Week-01 (Visualizing Data)

✳ Data visualization:

The graphic representation and presentation of data.

→ Effective data visualization:

information (data) → story (concept)

↳ goal (function)

↓

visual form (metaphor)

✳ Some data representation graph:

① Bars graph: Use size contrast to compare two or more values.

② Line graph: Help your audience understand shifts or changes in the data.

③ Pie-chart: show how much each part of something makes up the whole.

④ Maps: Help organize data geographically.

* Basic Principles of design:

① Balance : In a graph/chart the key visual elements like color, shape must be distributed properly.

② Emphases : The visualization should have a focal points, means the visualization should emphasise the most important data so that user recognize it first. Using color and value is the most common practice to do it.

③ Movement : ~ can refer to the path the viewer's eye travels as they look at the visualization.

④ Pattern : Using similar shape and colors are use to create pattern.

⑤ Repetition : Repeating chart and colors add effectiveness to a visualizations.

⑥ Proportion : ~ is the another way to express the importance of certain data. Using various colors and size helps demonstrate to prioritize the sig

nificance of one visual over others.

⑦ Rythm :~ refers to creating a sense of movement/flow on a visual.

⑧ Variety : The visualization should have variety in the chart types, lines, shapes, or colors. Its keep the audiance engaged.

⑨ Unity :~ refers that the final visualization should be cohesive.

✳ Data composition : combine the individual parts in a visualization and displaying them together as a whole.

✳ Elements for effective visuals :

① Clear meaning.

② Sophisticated use of contrast.

③ Refined execution.

✳ **Design thinking:** A process used to solve complex problems in a user-centric way.

✳ **Phases of design process:**

① Empathize: Think motion and needs of the target audiance of the visualization.

② Define: The define phase helps to find the audiences needs, their problems, and the insights. Its helps to decide which data you want to show in the visualization.

③ Ideate: This phase starts the real visulization. To use all the finding from empathize and define phases to brainstorm potential data-viz solutions.

④ Prototype:

⑤ Test:

These two stage responsible for viz-prototype and test

Design thinking for data visualization involves five phases:

1. **Empathize:** Thinking about the emotions and needs of the target audience for the data visualization
2. **Define:** Figuring out exactly what your audience needs from the data
3. **Ideate:** Generating ideas for data visualization
4. **Prototype:** Putting visualizations together for testing and feedback
5. **Test:** Showing prototype visualizations to people before stakeholders see them

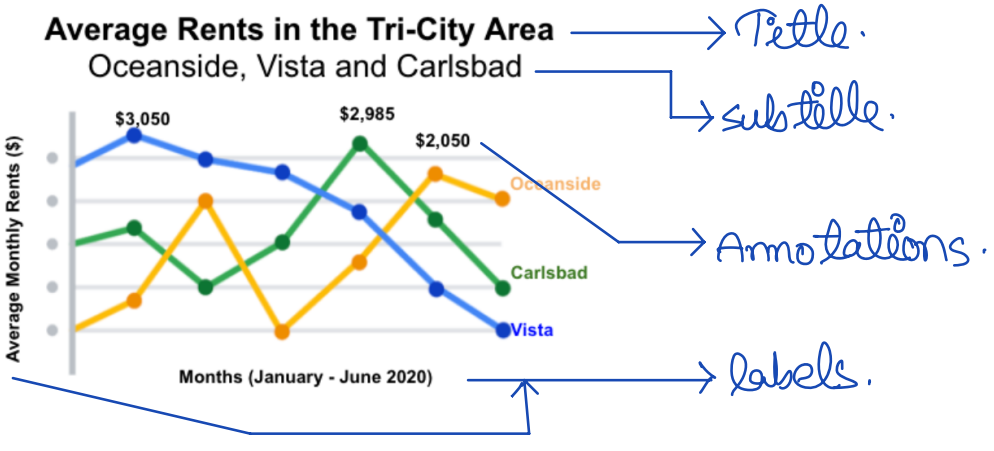
✳ Key components of a visualization:

① Headline: ~ is a line of words printed in a larger letters at the top of the viz.

② subtitle: ~ helps headline by adding more context and description.

③ Labels: ~ in a viz. identifies data in relation to other data. Most commonly labels in a charts identify what the x-axis and Y-axis represents.

④ Annotations: ~ briefly explains data or helps to focus the audience on a particular aspects of the data in a visualization.



Visualization components	Guidelines	Style checks
Headlines	- **Content**: Briefly describe the data - **Length**: Usually the width of the data frame - **Position**: Above the data	- Use brief language - Don’t use all caps - Don’t use italic - Don’t use acronyms - Don't use abbreviations - Don’t use humor or sarcasm
Subtitles	- **Content**: Clarify context for the data - **Length**: Same as or shorter than headline - **Position**: Directly below the headline	- Use smaller font size than headline - Don’t use undefined words - Don’t use all caps, bold, or italic - Don’t use acronyms - Don't use abbreviations
Labels	- **Content**: Replace the need for legends - **Length**: Usually fewer than 30 characters - **Position**: Next to data or below or beside axes	- Use a few words only - Use thoughtful color-coding - Use callouts to point to the data - Don’t use all caps, bold, or italic
Annotations	- **Content**: Draw attention to certain data - **Length**: Varies, limited by open space - **Position**: Immediately next to data annotated	- Don’t use all caps, bold, or italic - Don't use rotated text - Don’t distract viewers from the data

Week-02 (Creating data viz. with Tableau)

✳ **Tableau:** A business intelligence and analytics platform that help people see, understand, and make decision with data.

→ **Tableau data type:**

1. Numeric data: Only numbers.
2. String data: characters set.
3. Globe: Geographic data.
4. Calendar: Date data.
5. Calendar with clock: Date with time.

Week-03 (Crafting Data stories)

✳ **Dashboard:**

A tools that organizes information from multiple datasets into one central location for tracking, analyses, and simple vizualization.

→ **Dashboard filter:**

A tools that showing only the data that meets a specific criteria while hidding the rest.

→ **Story telling steps:**

1. Engage the audience.
2. Create compelling visuals.
3. Tell the story in an interesting narrative.

✳ **Spot lighting:** Scaning through data to quickly identify the most important insights.

* An effective data story include five key elements :-

① character ② setting. ③ Plot ④ big-reveal.
⑤ Aha moments.

* Best Practices for data-story telling :-

① Title : The title of the story.

② Date of the presentation.

③ Table of contents

④ Text : Good if the total text is less than 5 lines and 25 words per slide.

⑤ Don't use slang words / abbreviations.

⑥ conclusion : set conclusion at the end of the analysis.

Week-04 (Developing presentations and slideshows)

✳ Purpouse of framework:

1. Give content to the audience for better understand the data.
2. Help to focus on the important information.
3. Create logical connections that tie back to the business task.

✳ The McCandless method:

1. Introduce the graphic by name → (title)
2. Answer obvious question before they have asked.
3. state the insight of the graphics.
4. Call out data to support that insight → example.
5. Tell the audience why it matters.

✳ Type of objections:

→ About the data.
→ About the analysis.
→ About the finding.

✳ Important aspects of presentation:

1. Define the purpouse.
2. Keep it concise.
3. Have some logical flow to the presentation.
4. Make the presentation visually compelling.