

Building User Interfaces

Designing for Web

Yuhang Zhao & Cole Nelson

What we will learn today?

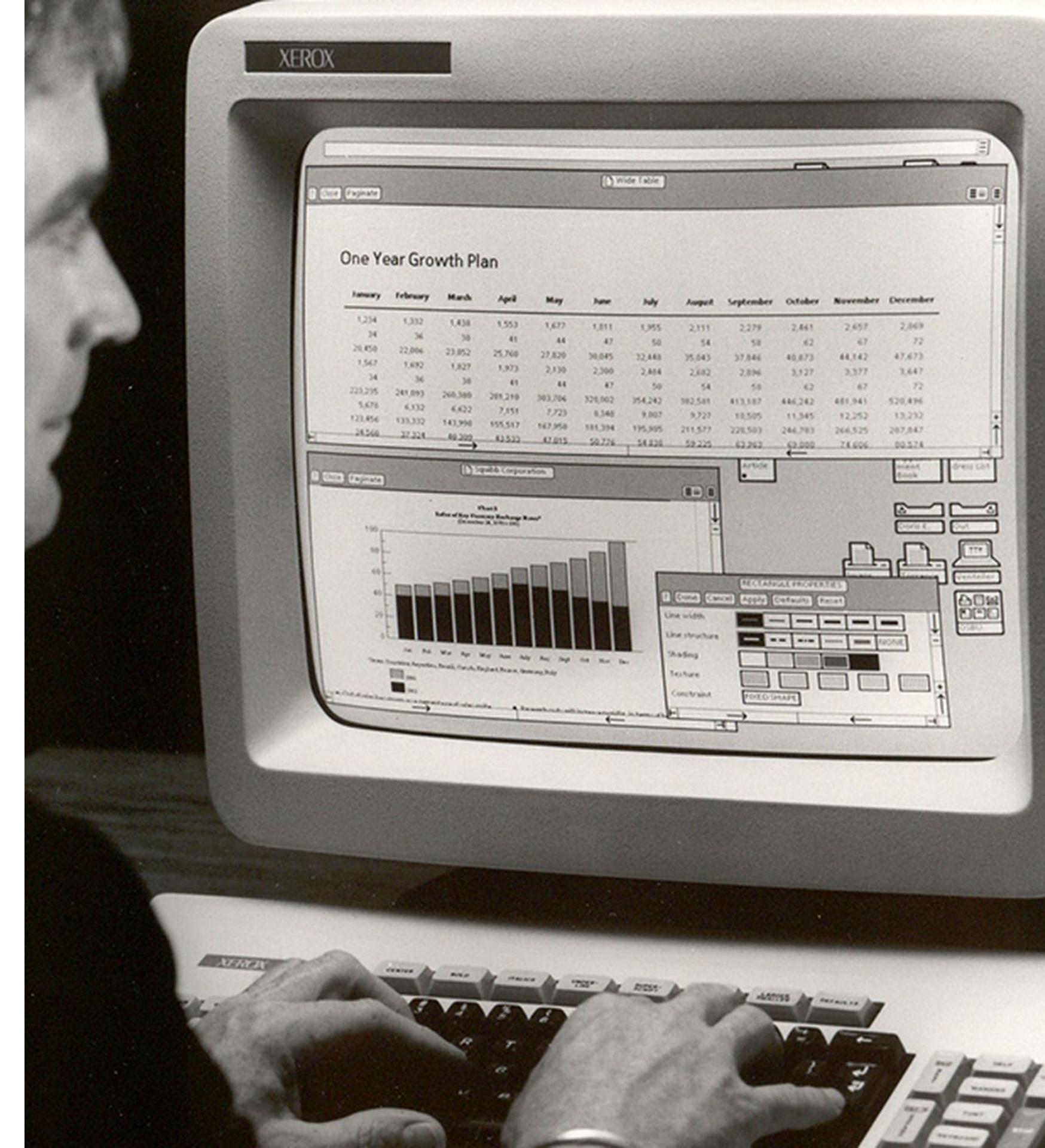
- Designing for the desktop
- Designing for the web
- Layout Design & Design Patterns

ICA deadline will be moved to Friday 11:59pm!

Designing for the Desktop

The WIMP Paradigm¹

Definition: *Windows, icons, menus, and pointer*, or *WIMP*, is a design paradigm that current desktop interfaces follow that dates back to the Xerox Alto (1973).

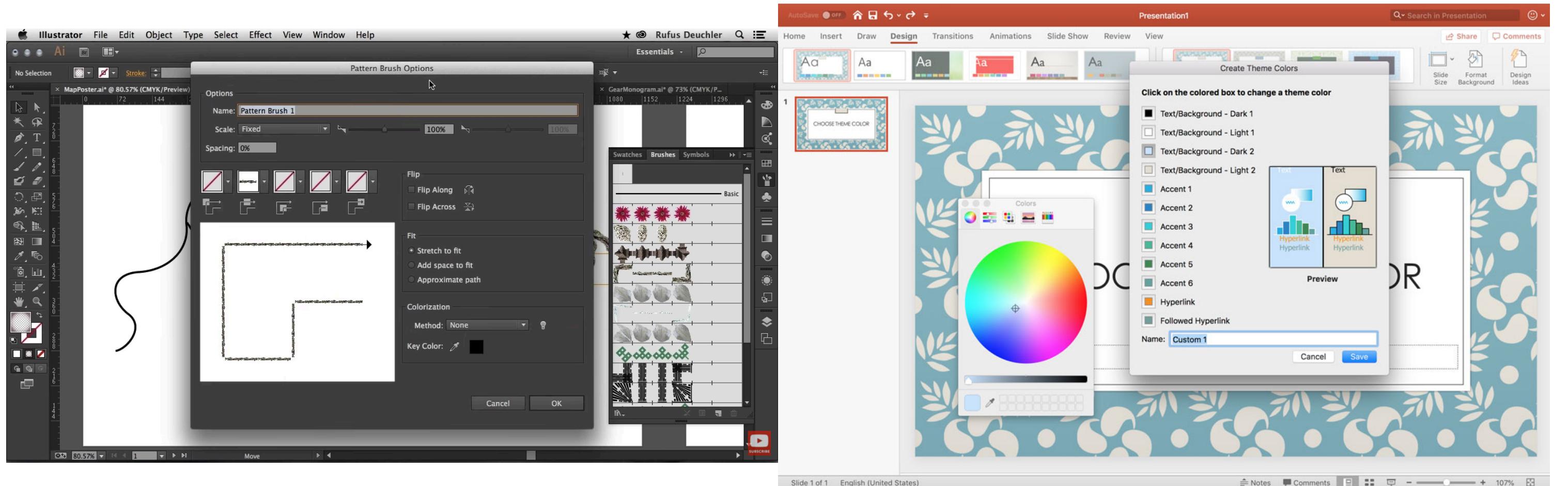


¹Image source

Elements of the WIMP Paradigm: *Windows*

Definition: Windows are resizable containers of individual applications.

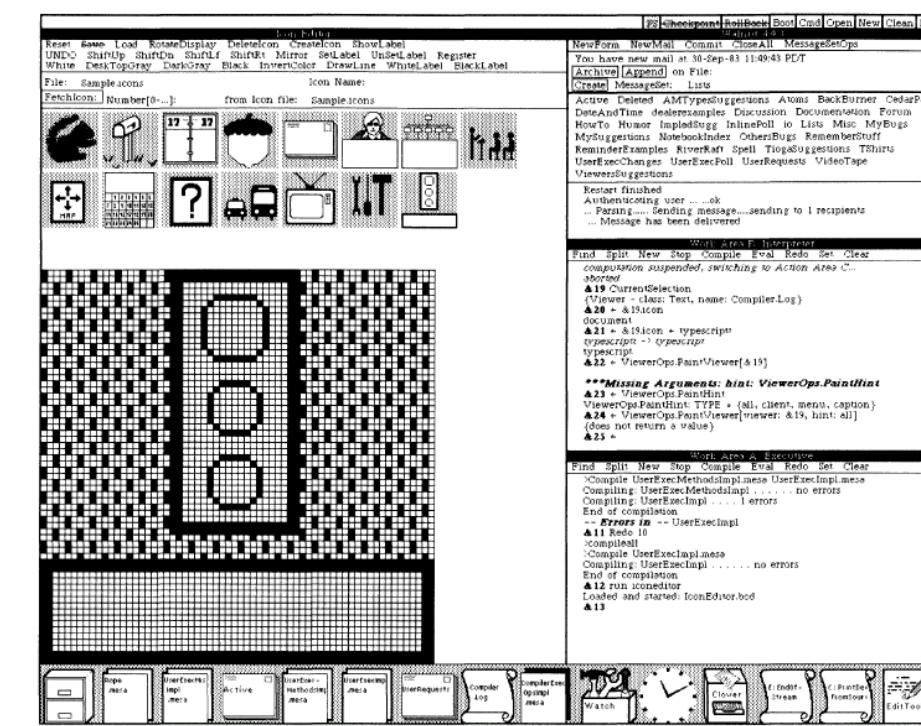
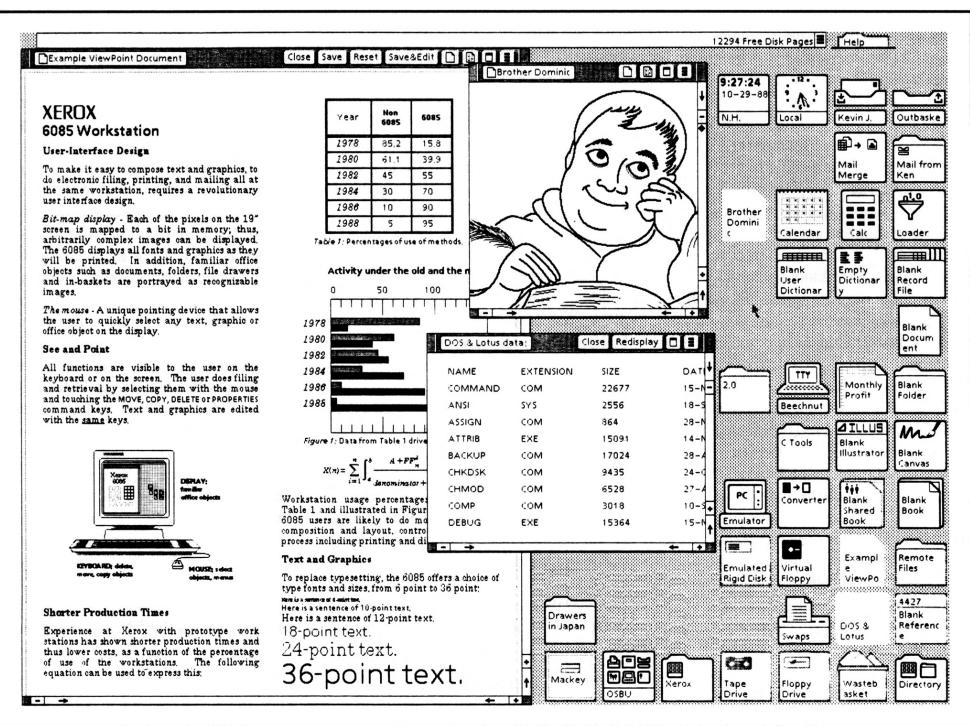
Primary windows contain elements for the main functionality of the application, such as a canvas. *Secondary* windows support main windows through modal panes, dialog boxes, etc.



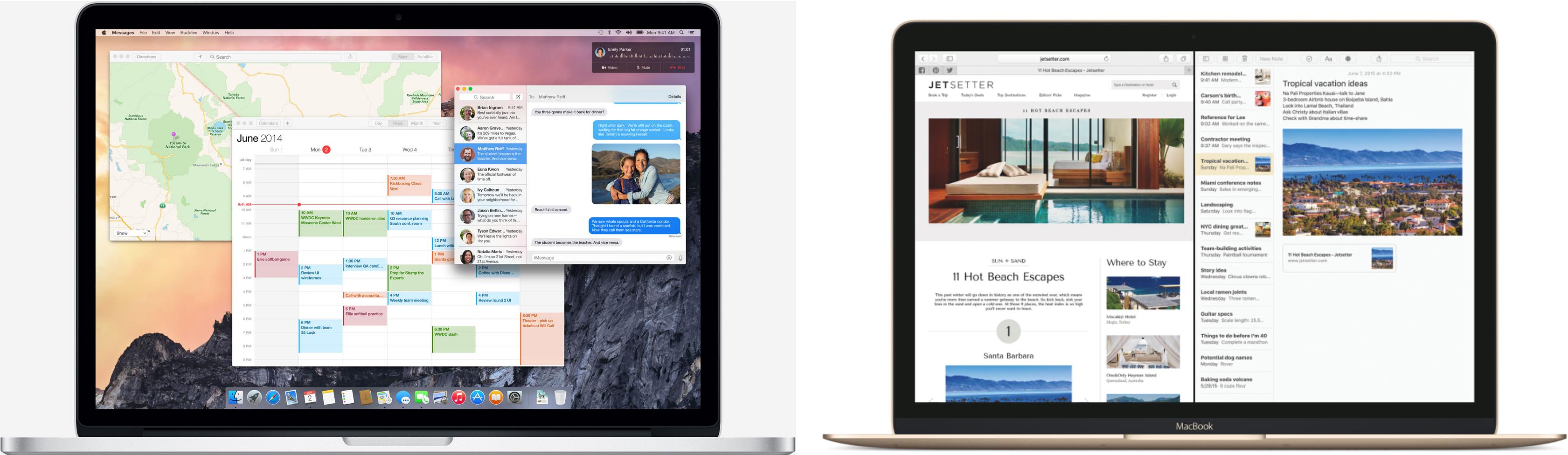
²Image source: [Left](#), [Right](#)

