

# Module 2

# Design principles

116N54C301

# Design guiding principles

## Categorical

1. Balance
2. Hierarchy
3. Scale/Proportion
4. Dominance/Emphasis
5. Similarity & Contrast.

**Simple colours, minimal text and white space work together to tell a clear story.**

rhythm



balance



unity



## THE PRINCIPLES OF DESIGN



proportion



contrast

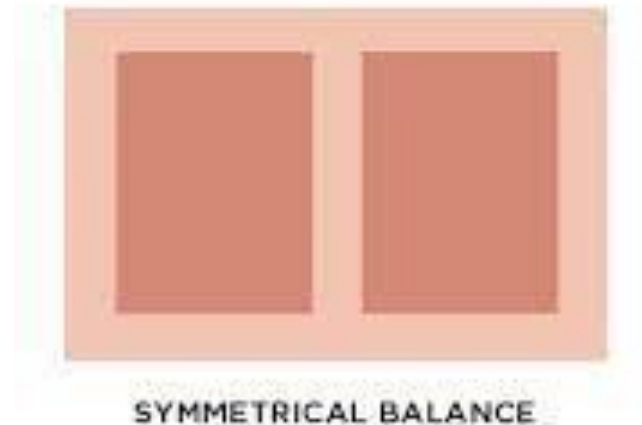
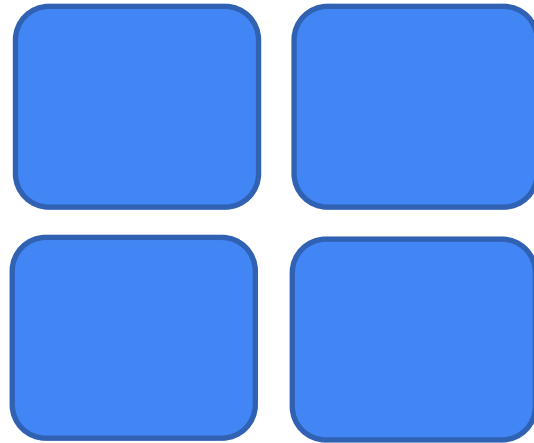


dominance

# Effective Data Visualization Design principles

## 1. Balance the Design:

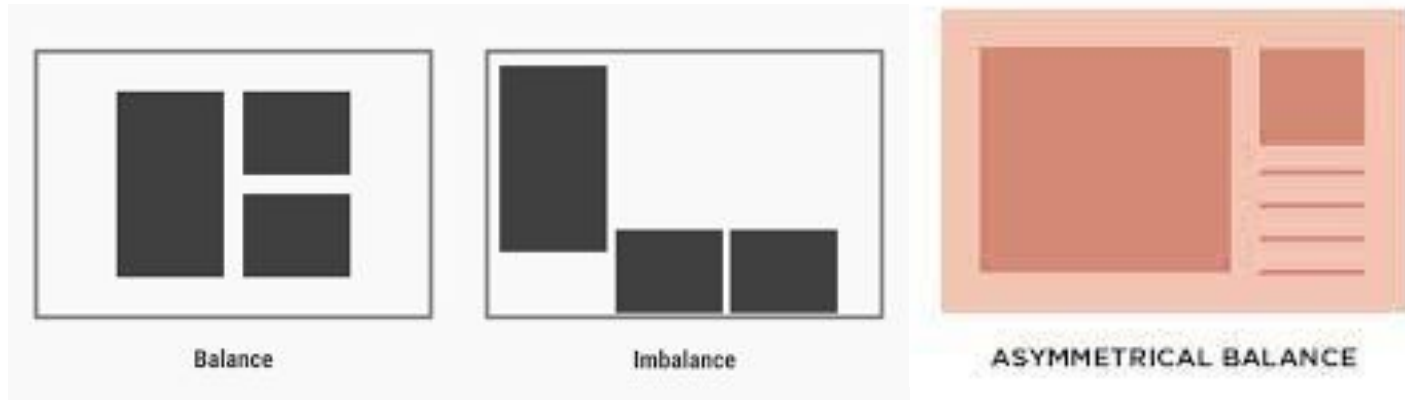
- Equally distribute the visual elements like shape, colour, negative space, and texture across the plot.
- **Types of balances in design:**
  - 1.1. Symmetrical**—Each side of the visual is the same as the other



