	Docente	Note	Orario
1	01PDWOV	ING-INF/05 (6)	Information systems	🇬🇧	6	M. Morisio (118 iscr.)	🟢	🕒
1	02GOLOV	ING-INF/05 (10)	Architetture dei sistemi di elaborazione	🇮🇹	10	P. Bernardi (150 iscr.) E. Sanchez Sanchez (159 iscr.)	🟢 🟢	🕒
oppure								
1	02LSEOV	ING-INF/05 (10)	Computer architectures	🇬🇧	10	P. Montuschi (207 iscr.)	🟢 🟢	🕒
1	01SQJOV	ING-INF/05 (8)	Data Science and Database Technology	🇬🇧	8	S. Chiusano (172 iscr.)	🟢 🟢	🕒
oppure								
1	01SQMOV	ING-INF/05 (8)	Data Science e Tecnologie per le Basi di Dati	🇮🇹	8	E. Baralis (254 iscr.)	🟢 🟢	🕒
1	01OTWOV	ING-INF/05 (6)	Computer network technologies and services	🇬🇧	6	G. Marchetto (161 iscr.)	🟢 🟢	🕒
oppure								
1	02KPNOV	ING-INF/05 (6)	Tecnologie e servizi di rete	🇮🇹	6	G. Marchetto (253 iscr.)	🟢 🟢	🕒
2	02JEUOV	ING-INF/05 (6)	Formal languages and compilers	🇬🇧	6	R. Sisto (60 iscr.)	🟢 🟢	🕒
2	05BIDOV	ING-INF/05 (8)	Ingegneria del software	🇮🇹	8	G. Bruno (132 iscr.)	🟢 🟢	🕒
oppure								
2	04G5POV	ING-INF/05 (8)	Software engineering	🇬🇧	8	M. Morisio (202 iscr.)	🟢 🟢	🕒
2	01UDFOV	ING-INF/05 (6)	Applicazioni Web I	🇮🇹	6	E. Masala (91 iscr.) L. De Russis (57 iscr.)	🟢	🕒
oppure								
2	01TXYOV	ING-INF/05 (6)	Web Applications I	🇬🇧	6	F. Corno (185 iscr.)	🟢	🕒
2	02GRSOV	ING-INF/05 (10)	Programmazione di sistema	🇮🇹	10	G. Cabodi (100 iscr.) A. Savino (112 iscr.)	🟢 🟢	🕒
oppure								
2	01NYHOV	ING-INF/05 (10)	System and device programming	🇬🇧	10	S. Quer (108 iscr.)	🟢	🕒
2° anno 2021/2022								
Periodo	Codice	SSD	Insegnamento	Lingua	Crediti	Docente	Note	Orario
1			Insegnamento a scelta 1		6		🟢	
1	01TYMOV	ING-INF/05 (6)	Information systems security	🇬🇧	6		🟢	🕒
oppure								
1	01UDUOV	ING-INF/05 (6)	Sicurezza dei sistemi informativi	🇮🇹	6		🟢	🕒
1	01SQNOV	ING-INF/05 (6)	Software Engineering II	🇬🇧	6		🟢	🕒
1,2			Crediti liberi		6		🟢	
1,2	29EBHOV		Tesi		30		🟢	
2			Insegnamento a scelta 2		6		🟢	

Example (2015 vs. 2019)

Add an address

Full Name:

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

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

City:

State/Province/Region:

ZIP:

Country:

Phone Number: [Learn more](#)

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

Weekend Delivery:

Security Access Code:
For buildings or gated communities

Save & Add Payment Method

Save & Continue

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

Aggiungi un nuovo indirizzo

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

Paese/Regione

Nome e cognome

Indirizzo

Città

Provincia

Codice postale

Numero di telefono

Può essere utilizzato per aiutare consegna

Aggiungi istruzioni di consegna
Consegna nel fine settimana

Aggiungi indirizzo

Some Best Practices

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

Colors

The most dangerous weapon in your toolset



I AM LING YOU CAN TRUST ME

Menu

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

CARS A-Z



ABARTH
 124 Spider
 Convertible
 595 Convertible
 595 Hatchback
 695 Convertible



ALFA ROMEO
 Giulia Saloon
 Giulietta
 Stelvio Estate



LINGSCARS.com

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

Stop

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

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!

Facebook Twitter

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

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

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+
 10 Arthur
 ATTLEBOROUGH, NR17