Window Organization³

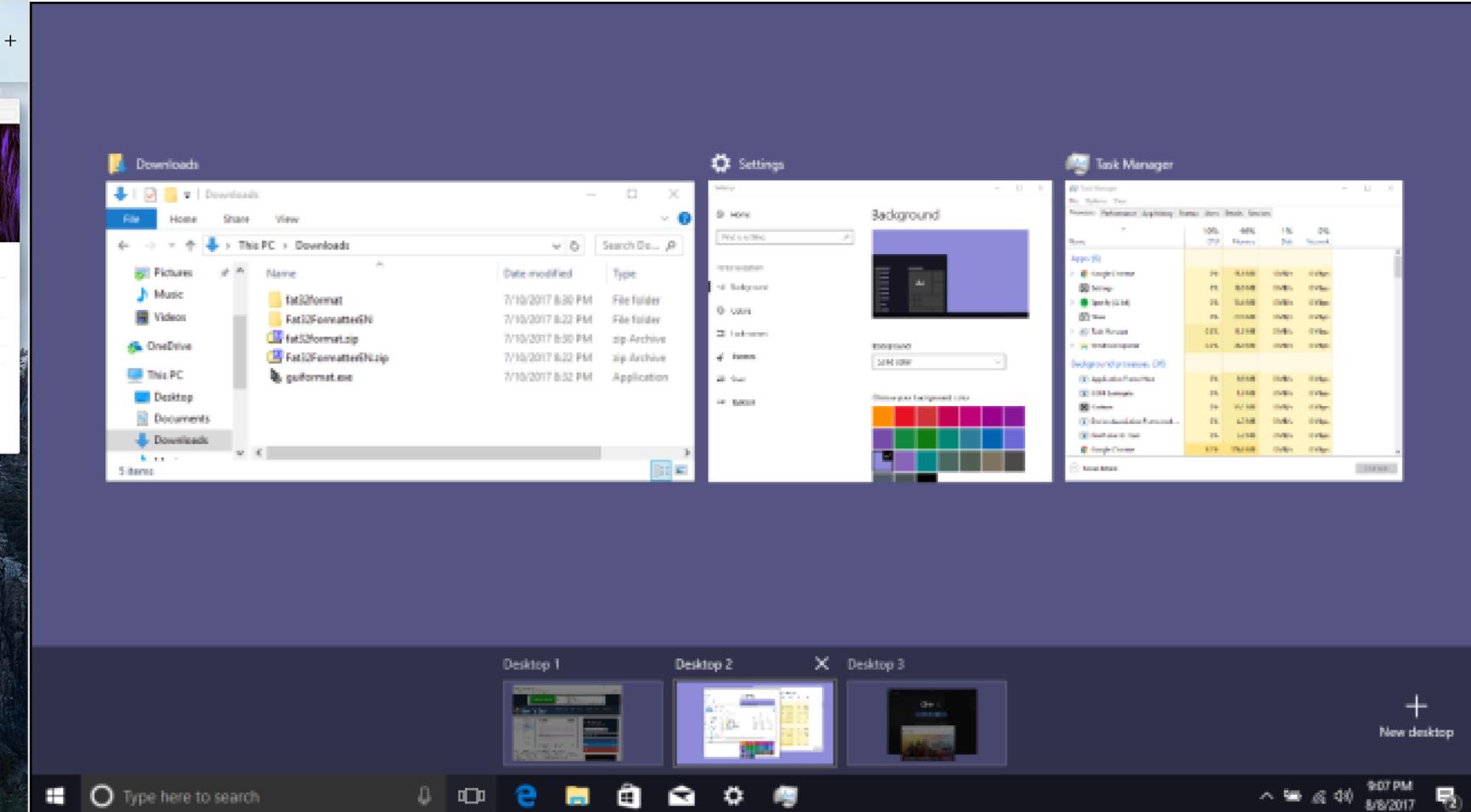
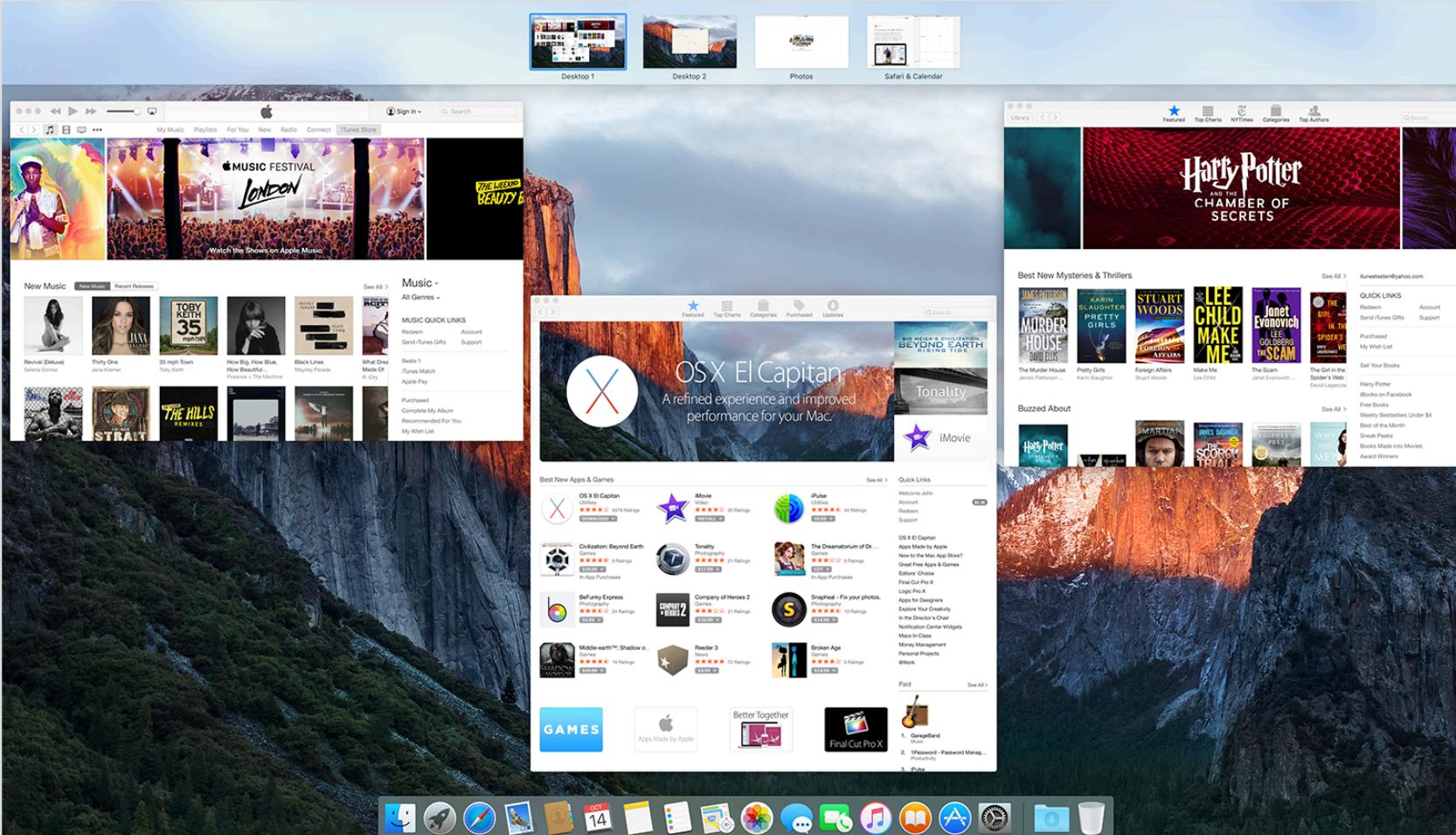
Definition: Windows can be organized in a way that overlaps several windows or tiles them across the screen.



³ Image source: [Left](#), [Right](#)



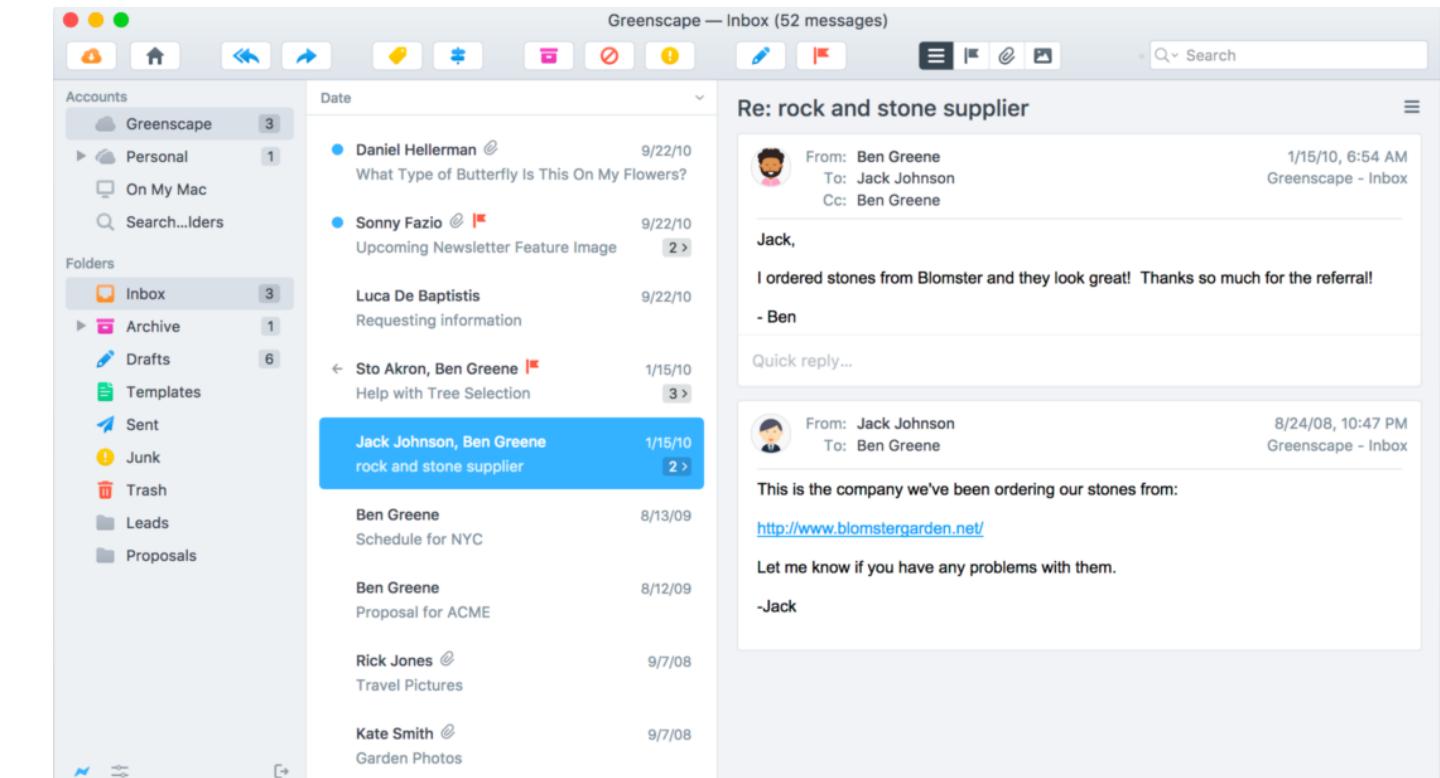
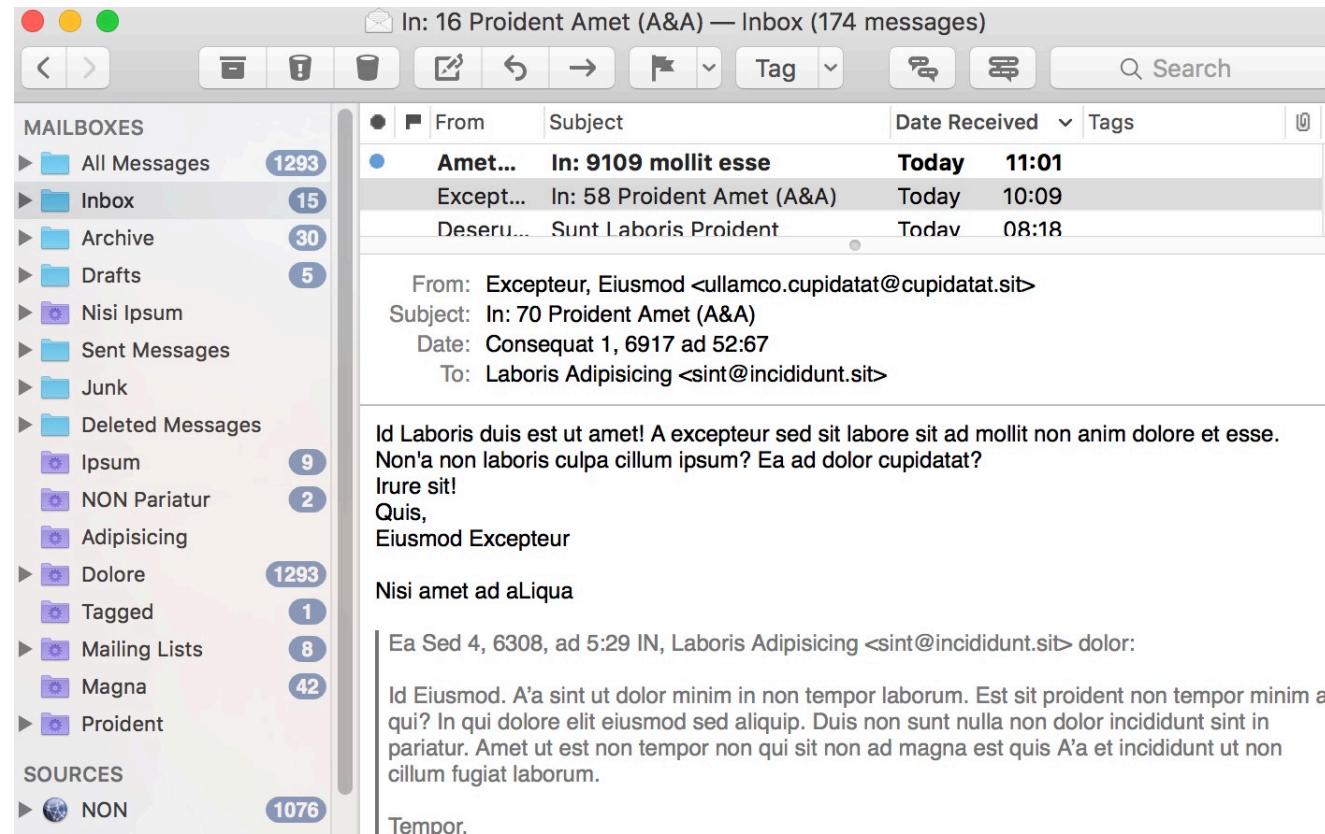
⁴Image source: [Left](#), [Right](#)



⁵ Image source: [Left](#), [Right](#)

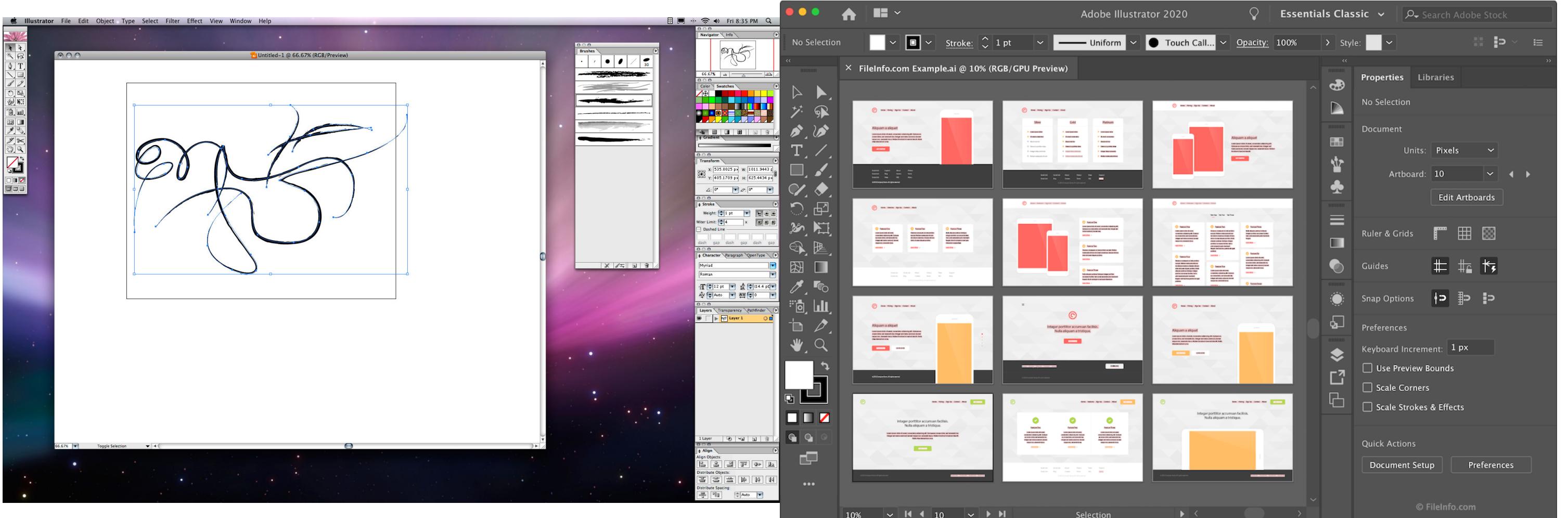
Window Structures⁶

Windows bring together dedicated *panes* in different configurations.



⁶ Image source: [Left, Right](#)

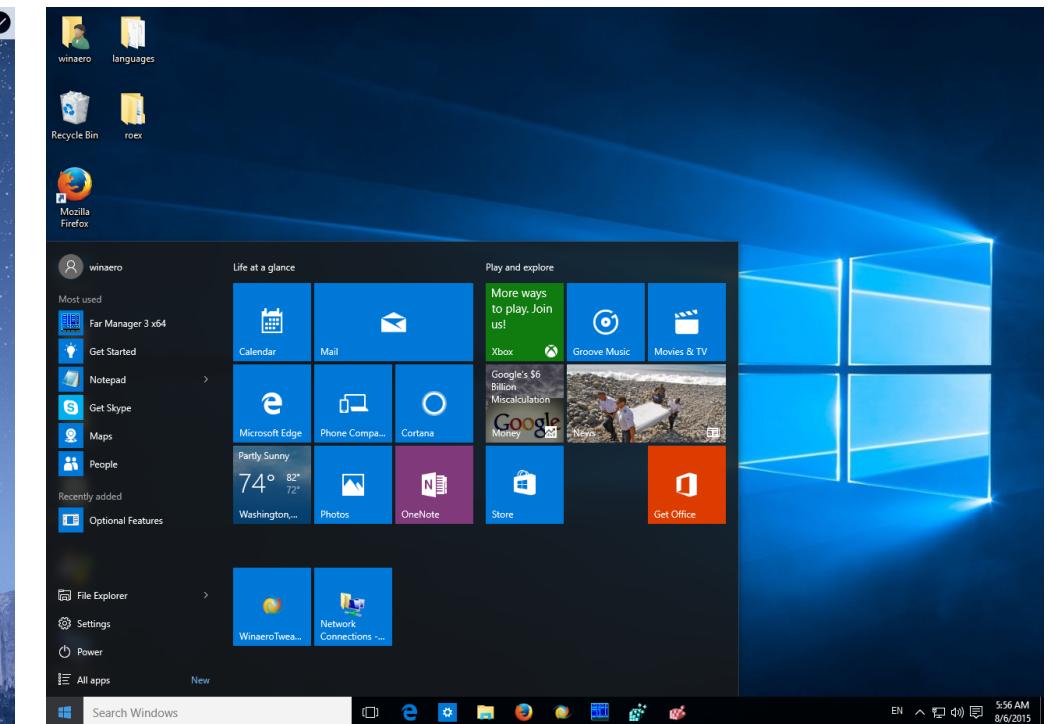
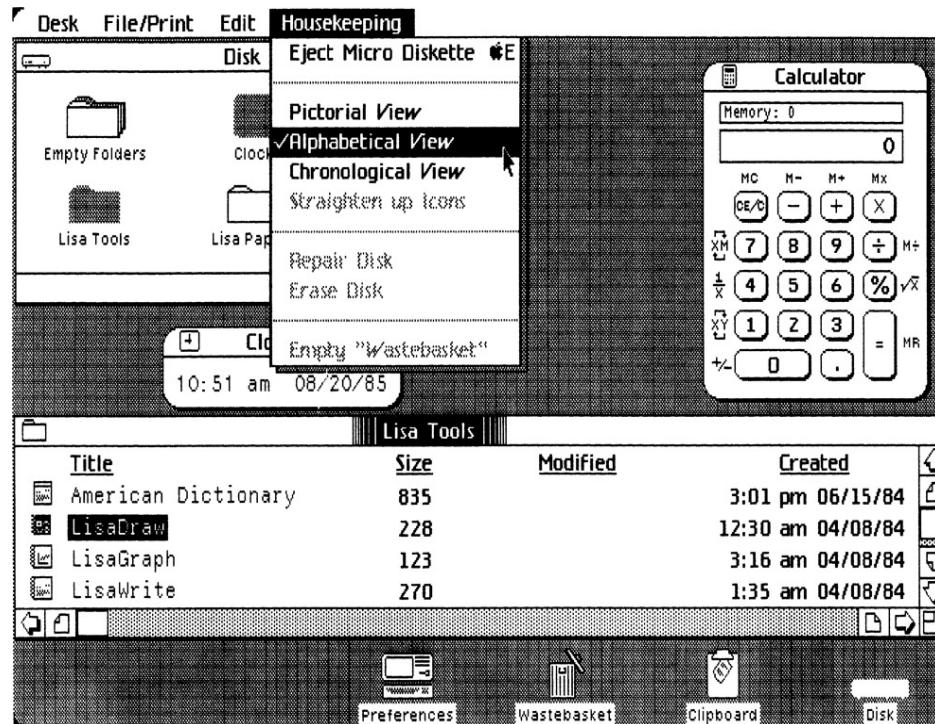
Secondary windows can be *docked*, *stacked*, and *floating*.⁷



