

Web Design

Building User Interfaces

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Make a copy of today's ICA and share it with your group members!

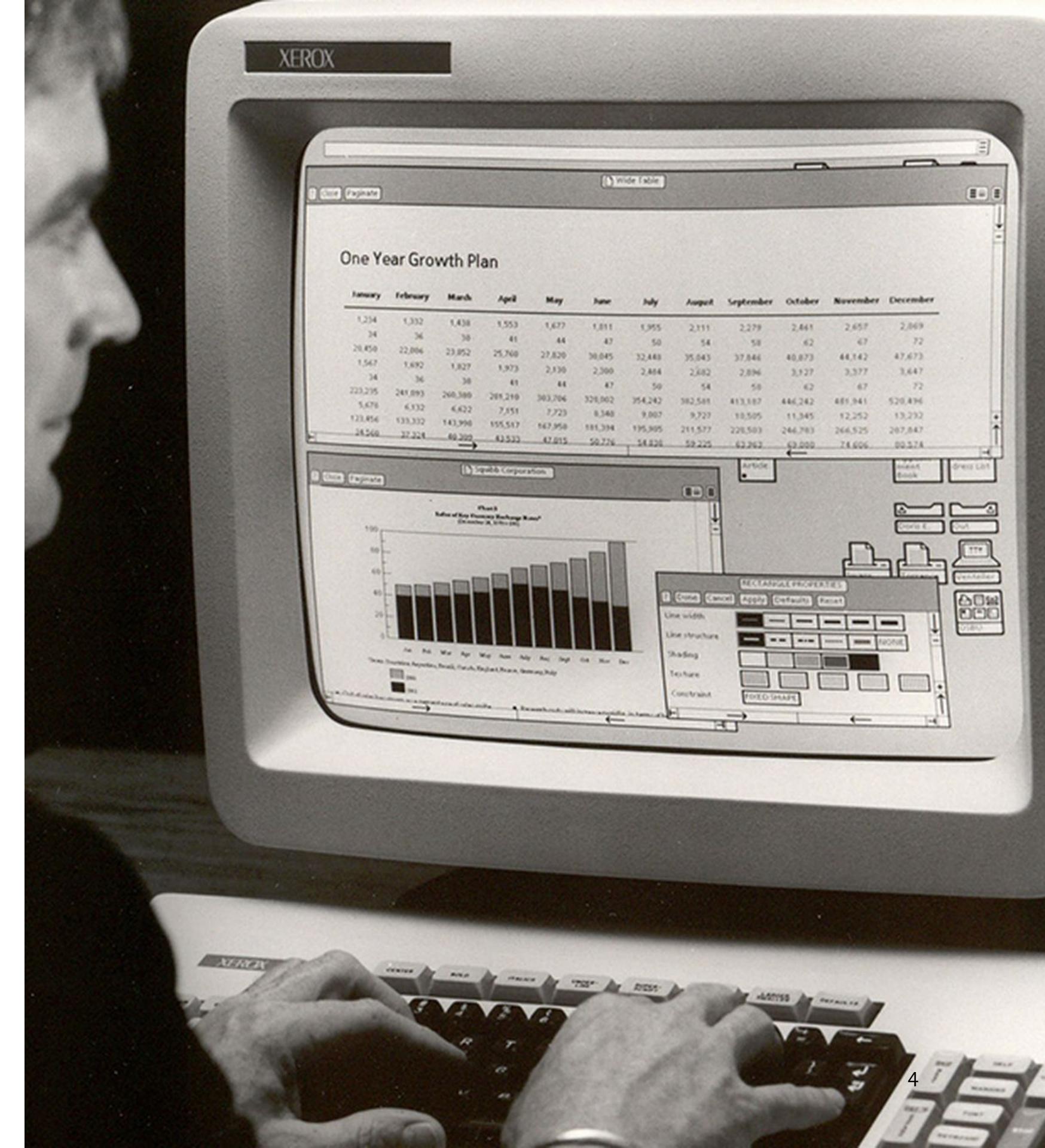
Learning Objectives

1. Be able to deconstruct a desktop application
2. Be able to deconstruct a web application
3. Be able to explain the differences between designing for the desktop and designing for the web

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).



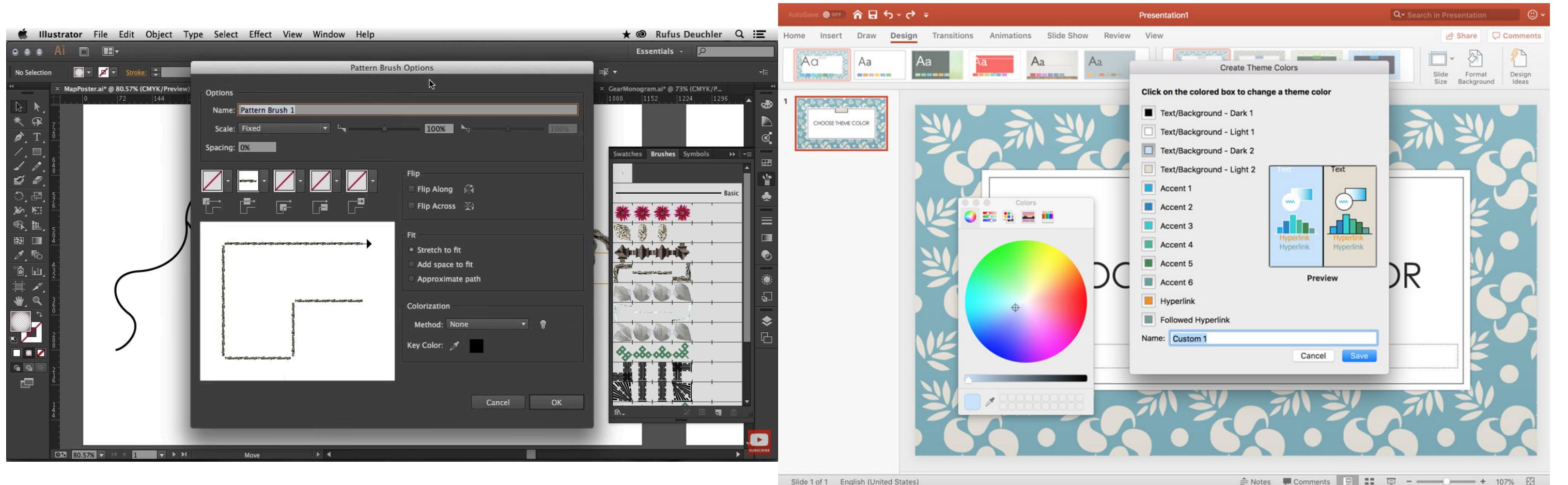
¹Image source

Elements of the WIMP Paradigm: *Windows & Icons*

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* or *modeless* operations.

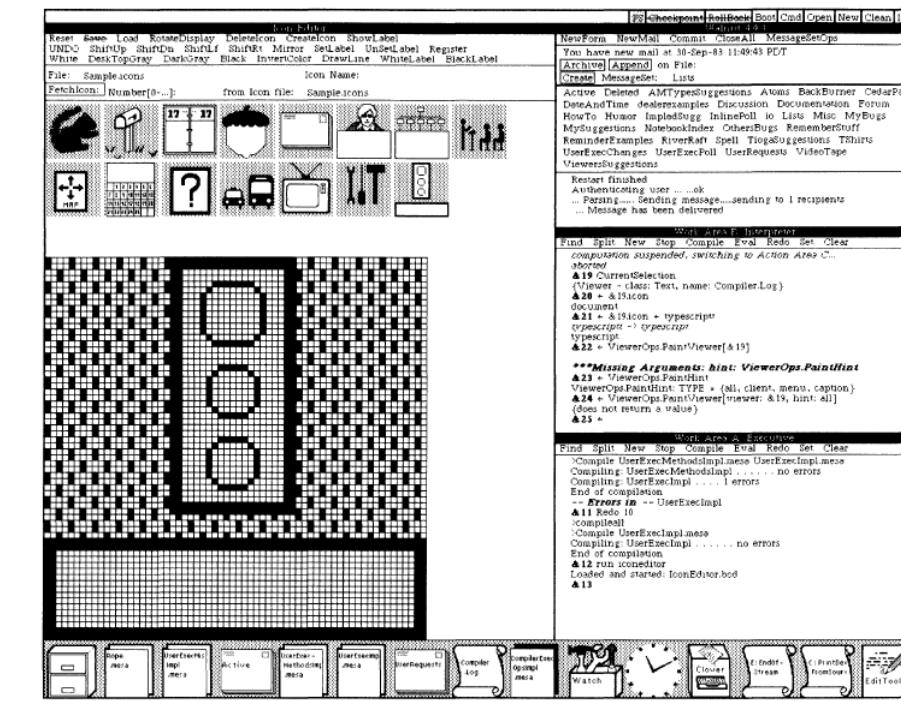
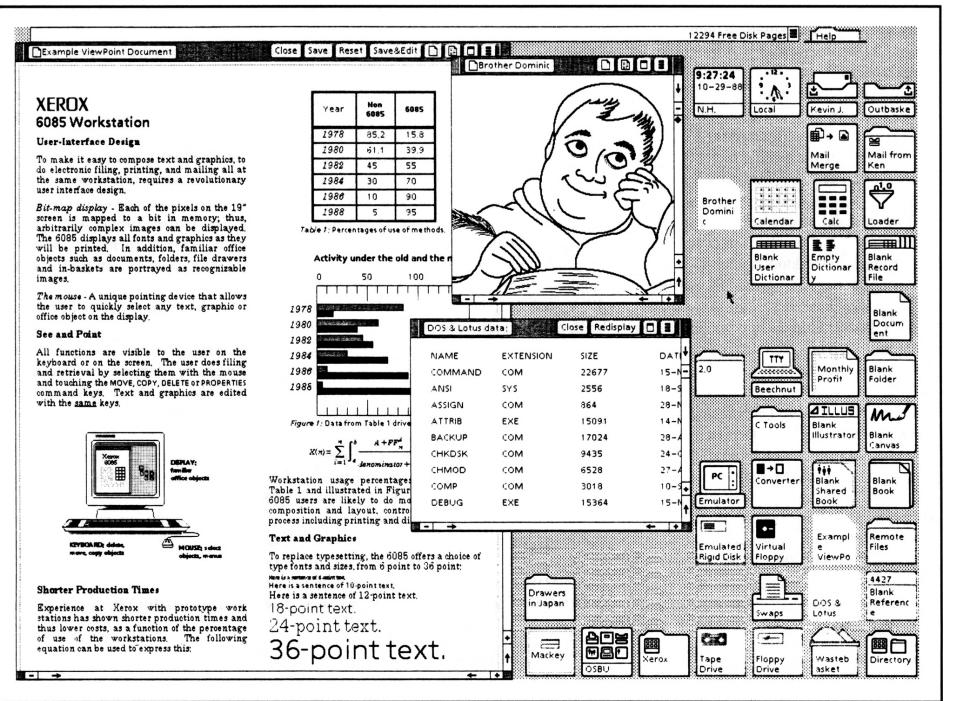
2



² Image source: [Left](#), [Right](#)

