Python: Data Visualization Notes

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1 Learning Objectives

What good is a data analysis if the answers or findings can't be conveyed properly? Or perhaps even more detrimental, what good is a dataset if the proper questions or hypotheses can't be formed in the first place? How can we properly tell the story the data is providing? Enter in data visualization! Both explaining the data and exploring the data can be significantly helped through the process of data visualization.

Data visualization is two-pronged:

- Exploratory Analysis: Helping to understand the data prior to analysis. Searching for relationships and insights.
- Explanatory Analysis: Helping to present analysis findings, helping to tell a story with the data. After insights were found.

And it's all a part of the entire data analysis process. We can also simplify the data analysis process into 5 steps:

1. Extract
2. Clean: Exploratory
3. Explore: Exploratory
4. Analyze: Exploratory OR Explanatory
5. Share: Explanatory

In this course, we'll be using the matplotlib, seaborn, and Pandas libraries to assist in the data analysis process.

Concepts

- Design of Visualization
- Exploration of Data

  - Univariate Exploration of Data
  - Bivariate Exploration of Data
  - Multivariate Exploration of Data
- Explanatory Visualizations
- Visualization Case Study

2 Design of Visualization

3 Exploration of Data

3.1 Univariate Exploration of Data

3.2 Bivariate Exploration of Data

3.3 Multivariate Exploration of Data

4 Explanatory Visualizations

5 Visualization Case Study