⁷Image source: [Left](#), [Right](#)

Menus⁸

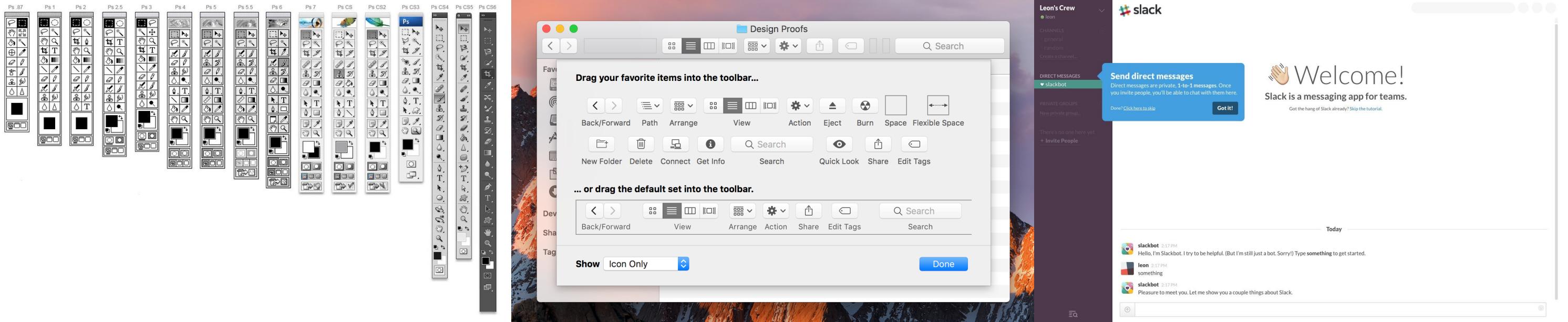
Definition: Menus list all the functions of the an application. Menu lists serve *educational* and *reference* purposes.



⁸ Image source: [Left](#), [Center](#), [Right](#)

Toolbars, Palettes, Sidebars, & Tooltips⁹

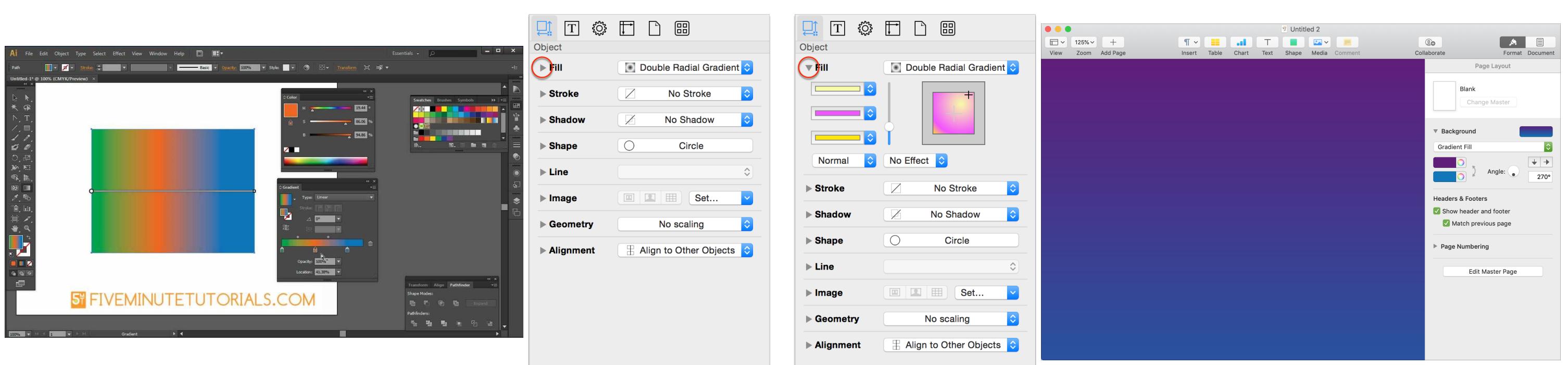
Definition: *Toolbars, palettes, sidebars, and tooltips* facilitate (visual and manipulation) access to frequently used functions.



⁹ Image source: [Left](#), [Center](#), [Right](#)

Tool Palettes¹⁰

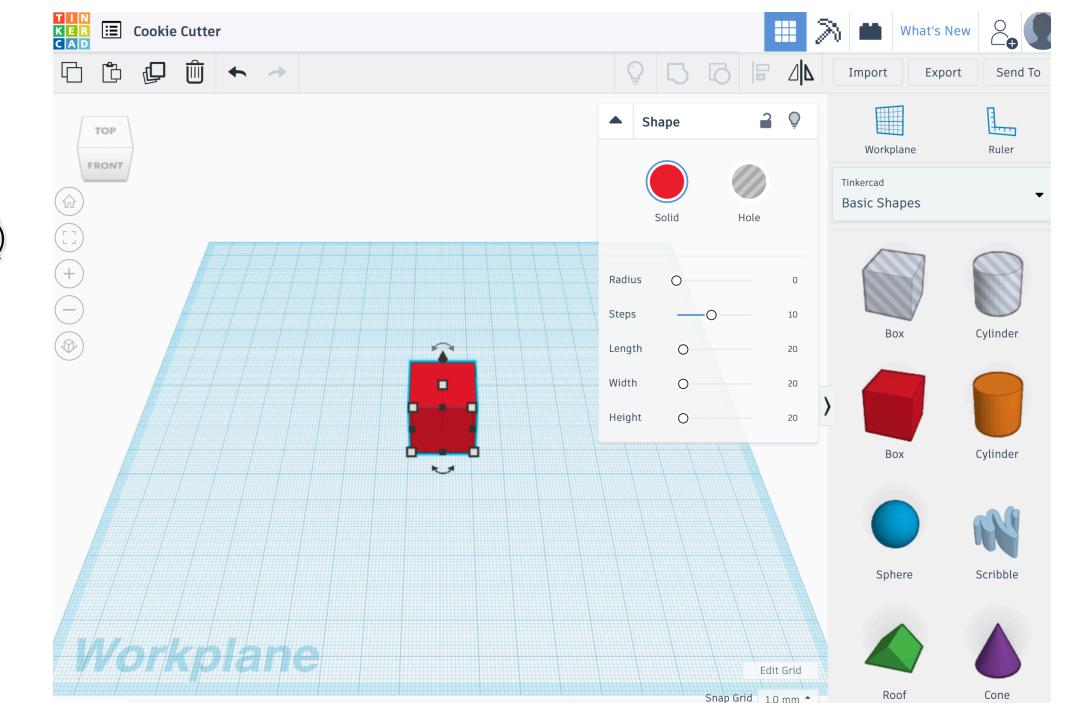
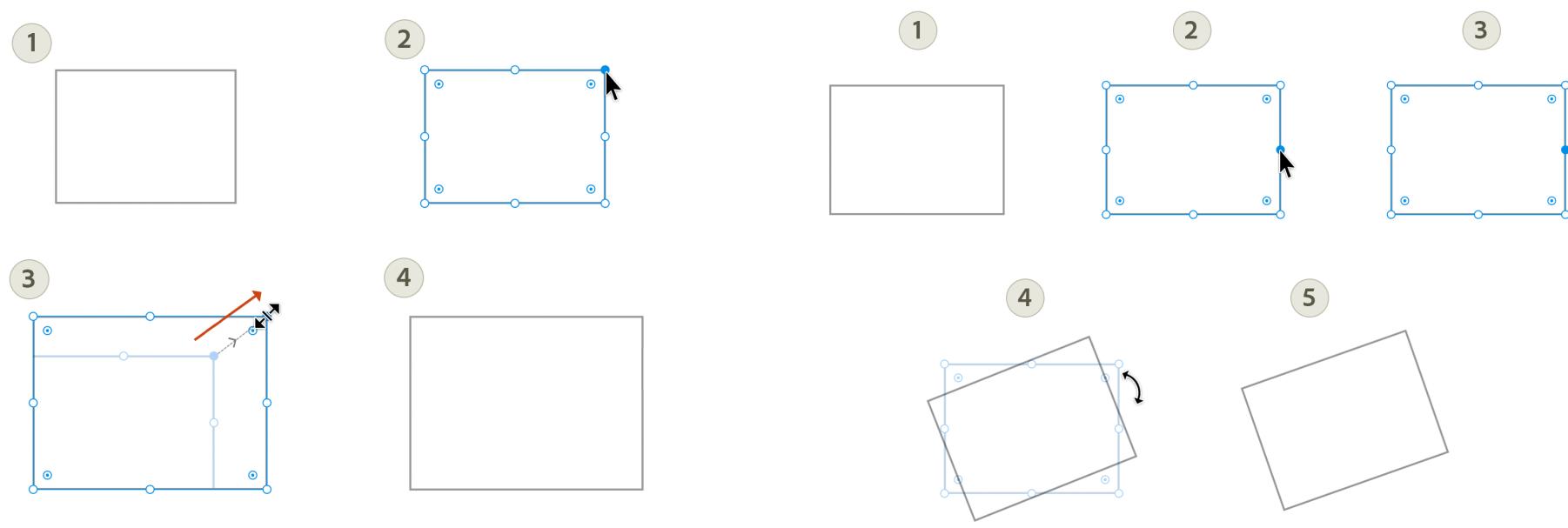
Definition: Tool palettes provide *advanced controls* for a particular function rather than frequently accessed functions.



¹⁰ Image source: [Left](#), [Center](#), [Right](#)

Pointing¹¹

Definition: *Pointing* on an application canvas enables a range of advanced capabilities for *direct manipulation*.

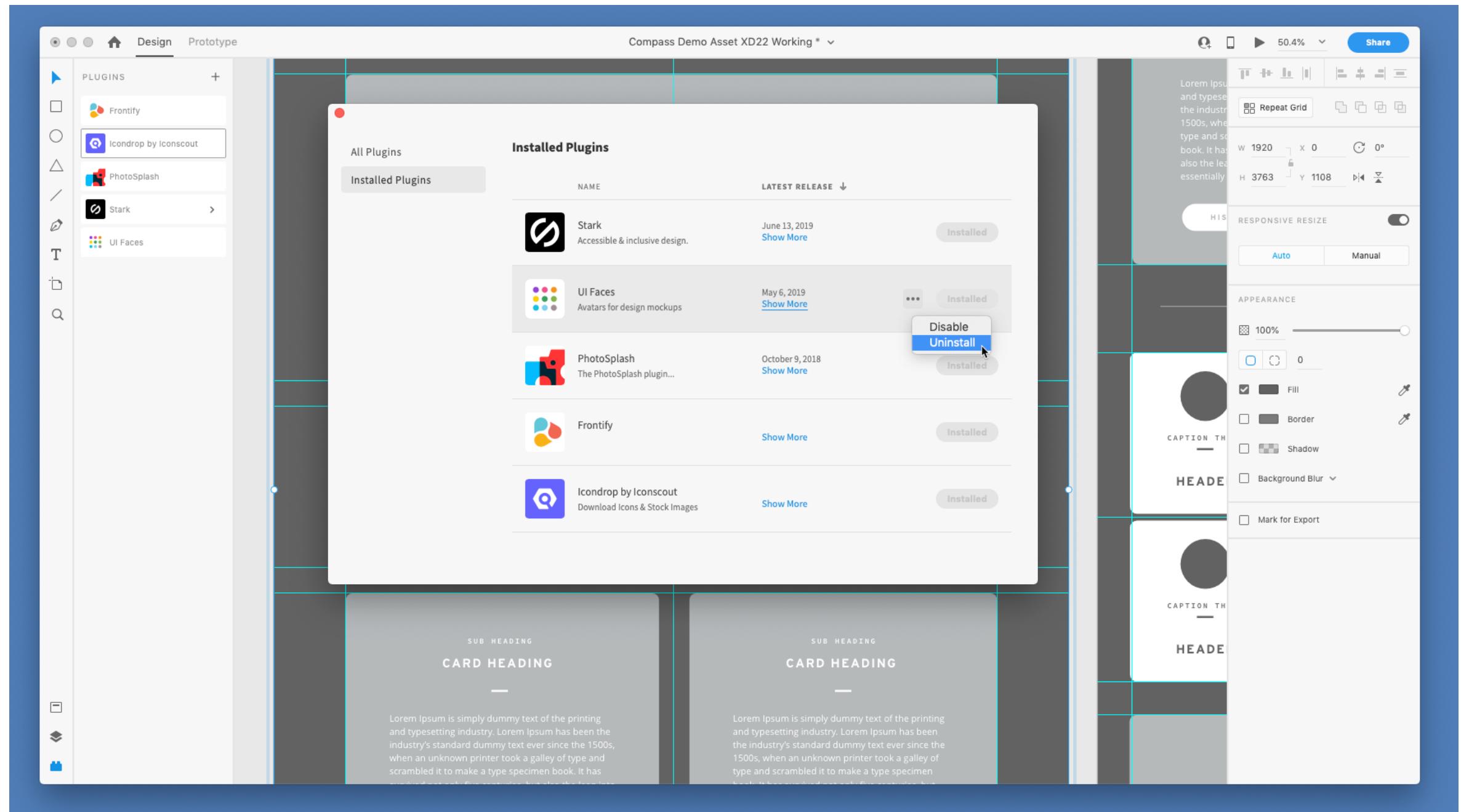


¹¹ Image source: [Left](#), [Center](#), [Right](#)

ICA C: Web Design

Deconstruct a desktop application into its basic structures...

- Choose a desktop application.
- Choose a task.
- Do your analysis!

