210 Project Report

This project explores your personal food ordering history from Yemeksepeti. The aim is to analyze your ordering patterns, identifying your culinary preferences, guilty pleasures, late-night snack habits, and any trends in your food choices. The goal is to paint a comprehensive picture of your Yemeksepeti experience through data.

Installation of Libraries: The code includes installation commands for requests, beautifulsoup4, and selenium. These libraries are essential for web scraping and parsing HTML. Pandas and sklearn used in further steps.

Data Collection

- I scraped my own Yemeksepeti orders from yemeksepeti.com/new/orders, then after getting the html. I used pandas to make it a dataframe.

Data Cleaning and Preprocessing

- **Handling Missing Values**
- **Parsing Timestamps**
- **Data Type Conversion**: Ensured that each column was in the appropriate data type for analysis.
- **Aggregating Order Items**

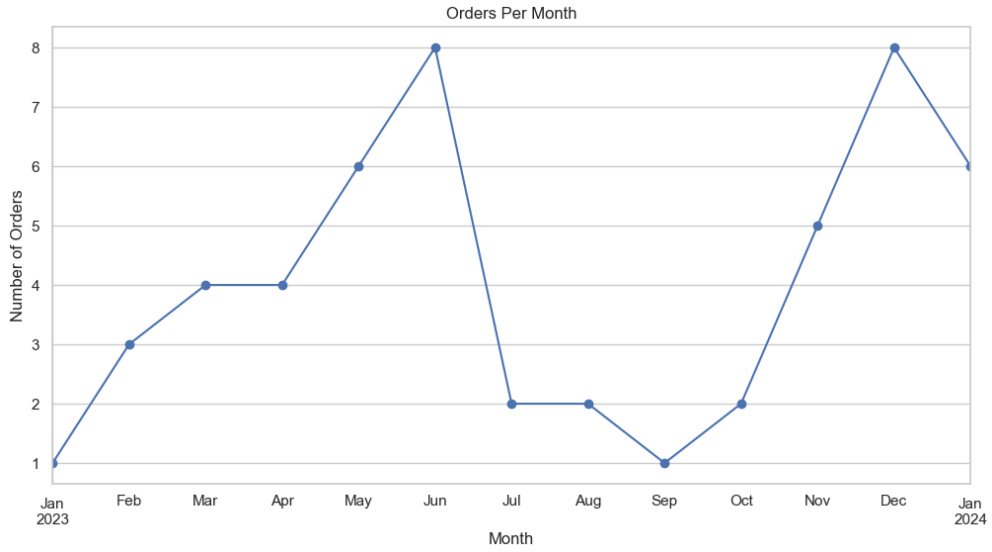
Exploratory Data Analysis (EDA)

- `pandas` for data handling.
- `matplotlib` and `seaborn` for visualization.

- **Culinary Preferences**: Identified the most frequently ordered types of food and popular restaurants.
- **Guilty Pleasures**: Highlighted specific foods or orders that stand out as indulgences.
- **Late-Night Snacking**: Analyzed ordering patterns to identify late-night food choices.
- **Binge-Eating Patterns**: Investigated instances of high-volume ordering, indicative of binge-eating behavior.

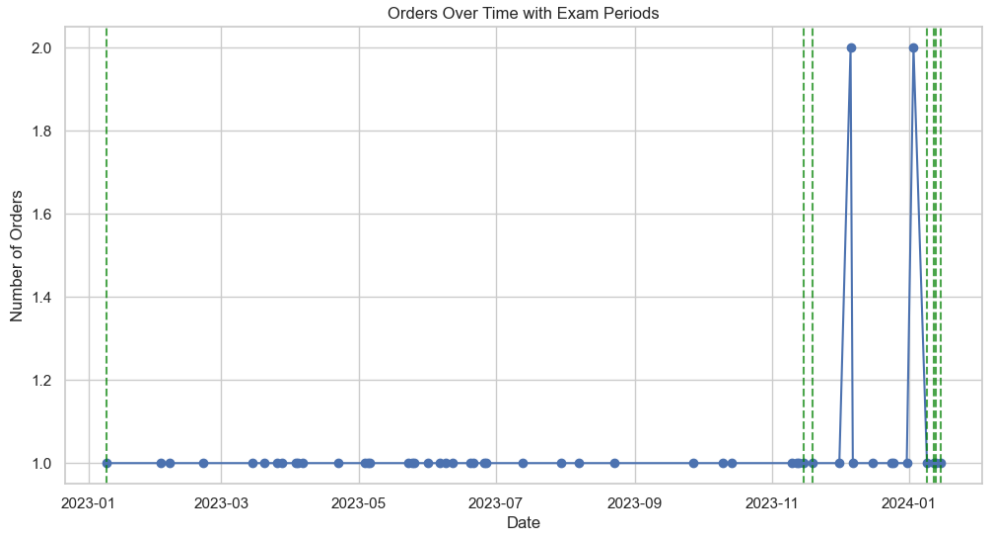
Time Series Analysis

- The code includes a time series plot of orders per month. This suggests an analysis of how order patterns have changed over time.



