

Foundational concepts of design: Structure and aesthetics

So far, you've learned that intentional UI/UX considerations are critical to creating visualizations that are useful for the audience. In this reading, you'll learn more about the foundational concepts of design, focusing on structure and aesthetics.

Organization and structure

Organizing information is important for audience understanding, and effective user interfacing (UI) and user experience (UX). The structure of your visualization is the framework that supports the overall design, which includes:

- Information hierarchy
- Visual hierarchy
- Consistency

Information hierarchy

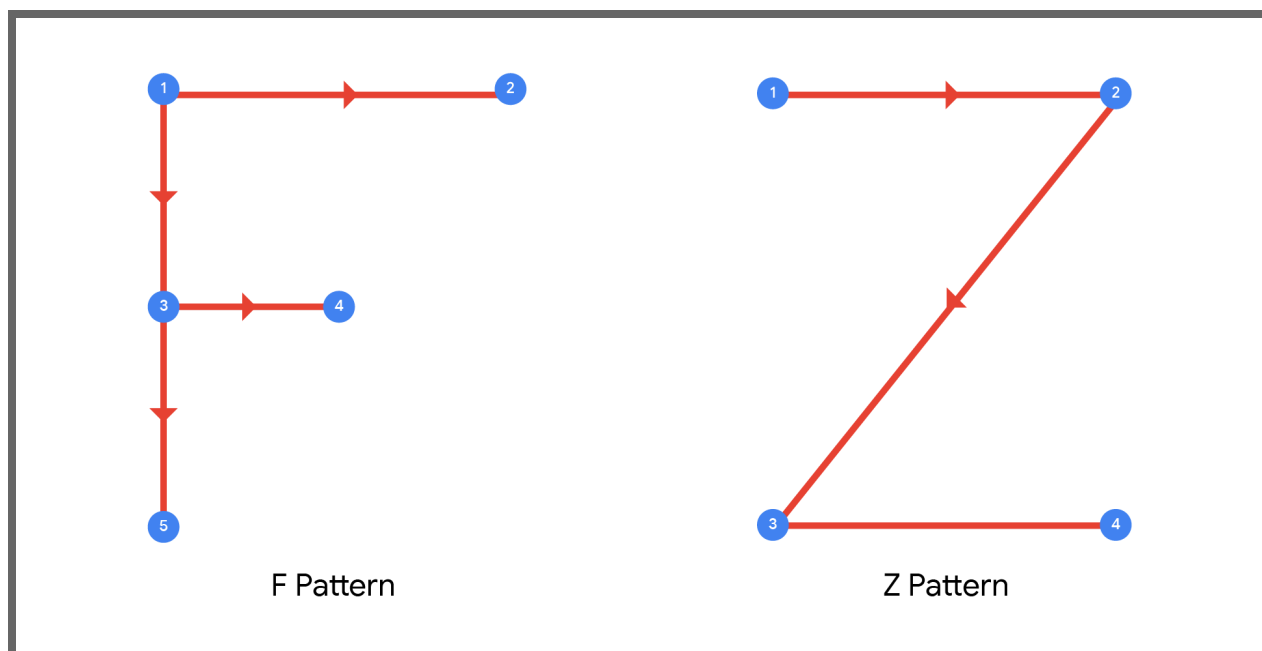
Hierarchies ensure the most important information is prioritized, highlighted, or called out by drawing the viewer's attention through graphics and color choices. By implementing an information hierarchy, the audience is able to arrive at the same conclusion you did through visualizations.

For example, a dashboard displaying the productivity of engineers on a software development team displays key metrics, like number of tasks completed, average time spent revising code, and percentage of contribution to projects. The most important measure is the number of tasks completed for the week, so it's in large font at the top of the dashboard, while the other measures are in smaller font underneath it.