21 DELIVERIES IN LAST WEEK

Renault Captur
 10 Cath
 PONTEFRAC T, WF81

Mercedes GLC Coupe
 10 Bill
 BEDLINGTON, NE22

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

Nissan Qashqai
 10 Arlene
 GLASGOW, G11

Volvo XC60 Estate
 10 Saif
 HILTON KEYNES, MK8

Seat Leon
 10 Ben
 BARNSELY, S70

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

Renault Clio
 10 Paul
 MIDDLEBROUGH, TS7

Renault Clio
 10 Paul
 MIDDLEBROUGH, TS7

Seat Arona
 10 Steve
 LONDON, SE18

Seat Leon
 10 Adam
 HATFIELD, AL10

Audi A3 Sportback
 10 Chris
 WYMONDHAM, NR18

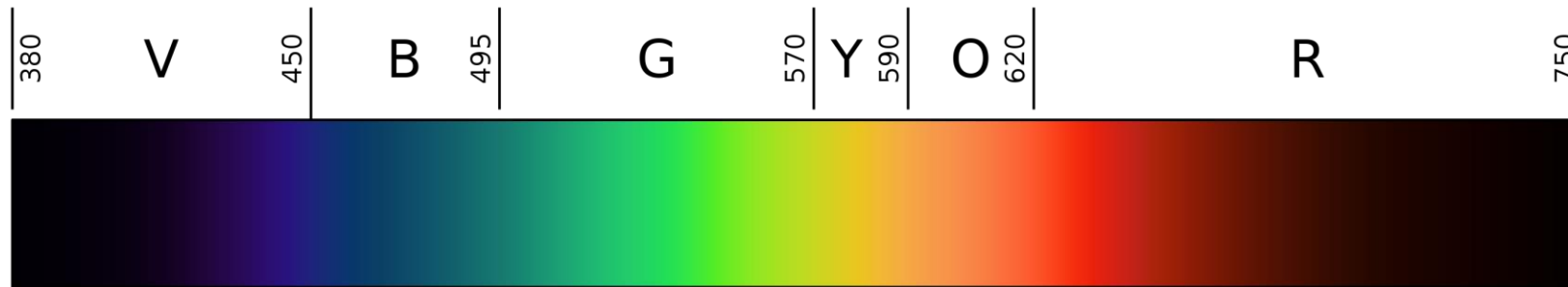
Colors

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

Colors: Suggestions

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

Visible Spectrum

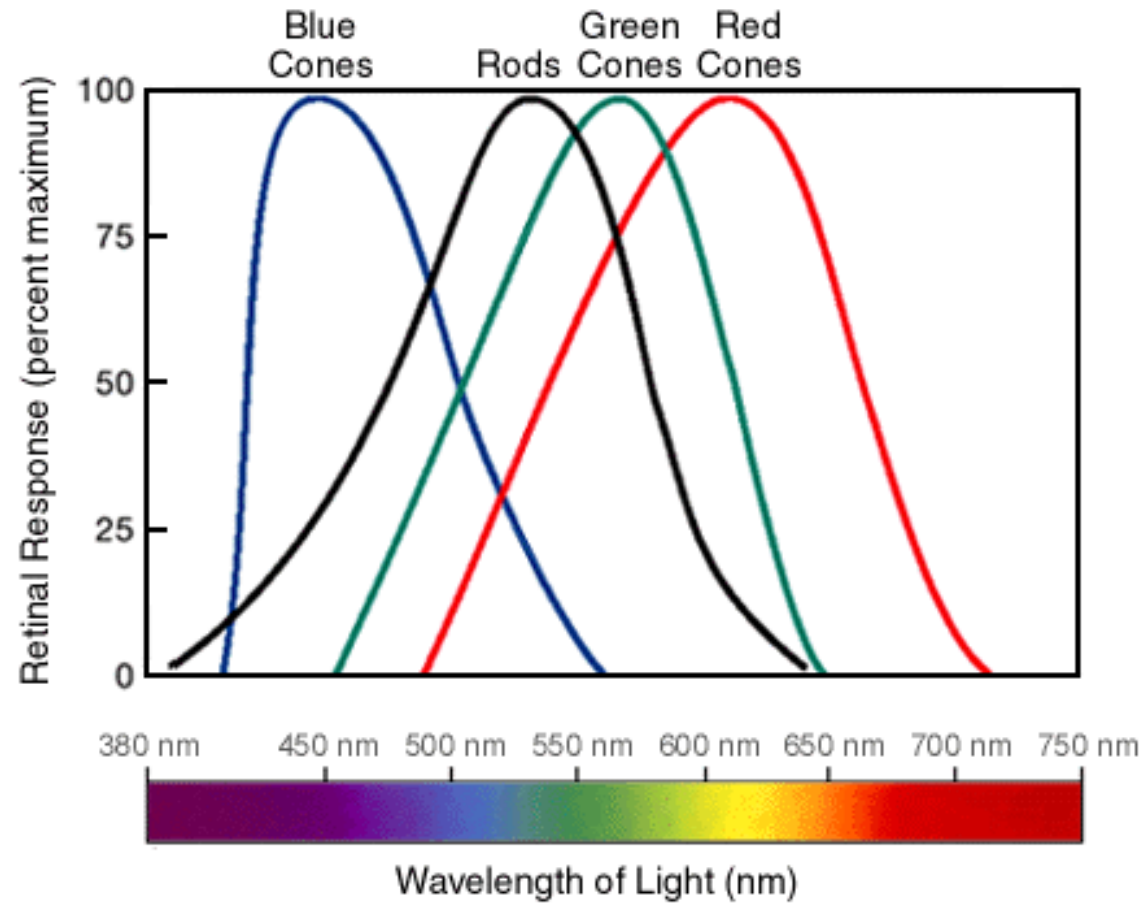


- UV spectrum ends on the left, IR starts on the right
- Wavelengths are in nm
- Source: https://commons.wikimedia.org/wiki/File:Linear_visible_spectrum.svg

Human Vision

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

Color Sensitivity of the Eyes



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

Example

The screenshot shows the Stack Overflow homepage. The main content area displays a list of top questions with columns for votes, answers, and views. The questions include:

- Loop backward in array of objects (14 views, 2 answers)
- Chain of responsibility - handling more than one request (19 views, 1 answer)
- How to change internal function in MendelianRandomization function in order to change decimal places in output? (7 views, 0 answers)
- How can I remove duplicate words unseparated in a python string? (10 views, 0 answers)
- add 7 days to a date field and convert to unix time (6 views, 0 answers)
- C# Compiler Extension doesn't show messages on build (27 views, 1 answer)
- How to access data retrieved into an anonymous inner class (a listener) from the enclosing class? (10 views, 0 answers)
- QMediaPlayer stream data from a self signed Flask https server (5 views, 0 answers)
- How to destroy component created dynamically angular 8 (10 views, 0 answers)
- Import specific Components from cdn in react (5 views, 0 answers)
- Is it safe to store a session ID with window.history.replaceState? (8 views, 0 answers)
- List all dependents of a dependency from lock file (5 views, 0 answers)
- Python: how to print to excel/csv (10 views, 0 answers)

The sidebar on the right contains a 'Blog' section with recent posts, a 'Featured on Meta' section, 'Custom Filters', 'Watched Tags', and 'Ignored Tags'.

This screenshot is identical to the one on the left, showing the Stack Overflow homepage with the same list of top questions and sidebar elements.