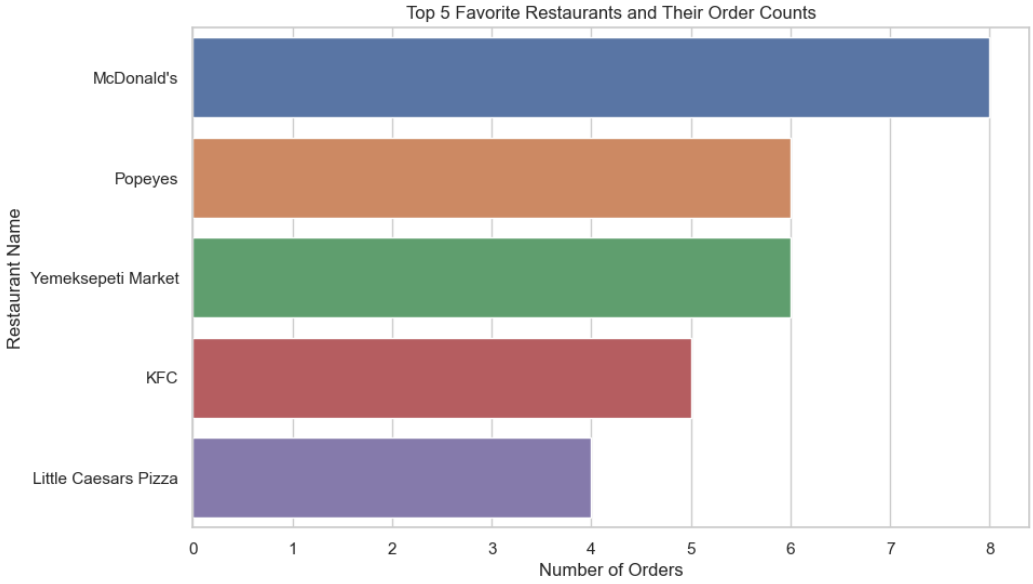
Highlighting Specific Periods:

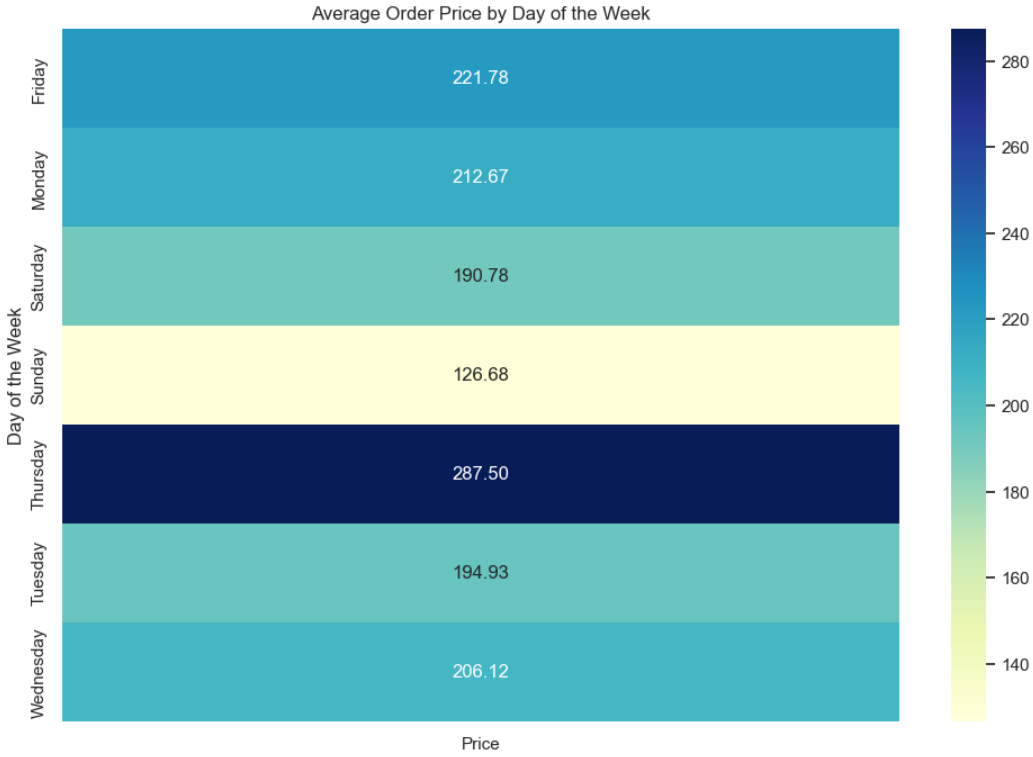
- Another plot highlights orders over time with specific periods marked (e.g., exam periods). This could be used to analyze the impact of external factors on order patterns.
- The use of plt.axvline to highlight particular dates suggests a detailed and contextual analysis.



Top Restaurants Analysis and Average Order Price:

- A bar chart visualizes the monthly order frequency for the top restaurants. This is likely aimed at identifying trends or preferences among different restaurants.
- Average order price indicating each day of the week.





Last Step & Results

As the final step, I trained a model by selecting feature and target variables to predict the future price of the repeated orders of mine considering the interest rates in our country. By using repeated orders and their price changes, using MAE and Random Forest we successfully achieved the predictions related to 1.5 months later.

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Price Estimation for 3 repeated orders for the beginning of our Spring Semester:
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	Order Description	Price_first	Price_last	Price_Change	Time_Interval_Weeks	Estimated_Future_Price
0	1x Acılı Cheese Sandviç X2,	208.0	262.0	54.0	11	299.101399
1	1x Coca-Cola Fırsatı (2'li Daba Daba Burger)	285.0	300.0	15.0	2	347.368421
3	1x Orta Boy Pizza (1+1)	154.9	163.9	9.0	7	172.062501