# Effective Data Visualization Design principles

## 1. Balance the Design:

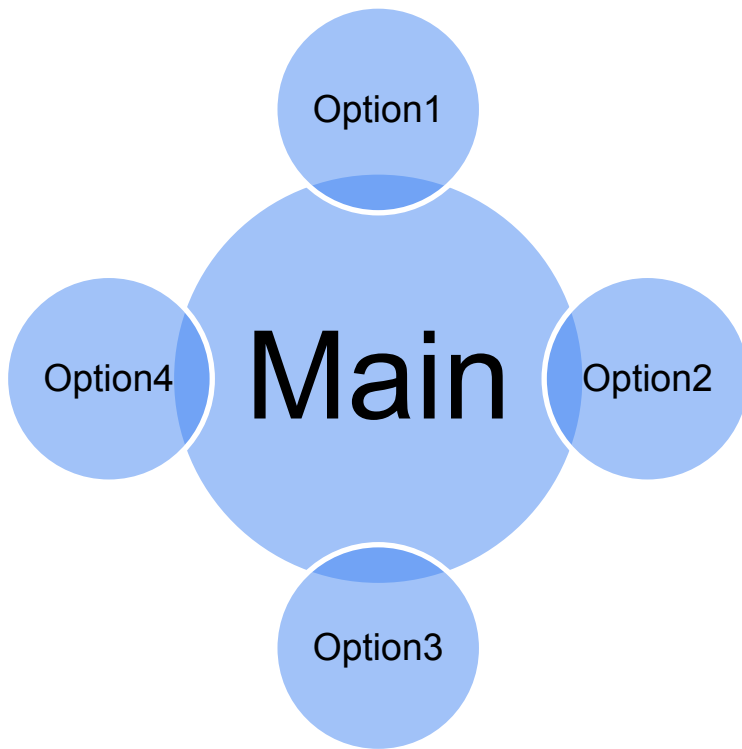
**1.2. Asymmetrical**—Both sides are different but still have a similar visual weight



# Effective Data Visualization Design principles

## 1. Balance the Design:

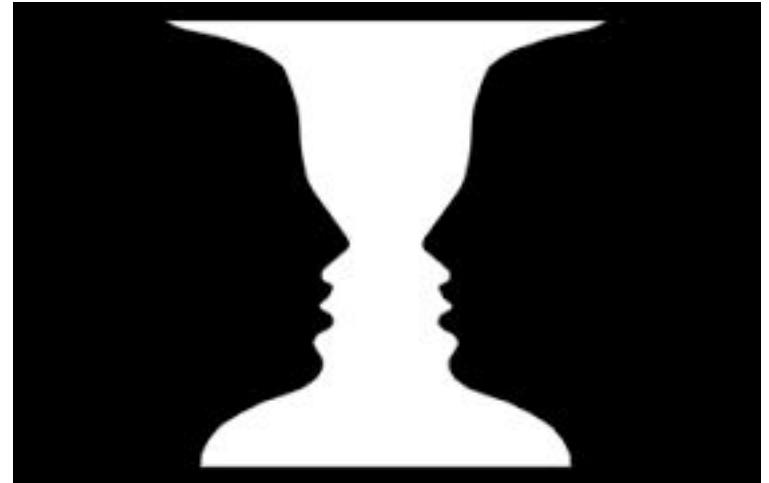
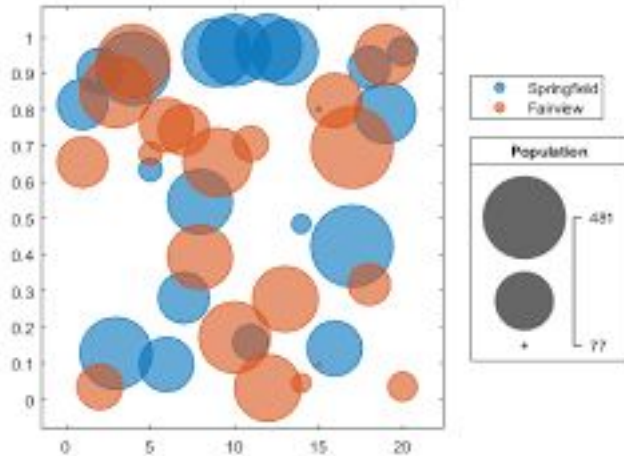
**1.3. Radial**—Elements are placed around a central object which acts as an anchor



# Effective Data Visualization Design principles

## 2. Emphasise the Key Areas

- Ensure important data will not get unnoticed
- Draw the user's attention to the right data points by carefully choosing the size, colours, contrast, and negative space.



