Exercise 2.7: Data Analysis and Visualization in Django

Learning Goals

- Work on elements of two-way communication like creating forms and buttons
- Implement search and visualization (reports/charts) features
- Use QuerySet API, DataFrames (with pandas), and plotting libraries (with matplotlib)

Reflection Questions

1. Consider your favorite website/application (you can also take CareerFoundry). Think about the various data that your favorite website/application collects. Write down how analyzing the collected data could help the website/application.

Analyzing collected data helps developers find what features their website could use work on, and which features are most and least used. This allows the developer get a feel about user behavior with their website.

2. Read the Django official documentation on QuerySet API. Note down the different ways in which you can evaluate a QuerySet.

Iterations, Slicing, Indexing, Counting, Existence Checks, Aggregation

3. In the Exercise, you converted your QuerySet to DataFrame. Now do some research on the advantages and disadvantages of QuerySet and DataFrame, and explain the ways in which DataFrame is better for data processing.

Advantages:

QuerySet is an object that represents a collection of objects from a data based and can be used to filter, order, and aggregate data from the database.

DataFrame is a data structure that is designed for data processing and analysis that can also be used to filter, order, and aggregate data from the database. It also provides different methods for data manipulation and analysis.

Disadvantages

QuerySet is designed to work from a database, and can process data slower when trying to process data that is not in the database. QuerySet it not as flexible when it comes to data manipulation.

DataFrame can be memory-intensive for large datasets.   It can also be slower that other Python libraries for certain operations.

DataFrame is more flexible and provides a wide range of methods for data manipulation and analysis. This makes it better for data processing. However, QuerySet may work out better if it is designed for working with data from a database.