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>

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)

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

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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AVVISI E SCADENZE Tutti gli avvisi

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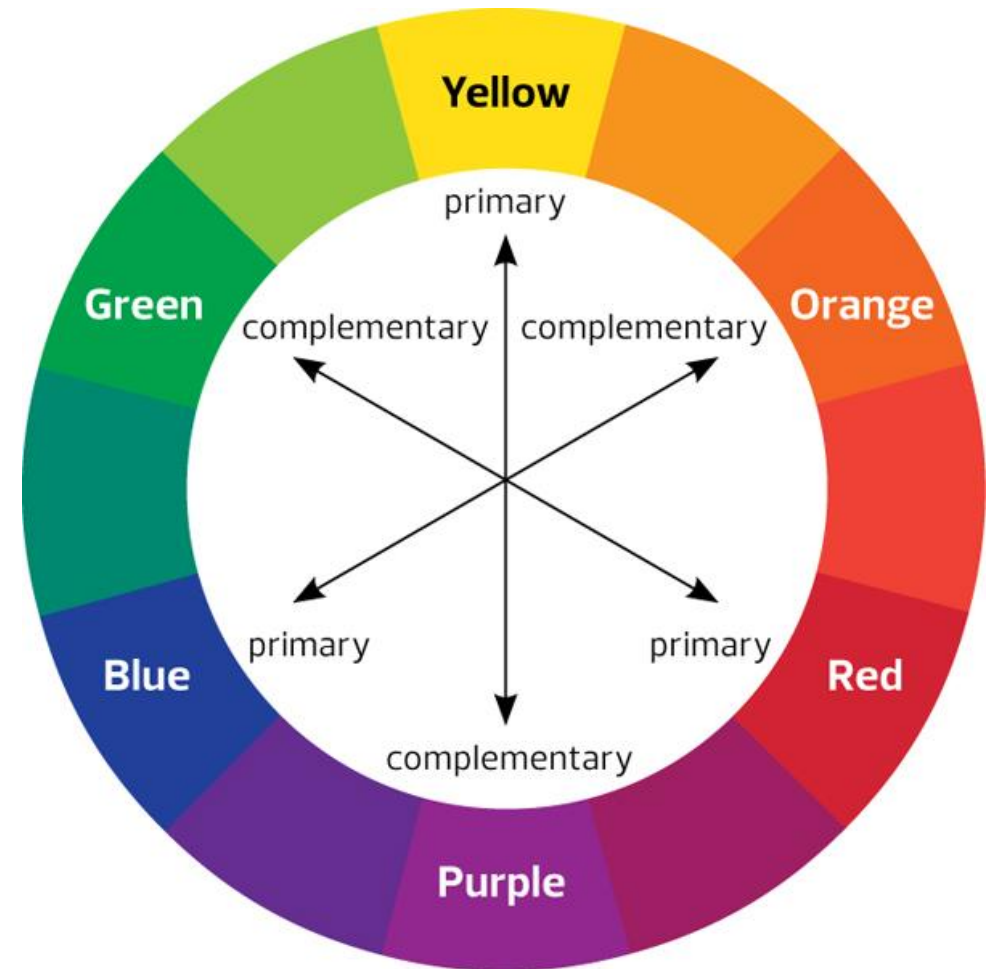
ACCESSO RAPIDO Apply - PoliTo
Iscrizioni online

- ↳ 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

The Color Wheel

- Aka the Hue Circle
- Pick non-adjacent colors
- Opponent colors go well together
 - Complementary colors

- Read more at <https://www.canva.com/colors/color-wheel/>



Palettes - PoliTo

GERARCHIA COLORI



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

Palettes Generator

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

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

Tools Jobs Go Pro Sign in Sign up

Press the spacebar to generate color palettes!

... [Icons]

3C91E6 Tufts Blue

9FD356 Yellow Green

342E37 Black Coffee

FAFFFD Baby Powder

FA824C Mango Tango

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

<https://coolors.co>

ColourLovers



Share Your Color Ideas & Inspiration.










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

Join the Community!

CONNECT WITH COLOURLOVERS




Follow @COLOURLovers 1.59M followers

LOVERS PEEK






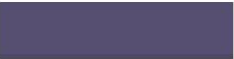
-  **SadieSews on Vengeful Z25**
Really nice look, with this! (:
-  **MistryMoments on CoffeeBerries**
I love your Template Design Style.. thanks
-  **renniecat on Cold Night**
Beautiful!
-  **GoldenHuesinBlue on Golden Fall**
Wow, very nice!
-  **TongrenGirl on Comfort**
Wow...so beautiful!!!!
-  **TongrenGirl 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

Navigation tabs: ALL, WEDDING, HOME, FASHION, WEB, PRINT, CRAFT, DIGITAL ART

LATEST BLOG POSTS [View More](#)

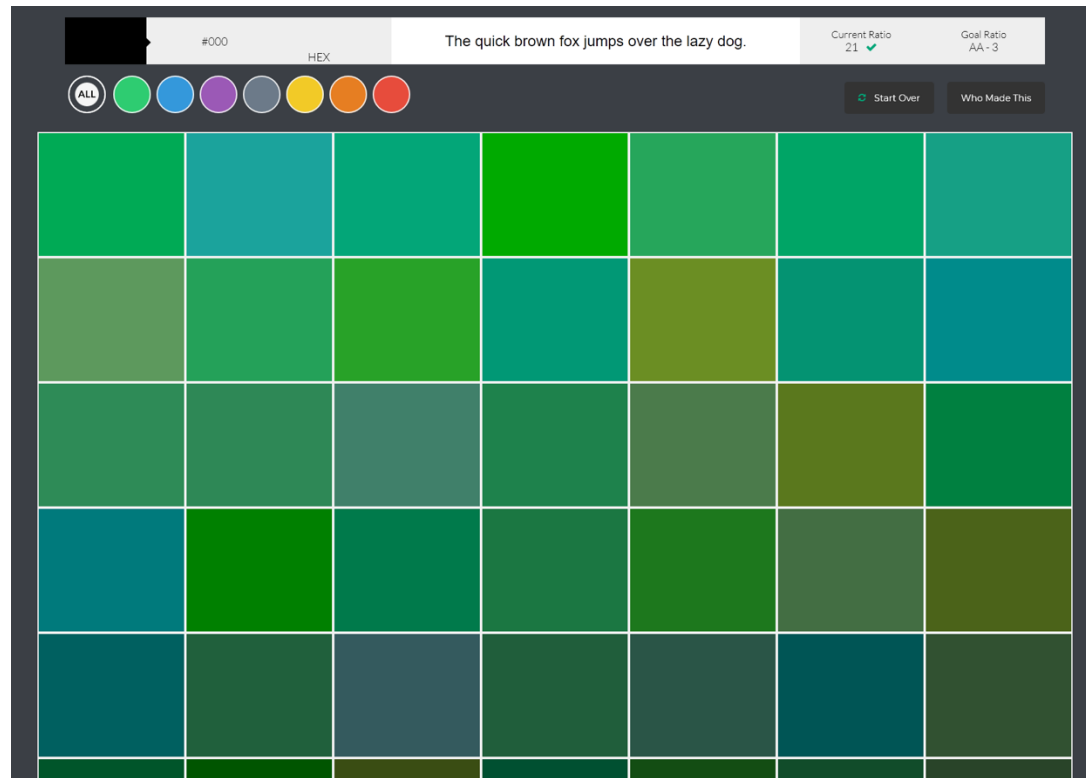
- 
Why Marketing Automation is Rocket-Fuel for Remote Workforce
0 Comments
- 
How to Become a Full-Time Creative and Do What You Love
0 Comments
- 
Colors, Human Growth Hormones, and Creativity
0 Comments