Negative Space

# Effective Data Visualization Design principles

## 3. Illustrating Movement

- Movement directs the user's attention in a certain direction
- Visual elements should mimic movement in an “F” pattern, which is how people read.
- Starting from top left to right, and gradually down the page.

**1      2    3**

**4**

**5**

**6**



# Effective Data Visualization Design principles

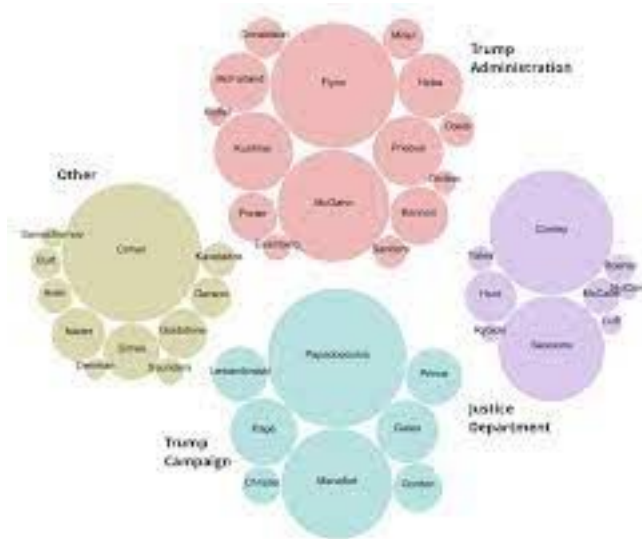
## 4. Smart Use of Patterns

- Repeated design elements form a pattern.
- Patterns make for a great way to display similar types of information spread across the page as one.
- Using similar colours, chart types and elements are the way to go.
- Easier to communicate an anomaly, since any disruption in the pattern will naturally draw the viewer's attention and curiosity.
- Using patterns is one of the simplest and most effective design principles when it comes to data visualization.

# Effective Data Visualization Design principles

## 5. Proportion

- Proportions can indicate the weight of different data sets and the relationship between their values.



# Effective Data Visualization Design principles

## 6. Proper Rhythm

- Balanced rhythm when the design elements together create a pleasing movement to the eye

# Effective Data Visualization Design principles

## 7. Variety

- keeps viewers engaged and interested
- not only eye-catching but also helps the viewer retain the information presented for longer.
- Use apt type of visuals , graphs suitable for the purpose

# Effective Data Visualization Design principles

## 8. Theme

- Design is consistent and follows a standard.
- Incorporate a theme for company or based on the niche of the visualization.
- This helps connect with the user on a deeper level and augments the visual design.

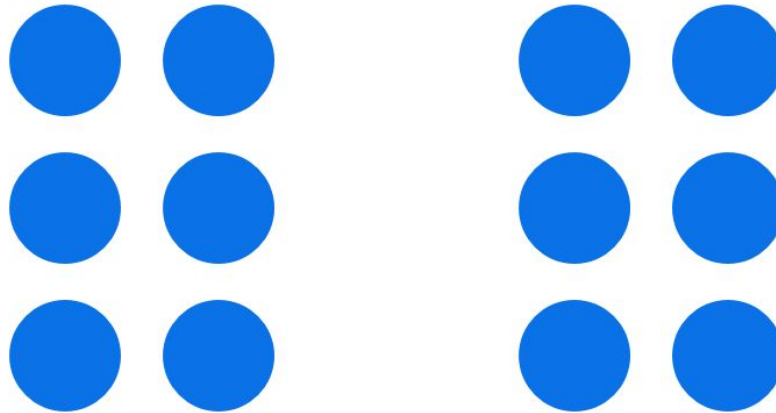
# Gestalt Principles

## Proximity:

The nearer the objects to each other, the more we logically think that these objects belong to the same group

placing visuals closer together encourages the users to think that the grouped visuals are in the same context.