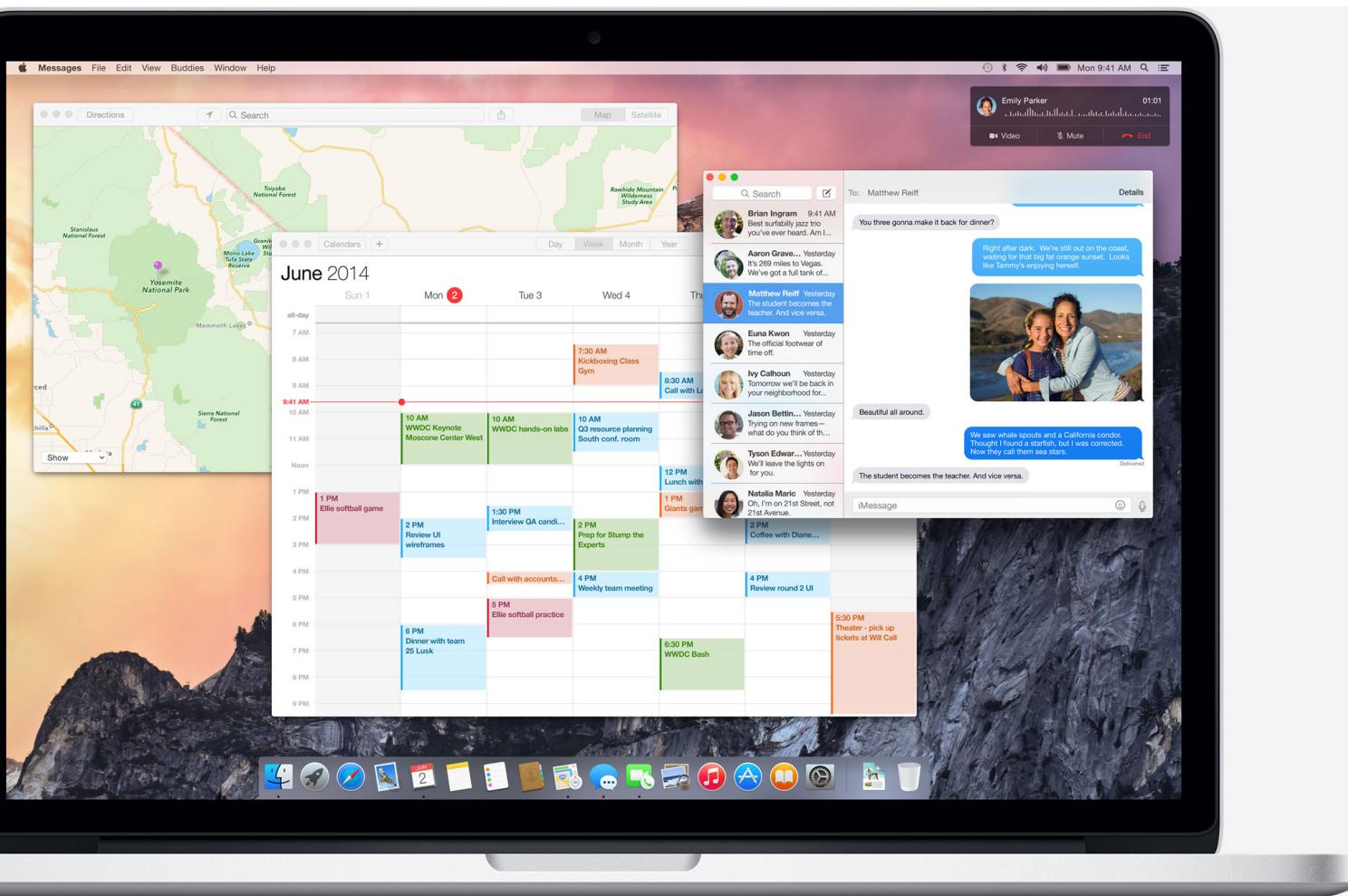
Window Organization³

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

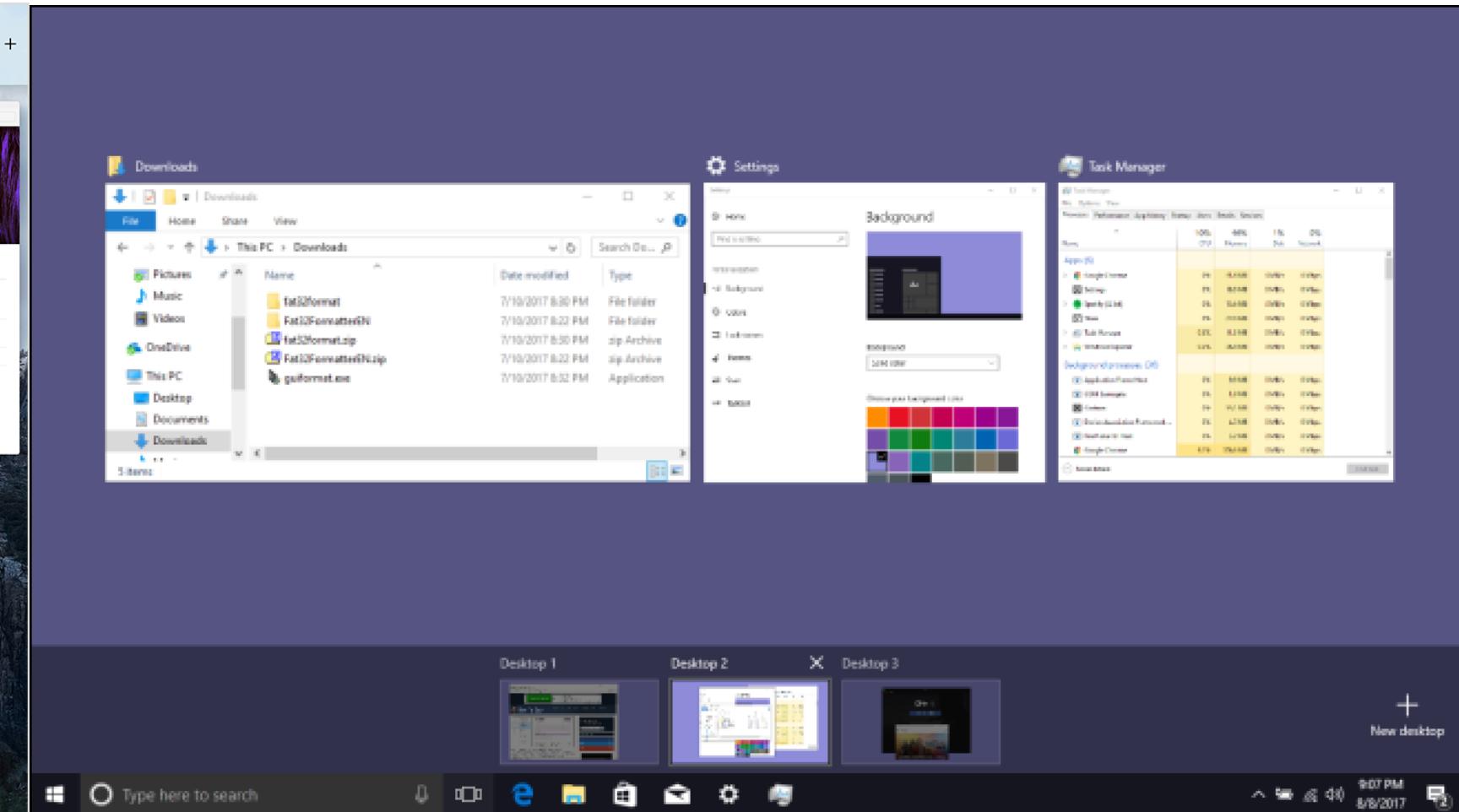
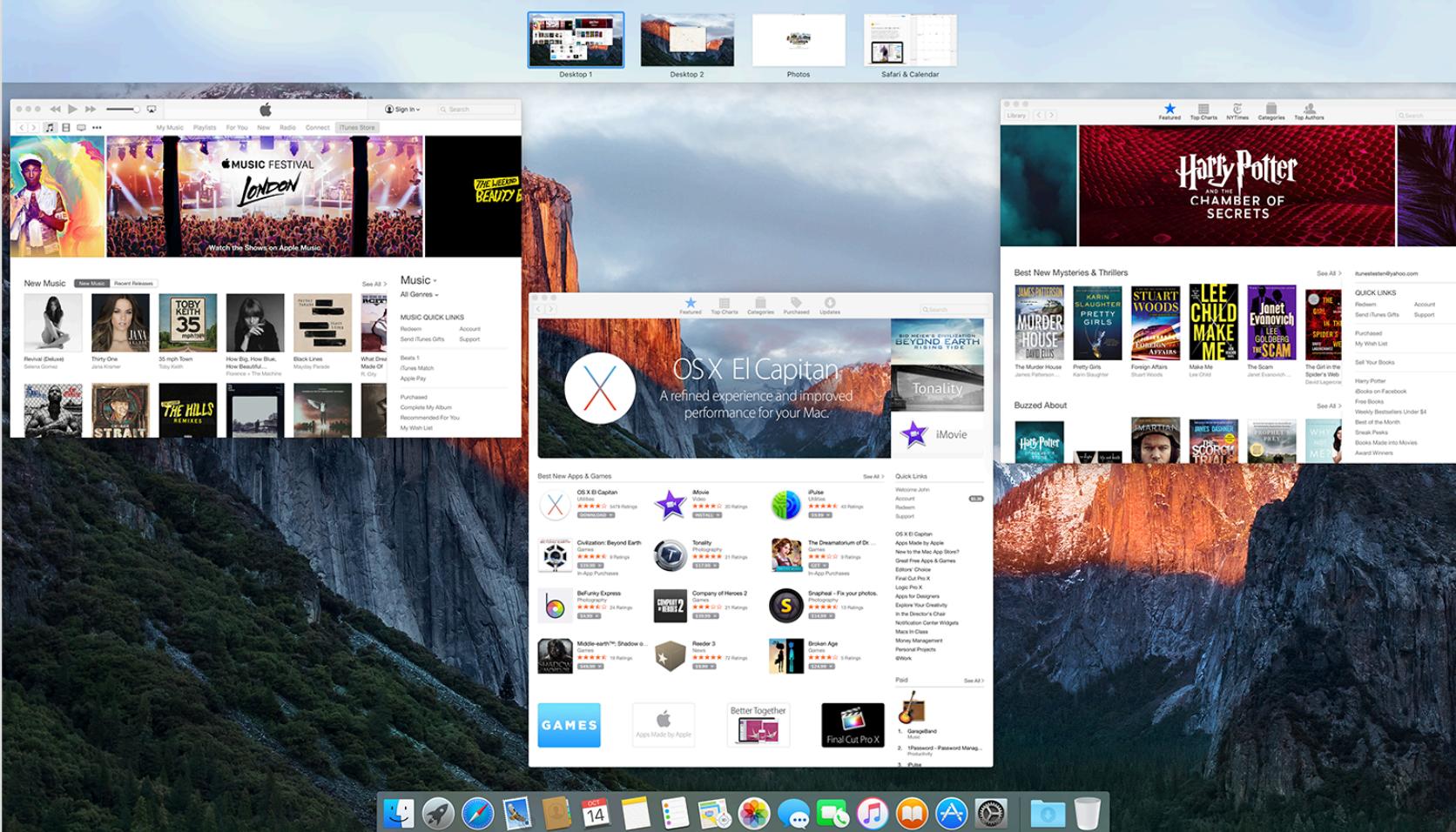


³ Image source: [Left](#), [Right](#)

4



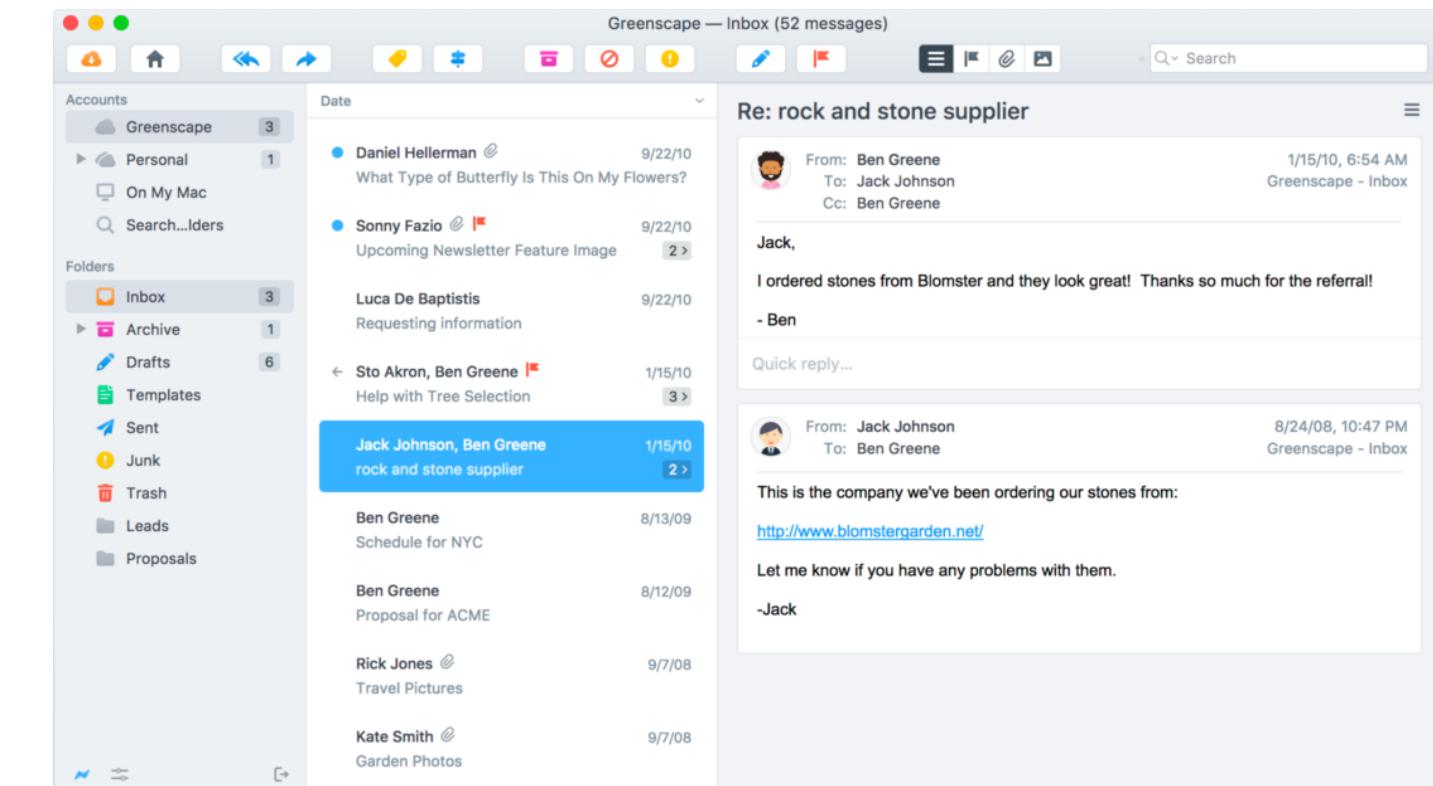
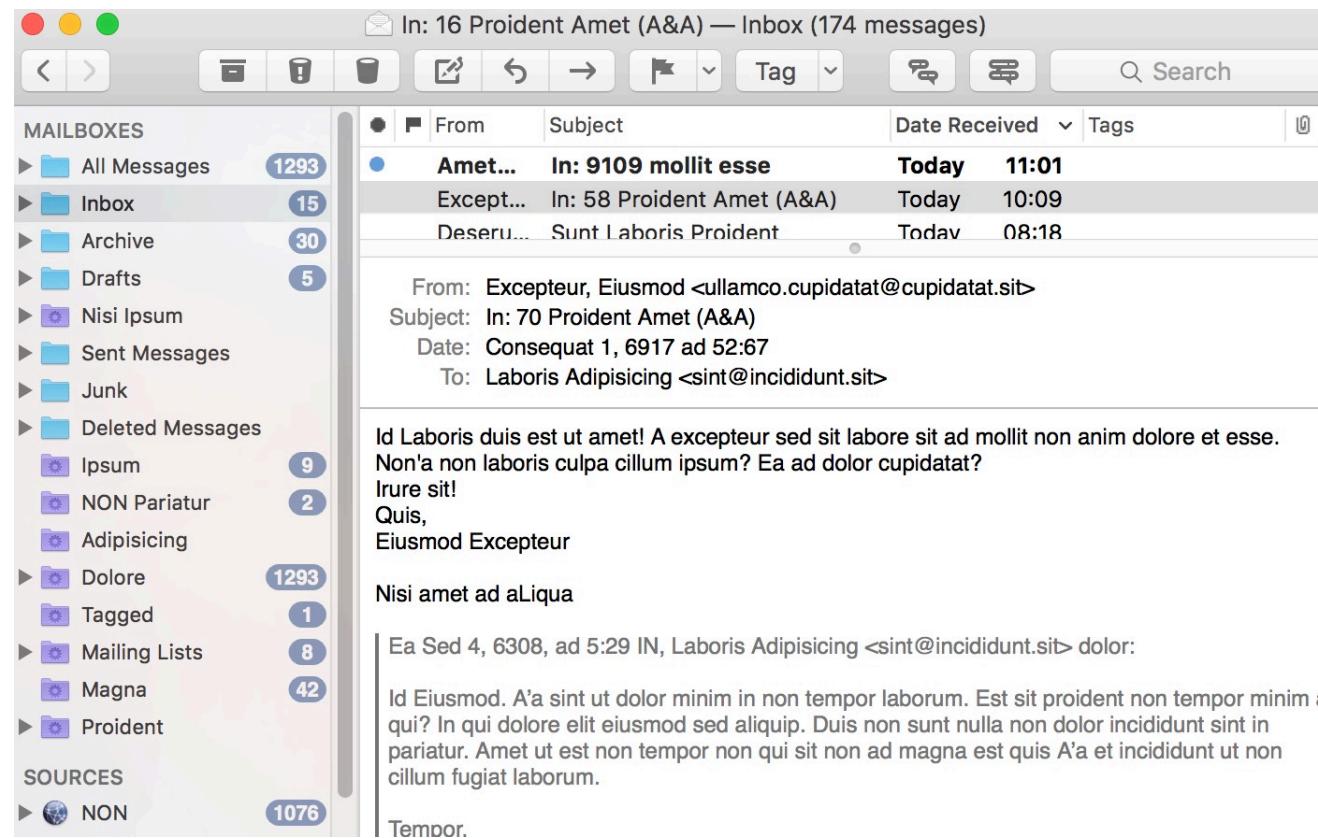
⁴ Image source: [Left](#), [Right](#)



⁵ Image source: [Left](#), [Right](#)

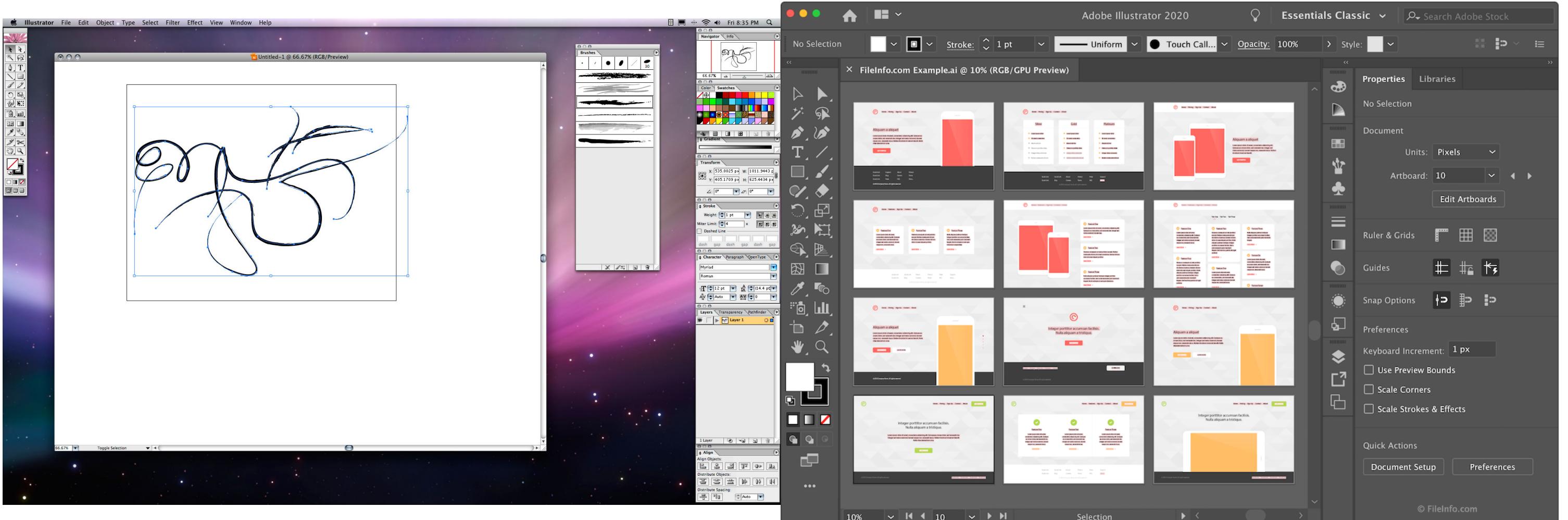
Window Structures⁶

Windows bring together dedicated *panes* in different configurations.