PALETTES Create + PATTERNS Create + COLORS Create +

- 
Nineteen by Júlia Freire 0
- 
try by Anomalin 0
- 
light gray purple by macover 0
- 
garden palette 2 by macover 0
- 
PodCasting by Sisters 0
- 
slate purple by macover 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

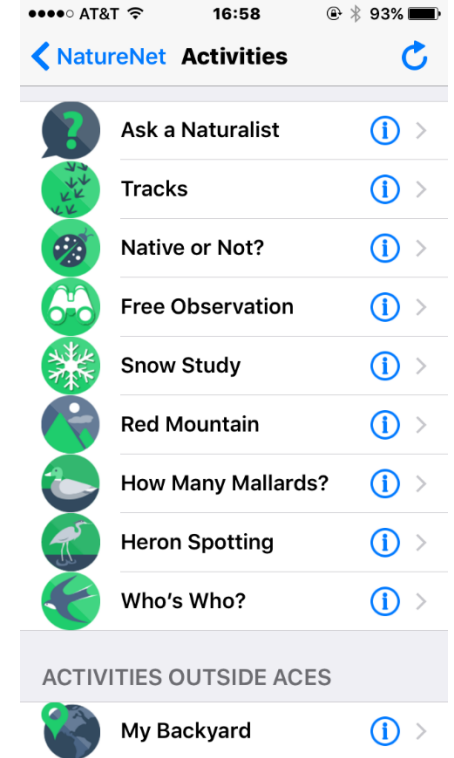
Navigation By Selection

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

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

Add gift wrap

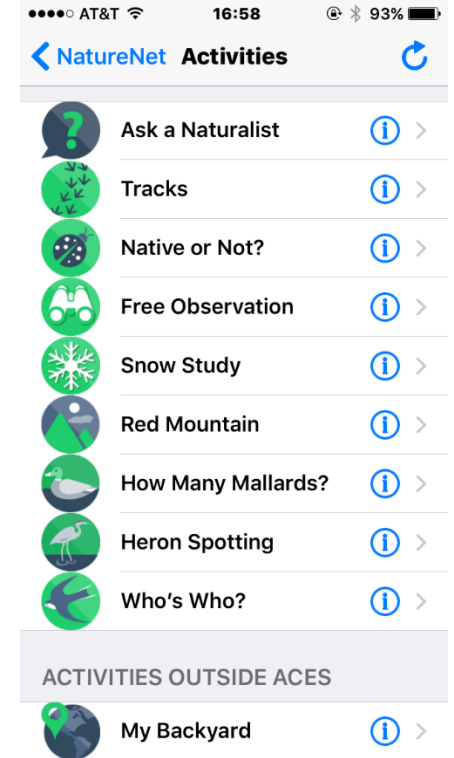
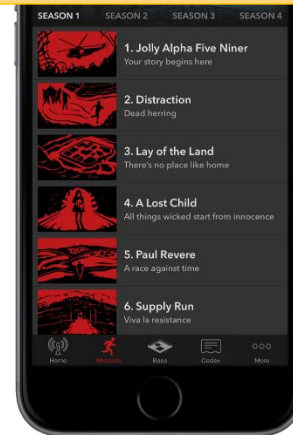
No thanks



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

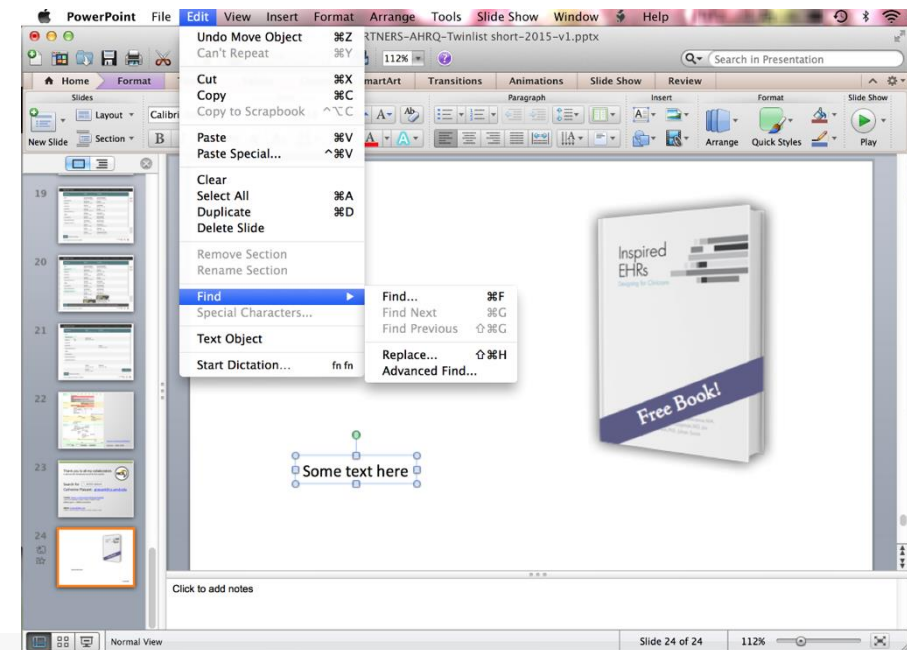
- Radio Buttons and Checkboxes
- Menu bars, pop-up menus, toolbars, palettes and ribbons