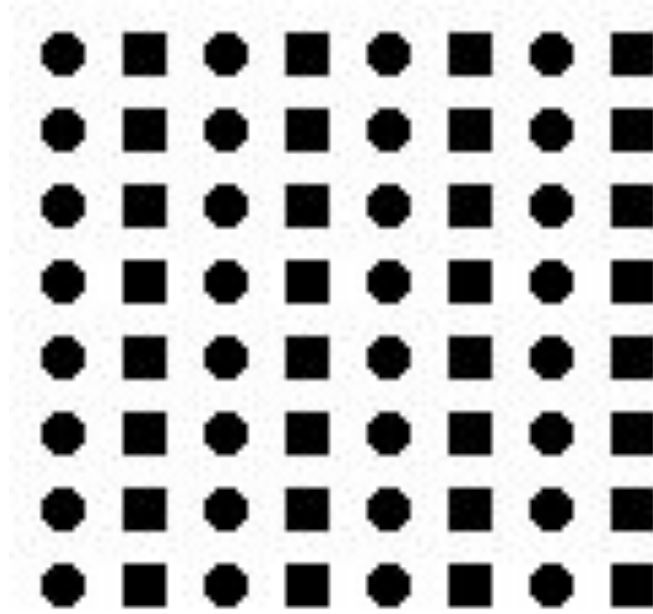
The way the objects are positioned in relation to each other can also make the user unconsciously move their eyes from left to right and/or top to bottom.



# Gestalt Principles

## **Similarity:**

Objects of the same color, size, shape and orientation belong to the same group,

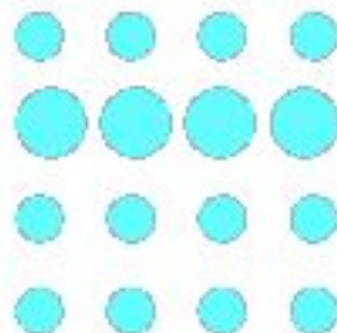
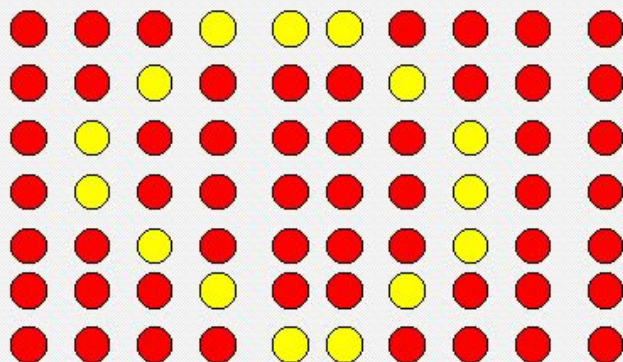


# Gestalt Principles

Similarity: Shape, Scale and Color



Items that look similar will be seen as parts of the same form



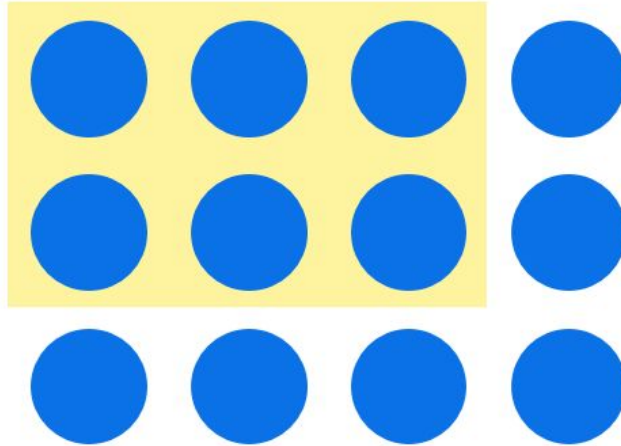
Similarity: Size



# Gestalt Principles

## Enclosure:

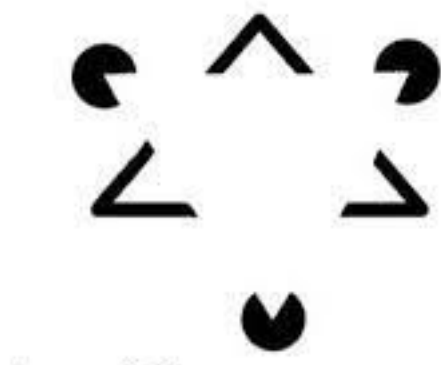
A group of objects can be enclosed by anything that forms a visual border around them  
This enclosure causes the objects to appear to be set apart in a region that is distinct from the rest of what we see.