⁶Image source: [Left](#), [Right](#)

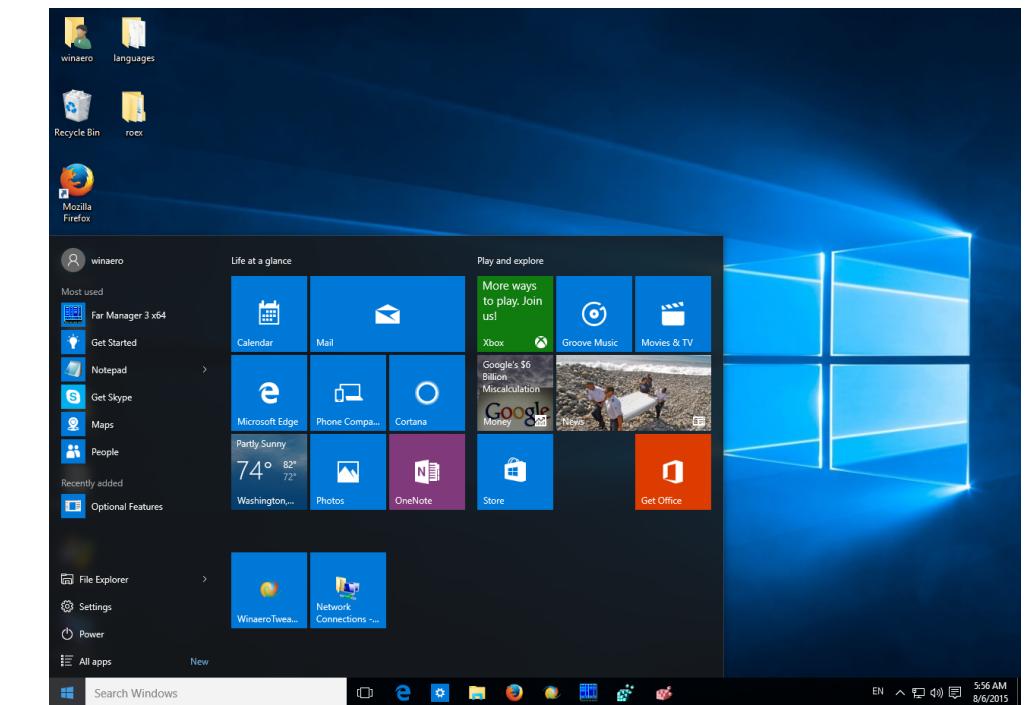
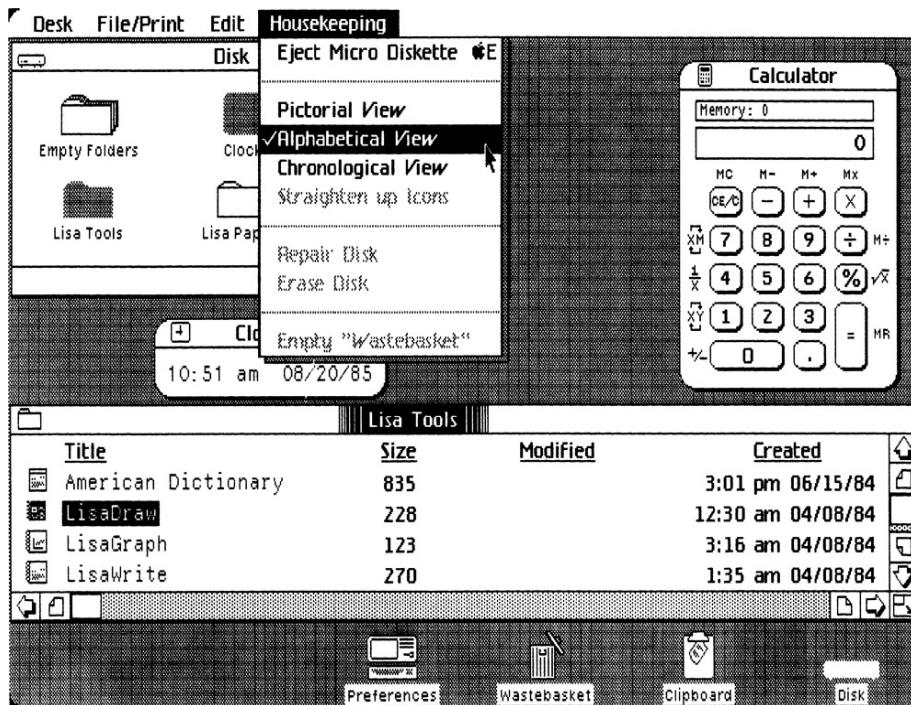
Secondary windows can be docked, stacked, and floating.⁷



⁷ Image source: [Left](#), [Right](#)

Elements of the WIMP Paradigm: Menus & Pointers⁸

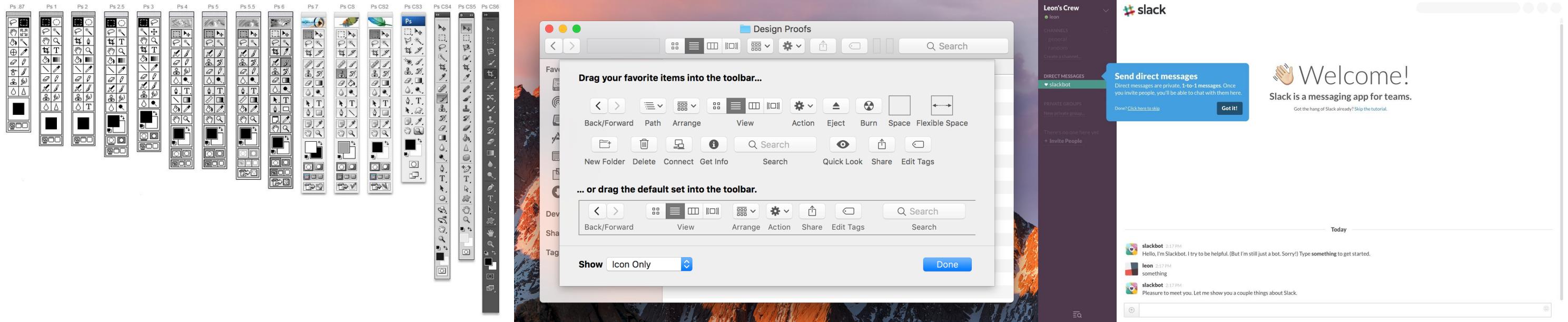
Definition: Menus list all the functions of the an application. Menu lists serve *educational* and *reference* purposes.



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

Toolbars, Palettes, Sidebars, & Tooltips⁹

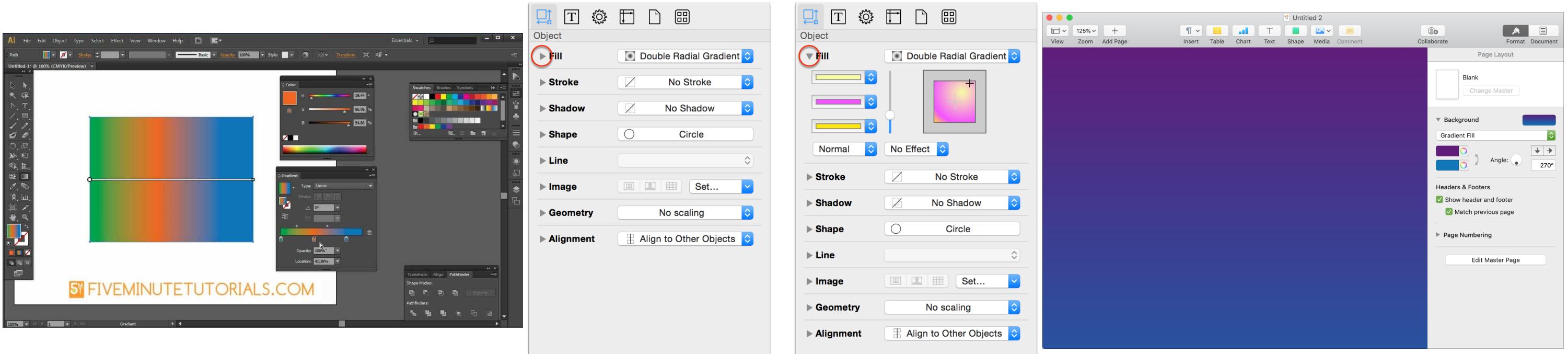
Definition: *Toolbars, palettes, sidebars, and tooltips* facilitate (visual and manipulation) access to frequently used functions.



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

Tool Palettes¹⁰

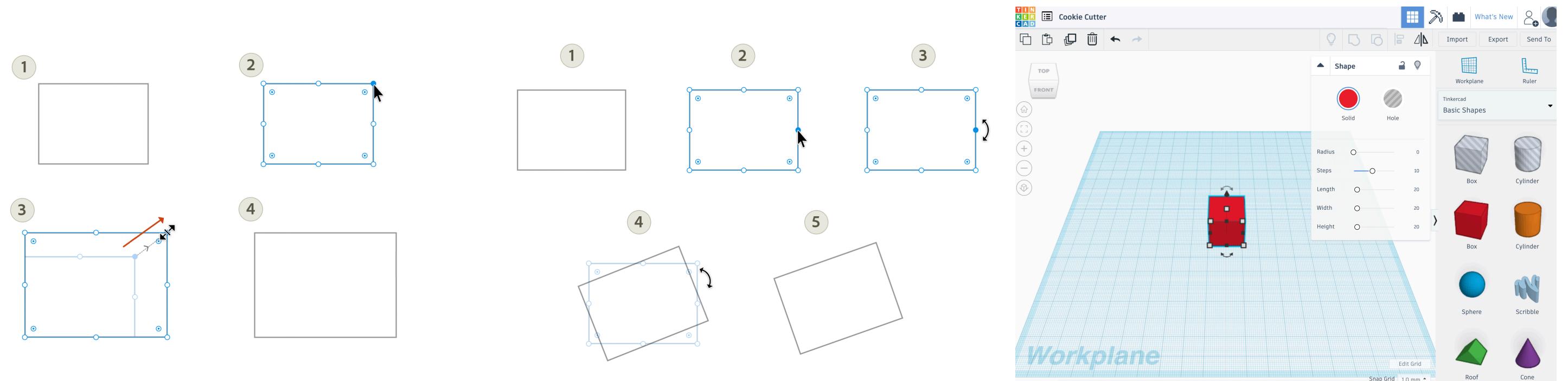
Definition: Tool palettes provide *advanced controls* for a particular function rather than frequently accessed functions.



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](#)

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Deconstruct a desktop application into its basic structures...

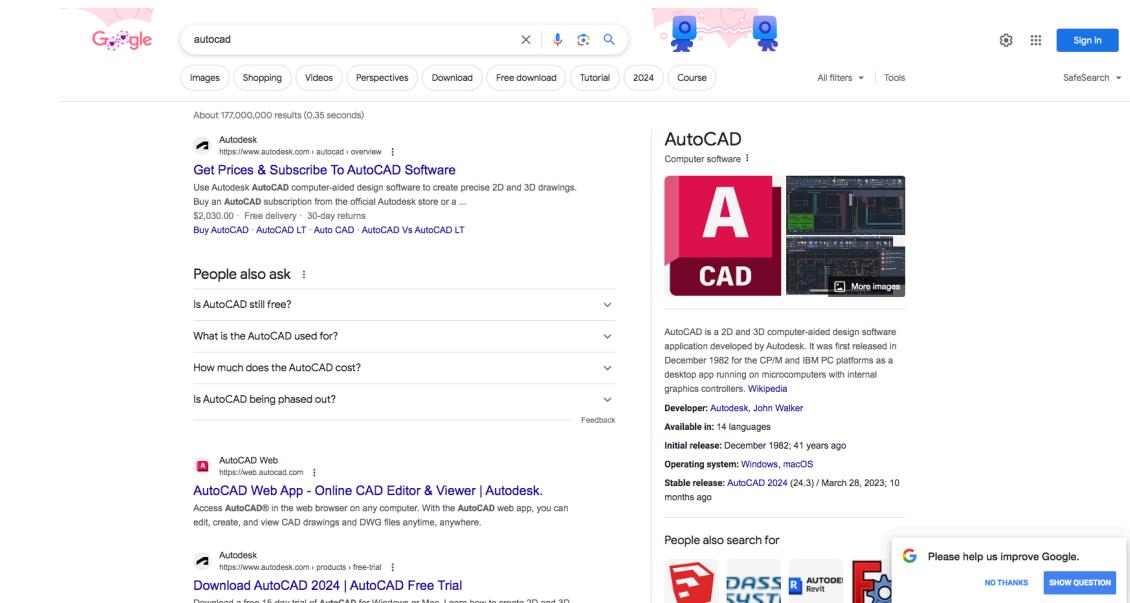
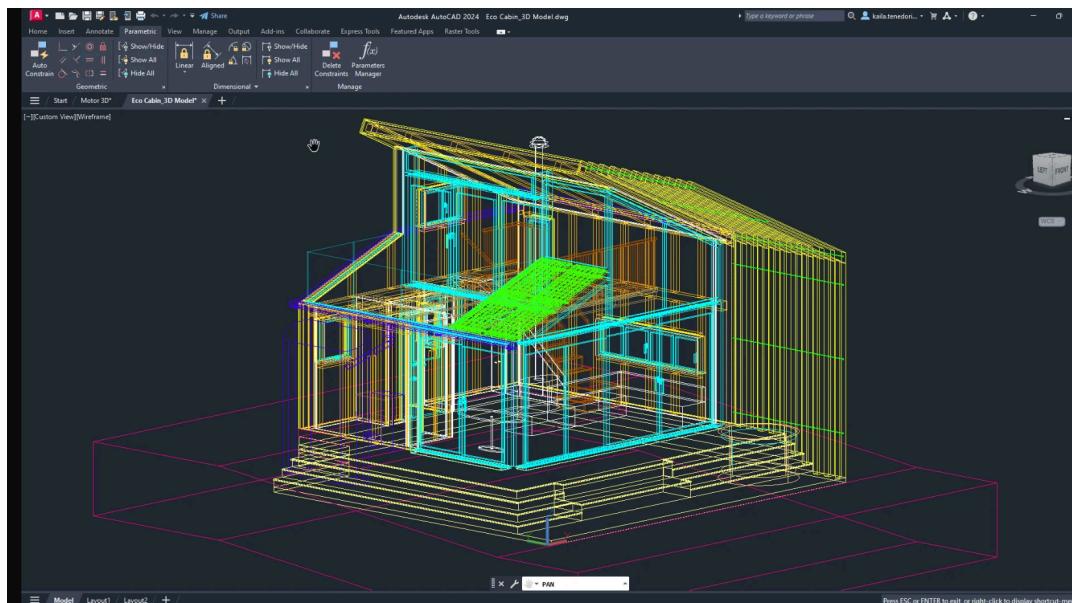
- Choose a desktop application.
- Choose a task.
- Do your analysis!

Designing for the Web

Desktop Applications vs. Websites¹²

Desktop Applications: Complexity in functionality.