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 navigation menu at the top. The menu includes links for Missions, Galleries, NASA TV, Follow NASA, Downloads, About, and NASA Audiences. Below the menu is a search bar and a secondary navigation bar with links for International Space Station, Journey to Mars, Earth, Technology, Aeronautics, Solar System and Beyond, Education, History, and Benefits to You. The main content area features 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 includes a play button icon. Other stories include "Eclipse: NASA Scientist Sheds Light on Rare Sept. 27 Supermoon Eclipse", "Image of the Day: Good Morning From the International Space Station", "Space Travel: New Green Propellants Complete Milestones", "Fire and Smoke: Rough Fire Still Burning in California", "Real Martians Moment: We're Learning More!", and "SDO Solar Mission: SDO Catches an Earth-Moon Double Photobomb". A "Tweets" section is also visible, featuring a tweet about a 3D printed habitat. The footer includes the NASA logo, the text "National Aeronautics and Space Administration NASA Official: Brian Dunbar", and a list of links: No Fear Act, FOIA, Privacy, Office of Inspector General, Agency Financial Reports, and Contact NASA.


The screenshot shows the NASA TV website. At the top, there is a search bar and a navigation menu with a home icon, the NASA logo, and the text "NASA TV". Below the navigation is a video player showing a scene from the International Space Station with the caption "One-Year Crew Halfway There". The video player has a play button icon and a progress bar. Below the video player is another video player showing a scene with the caption "One-Year Crew Halfway There". The website has a clean, modern design with a dark background and white text.

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.

[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)

 <p>★ ★ ★ ★ ★ (1)</p> <p>REI Rainwall Rain Jacket - Girls'</p> <p>\$31.83 - \$64.50</p> <p>Compare</p>	 <p>★ ★ ★ ★ ☆ (1)</p> <p>REI Rainwall Rain Pants - Kids'</p> <p>\$49.50</p> <p>Compare</p>	 <p>★ ★ ★ ★ ★ (9)</p> <p>REI Sahara Convertible Pants - Girls'</p> <p>\$44.50</p> <p>Compare</p>
 <p>ONLY AT REI</p>	 <p>ONLY AT REI</p>	 <p>ONLY AT REI</p>

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
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Aule Studio - Seleziona Aula Studio

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

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- Sala studio sotto l'aula 7

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

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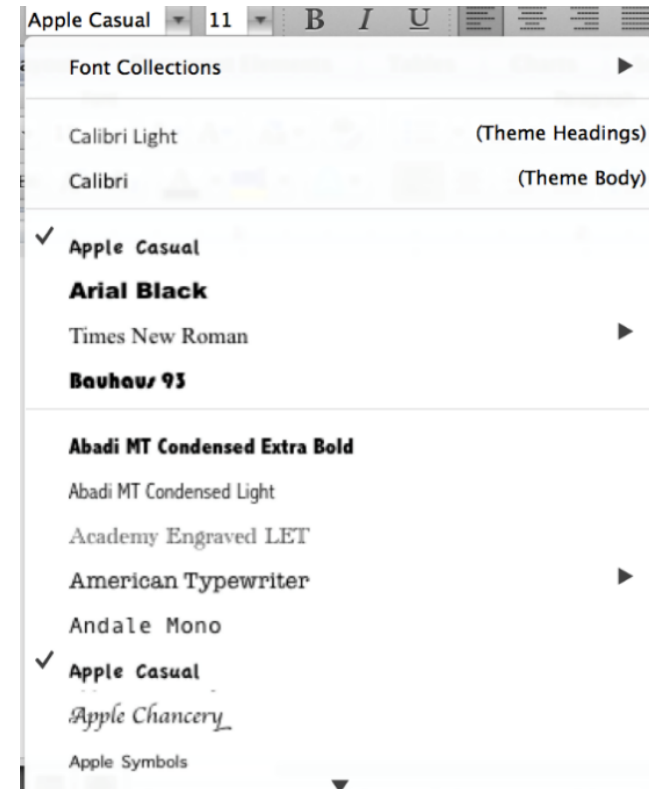
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<< Oggi >> **14 Set 2020 - 18 Set 2020** 1 giorno 3 giorni **Settimana lavorativa** Settimana

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

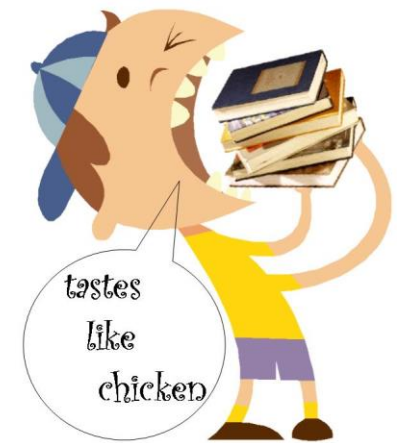
Menu Grouping: example

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



Information Scent

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



Informavore, an organism that consumes information

Poor Information Scent

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

Example

The screenshot displays the 'Teaching portal' of the Politecnico di Torino. At the top, a navigation bar includes 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 header features the university's logo and the text 'POLITECNICO DI TORINO' and 'Teaching portal'. The content is organized into a grid of colored boxes:

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

The footer contains contact information, logos for 'Posta Studenti email', 'Ente Regionale per il Diritto allo Studio Universitario', 'Contact us', 'Lezioni online demo', 'osservatorio regionale', 'POLITECNICO DI TORINO', and 'PoliTO App'. It also includes social media icons and the text: '© 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 Course

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

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

Teaching portal

Teaching portal

Find the Degree Guide of your degree programme

Check the dates, times, and locations of your courses

Check the dates, times, and locations of your courses

Check the dates, times, and locations of your courses

Check the dates, times, and locations of your courses

Check the dates, times, and locations of your courses

Generale
Studenti

Area dell'Architettura Corso di Laurea di 1° livello	Area dell'Architettura Corso di Laurea Magistrale
Area dell'Ingegneria Corso di Laurea di 1° livello	Area dell'Ingegneria Corso di Laurea Magistrale

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

Bachelor's Italian students

M.Sc. Italian students

Students with a foreign qualification

Ph.D.

