

CT Academy | Module 4 Visualization & Accessibility

Overview

This module contains the exercises for Module 4, Visualization & Accessibility. A list of learning materials, tools and recommendations are on the [course website](#). This module introduces the basics of effective data visualization and accessibility. Participants explore how people interpret visuals and how design choices can improve or hinder understanding. Emphasis is placed on selecting appropriate chart types, reducing clutter, applying accessibility principles, and designing clear visuals that communicate insights accurately and efficiently.

Learning Objectives

The learning objectives for this module are to:

- Build awareness of how visual choices shape understanding and how poor design can mislead or exclude.
- Understand the process behind building clear, focused and useable dashboards and reports.
- Encourage equitable design practices that ensure broad usability and interpretation of visuals across diverse audiences.

Data Lab

The data lab for Module 4 will have the following format:

- Review and discussion of the answers to the reflection questions with some real-life examples provided by the facilitators
- Look at our sample data, create a few example visualizations and discuss the impact of the pre-attentive attributes, gestalt principles and decluttering has on our data related products
- A walkthrough of each activity Mastery Level 3 of the Active Exercise by the facilitators
- Discussion around what charts work best with (typical) Government of Canada financial data

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Exercises

Exercise 1:

In the learning resources for this module, we learned about *workhorse visualizations* (charts and graphs that are reliable). List out standard charts and graphs that you use for your data but importantly identify WHY you use them. For example, you might use a clustered column chart for budget and actuals because you want to compare the two values.

Exercise 2:

In the learning resources for this module you have been provided with a clean dataset that represents a simplified GoC financial data set. Use the dataset (or your own data) to create a chart(s) that you have not used before. Compare it to the usual way you do it and identify if it is better or worse but note the reasons why. For example, you usually show salary type (indeterminate / determinate / student) on a pie chart but doing it on a horizontal bar chart makes the numbers easier to read as one of the categories is much smaller than the other two

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Exercise 3:

Using the principles covered in the course, what are three changes you would hope to implement in your existing dashboards? Of all of the changes you would make which is the one that you are most excited to bring back to your team?

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Active Exercise

As part of the course, you will have access to a dataset (GoC Financial Sample Data CLEAN.xlsx) that has different tables containing different types of financial information. Follow the activities set out in the table below. Don't worry about achieving the higher mastery levels at the beginning, they are designed to help you identify gaps in your current data literacy profile.

The goal of the exercise is to create a VERY simple dashboard in either Excel or Power BI. Create a dashboard with 3 to 5 charts (maximum), if you want a couple of slicers / filters and don't forget a header (sub header as well if you think it's important). The challenge is for you to use at least one pre-attentive attribute, one gestalt principle and have actively looked to de-clutter the dashboard you have created!

The examples in the table below use data (mostly) from the transaction table but feel free to use data from other tables (or your OWN data) as you see fit!

NOTE: Mastery levels are not exclusive, you might need (or want) to do Mastery Level 1 AND 2 AND 3 to get to the result that you need

Activity	Mastery Level Examples		
	Mastery Level 1	Mastery Level 2	Mastery Level 3
Create a dashboard	In Excel or Power BI add in a page on which you add the required number of charts, filters and headers	Layout the page so that common elements are grouped close to each other	Create a theme that unifies the dashboard, this can include graphic design elements that make the page "pop"
Use a pre-attentive attribute	Manually draw an arrow on a chart to identify a data point of interest	Turn on a border around one of your charts to draw attention to it	Use dynamic formatting to change the colour of a column or value on a chart or table
Use a gestalt principle	Line up all the elements on your page so it looks neat and tidy!	Choose consistent colours for a particular category (e.g., Fund Category Detailed EN, or Vote Name EN) and use them across several charts	Create a full visual hierarchy on your dashboard to allow users to easily navigate and find the data that they need
Declutter the dashboard	Place your charts in a sensible order for the end-user to read and understand	Choose data-labels or axis as appropriate on all your charts	Use headers and sub-headers that eliminate the need for chart titles
Make your dashboard accessible	Use a standard font across all of your visualizations	Choose "safe" colour combinations for your visualizations	Add in "alt text" and sort out the tab order of your visualizations to prepare for the use of visual impairment tools