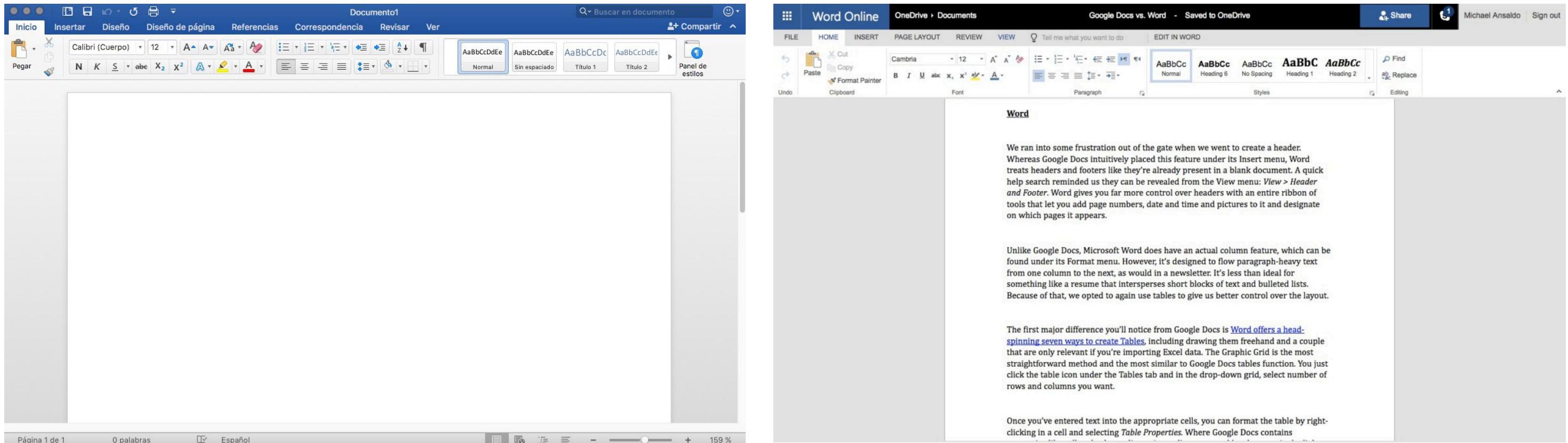
Websites: Complexity in information structure.



¹² Image source

Web Applications¹³

This is by no means a comprehensive definition!



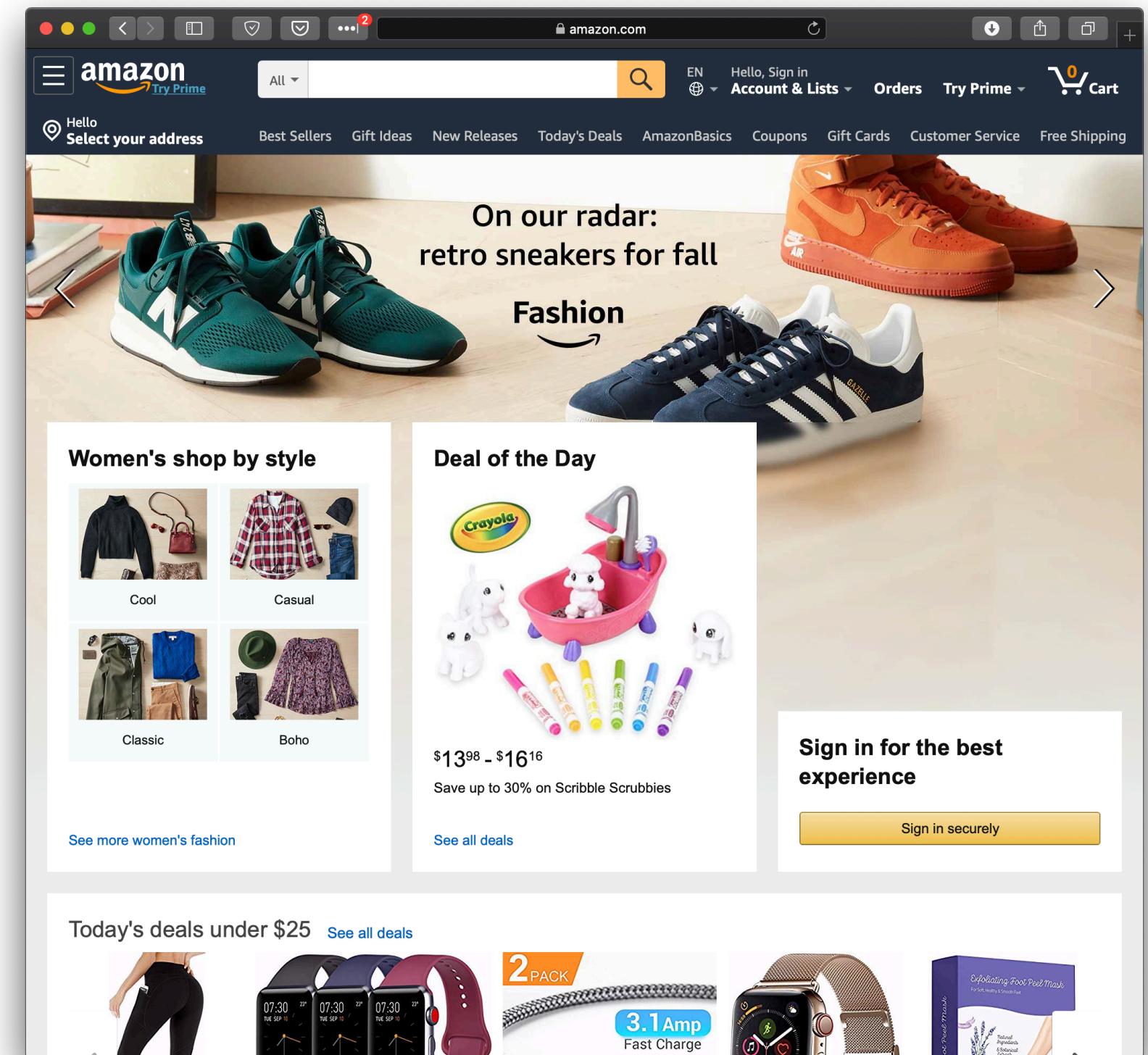
¹³ Image source: [Left](#), [Right](#)

The Page

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

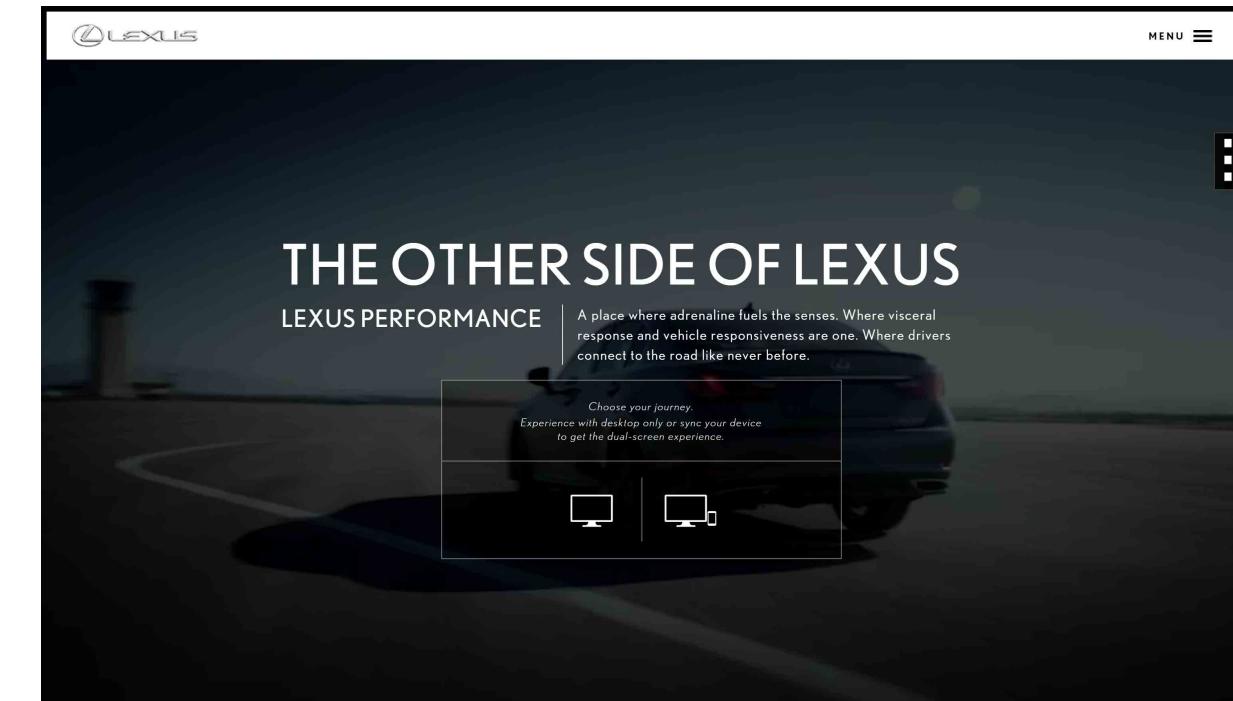
If the web is made out of pages, how do we organize and help users navigate them?

Using primary and secondary navigation aids.



Primary Navigation Aids¹⁴

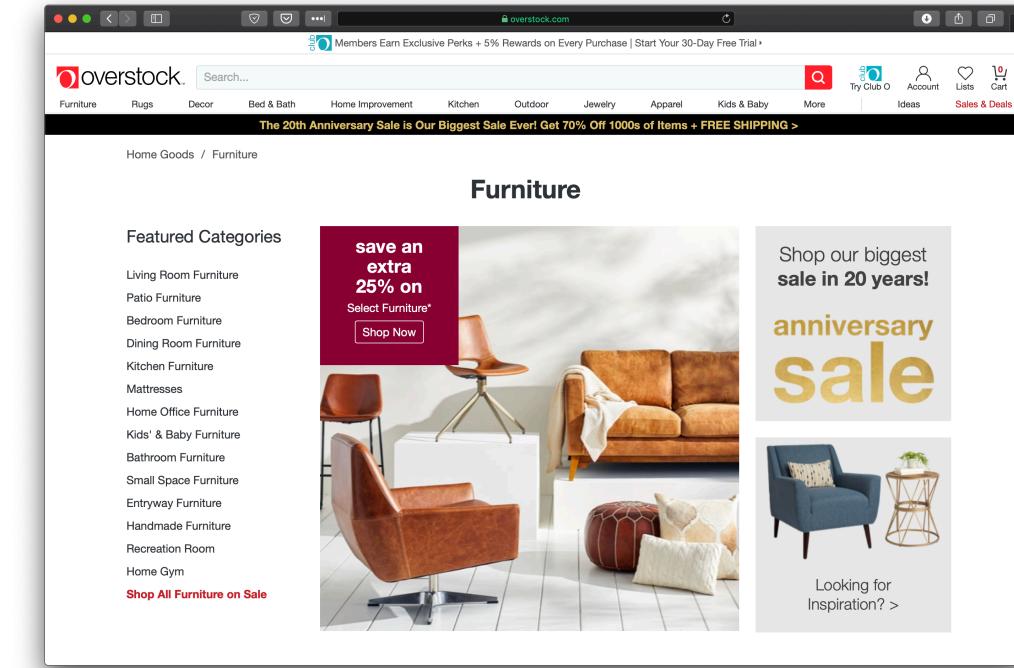
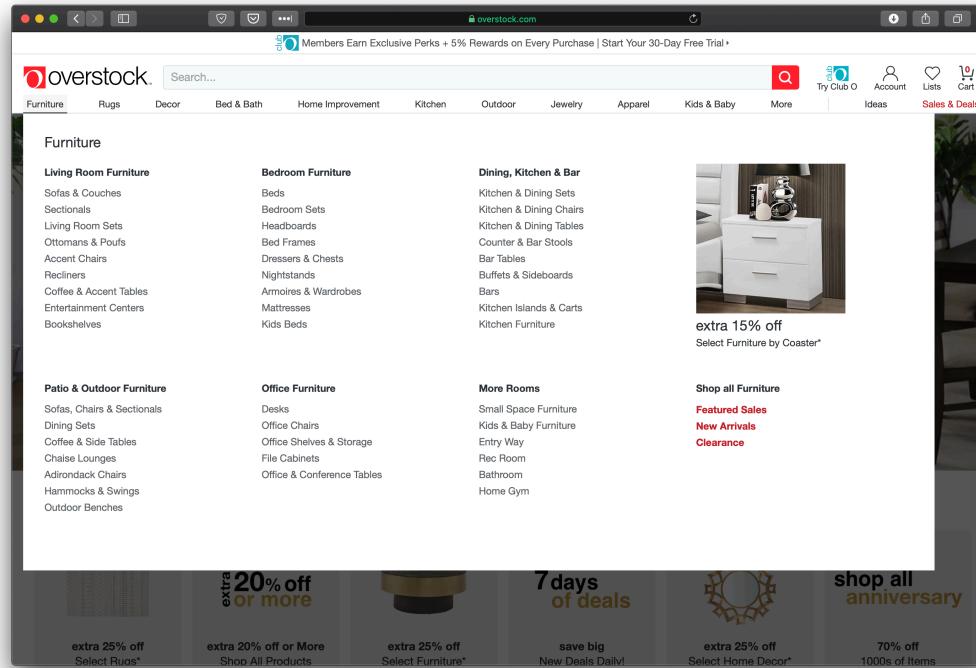
Definition: Primary navigation aids take the form of menus/menubars and reflect the major areas or sections of a website.



¹⁴ Image source: [Left](#), [Right](#)

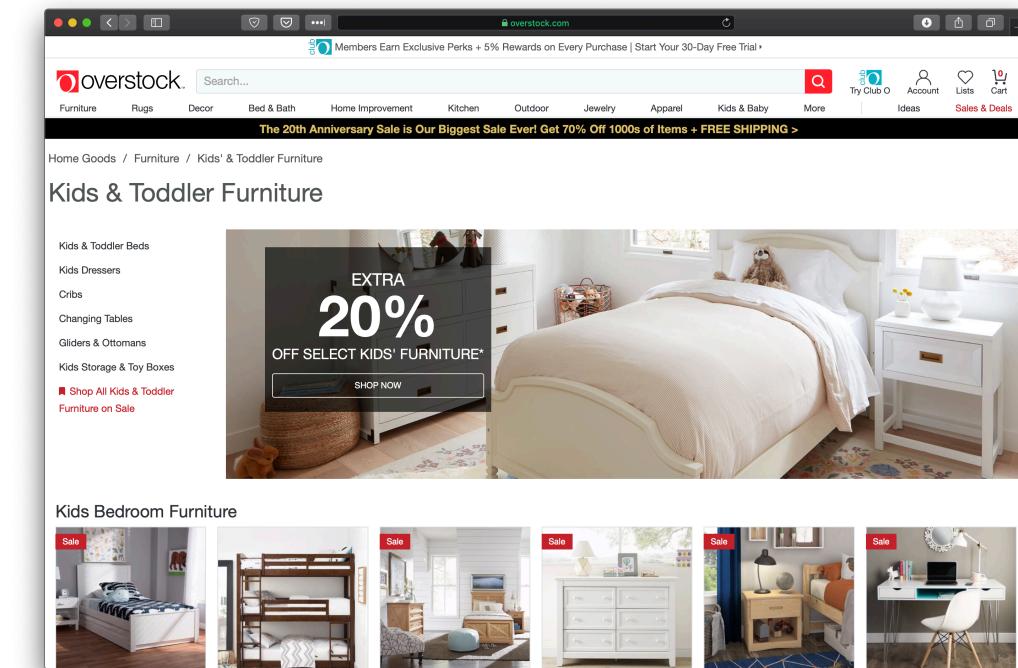
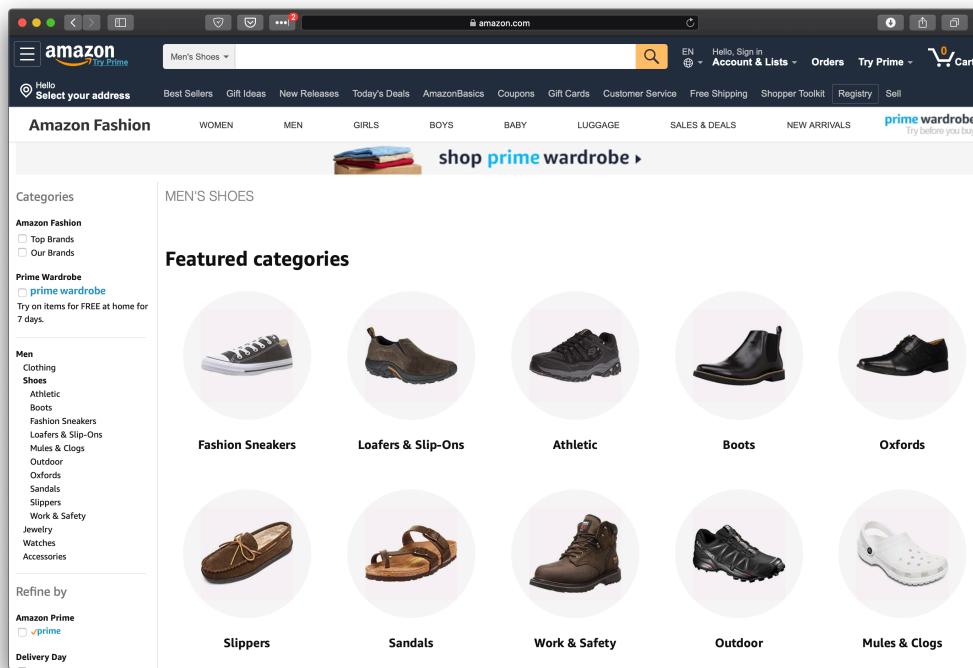
Secondary Navigation Aids