Specializing master

Exchange programmes

Stato esami

Online application form

Privacy - Information

Forgot your password?

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

Home

Come orientarsi al Polito

Iscrizione al primo anno

Materiali informativi

Attività con le scuole medie superiori

Registrazione ad apply@polito

Link correlati

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

Come orientarsi al Polito

Iscrizione al primo anno

Materiali informativi

Assisti regionali

STUDENTS & GRADUATES

EMPLOYERS

EVENTS

Check all the opportunities to build your career

Find out how to get in touch with our talents

HIGHLIGHTS:

TECH TALK VISHAY

07 Novembre 2019

ore 17:30 - Aula 4P

L'evoluzione della E-Mobility

VIDEO GALLERY:

LA BELLEZZA DI FARE IMPRESA

Job Fair@PURTTO under 250 | La bellezza di fare impresa

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

Career Day 2018 | L'importanza delle esperienze curriculari

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

Survey@Polito

Administration -- Logged in as: **cornio**

Surveys: Smart Home Survey

Survey Smart Home Survey (ID:365355)

Question groups: Please choose...

Title: Smart Home Survey (ID 365355)

Survey URL (English): <https://survey.polito.it/365355/lang-en>

Description: This very short survey aims at exploring the future and expected user interaction between user and smart environments, in particular smart homes. The research goal is to update, and compare, the research findings of a similar survey held in year 2010 (5 years ago). The expected completion time for this survey is 5 minutes or less.

Welcome: Thank you for agreeing to take part in this survey. All the answers you give are anonymous, and the data-set will be released as open data after the survey ends. You may choose to reply in any of the supported languages, preferably your mother tongue.

End message: Thanks for completing the survey. The results will be available on the website <http://elite.polito.it> The paper describing the previous survey (in 2010) is available at: <http://porto.polito.it/2380988/>

Administrator: Fulvio Corno (fulvio.corno@polito.it)

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

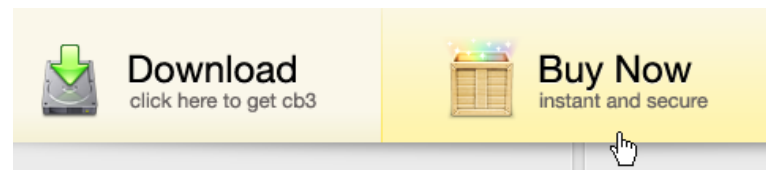
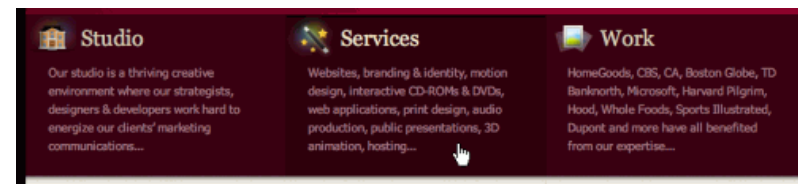
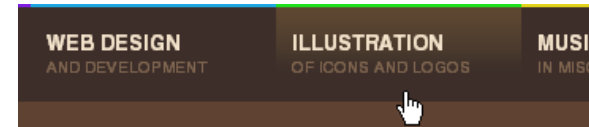
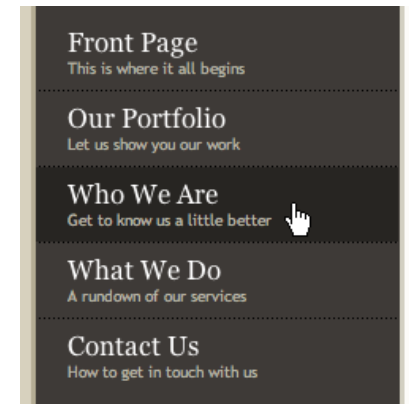
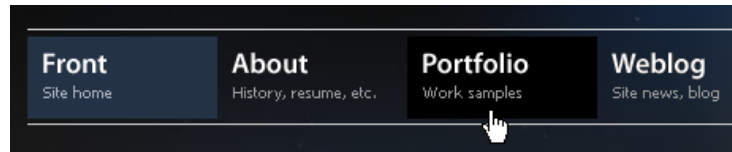
- Icons facilitate recognition over recall
 - When they are consistently used, and frequently visible
- Redundant coding helps recognition and memorization
 - Icon + Text + Tooltip + Context



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



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 help icon. The form is organized into several sections:

- Provide your personal information:** Contains three text input fields for "Given/First name" (filled with "Catherine"), "Middle name", and "Last/Family/Surname" (filled with "Plaisant").
- Enter e-mail address & password:** Contains four text input fields: "E-mail address" (filled with "cplaisant@" and highlighted with a red border), "Re-enter e-mail address", "Password" (filled with dots), and "Confirm password".
- Set security questions:** Contains two dropdown menus for "Security question 1" and "Security question 2", each followed by a text input field for the answer.

Validation and feedback elements include:

- A red asterisk icon indicating required fields.
- A yellow warning box with a triangle icon stating: "The e-mail address provided is not in a valid e-mail format (for example: j.doe@nomain.com). Please try again."
- A green success box with a checkmark icon stating: "Your password is good". Below it, a note says: "Passwords must be between 8 and 64 characters, and include at least one number. [More...](#)"

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

Form Elements and UI Elements

Text input fields let you input text

NonFederal (99)
 Federal (57)

Yes No

Find your state or...

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

Settings menu:
General Settings
Your Profile
Sign Out

SEP 18th 2010

22 JUN

Navigation arrows

ON OFF

Calendar for Sep, 2010

JUN 22

Grid of icons: document, camera, person, etc.

Mobile navigation icons

Menu Item Messages¹ 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.