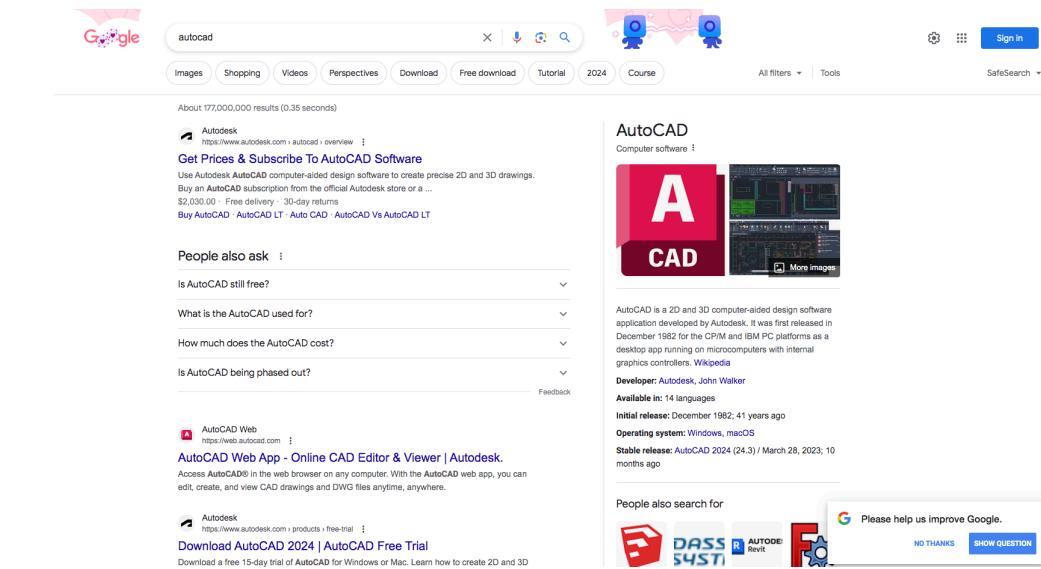
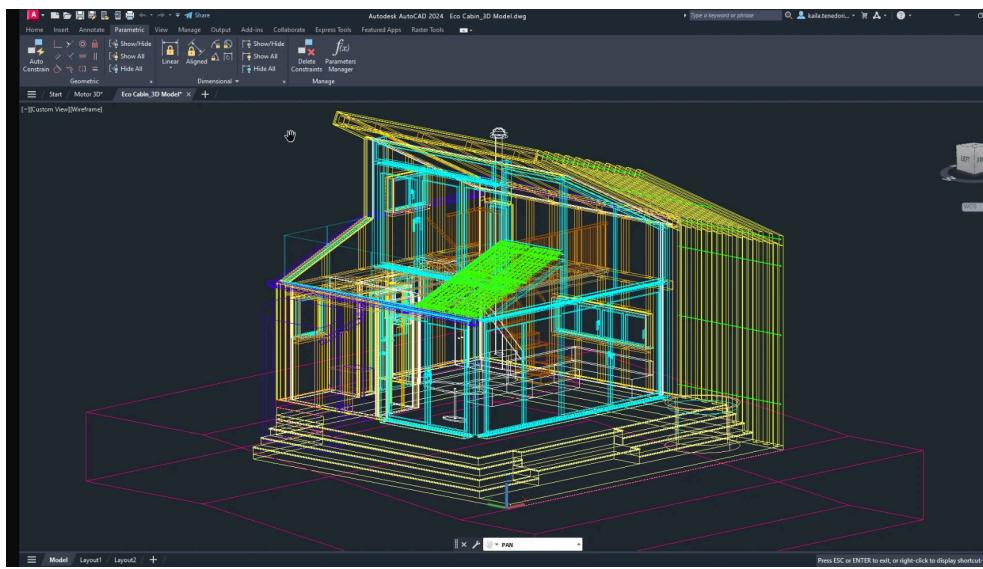


Designing for the Web

Desktop Applications vs. Websites

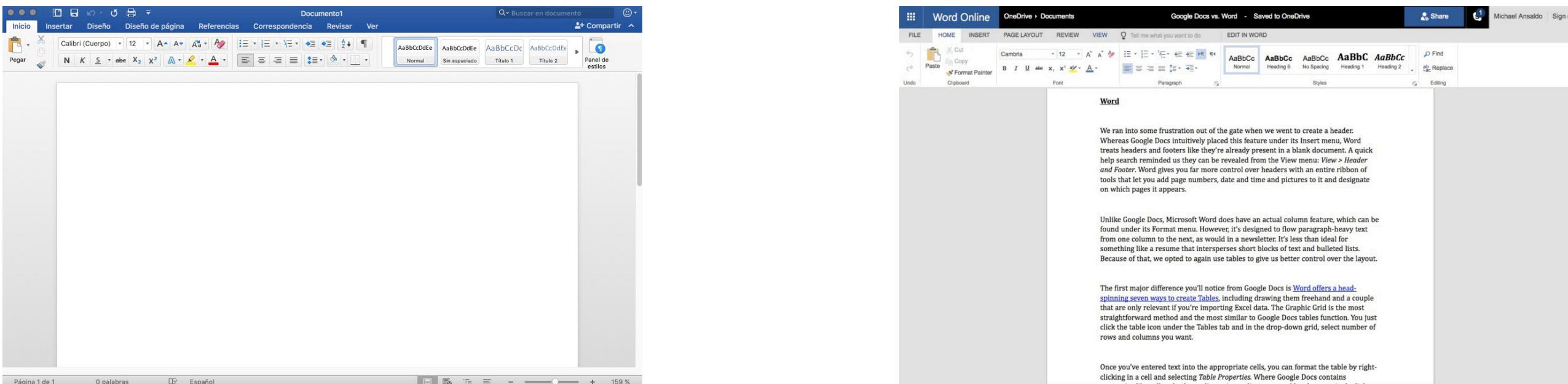
Desktop applications: Dynamic, persistent *screens* and supporting *components* that enable users to perform complex tasks.

Webpages: Interconnected *pages* with *aids* that help users navigate and access a large body of content.



Web Applications¹²

Definition: Single-page applications (SPAs) provide the functions of a desktop application on a webpage following the conventions of desktop applications.



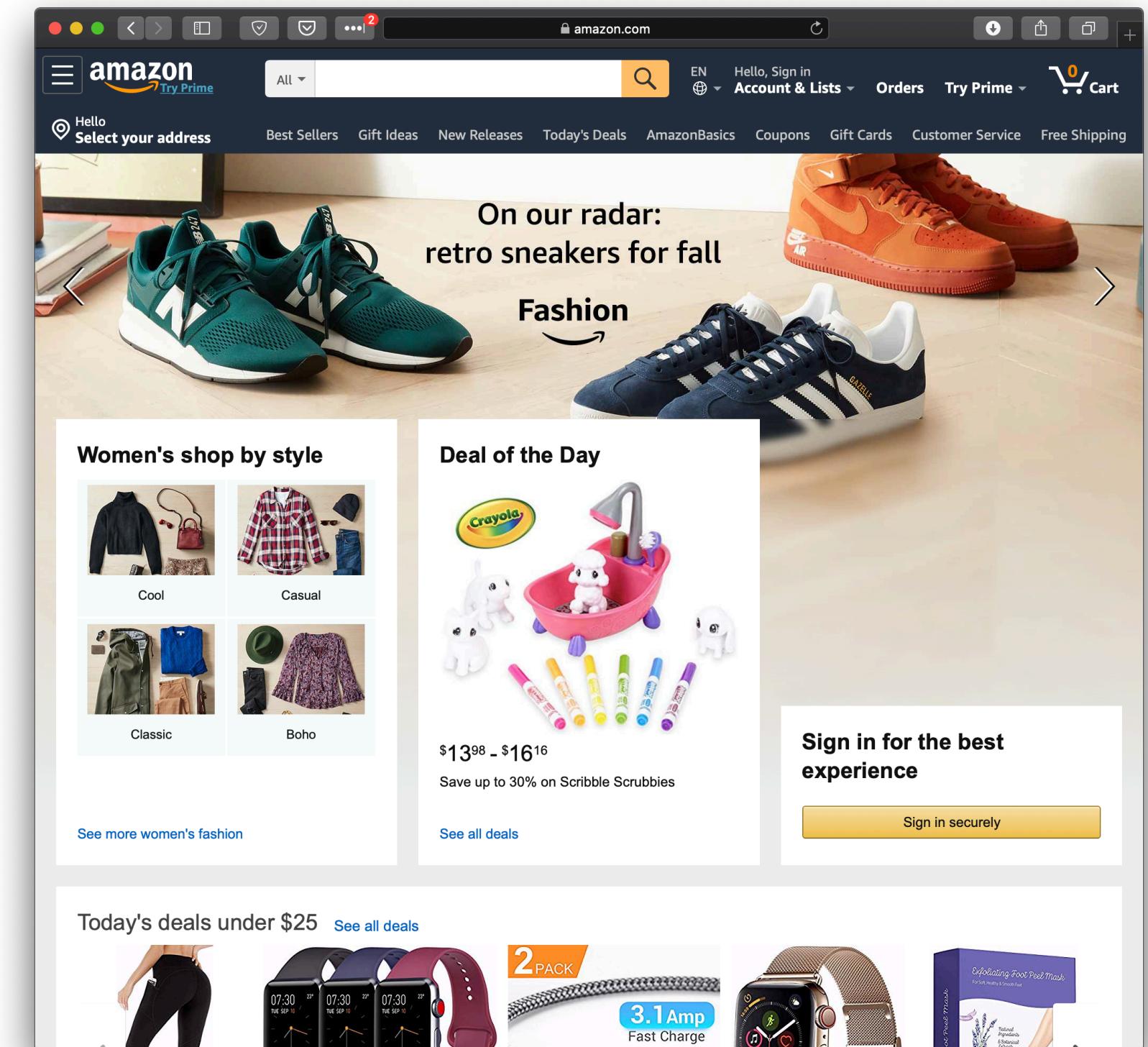
¹² Image source: [Left](#), [Right](#)

The Page

Since its inception, the *page*, has been the building block of web content.

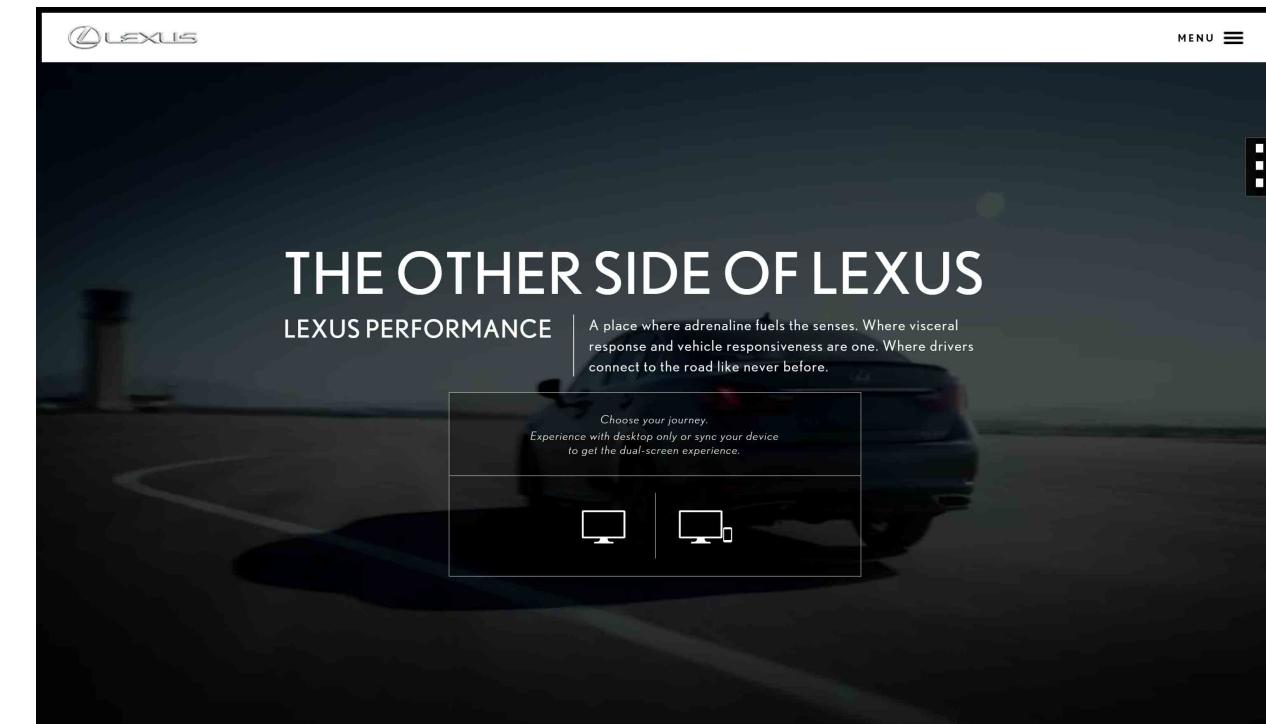
If the web is made out of pages, how do we organize and help users navigate them?

Using *primary* and *secondary* navigation aids.



Primary Navigation Aids¹³

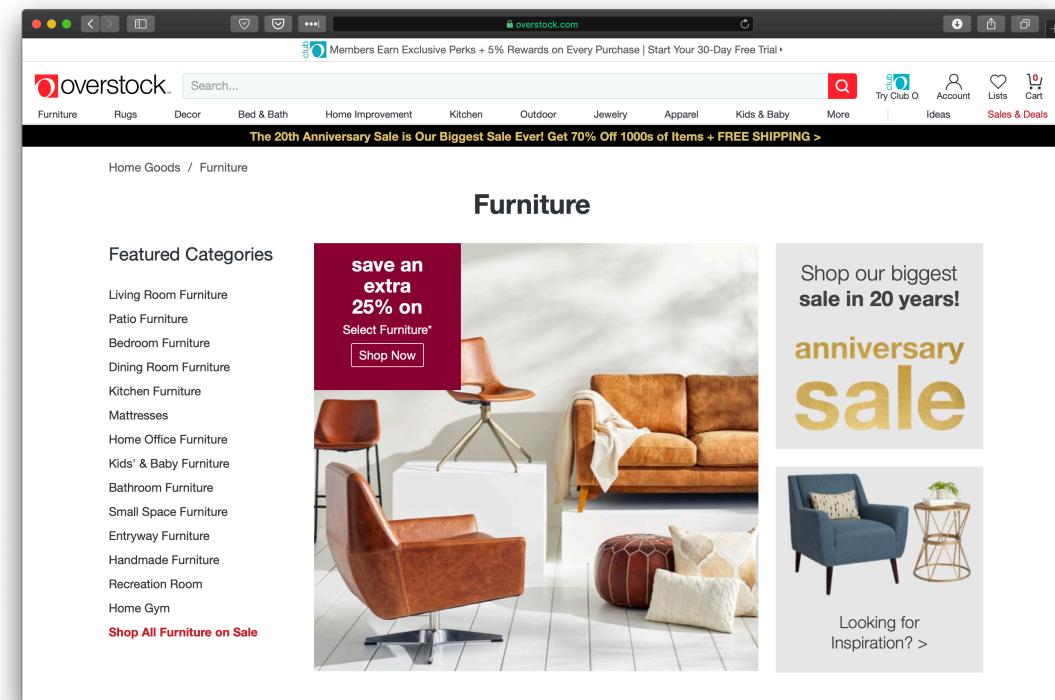
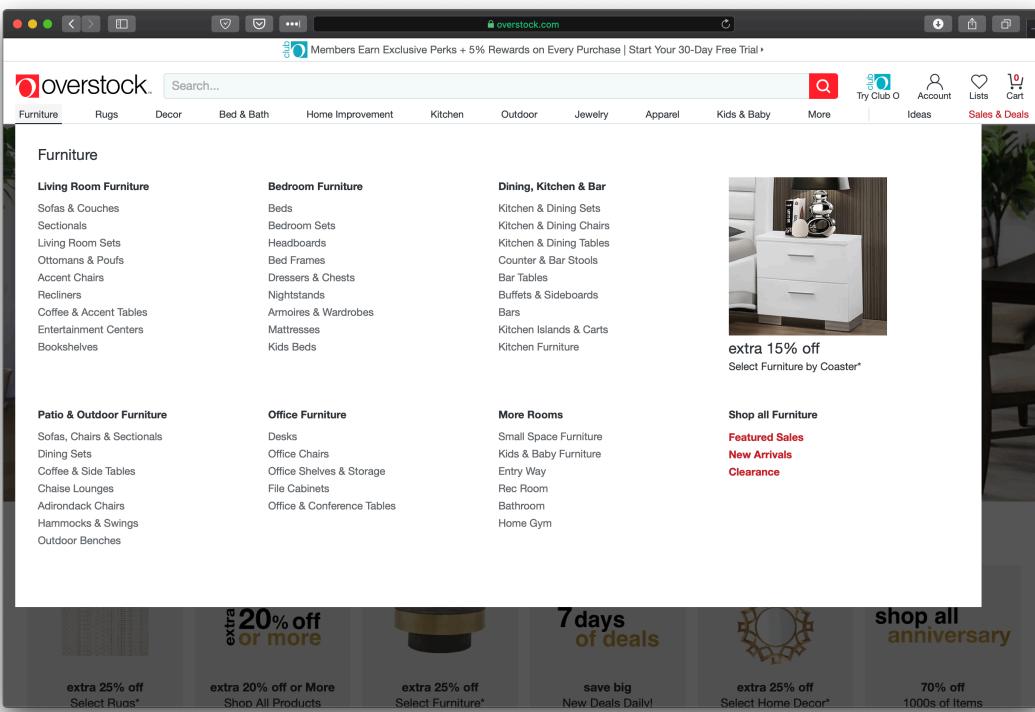
Definition: Primary navigation aids take the form of menus/ menubars and reflect the major areas or sections of a website.