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



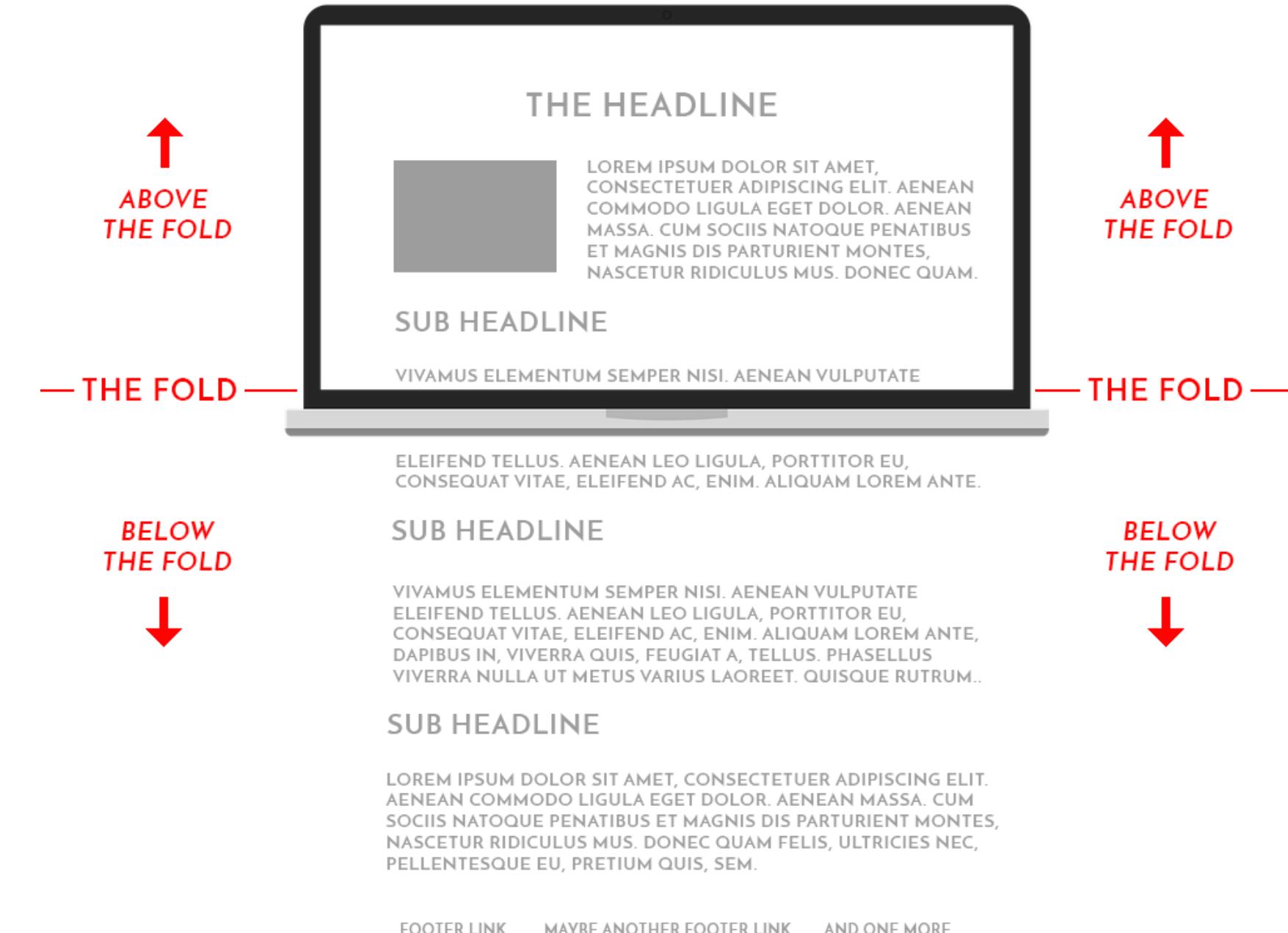
How do we get home?

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.

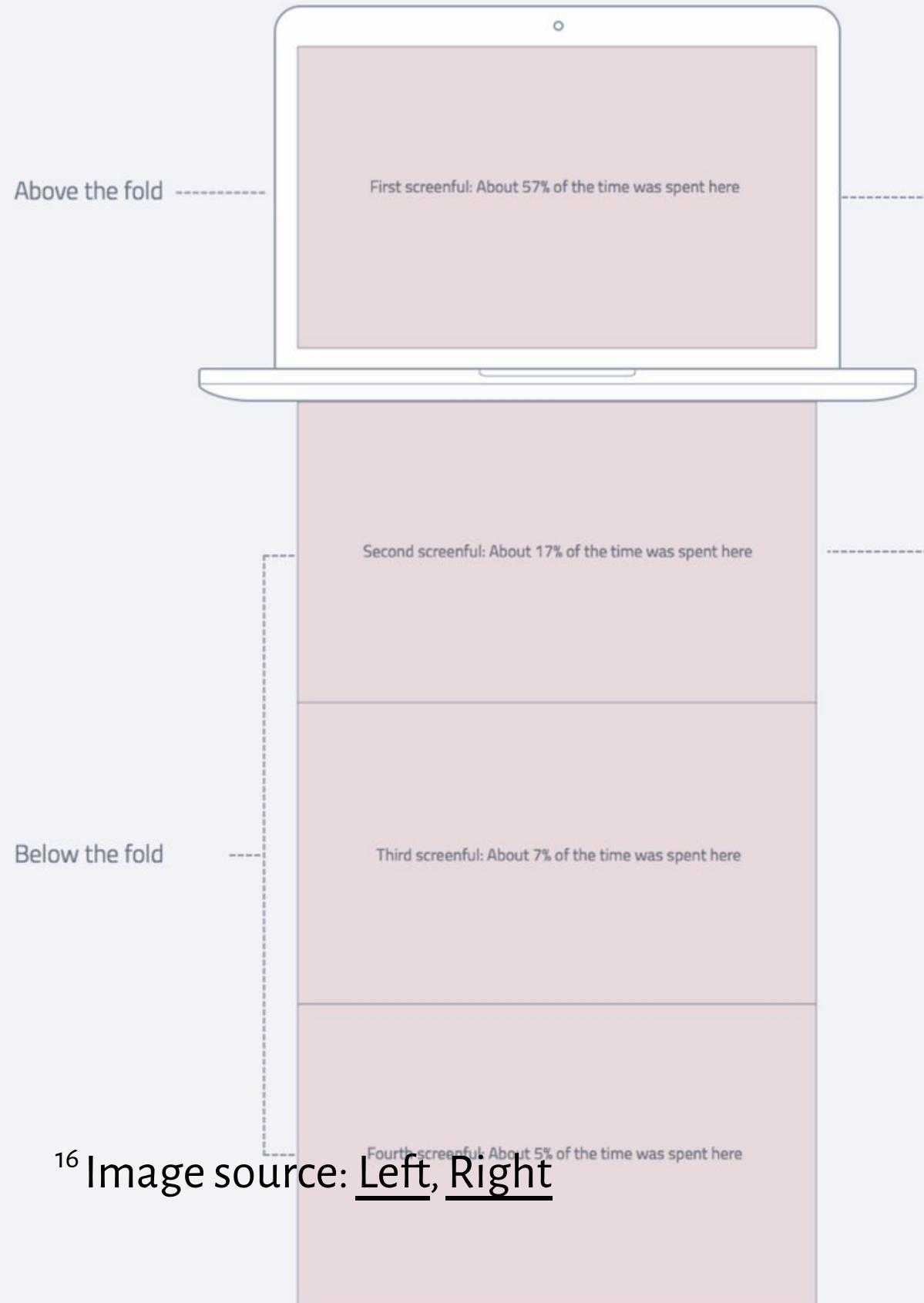


Organizing Page Content: The Fold¹⁵

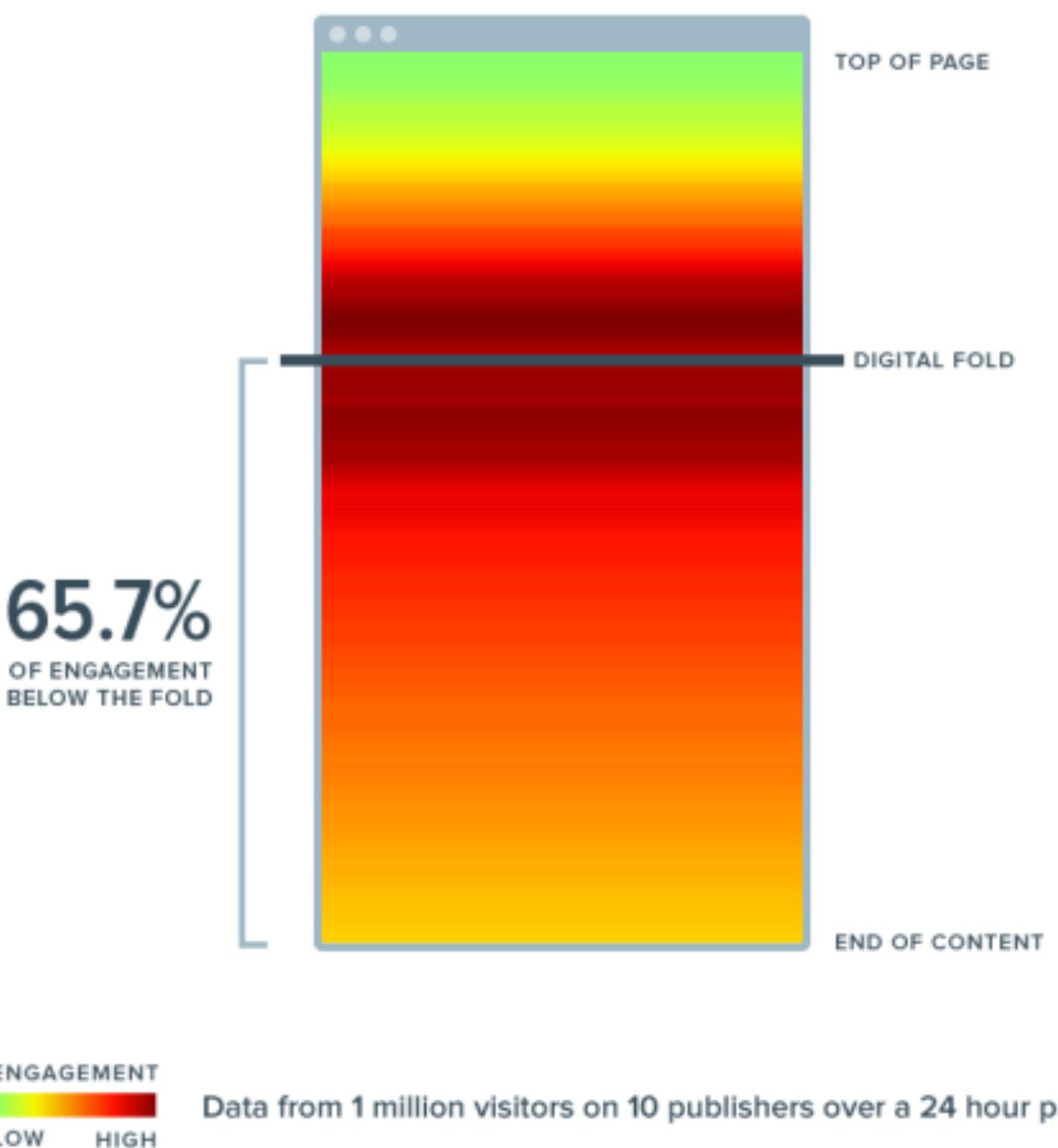
Definition: The *fold* is the dividing line between the area that is visible when a page first loads and the remainder of the page.



¹⁵ [Image Source](#)



WHERE WE SPEND TIME READING



¹⁶ Image source: [Left](#), [Right](#)

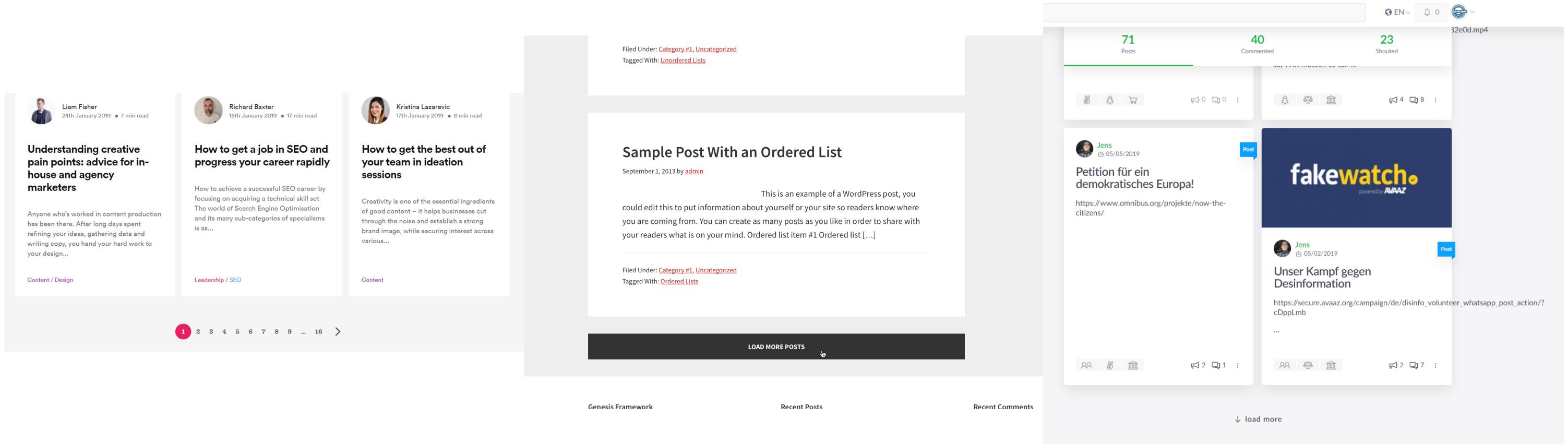
Organizing Page Content: Fitting It All in¹⁷

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



¹⁷ [Image Source](#)

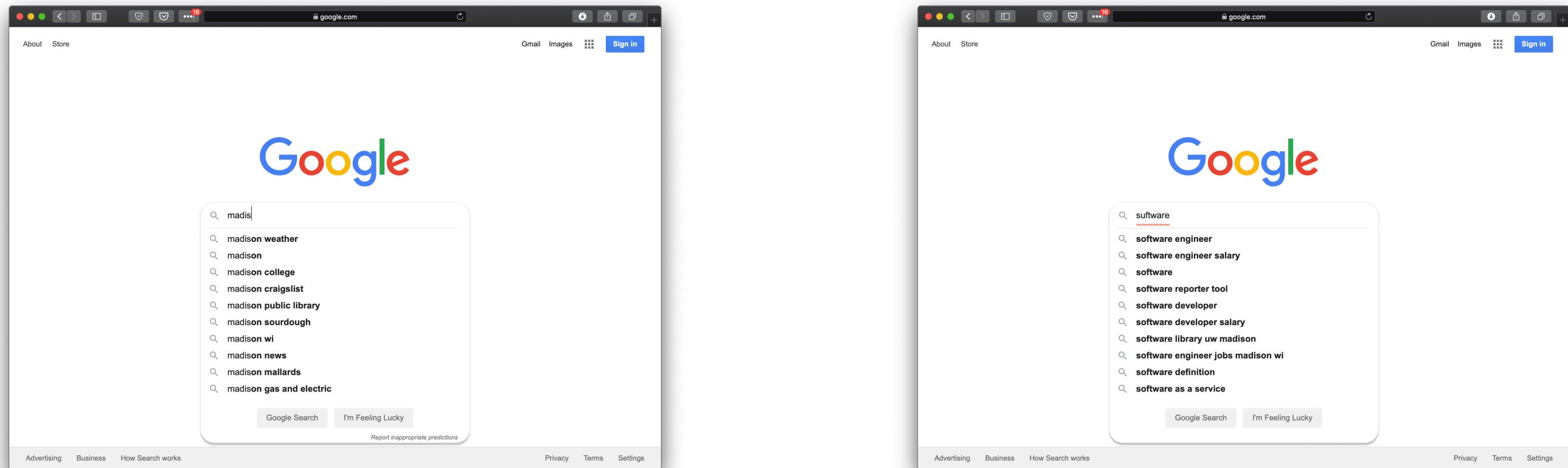
Examples of pagination and infinite scroll:¹⁸



¹⁸ 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 restaurants. 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, a navigation bar includes categories like "Restaurants", "Home Services", "Auto Services", and "More". There are also buttons for "Write a Review" and "For Businesses". The main content area is titled "Best Restaurants near South Campus, Madison, WI" and displays "Showing 1-30 of 165" results. A map of Madison, WI, highlights the South Campus area with numbered pins indicating restaurant locations. Each pin corresponds to a listing below it, such as "1. Asian Noodle" with a photo of ramen and details like "(608) 467-6210" and "902 Regent St, South Campus". The interface includes various filters at the top: "All Filters", price levels (\$, \$\$, \$\$\$, \$\$\$), and service types ("Open Now", "Delivery", "Takeout", "Good for Lunch"). On the left, there's a sidebar for "Sort By" options like "Recommended", "Highest Rated", and "Most Reviewed". Other filters include "Neighborhoods" (South Campus, Orchard Ridge Community, Capitol, Midvale Heights Community), "Distance" (Bird's-eye View, Driving (5 mi.), Biking (2 mi.), Walking (1 mi.), Within 4 blocks), "Price" (from \$ to \$\$\$), "Features" (Delivery, Takeout, Open Now 11:19 AM, Take-out), and "Category" (Sandwiches, American (Traditional), Pizza, Mexican). Buttons for "More Features" and "More Categories" are also present.