Visual hierarchy

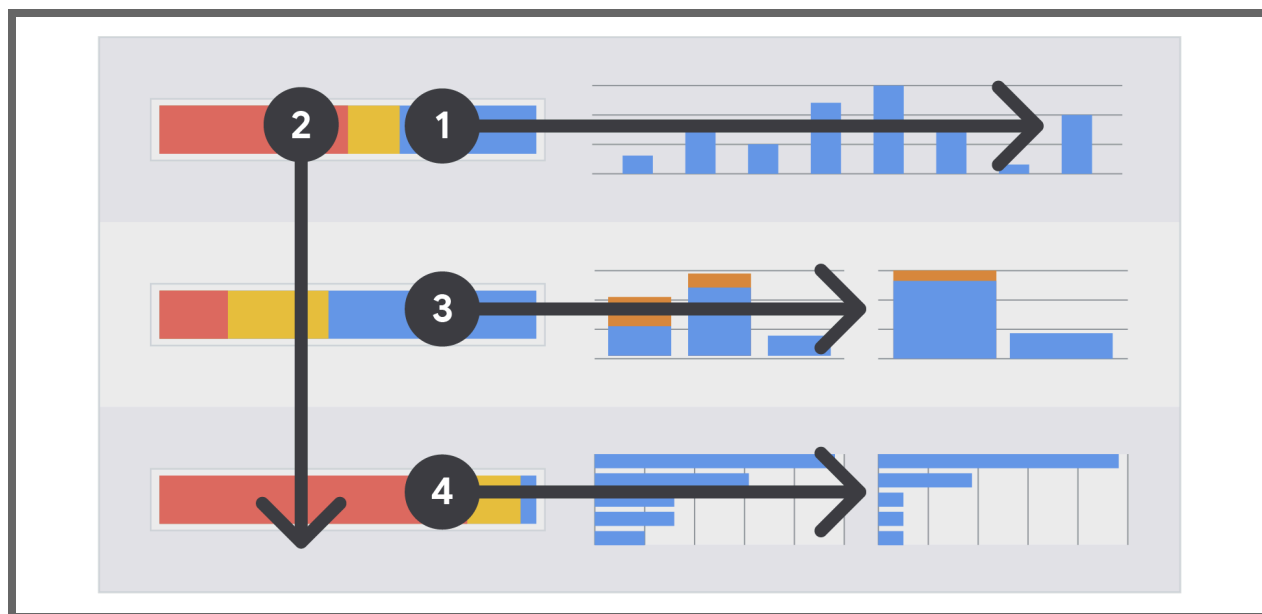
A visual hierarchy considers how information is displayed in a logical order. It's helpful to have one main visualization with supporting graphics so the audience arrives at the main point with ease.

While color, shape, and text choices are all important to creating an effective visualization, the layout of information is just as important. There are various grid systems you can use to align your content. Two examples of the systems are the F and Z pattern recognitions. The purpose is to guide users towards specific goals, ensuring the most important pieces of information receive the attention they deserve.



Drawn from the findings of the Nielsen Norman Group, The F pattern describes the way users typically scan dense content.

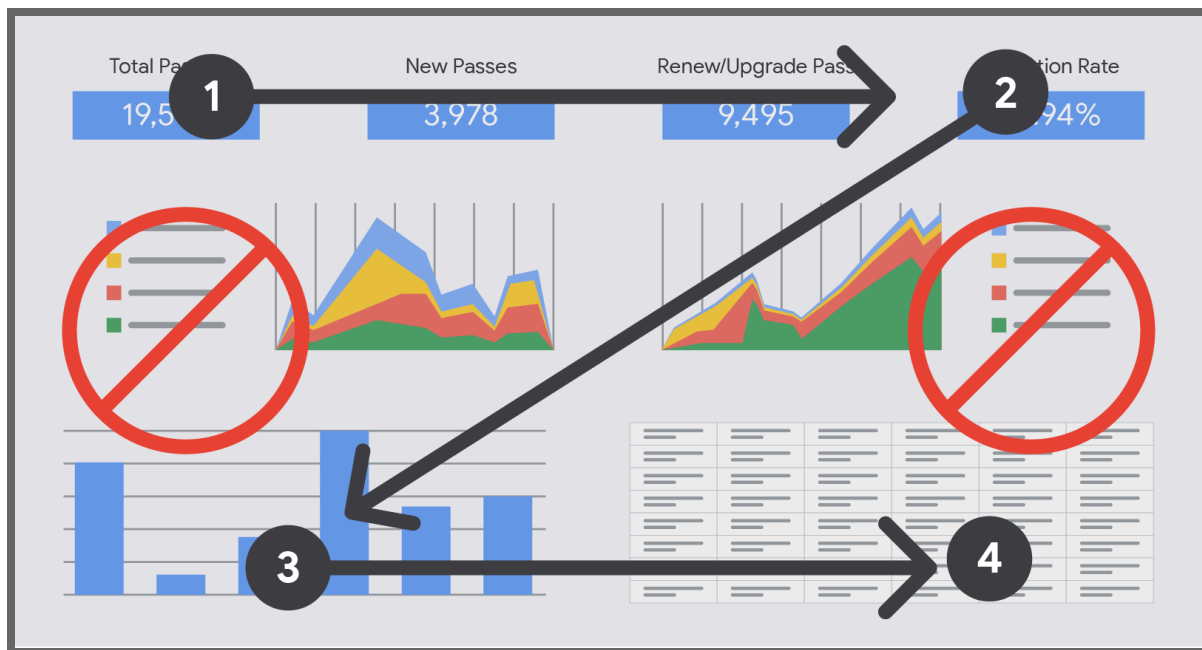
- First, users read horizontally across the upper part of the content area.
- Second, users move down and read horizontally covering a shorter area than before.
- Lastly, they scan the left side of the content vertically.