¹³ Image source: [Left](#), [Right](#)

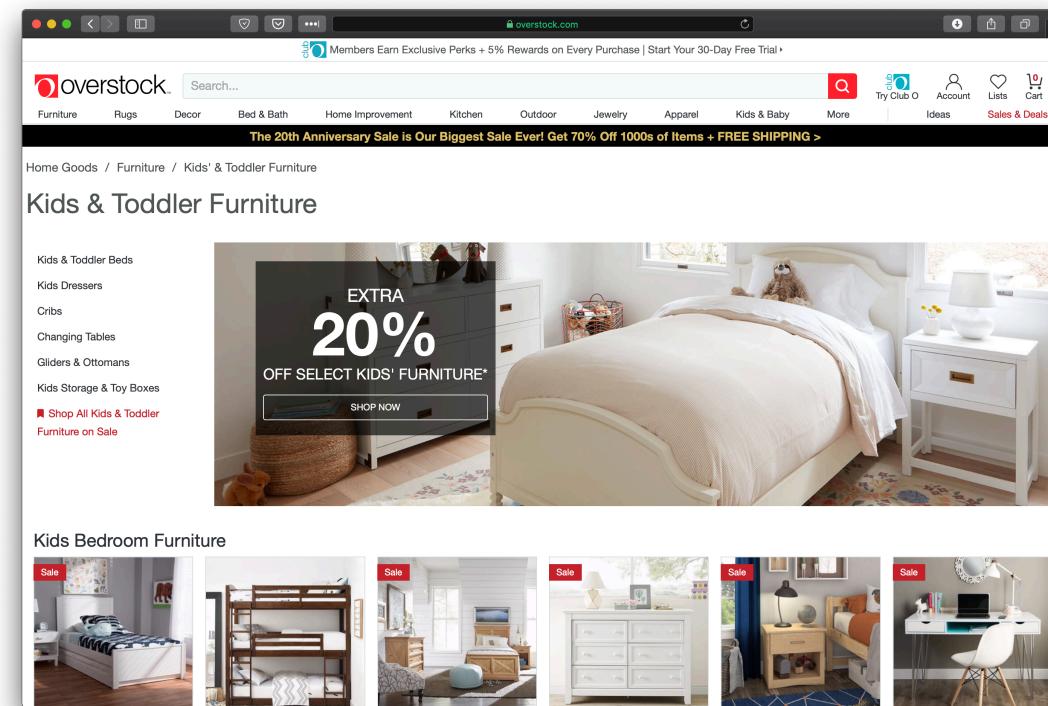
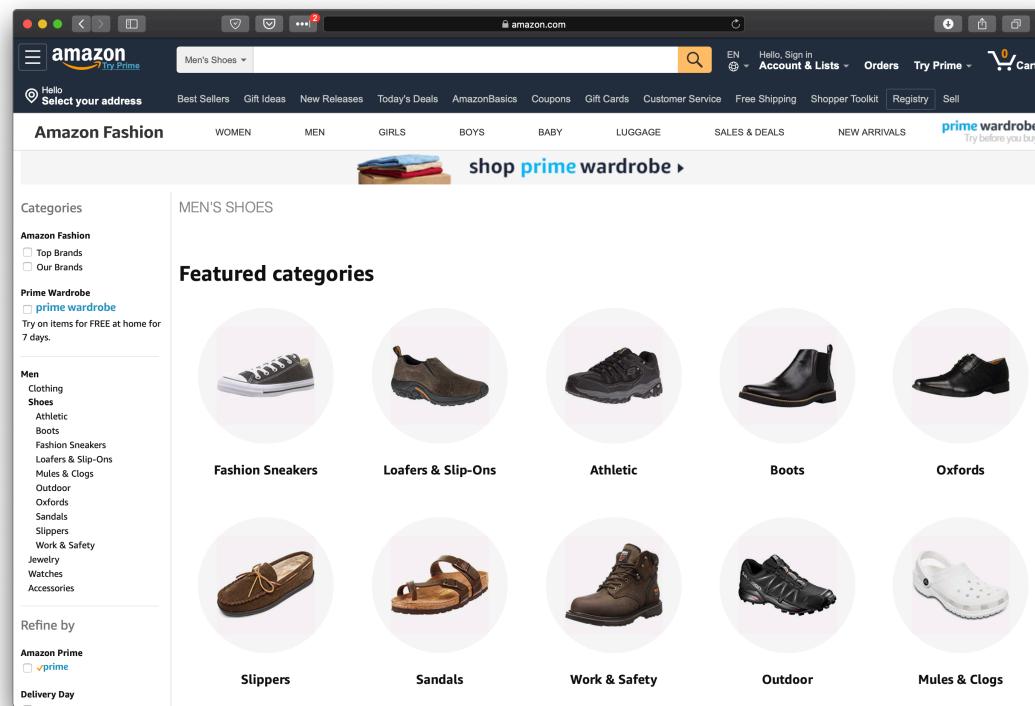
Secondary Navigation Aids

Definition: Secondary navigation aids provide comprehensive links to specific content on the site as *fat navigation, left-hand navigation, footer navigation, etc.*



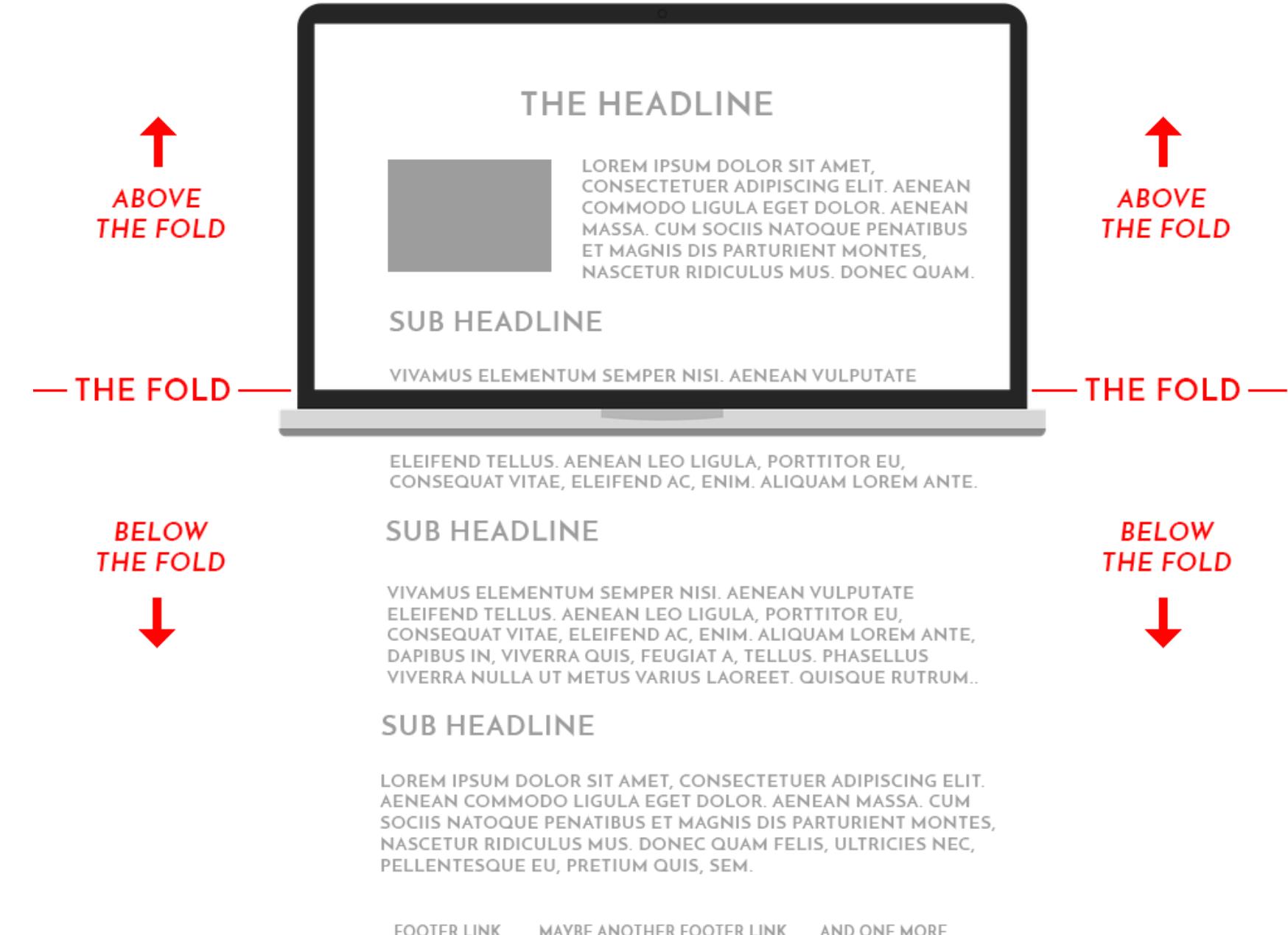
How do we get home?

A key problem in complex sites is to get back to previous pages or other pages that are higher in the navigation hierarchy. *Breadcrumbs* and *hierarchical lists* are solutions to this problem.

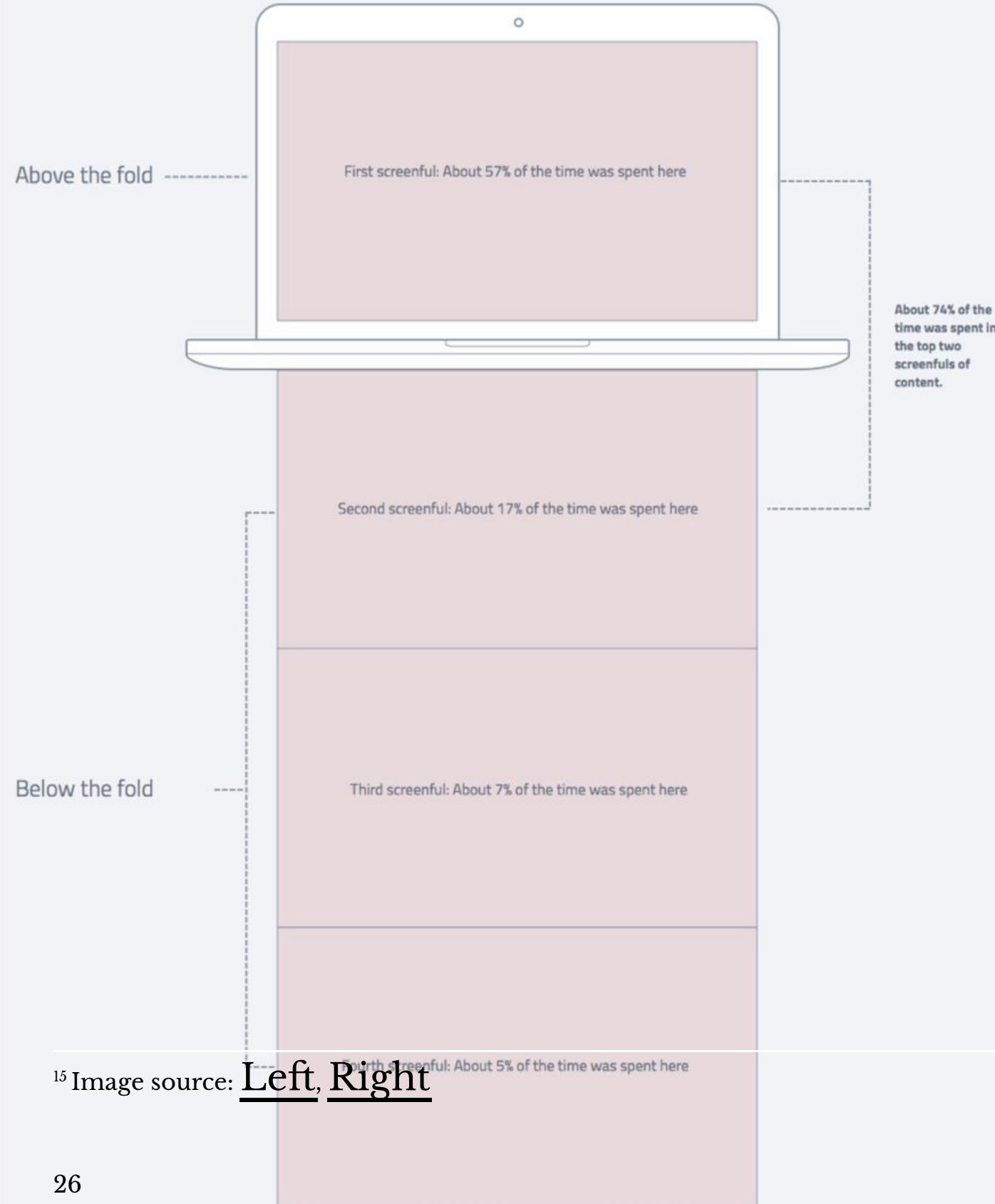


Organizing Page Content: The Fold¹⁴

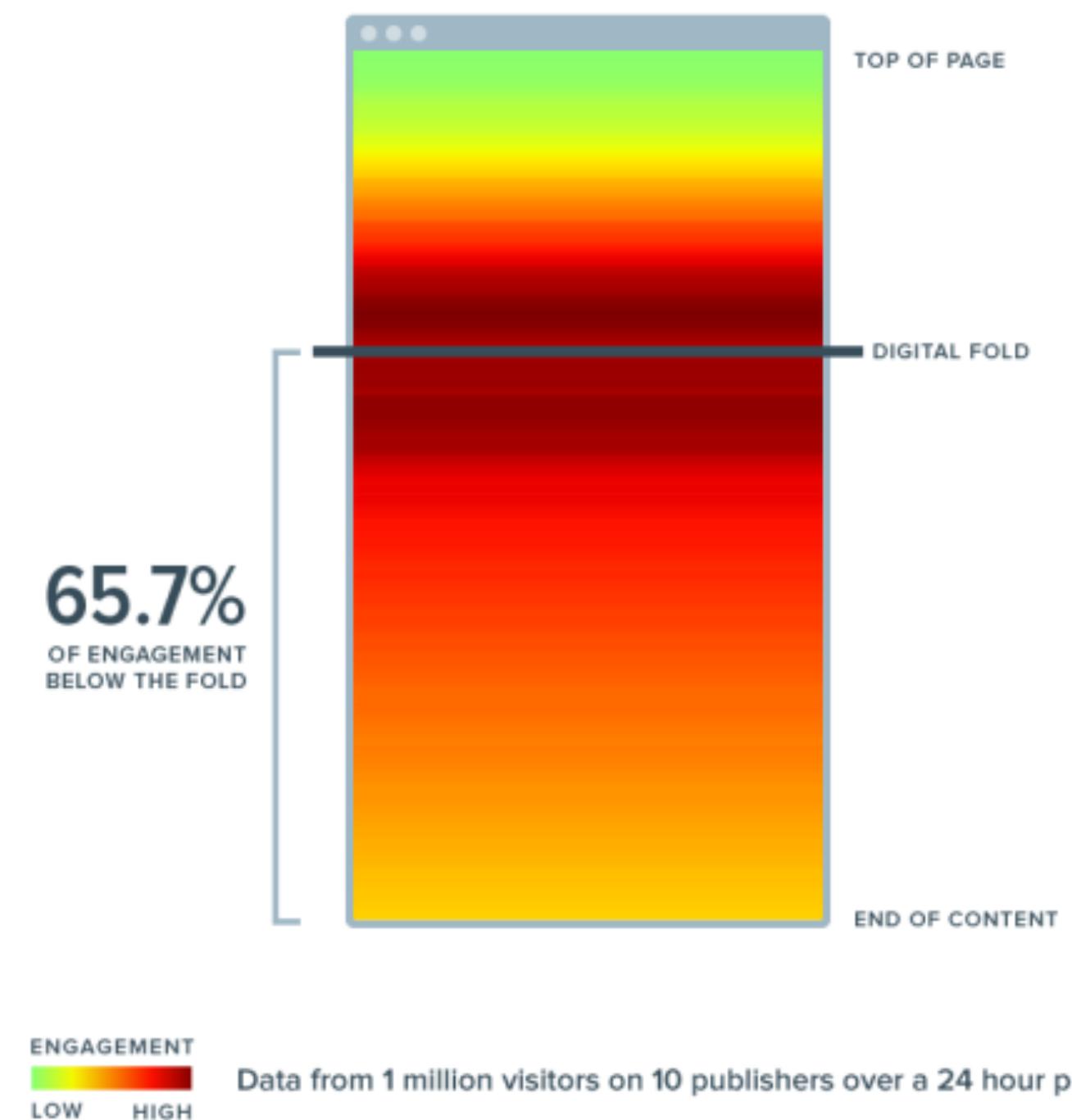
Definition: The *fold* is the dividing line between the area that is visible when a page first loads and the remainder of the page.



¹⁴[Image Source](#)



WHERE WE SPEND TIME READING



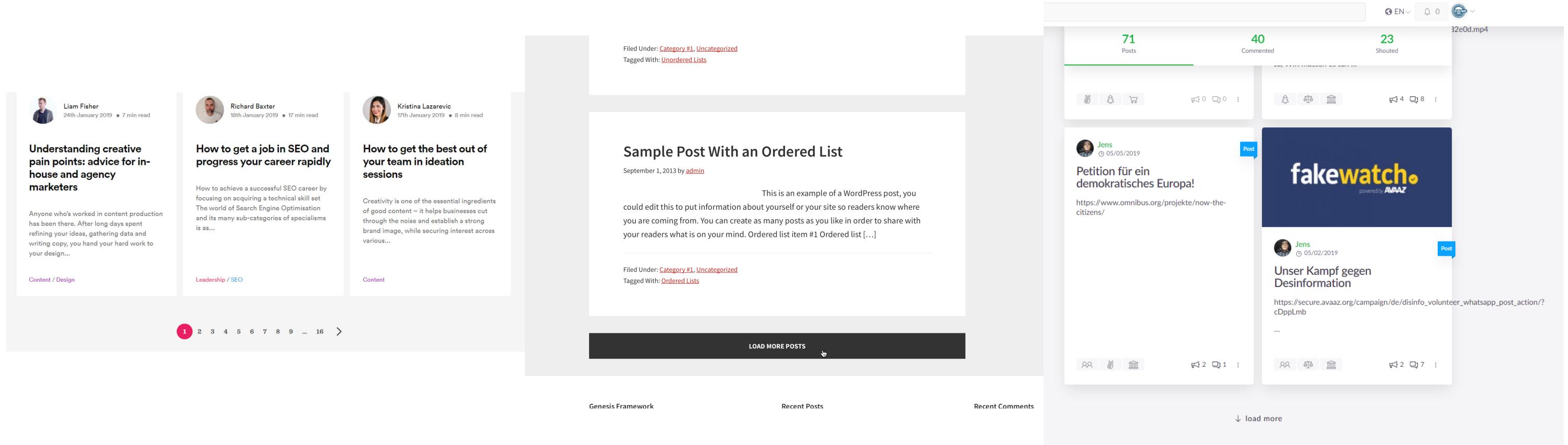
Organizing Page Content: Fitting It All in¹⁶

Large volumes of content is either broken into discrete pages through *pagination* or incrementally loaded through *infinite scroll*.