The screenshot shows the Zappos search interface for running shoes. At the top, there's a blue header with the Zappos logo, a search bar containing "running shoes", and a "SEARCH" button. Below the header, a navigation bar includes links for "Customer Service", "Available 24/7 at (800) 927-7671", and "Free Shipping, Free 365-day Return policy, & 24/7 Customer Service. Learn More". The main content area is titled "Running Shoes" and displays "5727 items found". A sidebar on the left titled "Narrow Choices" includes sections for "Gender" (Women 2725, Men 2109, Boys 658, Girls 653), "Product Type" (Shoes 5626, Clothing 97, Bags 3, Sporting Goods 1), and "Brand" (Search Brand, 361 Degrees 30, Acorn 3, adidas 10, adidas by Stella McCartney 3). The main area shows four pairs of running shoes with their names and prices: "Newton Running Distance 8" (\$155.00), "Newton Running Gravity 8" (\$175.00), "Newton Running Fate 5" (\$140.00), and "Newton Running Distance 8" (\$155.00). Each item has a star rating and a "Customers Who Searched This Also Bought" section below it. The interface also includes a "Sort By" dropdown set to "Relevance".

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

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

Layout

Layout

Definition: Arrangement of visual elements on a canvas.¹⁹

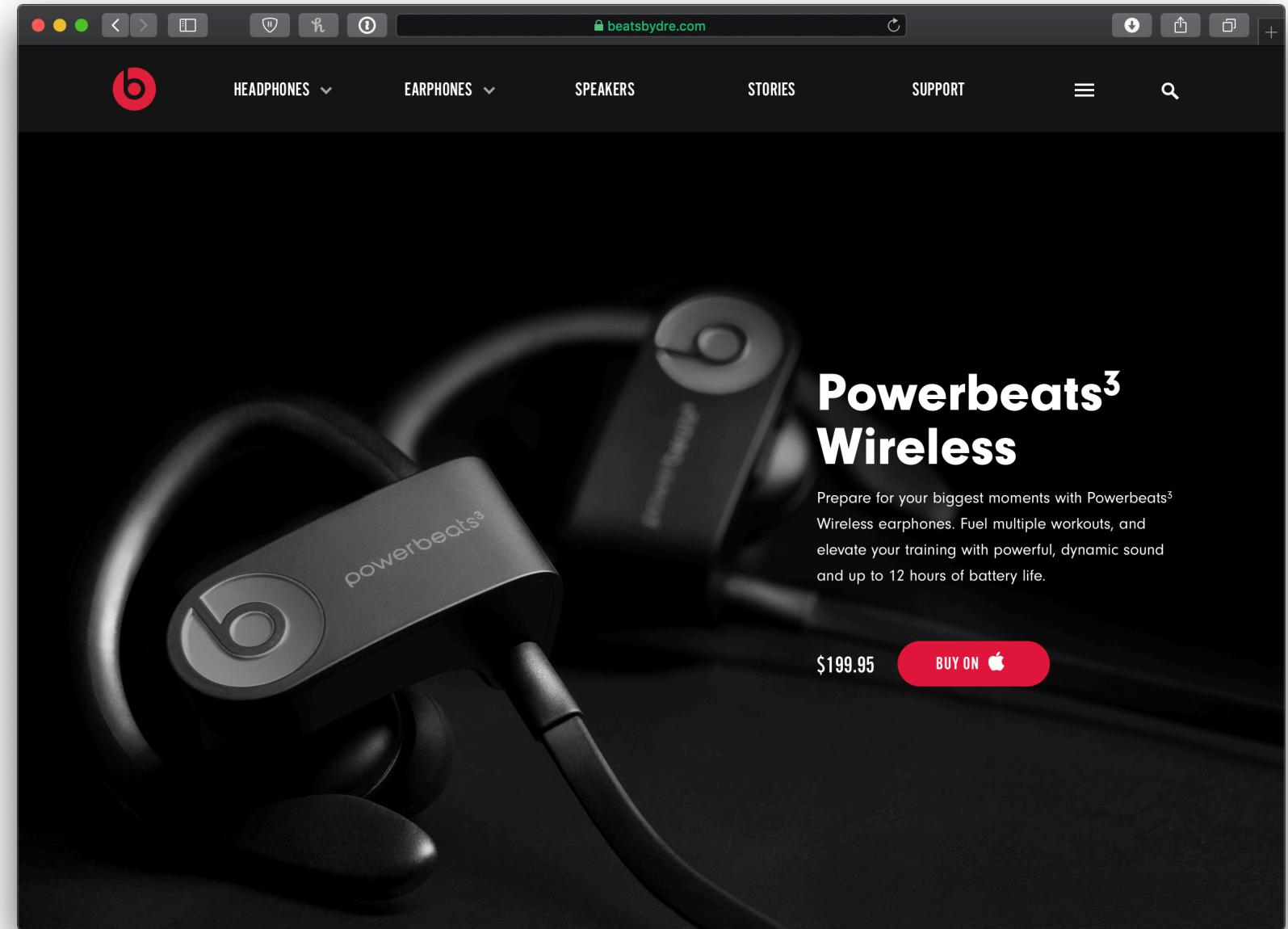
- Creating a focal point
- Following the golden ratio
- Using the rule of thirds
- Effectively using grids
- Integrating type
- Using negative space
- Grouping using gestalt theory
- Creating visual hierarchy
- Exploiting visual scan patterns
- Creating contrast/emphasis

¹⁹ 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.

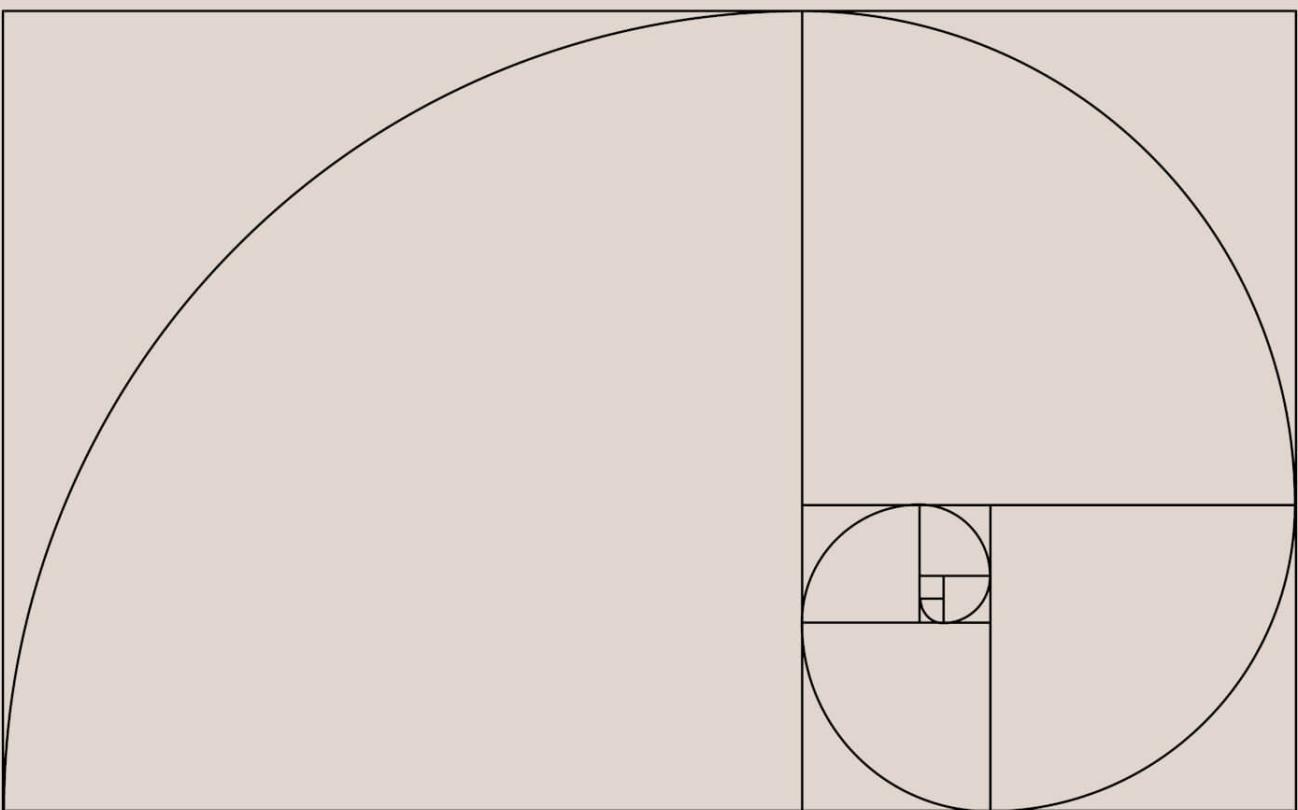
Pro Tip: Successful use locks attention to the focal point and gently guides it to its next destination.



Following the golden proportion²⁰

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

²⁰ [Further reading on the golden ratio](#)



The image shows a website landing page for a design agency. The header features a logo with 'W/M' and navigation links for HOME, ABOUT US, SERVICES, and CONTACTS. The main section has a purple background and features a large image of a person climbing a wall with a grid overlay. The text 'Business goals achieved with design' is displayed prominently. Below it, a subtext reads: '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.' There are 'PRICING' and 'Contact Us' buttons at the bottom left. The footer has a red background.

**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](#)

Using the rule of thirds

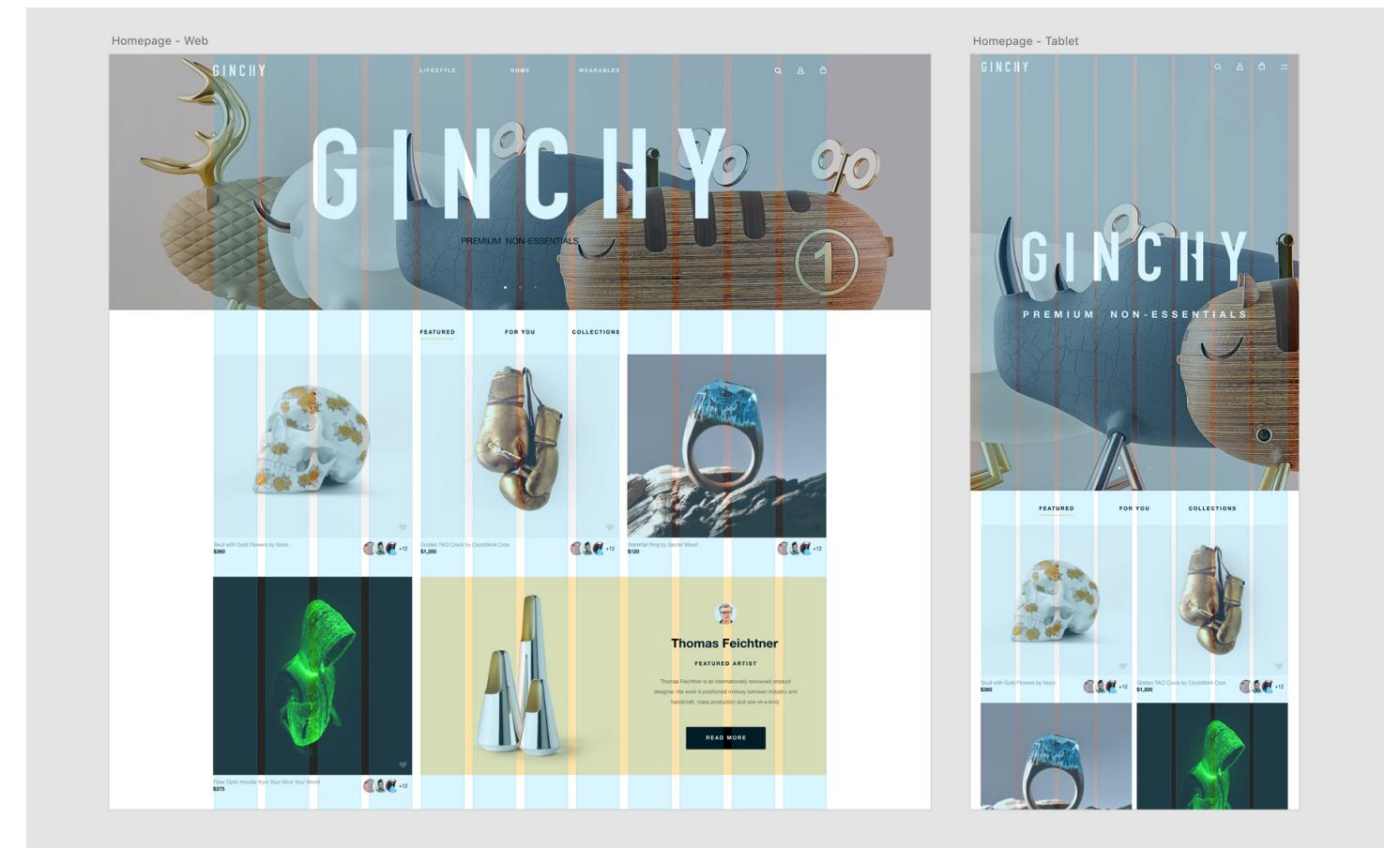
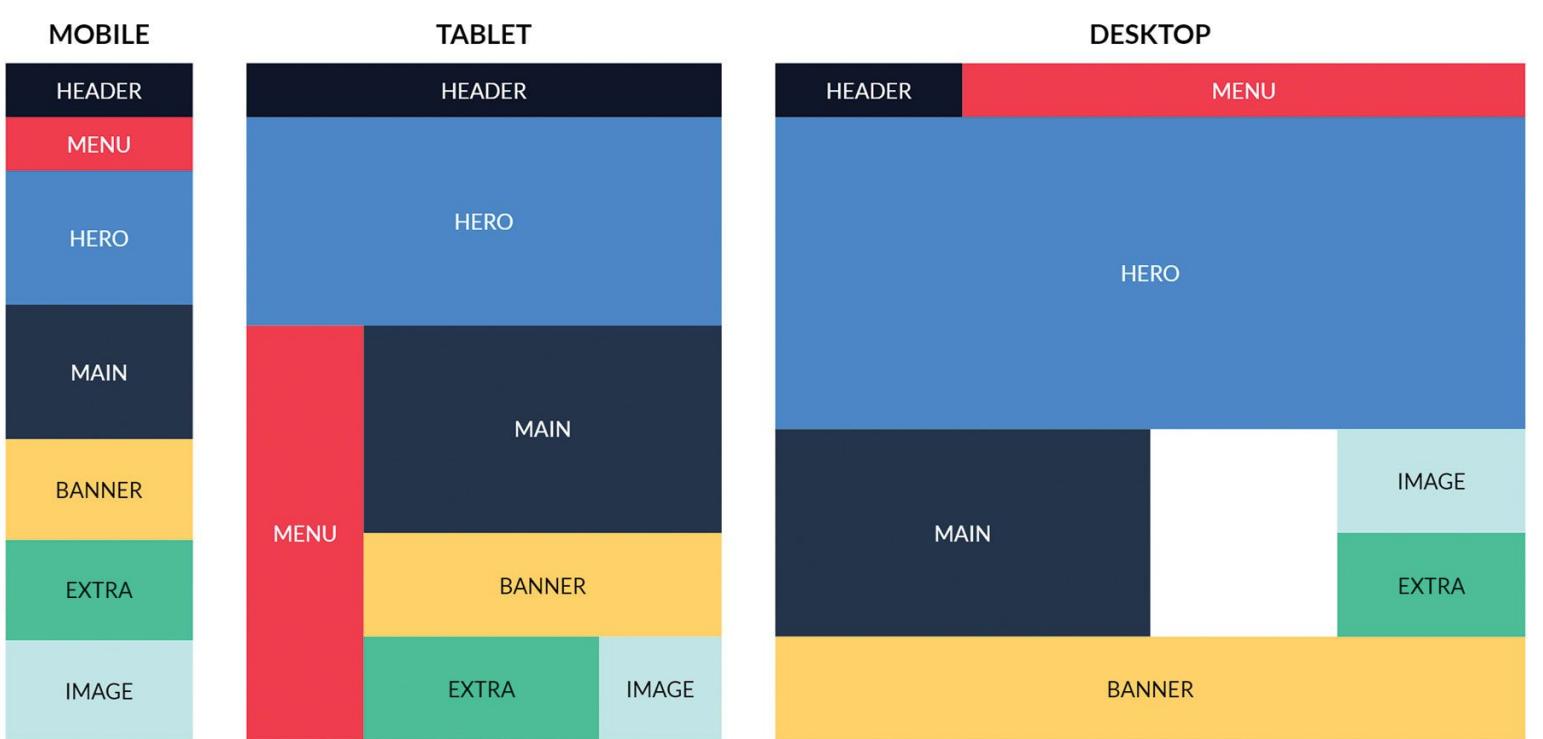
Definition: An approximation of the golden ratio that is easier and more flexible to use. When the canvas is divided into a 3x3 grid, the intersections serve as focal points.