Navigation styles:
Navigation Crystal Clear
Navigation Menu
Navigation Soft Style
Navigation Class
Navigation Classic

Search options:
Enter keywords:
• Search Option One • Search Option Two • Search Option Three

Search dropdown:
Search:
Everything
• Entries
• Photos
• Videos
• Audio

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

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

Clean Fresh Modern
Unique x +

Horizontal scroll indicator

Page navigation:
1 2 3 4 5 6 7 8 9 10 next
Previous 1 2 3 4 5 6 7 8 9 10 ... 246 247 Next
Prev 1 2 3 4 5 6 ... 33 34 Next

Example: Redesign This

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

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

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

Reading Content

Organizing text and content for maximum visibility

Reading Content

“How people
read on-line?”

“They don’t”

How Users Read on the Web

by Jakob Nielsen on September 30, 1997

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

Eye Tracking



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

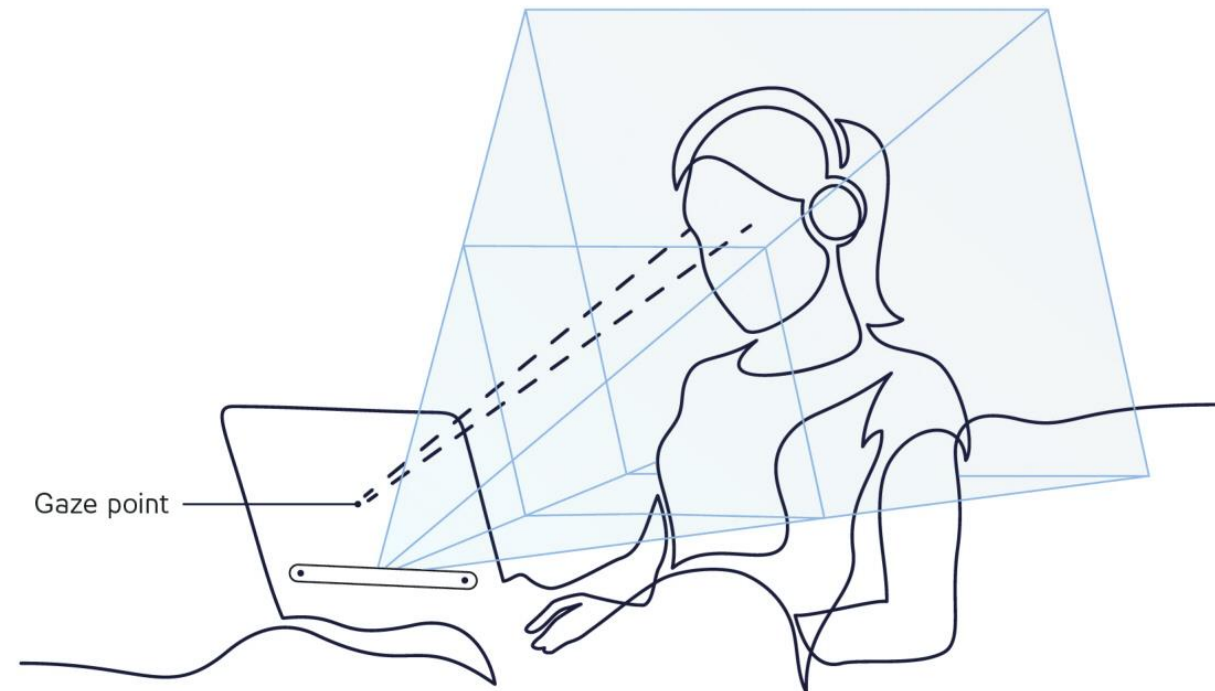
Eye Trackers



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

Eye Tracker: How It Works

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

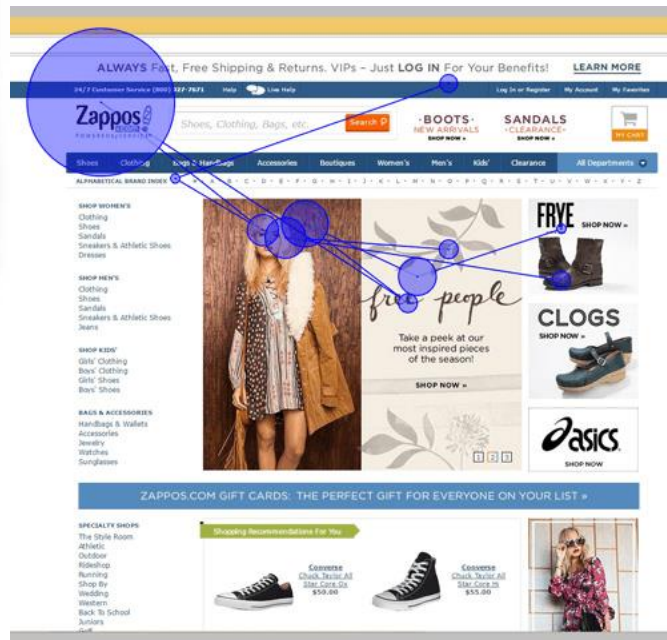


source: <https://www.tobii.com/group/about/this-is-eye-tracking/>

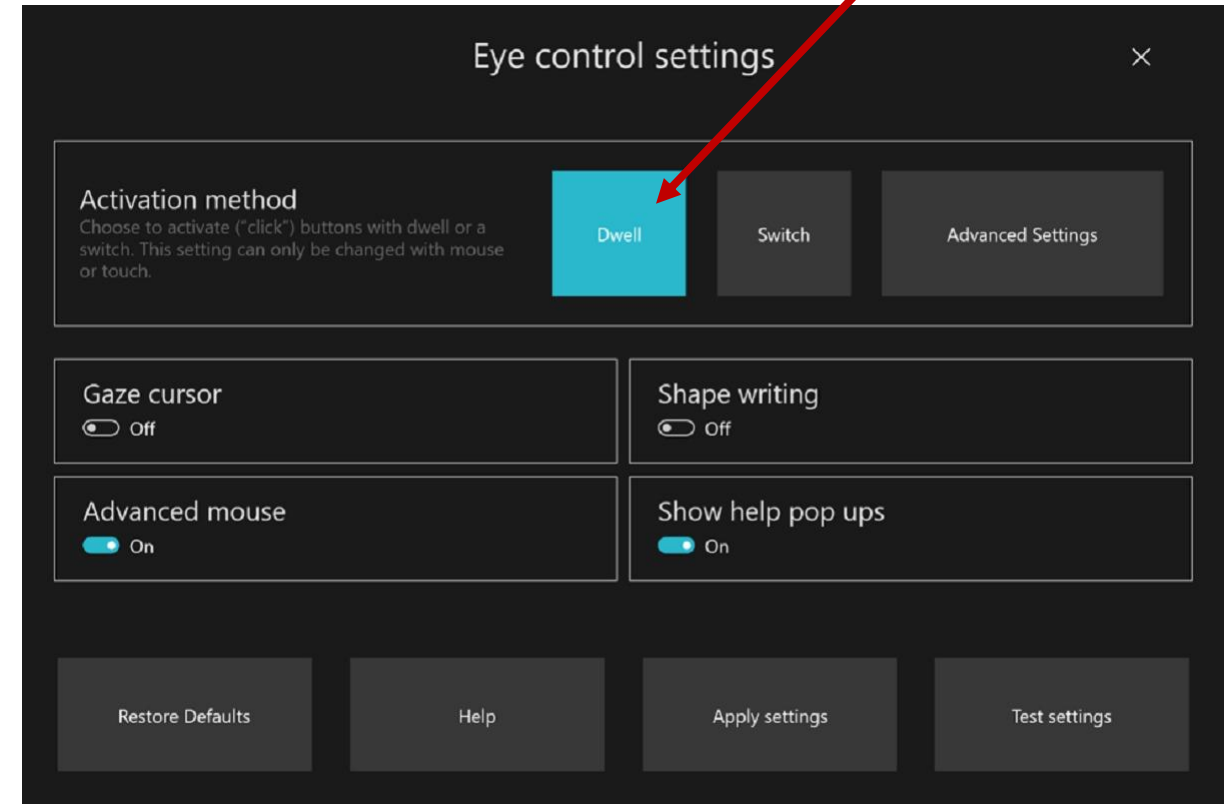
Eye Tracker: Examples



Heatmap and scan path analysis



Beware the Midas' Touch!



Windows 10 Eye Control Settings

Location on the Page

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

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

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

F-shaped pattern

Google the new yorker hotel

Wyndham New Yorker Hotel - Official Site - wyndhamhotels.com

The New Yorker A Wyndham Hotel | Midtown Manhattan Hotel

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

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

Wyndham New Yorker Hotel - Wikipedia

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

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