¹⁶[Image Source](#)

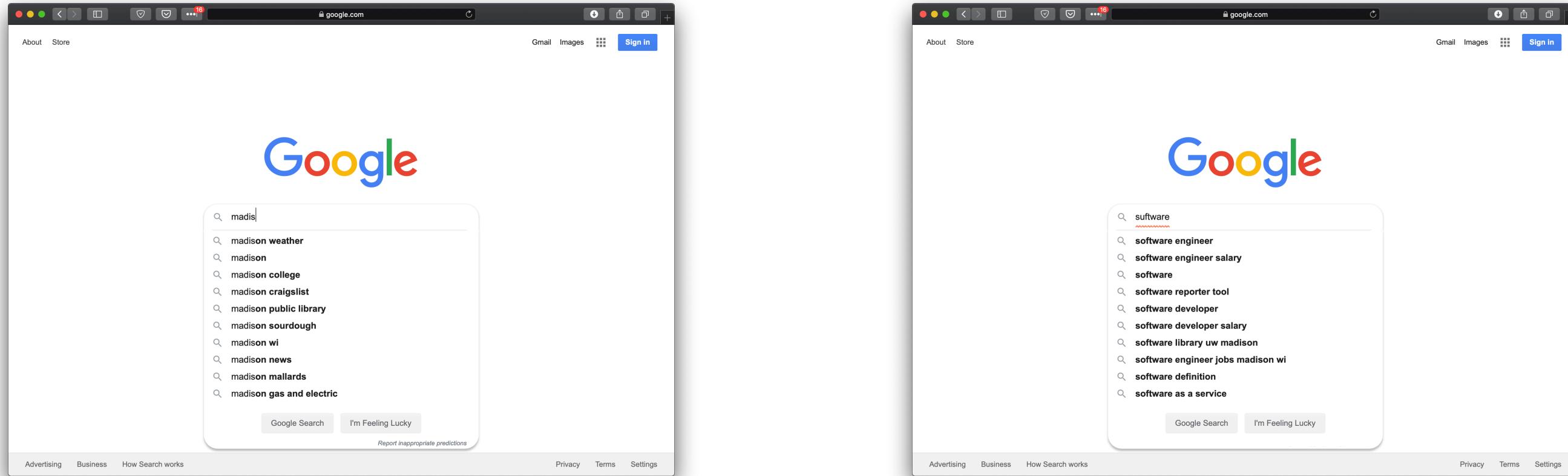
Examples of pagination and infinite scroll:¹⁷



¹⁷ Image source: [Left](#), [Center](#), [Right](#)

Search

Definition: Search, an alternative to page navigation, provides users with listings of content based on a search query.



Faceted search helps users narrow down a search once results are returned based on a simple query by providing functions to sort and filter the results.

The screenshot shows the Yelp search interface for "Best Restaurants near South Campus, Madison, WI". At the top, there's a red header with the Yelp logo, a search bar containing "Near South Campus, Madison, WI", and navigation links for "Log In" and "Sign Up". Below the header, there are category filters: "Restaurants", "Home Services", "Auto Services", "More", "Write a Review", and "For Businesses". A "Sort By" section includes "Recommended", "Highest Rated", and "Most Reviewed". The main content area displays a map of Madison, WI, with numbered pins indicating restaurant locations. A list of restaurants is shown below the map, starting with "1. Asian Noodle" which has a thumbnail image of a bowl of ramen, a star rating of 3 reviews, and the address "(608) 467-6210, 902 Regent St, South Campus". Other filters at the top include price ranges (\$, \$\$, \$\$\$, \$\$\$), "Open Now", "Delivery", "Takeout", and "Good for Lunch".

The screenshot shows the Zappos search interface for "Running Shoes". At the top, there's a blue header with "Customer Service", a phone number "(800) 927-7671", and a link to "Learn More". Below the header, there are navigation links for "Women", "Men", "Kids", "Departments", "Brands", and "Sale". A "Sort By" dropdown is set to "Relevance". The main content area displays a grid of four running shoes. Each item includes a thumbnail image, a star rating, and purchase information: "79" likes, "Newton Running Distance 8 \$155.00", "5 stars"; "75" likes, "Newton Running Gravity 8 \$175.00", "5 stars"; "26" likes, "Newton Running Fate 5 \$140.00", "5 stars"; and "19" likes, "Newton Running Distance 8 \$155.00", "5 stars". To the left of the grid, there are sections for "Narrow Choices" (Gender: Women 2725, Men 2109, Boys 658, Girls 653; Product Type: Shoes 5626, Clothing 97, Bags 3, Sporting Goods 1; Brand: Search Brand, 361 Degrees 30, Acorn 3, adidas 10, adidas by Stella McCartney 3). A "Customers Who Searched This Also Bought" section is also visible.

ICA C: Web Design

Deconstruct a website based on its **navigation**...

- Choose a website.
- Choose a task.
- Do your analysis!

amazon.com

Hello, Sign in
Account & Lists Returns & Orders Try Prime Cart

15 ABP ⓘ ⓘ

amazon Toys & Games

Best Sellers Customer Service New Releases AmazonBasics Today's Deals Whole Foods Gift Cards Free Shipping Registry Sell Coupons #FoundItOnAmazon Prime Day is October 13-14

Toys & Games Kids Gift Guide Shop Toys by Age Shop Top Toys Shop by Category Shop by Brand Shop by Character Save on Toys

FEATURED BRANDS

Baby Alive	LEGO
Barbie	Little Tikes
Beyblade	L.O.L Surprise!
Disney	Melissa & Doug
Fisher-Price	NERF
Funko	Osmo
Gund	Play-Doh
Hatchimals	Playmobil
Hot Wheels	Playskool
Kidkraft	Radio Flyer
Learning Resources	Ravensburger

LEGO Shop now **Mattel** Shop now **NERF** Shop now

Play Vehicles

Preschool

Bikes, Skates & Ride-Ons

Hobbies

Novelty & Gag Toys

Action & Toy Figures

Building & Construction Toys

Baby & Toddler Toys

Collectible Card Games

Dolls & Accessories

Dressing Up & Costumes

Musical Instruments

Party Supplies

Pretend Play

Puppets & Puppet Theaters

#5 **LEGO City Advent Calendar 60268 Playset, Includes 6 City Adventures TV Series...** ★★★★★ 122 \$19.97

#6 **Tara Toys Ariel Necklace Activity Set - Amazon Exclusive** ★★★★★ 16,371 \$8.72 - \$34.95

#7 **The First Years Stack Up Cup Toys** ★★★★★ 28,092 \$3.99 - \$16.99

#8 **SunWorks Heavyweight Construction Paper, 9 x 12 Inches, Black, 100 Sheets** ★★★★★ 5,228 \$2.84 - \$15.45

HOZZQ DIY Halloween Party Supplies PVC 3D Decorative Scary Bats Wall Decal Wall... ★★★★★ 1,800 \$11.99

Play-Doh Modeling Compound 10 Pack Case of Colors, Non-Toxic, Assorted Colors, 2 Oz... ★★★★★ 12,356 \$7.99 - \$22.99

LeapFrog 100 Animals Book ★★★★★ 18,031 \$9.47 - \$59.99

Open "https://www.amazon.com/s/other/ref=lp_165793011_sa_p_89?ie=UTF8&bbn=165793011&ie=UTF8&pickerToList=lbr_brands_browse-bin&qid=1559670210&rh=n%3A165793011&ref_=sv_t_5" in a new tab

Layout

Layout

Definition: Arrangement of visual elements on a canvas.¹⁸

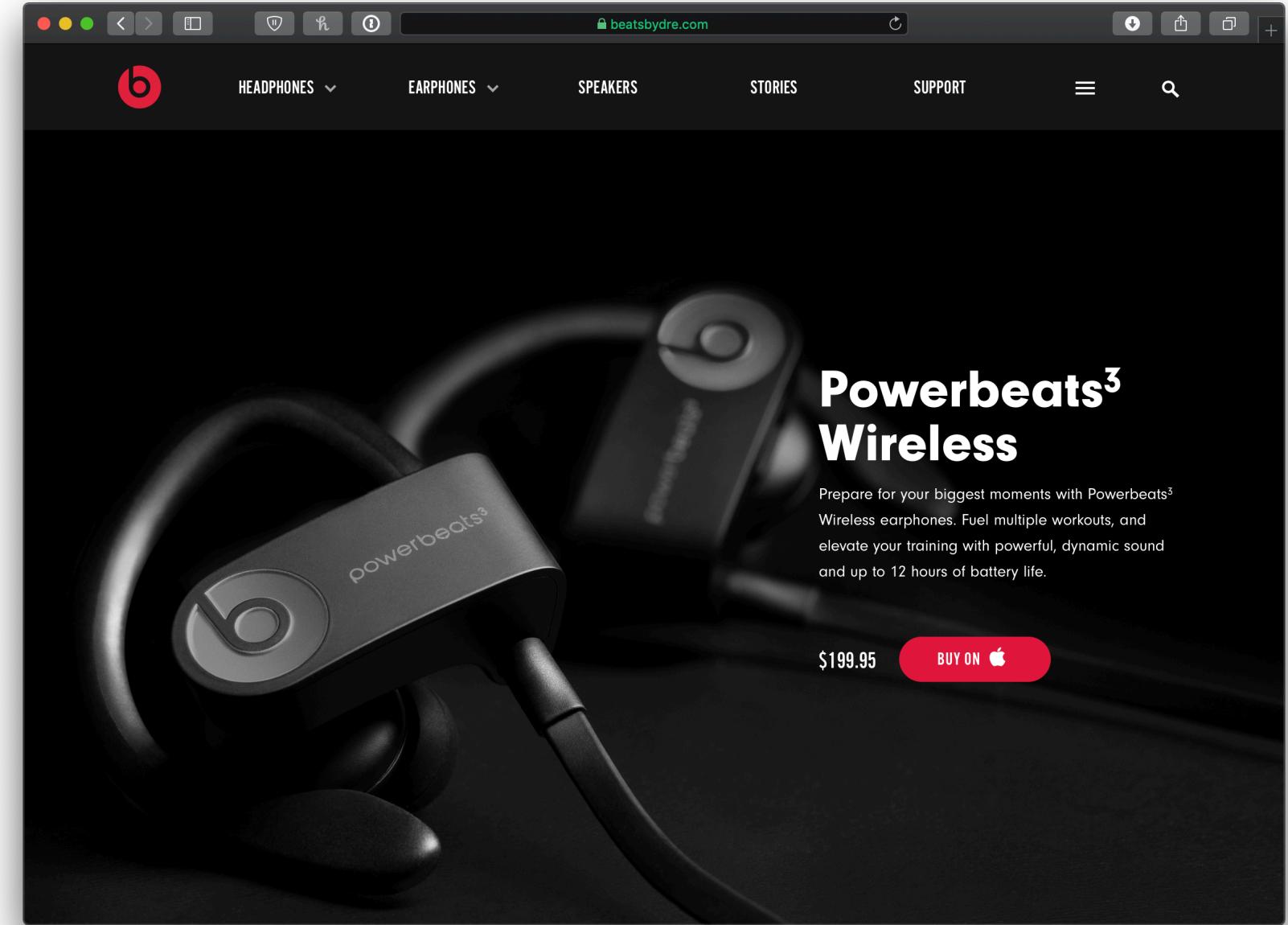
- Creating a focal point
- Following the golden ratio
- Using the rule of thirds
- Effectively using grids
- Integrating type
- Placing imagery
- Using negative space
- Grouping using gestalt theory
- Creating visual hierarchy
- Exploiting visual scan patterns
- Creating contrast/emphasis

¹⁸ These build on the visual design elements/principles that we covered last week.

Creating a focal point

Definition: Aka, center of visual interest, where the design directs the attention of the viewer first.

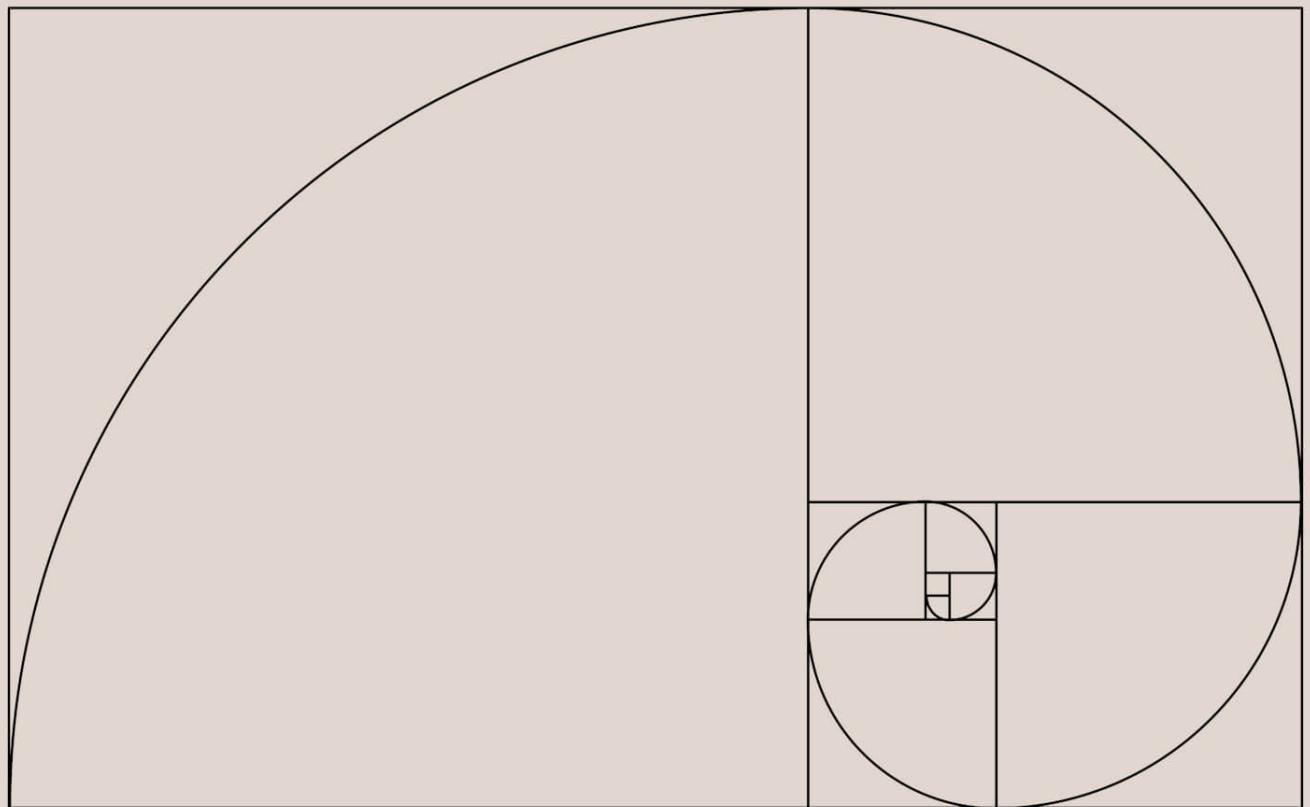
Pro Tip: Successful use locks attention to the focal point and gently guides it to its next destination.



Following the golden proportion¹⁹

Definition: A ratio, 1:1.618, which creates a compositional grid that suggests an asymmetrical, but balanced placement of items on a layout and produces a universal aesthetic appeal.

The golden ratio



thesplashlab.com

¹⁹ Golombisky & Hagen, 2010, *White space is not your enemy*



W/M

HOME ABOUT US SERVICES CONTACTS

Business goals achieved with design

We are a design team with a strong expertise in design for business. We create branding, business graphics, websites and mobile apps. Let us help you win the competition, reach your maximum and score the company goals beautifully.

PRICING Contact Us

The website features a large, stylized illustration of a person climbing a mountain. The illustration is overlaid with a golden ratio grid, consisting of a large circle and several intersecting lines that divide the space into sections. The background of the main content area is white, while the sidebar and footer have a purple background.

