

Sep 23, 2024

Data Visualization

Week 1. Introduction

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Why “Data Visualization” ?

These factors necessitate that Data Visualization be considered as a separate course:

- The increasing volume of data due to declining storage costs in parallel with technological advancements, and the need to quickly derive insights from this data,
- The effectiveness of visual representation compared to other explanatory techniques,
- The growing demand in the industry for skilled professionals who can extract meaning from data using visual tools.

Aim

- Understanding data visualization methods.
- Practicing data storytelling techniques.
- Gaining awareness of bad visualization habits.

Why “Visual Representation” ?

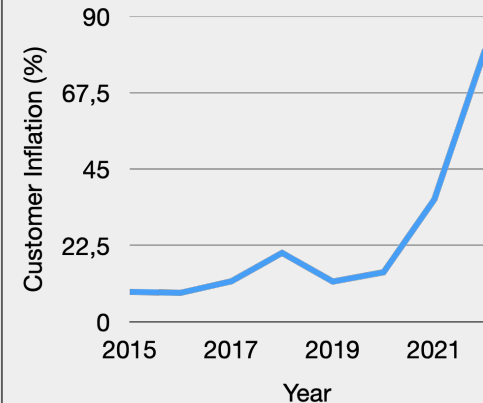
Text

Since 2015, consumer inflation in Turkey has increased each year compared to the previous year. In 2015, inflation rose by 8.81% compared to the previous year, followed by increases of 8.53%, 11.92%, 20.3%, 11.84%, 14.6%, 36.08%, and 80.21% in the subsequent years.

Table

Year	Consumer Inflation (%)
2015	8.91
2016	8.53
2017	11.92
2018	20.3
2019	11.84
2020	14.6
2021	36.08
2022	80.21

Plot



Why “Visual Representation” ?

The human brain processes visual data 60,000 times faster than text data.*

*<https://oit.williams.edu/files/2010/02/using-images-effectively.pdf>

Applications

Throughout the course, the exercises will be conducted using R. posit Cloud (<https://posit.cloud>) will be used for this purpose.

Course Materials

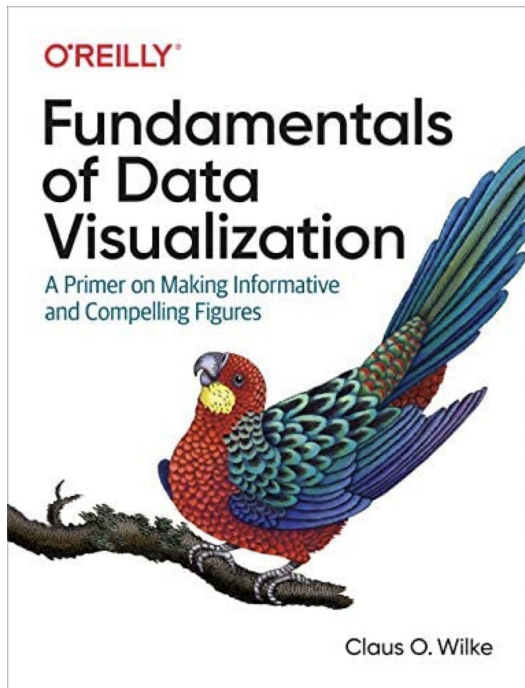
All materials can be accessed through the course's GitHub page:

https://github.com/mcavs/ESTUStat_2024Fall_DataVisualization

Grading

- 5 Homeworks - *cornerstones of final project + practices* (50%)
 - project proposal (title + abstract + data source + RQs) - minor changes can be done
 - practice
 - project draft #1 (some plots)
 - practice
 - project draft #2 (improved plots + report)
- Final Project - *poster presentation in the last course* (50%)
 - an open event for 2 hours
 - a poster summarize your project in the size of A1
 - GitHub repository (code + data + poster)

Book



It is open source and free:
<https://clauswilke.com/dataviz/>