# Gestalt Principles

Closure:

Our eyes tend to add any missing pieces of a familiar shape



# Gestalt Principles

## Continuity:

We perceive objects as belonging together, as part of a single whole, if they are aligned with one another or appear to form a continuation of one another.

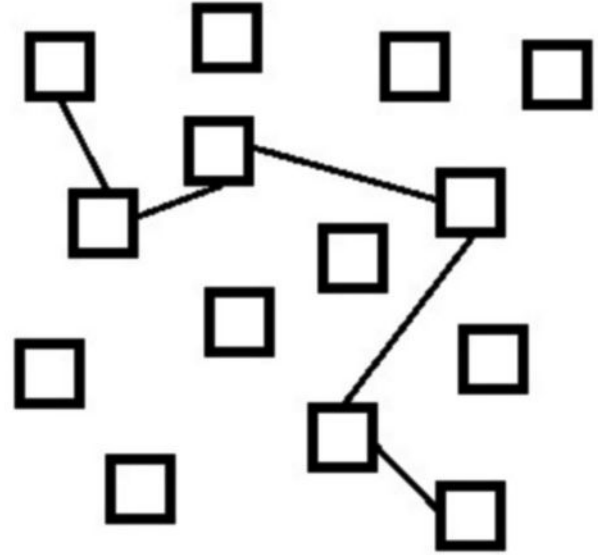
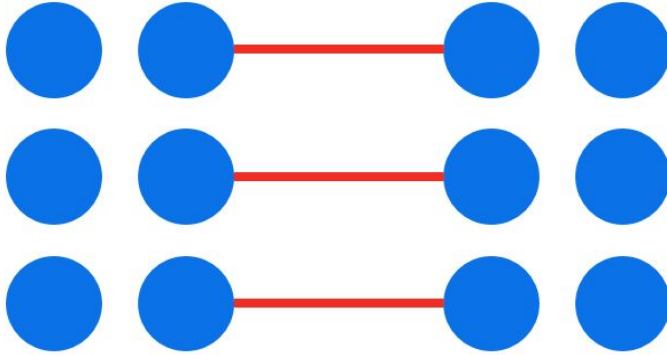
It's like the closure principle, but besides the visual connection to form shape, we also attach visual direction as part of the continuation.



# Gestalt Principles

## Connection:

We perceive objects that are connected in some way, such as by a line, as part of the same group