Using the rule of thirds

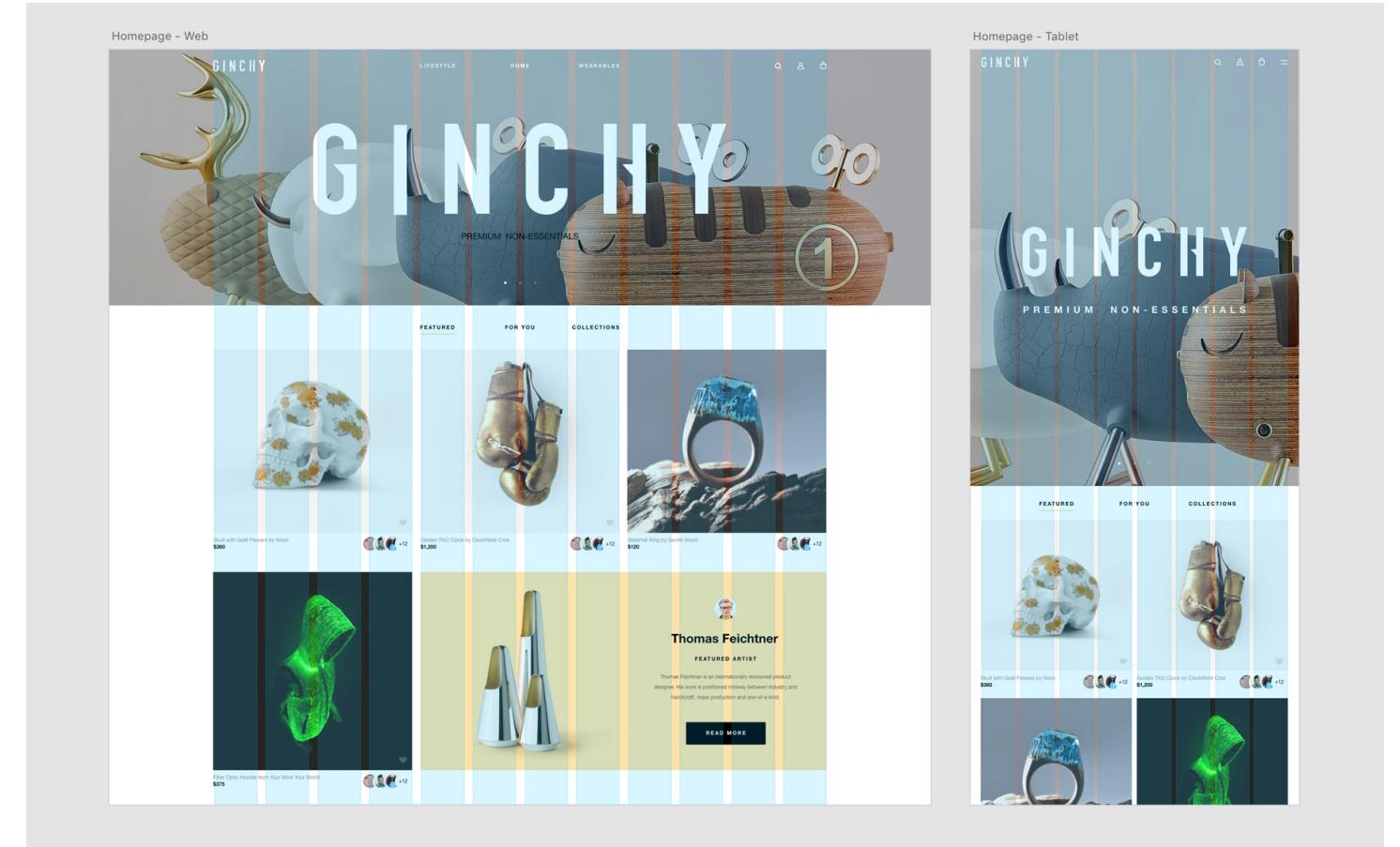
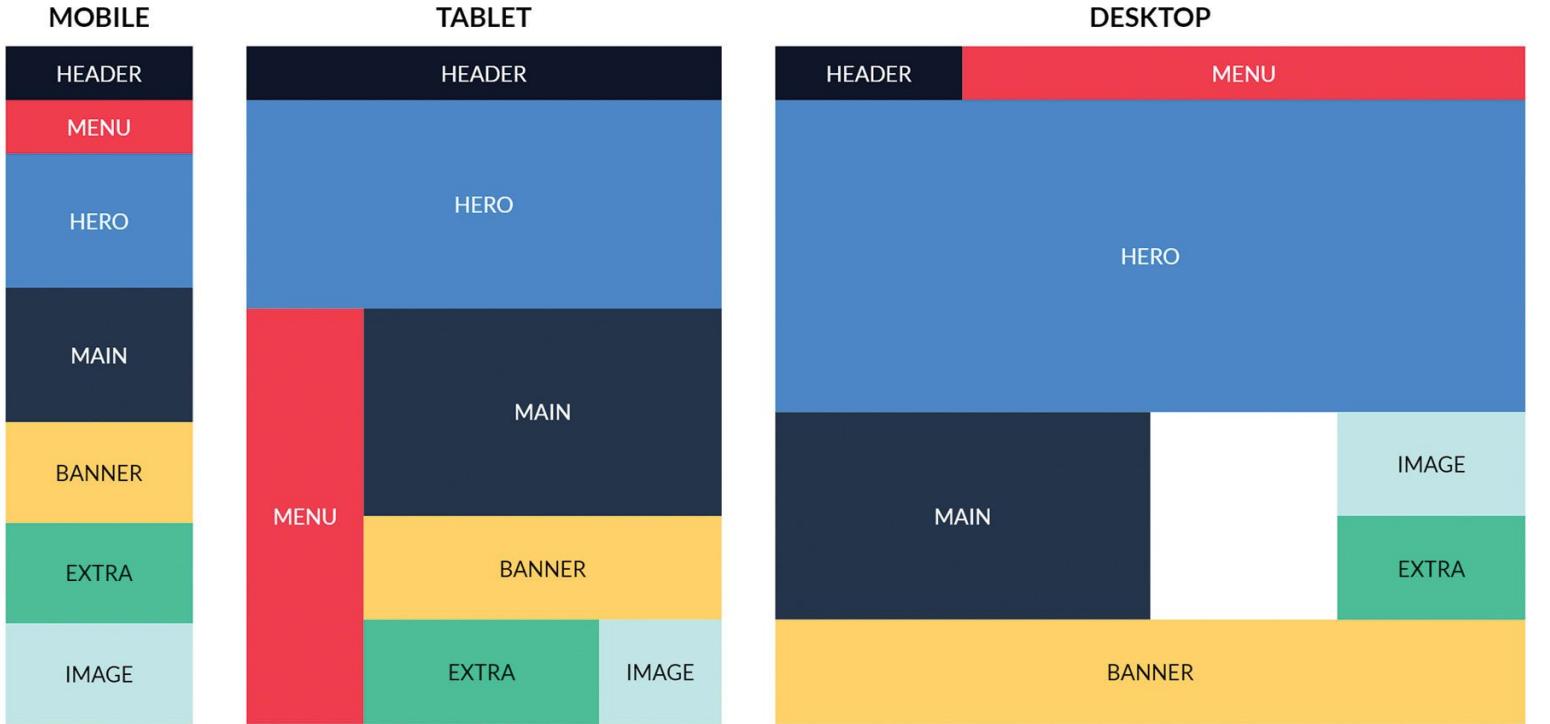
Definition: An approximation of the golden ratio that is easier and more flexible to use. When the canvas is divided into a 3x3 grid, the intersections serve as focal points.



Effectively using grids

Definition: Grids serve as a visual framework for organizing elements in an orderly and balanced fashion.





Integrating type

Definition: The use of *headlines* or *blocks of text* to guide the user's attention to messages.

IOTA makes it possible to securely store, sell, and access data streams.

Never has getting access to diverse, fine-granular data been this easy!

[ABOUT THE MARKETPLACE](#)

[TRY THE MARKETPLACE](#)

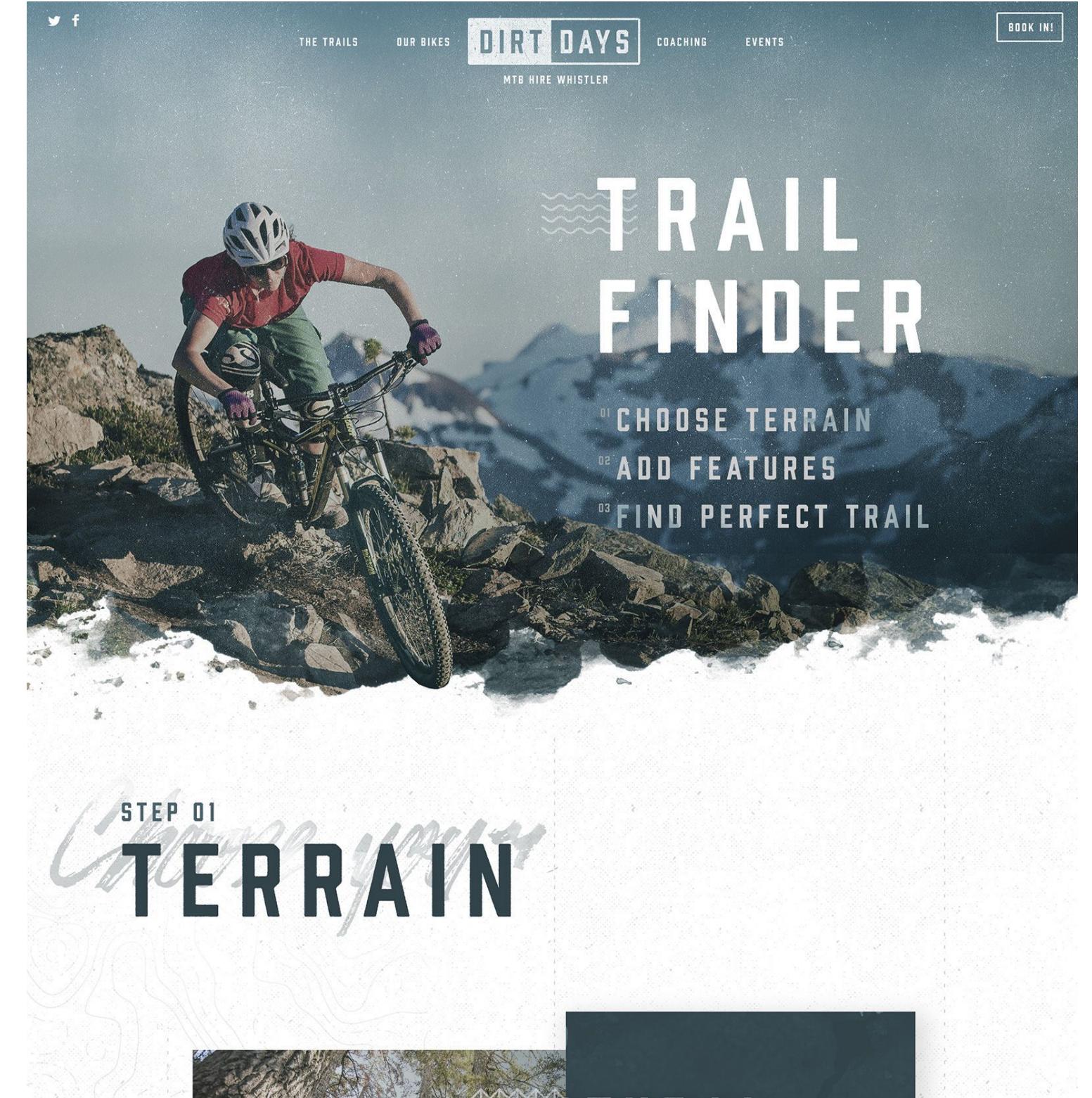
[PARTICIPANTS](#)

IOTA MARKETPLACE

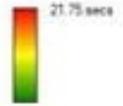
Placing imagery

Definition: The use of imagery to create a focal point or movement on the canvas.

Pro Tips: Place on top, not bottom; direction should be toward next focal point; never flip images; do not interrupt headlines; do not wrap text around images.



Media: Diapers-01.jpg
Time: 00:00:00.000 - 00:00:06.000
Participant Filter: All



Exclusively gentle for the most sensitive skin.

So you have sensitive skin, add the chemicals and moisture to it and you will have diaper rash.

Baby Wipes' unique high-absorbency natural-blend cotton provides cotton-soft, extra thick, gel-free protection for your baby's sensitive skin. The chlorine-free materials and absorbent polymers is non-toxic and non-irritating. Clinically tested and pediatrician recommended for babies with allergies and sensitive skin.



TM

If you are not satisfied with the baby leakage protection, you will get your money back. Read more about our leakfree guarantee at www.baby.com

Participant Filter: All
10.43 secs



Exclusively gentle for the most sensitive skin.

So you have sensitive skin, add the chemicals and moisture to it and you will have diaper rash.

Baby Wipes' unique high-absorbency natural-blend cotton provides cotton-soft, extra thick, gel-free protection for your baby's sensitive skin. The chlorine-free materials and absorbent polymers is non-toxic and non-irritating. Clinically tested and pediatrician recommended for babies with allergies and sensitive skin.



TM

If you are not satisfied with the baby leakage protection, you will get your money back. Read more about our leakfree guarantee at www.baby.com

Using negative space

Definition: Space left on the canvas from other design elements, used to provide a visual break and create balance.



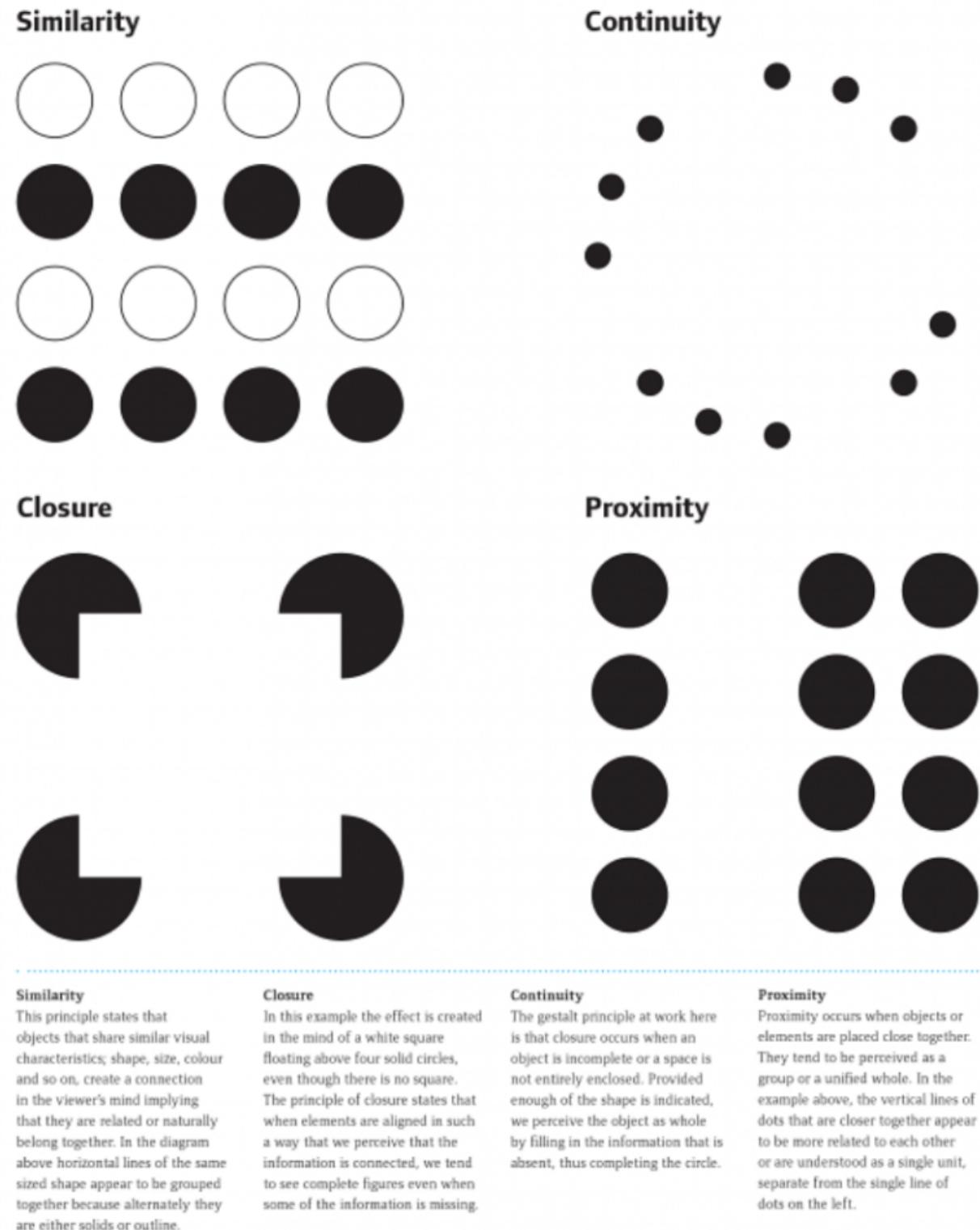
A screenshot of a website for a photographer named Jonathan Davis. The header features the name "DAVIS" in a bold, black, sans-serif font next to a small circular logo. To the right of the logo are navigation links: "HOME", "PORTFOLIO ▾", "SERVICES", "BLOG ▾", "PAGES ▾", and "CONTACTS". On the far right is a yellow circular icon with a camera symbol. The main content area has a large, semi-transparent background image of a person sitting on a rocky cliff edge, holding a camera and looking at the landscape below. Overlaid on the image is the text "I'M JONATHAN DAVIS" in a small, orange, sans-serif font. To the right of the image, the words "Photographer & Retoucher" are written in a large, bold, black, sans-serif font. Below this, a smaller paragraph reads "Based in San Diego, I specialize in various kinds of photography". At the bottom right of the image is a yellow rectangular button with the text "VIEW PORTFOLIO" in a small, black, sans-serif font.

Grouping using Gestalt Theory

Definition: Visual perception principles that predict how users will perceive design elements.

Includes four key principles:

1. Proximity
2. Similarity
3. Continuity
4. Closure



Creating visual hierarchy

Definition: Using relative positioning and sizing to communicate what design elements are more important and should be looked at first.

You will read this last.