For designers, the F-pattern indicates the importance of placing key information towards the top left.

For less dense information, the Z pattern describes how users' eyes move in a pattern resembling the letter z. The Z-pattern is particularly relevant for content with a singular focus.

- Users start from the top left, reading horizontally to the top right (a similar start to the F pattern).
- Next, users' eyes move diagonally to the bottom left.
- Lastly, users scan horizontally to the bottom right.



The Z-pattern suggests that key elements be strategically placed along this Z path to maximize visibility.

Understanding these patterns and prioritizing a visual hierarchy can help to effectively guide user engagement. Ultimately, your goal should be to create a deliberate flow that directs users toward intended outcomes.

Consistency

Consistency refers to font, color, and style choices in a visualization. Consistent design elements like simple fonts and calming color palettes reduce mental load on the viewer. Making effective design choices helps the viewer focus on the information instead of being distracted by bold color choices, over-styled fonts, and complicated graphics.

Implement consistency across a visualization to create a seamless experience by:

- Avoiding bold, contrasting color palettes
- Choosing similar font families that can be read easily in lower and upper case
- Being intentional about graphic choice

Design choices for visual aesthetics

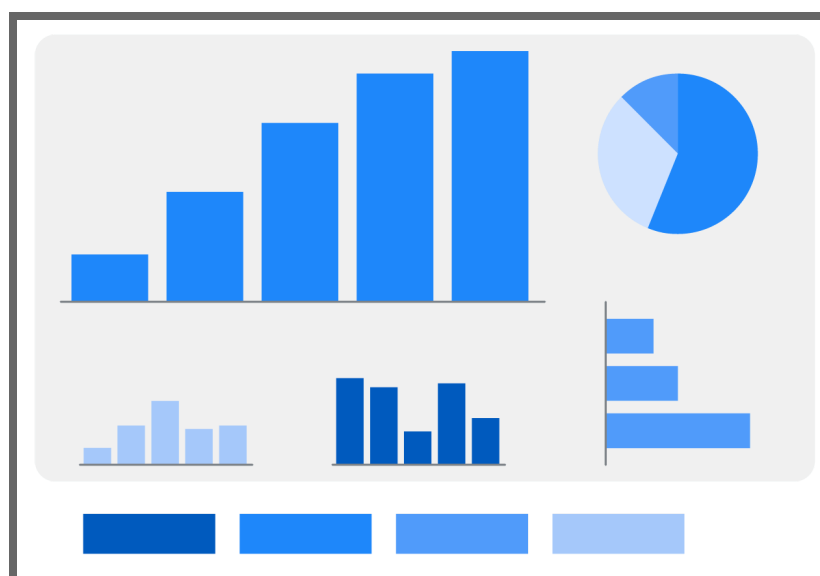
Aesthetics make a design pleasing to the eye and involve elements like:

- Color theory and psychology
- Typography
- Imagery and icons

Color theory and psychology

Color psychology is an area of color theory that assigns emotional connotations to colors. These meanings are typically universal because of their effect on the brain. You can use this information to evoke emotion or draw attention to specific information in your graphics.