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.

The image shows the IOTA marketplace landing page. At the top right is a large, stylized blue graphic containing three sensor cards: a Soil Sensor card with ID 66110 showing 20% moisture and 5.0 pH levels; an Air Quality Sensor card with ID 45881 showing CO2 at 345 PPM, Ozone at 4 PPB, and pm2.5 at 10 µg/m³; and a Weather Sensor card with ID 23110 showing 68°F temperature, 11% humidity, and wind direction NNE. The background features a white and light gray abstract shape. The IOTA logo is in the top left corner. Below the graphic, the text "IOTA makes it possible to securely store, sell, and access data streams." is displayed. A subtext below it reads "Never has getting access to diverse, fine-granular data been this easy!" At the bottom are three buttons: "ABOUT THE MARKETPLACE" (blue), "TRY THE MARKETPLACE" (gray), and "PARTICIPANTS" (gray). The footer contains the text "IOTA MARKETPLACE" and "IOTA MARKETPLACE".

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

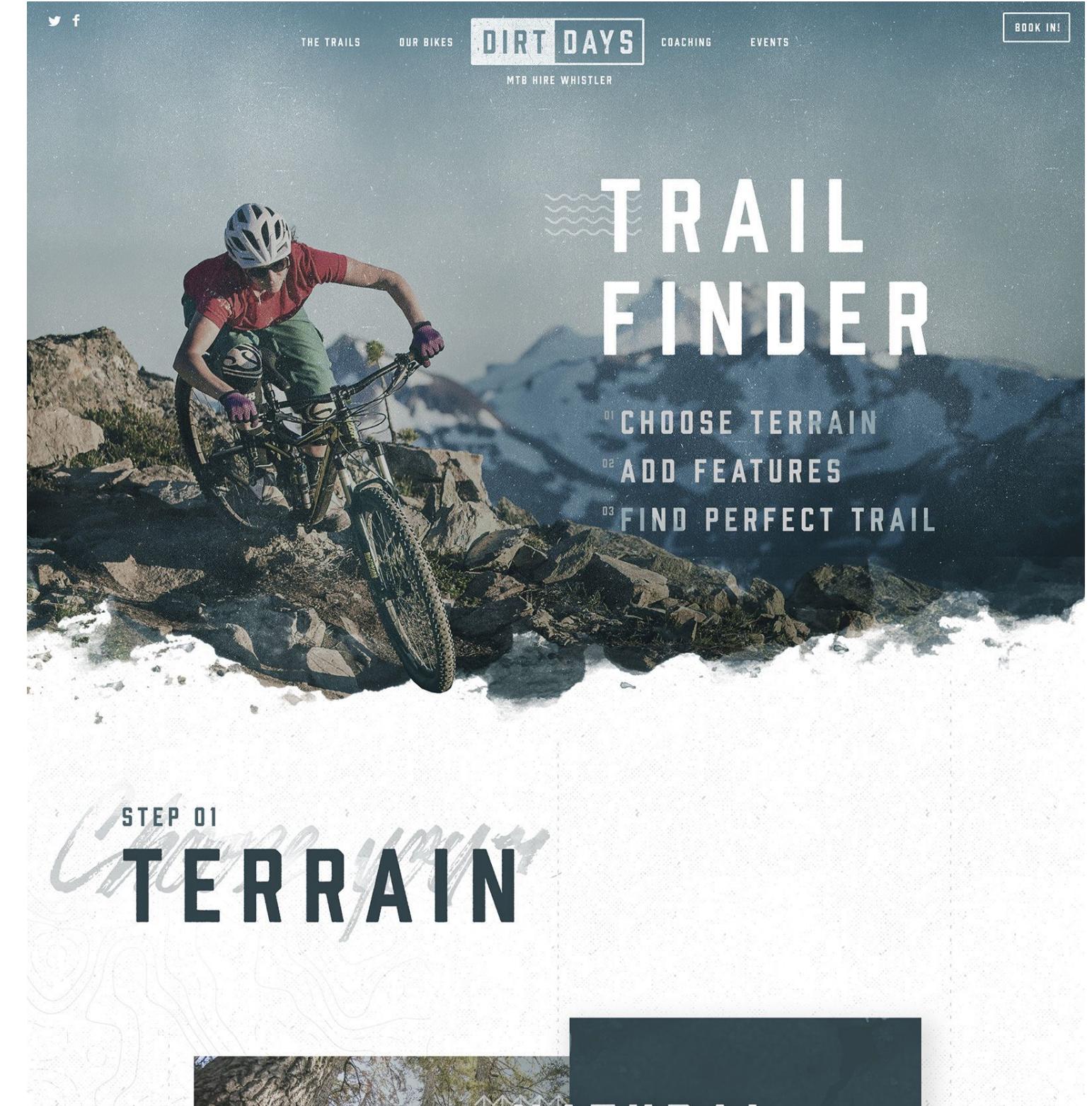
IOTA MARKETPLACE

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.





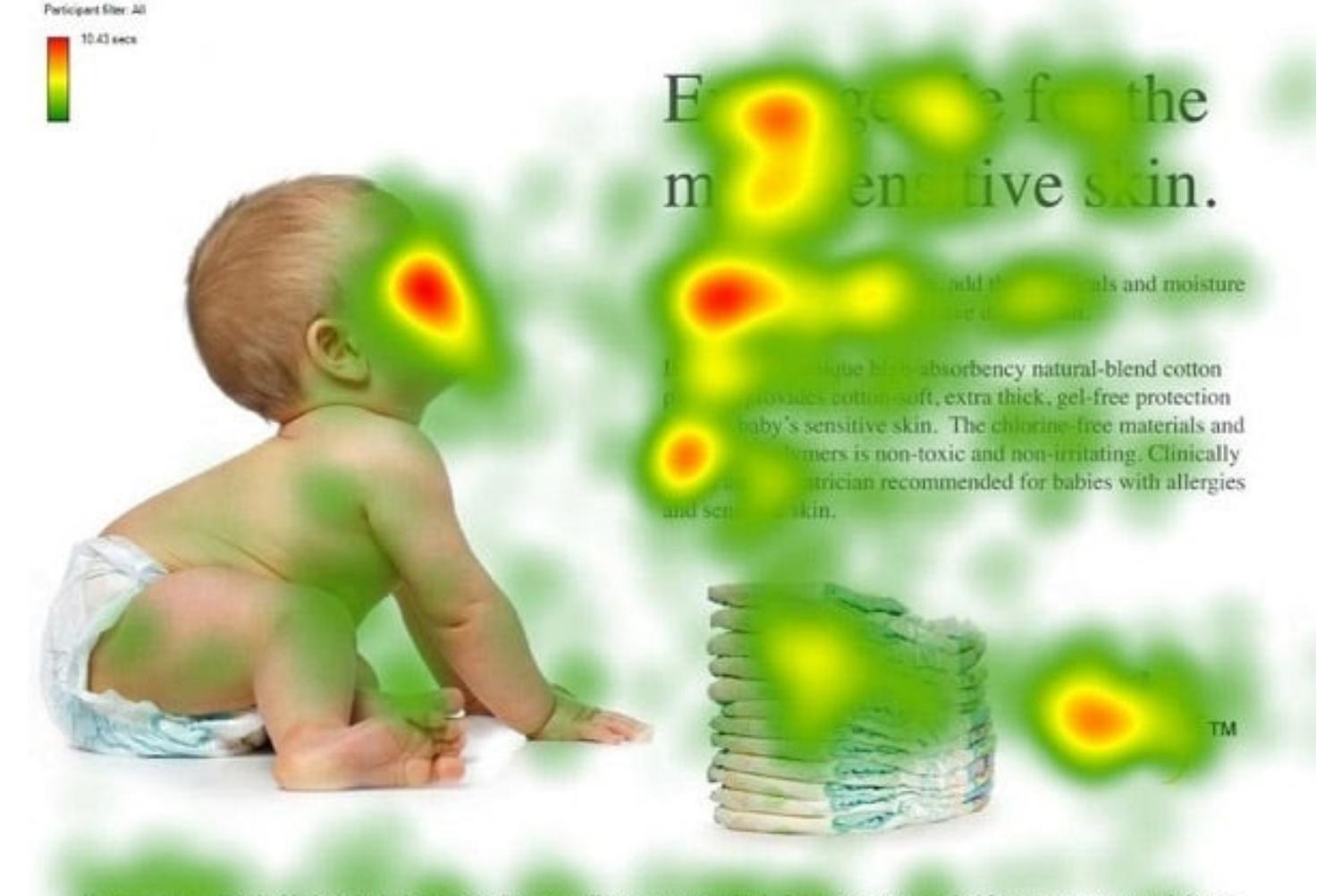
Ex~~o~~ gentle for the
mo~~o~~sensitive skin.

Since you have sensitive skin, add the chemicals and moisture you have diaper rash.

Baby Wipes' unique high-absorbency natural-blend cotton provides cotton-soft, extra thick, gel-free protection you 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.



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



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.

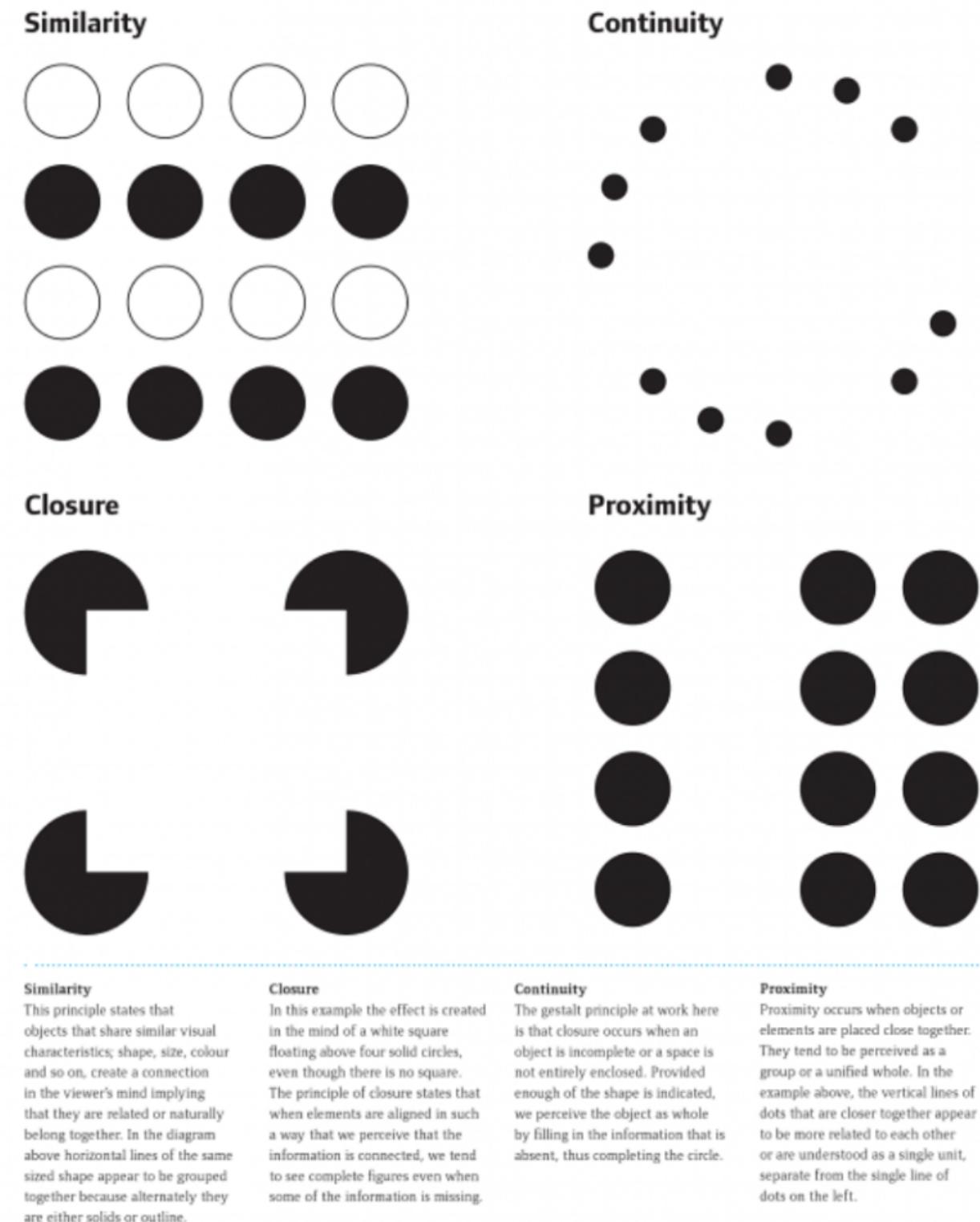


Grouping using Gestalt Theory

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.