Wyndham New Yorker (New York, USA) | Expedia

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

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

Images for the new yorker hotel

Searches related to the new yorker hotel

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

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Eye tracking

From Wikipedia, the free encyclopedia

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

Eye tracking is the process of measuring either the point of gaze ("where we are looking") or the motion of the eye tracker is a device for measuring eye positions and eye movements. Eye trackers are used in research psychology, in cognitive linguistics and in product design. There are a number of methods for measuring eye position, but the most common is eye-tracking. Other methods use search coils or are

navigation

- Main page
- Contents
- Featured content
- Current events
- Random article

search

Go Search

interaction

- About Wikipedia
- Community portal
- Recent changes
- Contact Wikipedia

Contents hide

- History
- Tracker types
- Technologies and techniques
- Eye tracking vs. gaze tracking
- Eye tracking in practice
 - Eye tracking while driving a car in a difficult situation
 - Eye tracking of younger and elderly people in walking
- Discussion on eye tracker

Design for glanceability

Priority 1	Priority 2	Priority 3

The Paynter Institute www.paynter.org/instr/instrweb2004

Scanning

WHAT DESIGNERS BUILD...



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How do I check my frequent flyer miles?

Experiment

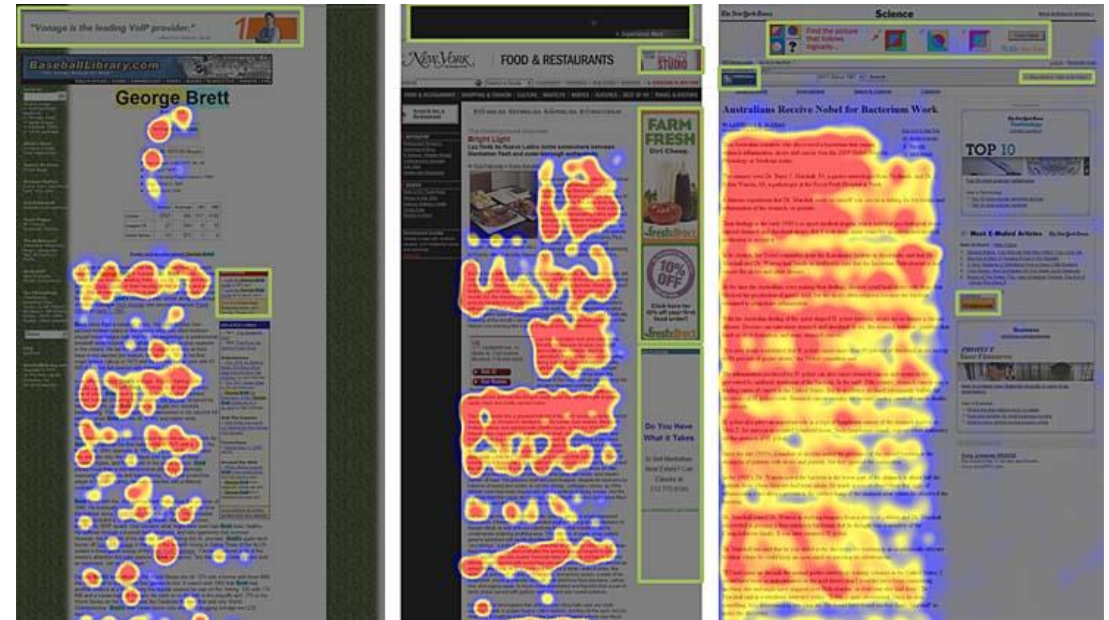
Site Version	Sample Paragraph	Usability Improvement (relative to control condition)
Promotional writing (control condition) using the "marketese" found on many commercial websites	Nebraska is filled with internationally recognized attractions that draw large crowds of people every year, without fail. 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=PLLsT5z_DsK_nusHL_Mjt87THSTlgrsyJ
- Thanks to Fulvio Corno, past teacher of the course, for his work on some of these slides



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