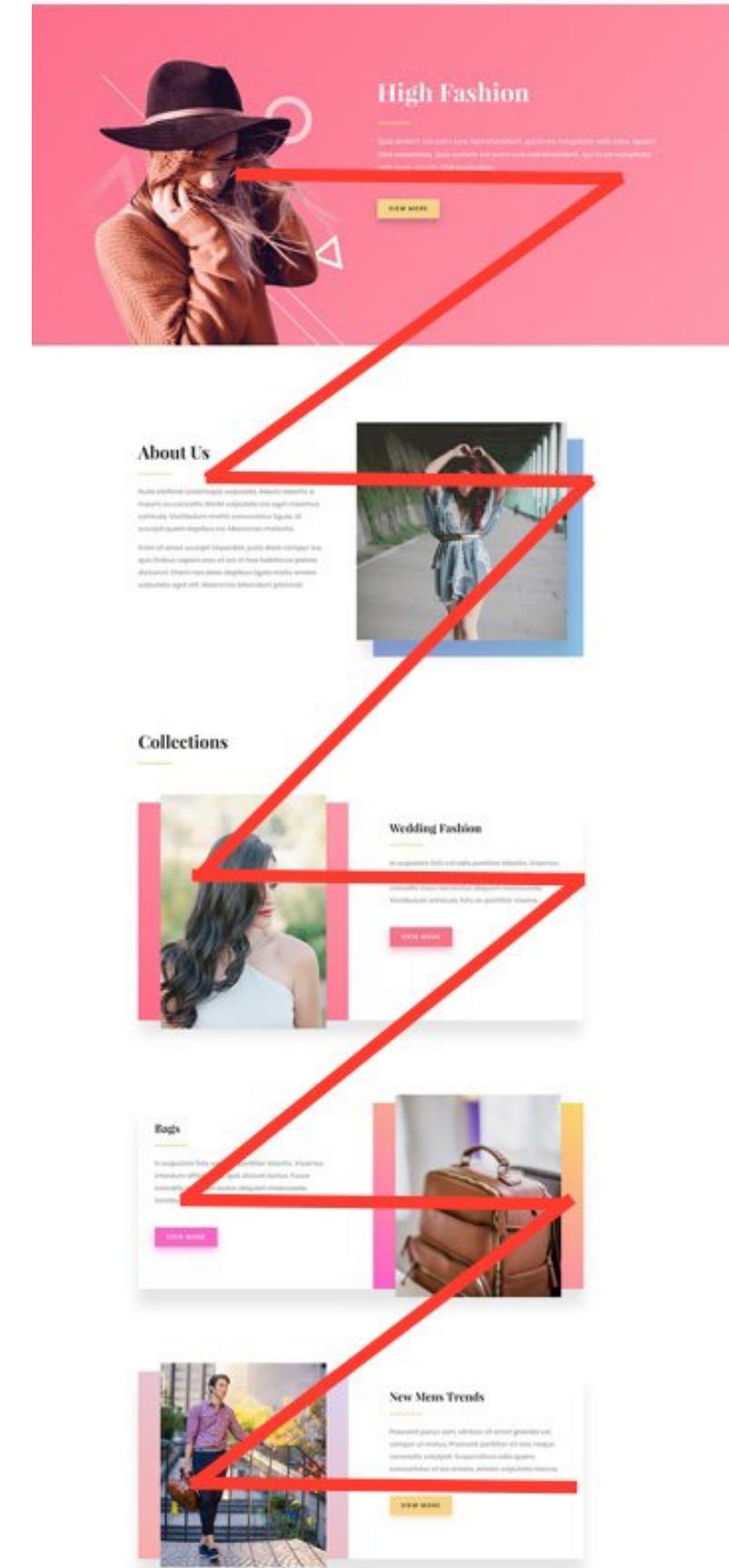
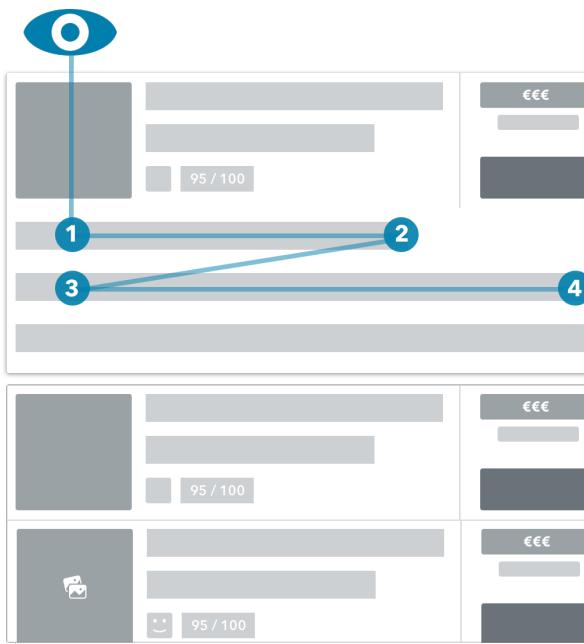
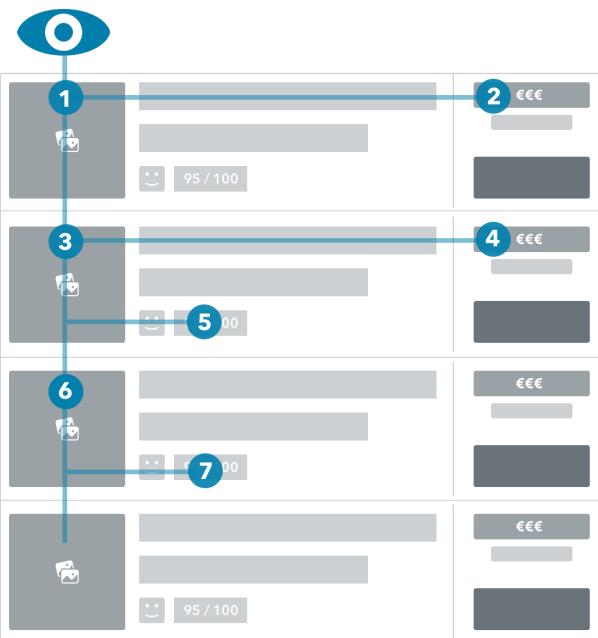
You will read
this first.

Then you will read this.

And then this one.

Exploiting visual scan patterns

Definition: Designing layouts that exploit common eye-scanning patterns, e.g., the F-pattern and the Z-pattern.



The screenshot shows a homepage with sections: "About Us" (pink header), "Driving Industry Trends" (with a woman's image), "Sourced from Around the Globe" (with a woman's image), "Our Designers" (with four designer images), and "Stay in Touch" (with contact form fields). Red arrows drawn diagonally across the page highlight specific sections or images, likely indicating areas of focus for the F-pattern or Z-pattern.



SPEAK TO AN AGENT
1-800-416-0599

Free credit monitoring and reports won't work to fix identity theft. We will.

Identity theft is more than credit card fraud. Free credit services don't look for threats like a criminal draining your 401(k), renting an apartment or committing crimes in your name. Our Advantage and Ultimate Plus memberships will. We detect¹ a wide range of threats and work to fix identity theft issues.

[START MEMBERSHIP >](#)

[GET 60 DAYS RISK-FREE!*](#)

How LifeLock works to help protect you from identity theft.

Our proprietary technology alerts you to wide range of identity threats.² If you have an identity theft problem, our U.S.-based team of specialists will work to fix it.



DETECT & ALERT

We can detect a wide range of threats and will alert you by phone,³ email and text of the suspicious activity.⁴



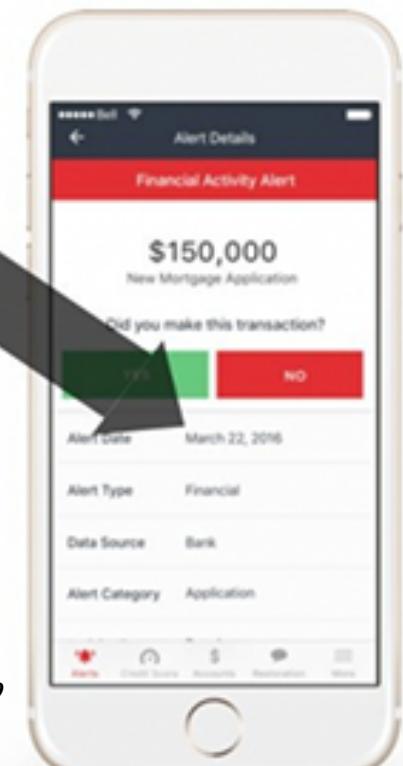
RESTORE

If you become a victim of identity theft while a LifeLock member, a dedicated U.S.-based Identity Restoration Specialist will work with you from start to finish to help fix the issue. With our \$1M Service Guarantee⁵, we'll spend up to \$1M on lawyers and experts if needed.



REIMBURSE

If you have money stolen due to identity theft, we'll replace it, as provided by your plan.⁶



Creating contrast and emphasis¹⁹

Definition: Using contrast and emphasis to establish visual hierarchy by manipulating features of design elements, including position, size, color, typographic characteristics.

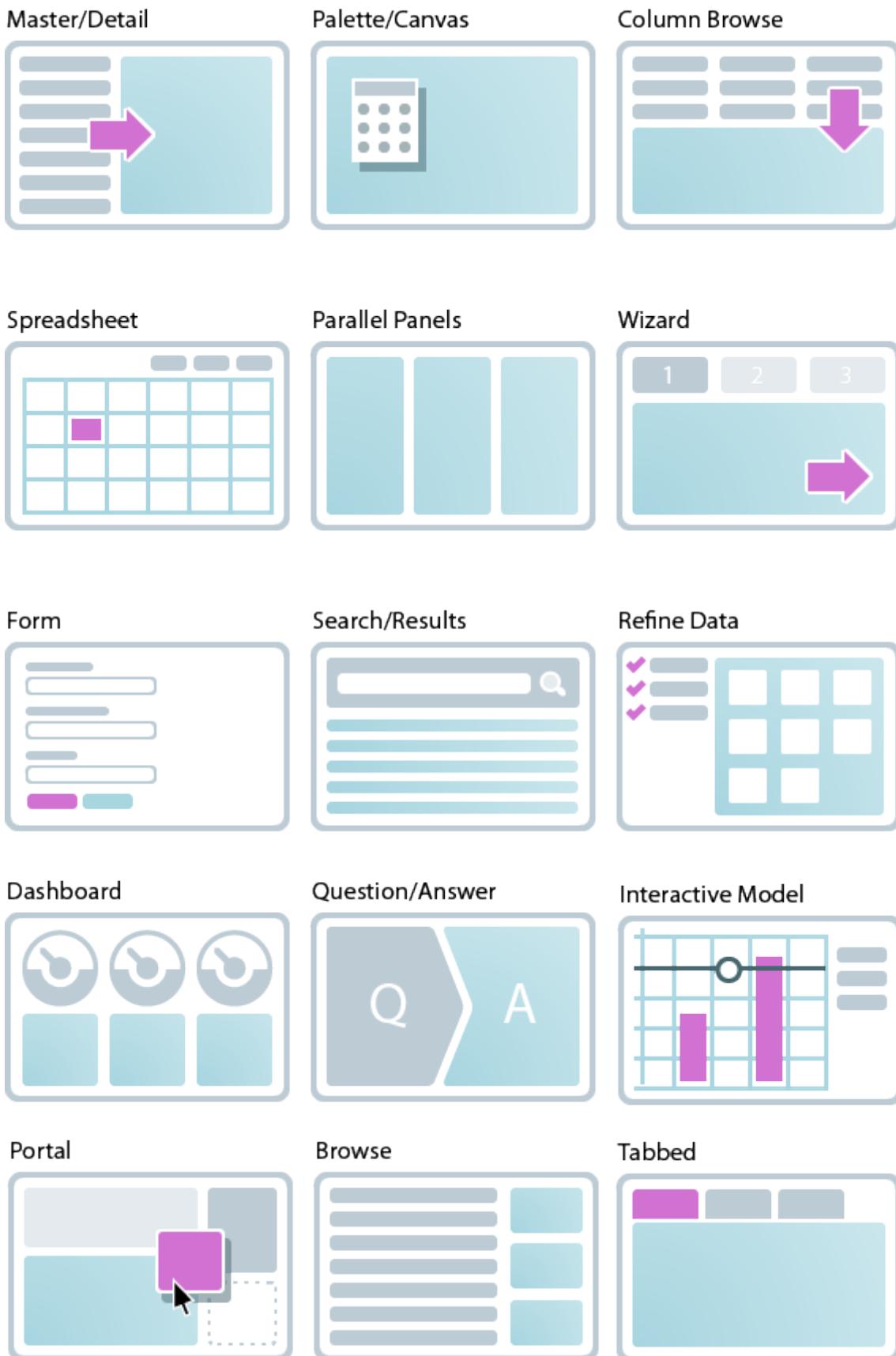
TABLE 10.1. Opposing features that can create contrast.

Contrast Type	Feature 1	Feature 2
Spatial contrast	Filled space High density	Empty space Low density
Layout contrast	Top High Right Isolated Symmetrical	Bottom Low Left Grouped Asymmetrical
Form contrast	Simple Representational Geometric Angled	Complex Abstract Organic Curved
Direction contrast	Vertical Static	Horizontal Moving
Style contrast	Technical and precise Playful	Hand-drawn and irregular Serious
Size	Large Long Wide	Small Short Narrow
Color contrast	Dark Black and white Warm colors Vivid	Light Colorful Cool colors Muted
Texture contrast	Fine Smooth	Coarse Rough
Typographic contrast	Serif Roman style (regular)	Sans serif Bold style

¹⁹ Golombisky & Hagen, 2010, *White space is not your enemy*

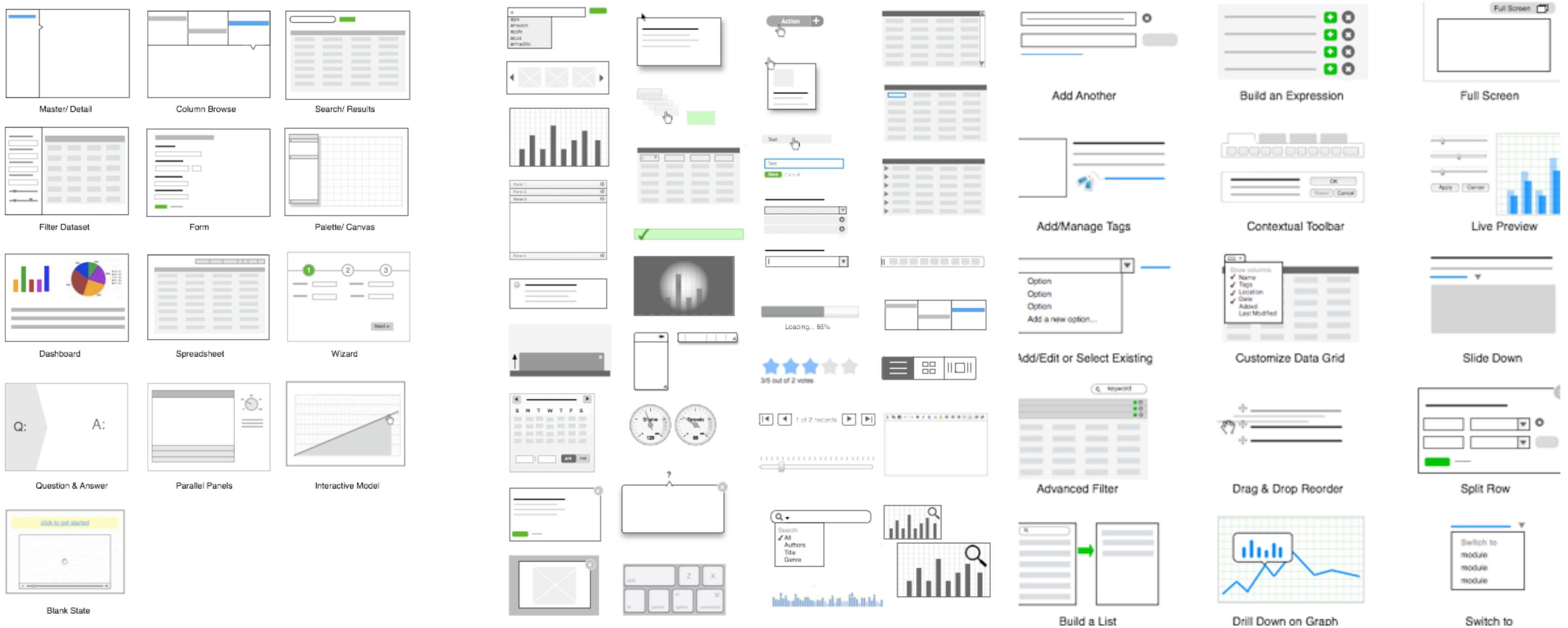
Design Patterns in UX

In the last decade, designers have also developed and refined patterns for overall structure and organization, components and controls.²¹



²¹ Neil, 2010, 12 Standard Screen Patterns

Source²²



²²Neil, 2010, 12 Standard Screen Patterns

Pros & Cons of Design Patterns

Pros:

1. Reducing design time and effort
2. Improving the quality of design solutions
3. Establishing familiarity across systems
4. Providing a baseline or state of the art

Cons:

1. Not every design problem will warrant a pattern
2. Patterns may not exist for new design spaces

ICA C: Web Design

Deconstruct a website based on its layout...

- Choose a webpage *from* your chosen website.
- Do your analysis!

What we learned today?

- Designing for the desktop
- Designing for the web
- Layout Design & Design Patterns