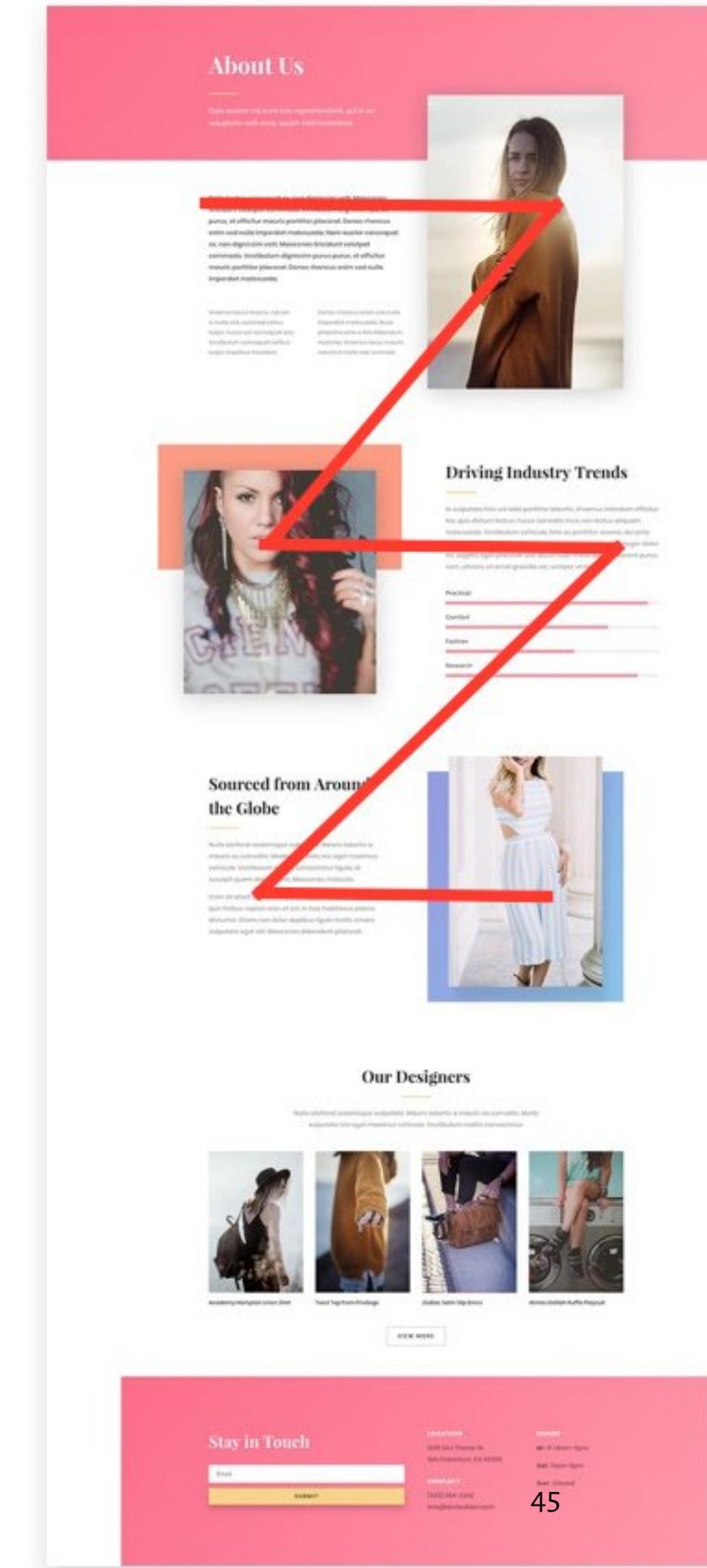
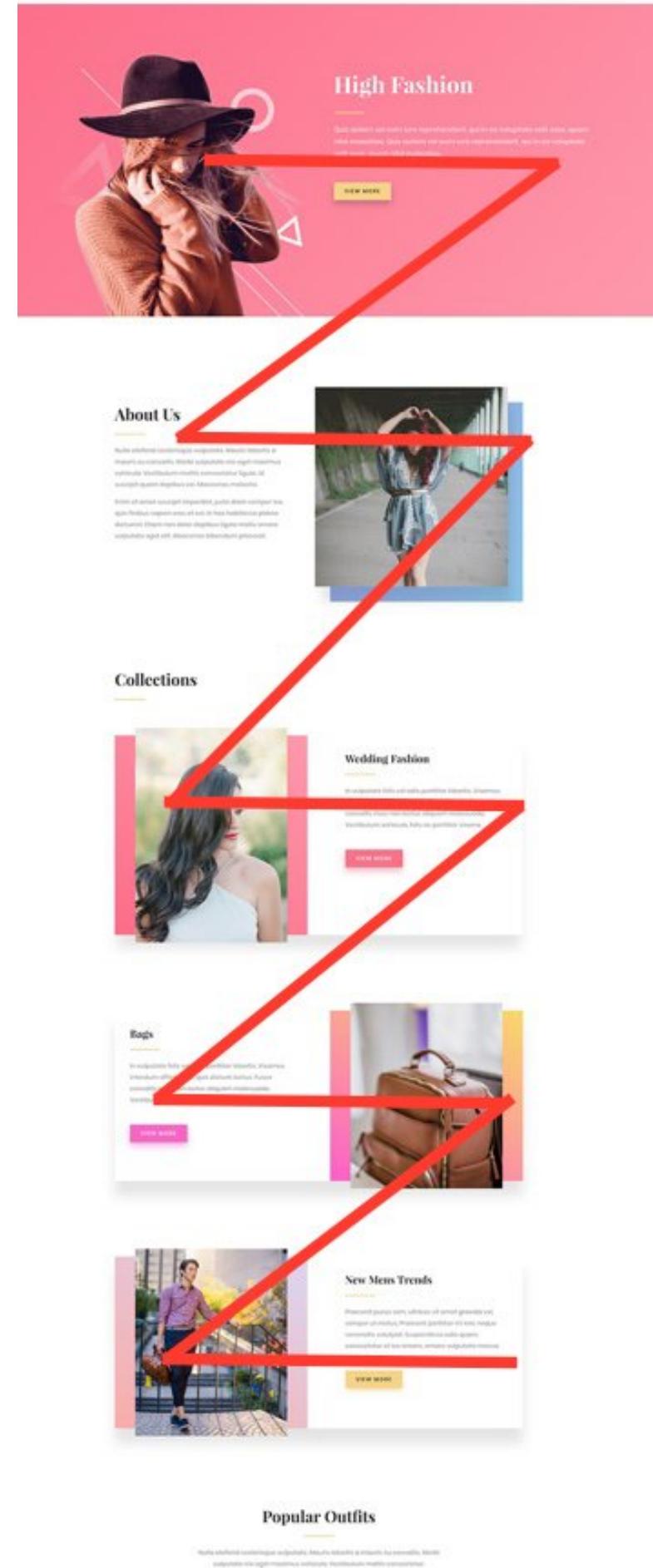
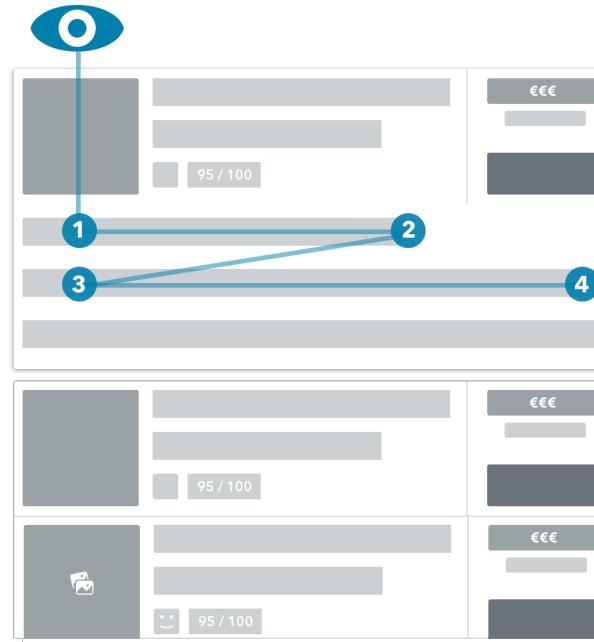
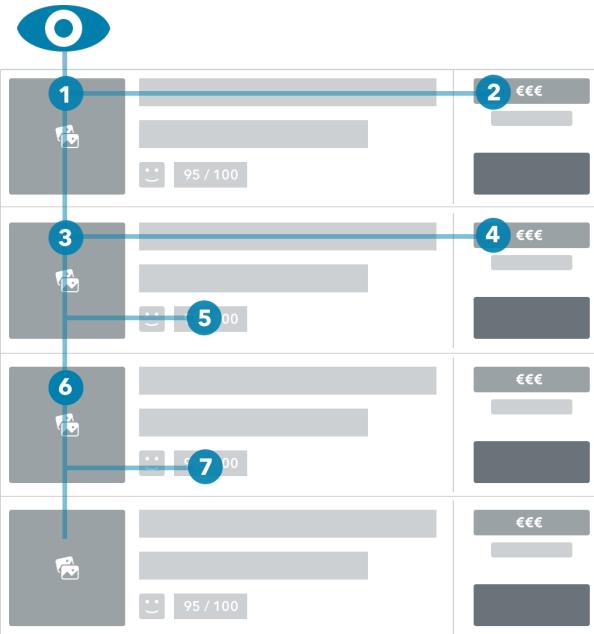
You will read
this first.

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.



Creating contrast and emphasis²¹

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

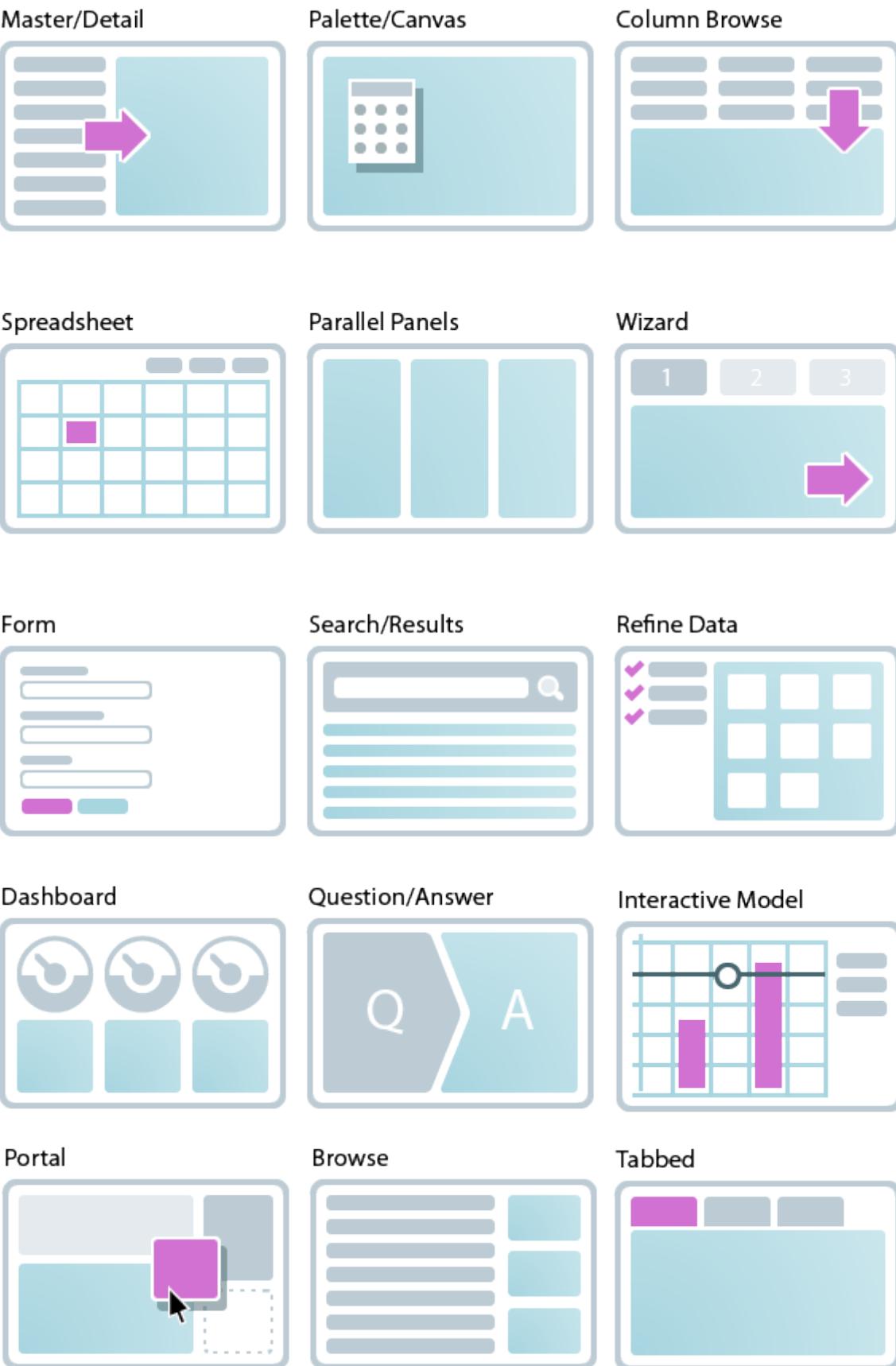
TABLE 10.1. Opposing features that can create contrast.

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

²¹ Neil, 2010, 12 Standard Screen Patterns

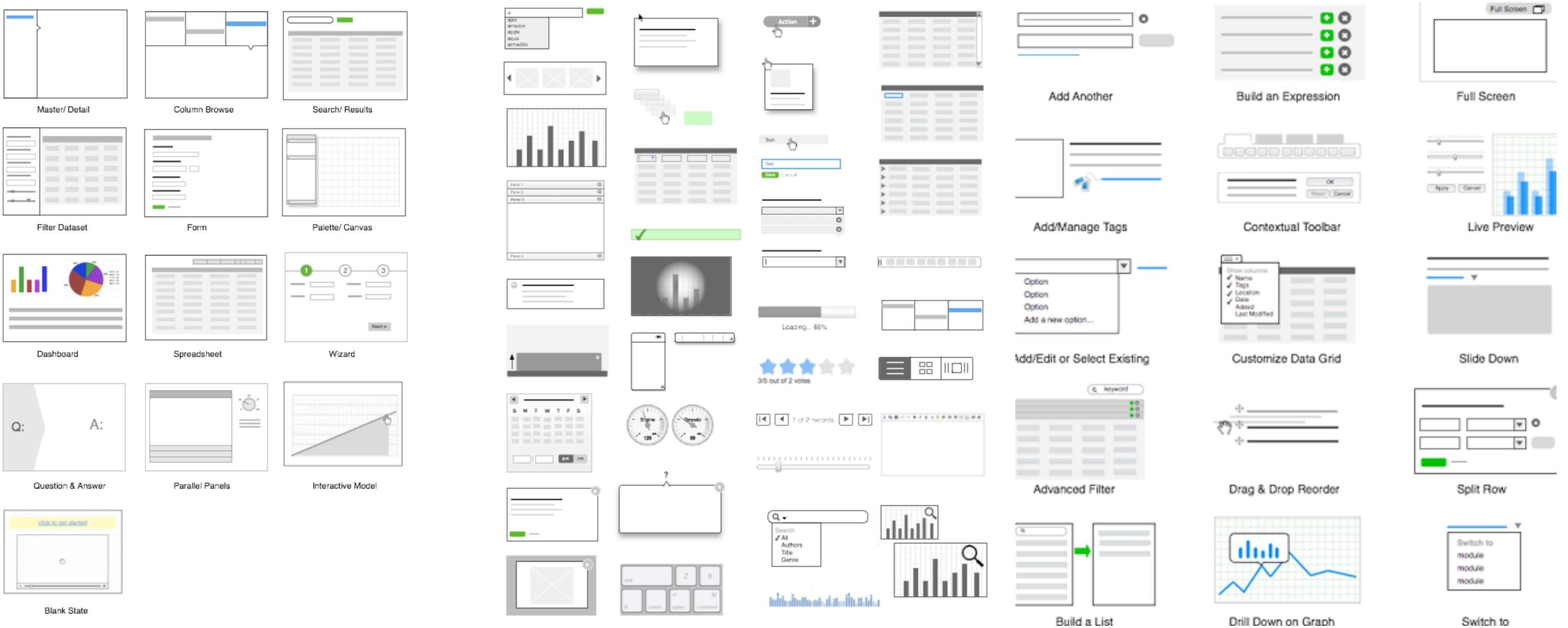
Design Patterns in UX

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



²² Neil, 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. 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!

Questions?