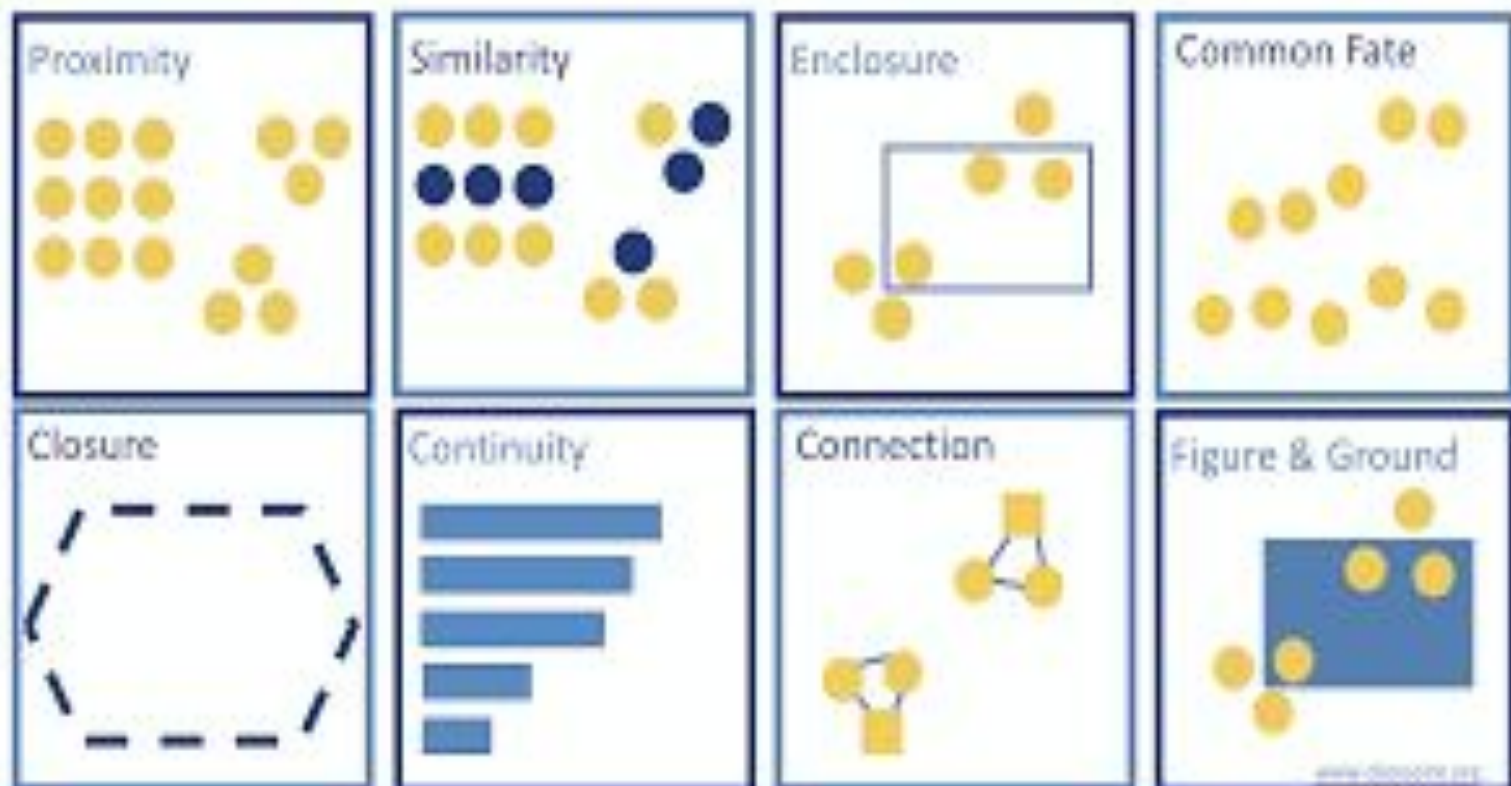
# Gestalt Principles

## Figure and Ground

We add information based on our imagination



# Gestalt's Principles of Visual Perception



# 7 Key Design Principles

## 1. Identifying The Target Audience

- Be clear on the target market and their levels of literacy
- Have a good idea of the message or messages they want to convey.
- Take into account ethnicity and cultural values.

## 2. Focusing On Focus

- Create a visual hierarchy or focus on key areas using : size, contrasting colors, and position.
- Take into account “eye flow”, the way the eye moves from left to right and then down and left to right again.

# 7 Key Design Principles

## 3. Keeping It Simple

- Break data down into digestible bites
- Make information easy for people to understand at a quick glance

## 4. Balancing Layouts

- Balanced and elegant presentation accomplished by using a grid as the underlying skeleton of the design.
- A common element used are columns to organize information, much like the style of newspapers, magazines, and documents.



# 7 Key Design Principles

## 5. Organizing Alignment

- Group related content together and separate unrelated content
- Use lines, backgrounds, and boxes to show connections or related content.
- Separate unrelated information using spacing and enclosures, such as boxes, color, and backgrounds.

## 6. Creating Consistency

- Design elements must all remain the same , use standard font and point size
- Consistent use of color for graphical elements, and keeping an eye out for consistency in the visual hierarchy.
- Stick to a considered design standard if the client has a corporate identity or branding guidelines . Balanced and elegant presentation accomplished by using a grid as the underlying skeleton of the design.

# 7 Key Design Principles

## 7. Elevating Engagement

- Form should follow function.
- Consider balance, movement, and interactivity.
- Keep the target audience interested, engaged, and invested in the message means success.

# Time series based design principles

- Time series data is any type of information presented as an ordered sequence
- Collection of observations for a single subject assembled over different, generally equally spaced, time intervals.
- The time intervals applied to assemble the collected data in a chronological order are called the time series frequency.