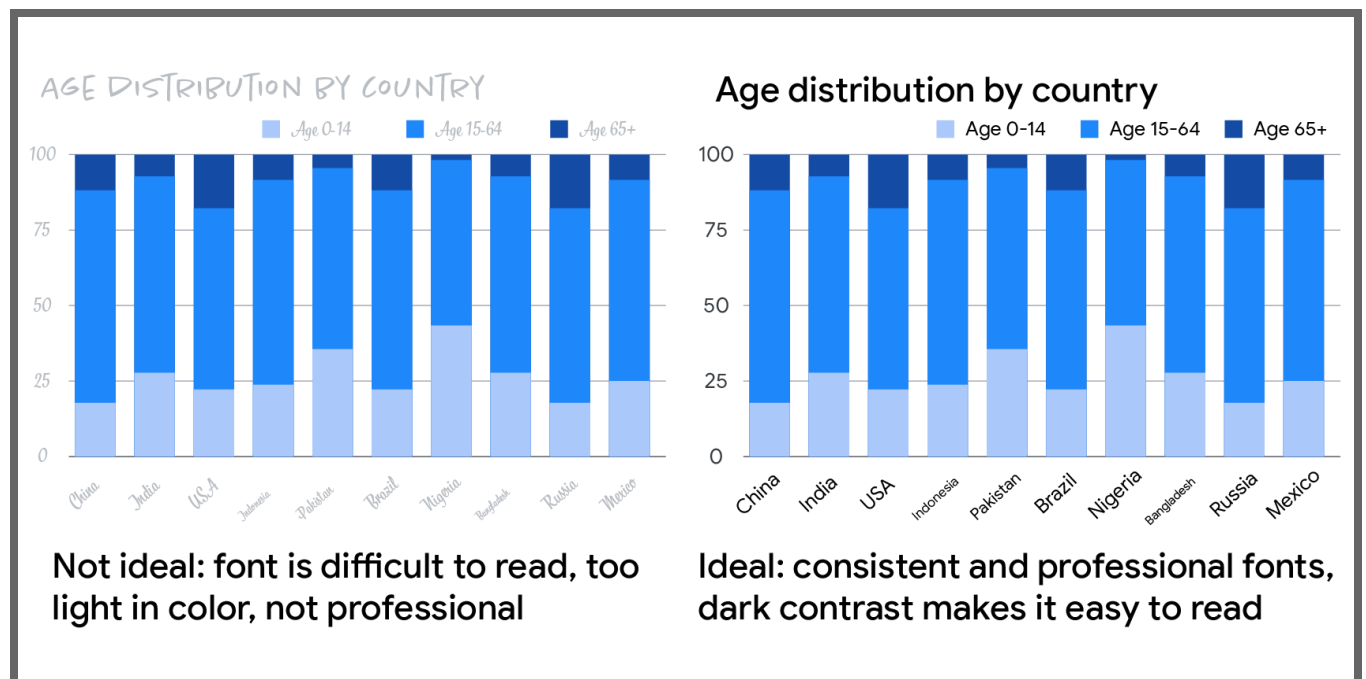
For example, blue is associated with trust, peace, loyalty, and competence. If you're creating a visual for a new audience, a blue color palette could be useful for making a good first impression.



Typography

Typography refers to the font chosen to make text legible. Certain fonts can compete with the overall message of your visual or your company's branding. Some font combinations will not meet accessibility standards for your organization. Ultimately, your fonts need to be cohesive and readable to your audience.

For example, choose one font family for primary use. Instead of choosing a second font for headings, try using the bold, italics, or underline feature. This is also helpful to establish hierarchy and emphasize topics.



Imagery and Icons

Pictures, icons, and graphics can be a great way to break up long portions of text. They reduce the mental load for the viewer by giving their mind a rest between texts. These visuals can also help simplify complex concepts.

Consider these guidelines for choosing intentional graphics:

- Imagery must be accessible to your audience.
- Imagery must be relevant to your audience and subject matter.
- Provide a description and alternative text to accompany graphics.
- Images and graphics are meant to support your narrative, not overpower the story.

Balance structure with aesthetics

It's important to achieve the right balance between structure and aesthetics to ensure the viewer can quickly grasp the meaning of the data, while also enjoying an aesthetically pleasing experience.

Keep these tips in mind when you're creating visuals:

- Lay out your visual to parallel the narrative you're telling about the data.
- Structure your narrative around the main point or conclusion you want your audience to reach.
- Relate to your audience by considering their questions, concerns, and potential interpretations of the presentation.
- Regularly iterate and refine based on feedback from stakeholders.
- Adopt the design and complexity of the visual based on your audience's familiarity with the data.

Key takeaways

As a future cloud data analyst, mastering the principles of organization and aesthetics can significantly enhance the effectiveness and user experience of visualizations. Remember, structure supports the data while aesthetics enhances users' experience.

Resources for more information

Learn more about how to make effective color, text, and style choices for your visualizations with these resources:

- This resource describes the importance of color choices in data visualization, and how to make effective decisions regarding color: [Color Choices in Data Visualizations: Importance and How To](#)
- This resource includes an in-depth explanation of the Z and F patterns and the applications to digital design: [Z-Pattern vs F-Pattern: The Alphabet in Web Design](#) Learn more about basic color theory and psychology, and the impact it has on user experience in this extensive blog: [How Color Impacts Conversion Rates and UX](#).