

Upliance.ai Data Analytics Assignment Report

Date - 14-12-2024

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Summary -

This report will provide some insight into user behavior, such as cooking preferences and order trends, based on data acquired from three datasets: User Details, Cooking Sessions, and Order Details. Noted is the development of trends in session times, user demographics, dish popularity, and more through key insights. Business recommendations toward optimization of user acquisition and revenue generation are also found in the analysis.

1.Problem Statement -

Objective:

This analysis, therefore, focuses on understanding user behavior based on the relationship between cooking sessions and orders, the identification of popular dishes, and demographic factors that influence user activity.

Datasets Used:

UserDetails: This would contain information about the users, including age, location, and favorite meals.

CookingSessions: Includes session data such as rating, start and end times of a session, and session duration in general.

OrderDetails: This includes the details about the order placed, which are dish name, order status, amount, and order date.

2.Data Preparation -

Steps Involved:

Data Cleaning : Understand datasets, missing value handling was performed, make sure each column has appropriate data types. Missing data imputation using suitable techniques

Merging: Merged all three datasets into one using keys like User ID and Session ID.

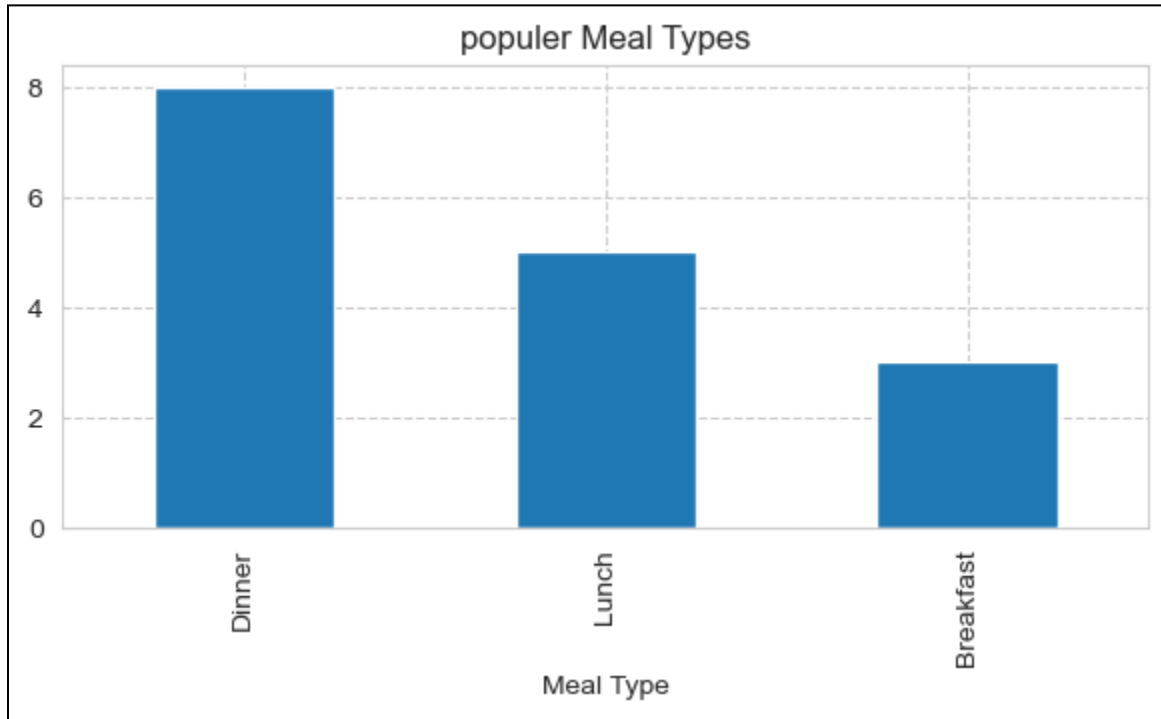
Final Dataset Structure :

Rows: 16

Columns: 22

3.Exploratory Data Analysis -

Which is the most popular meal type of users?

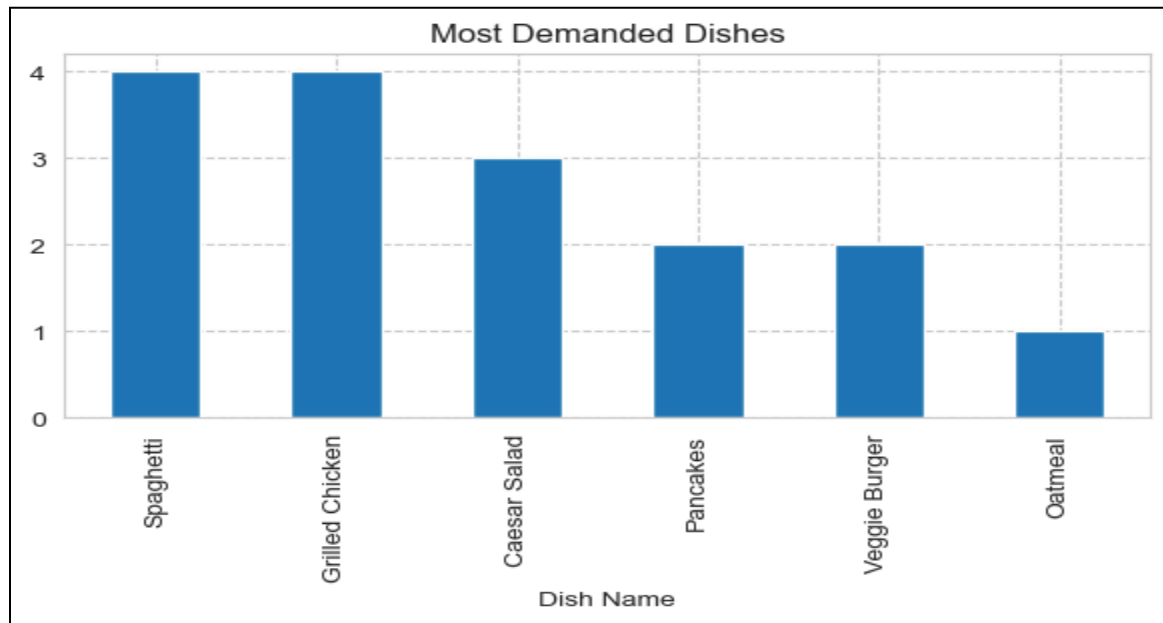


Insights -

Dinner is the most preferred meal type, followed by Lunch, while Breakfast is the least preferred.

This trend might reflect that users more frequently place orders in the evening, perhaps right after work is over or after spending some time with the family. This could be an indication that breakfast is not as popular, since it is either skipped or prepared at home rather than ordered.

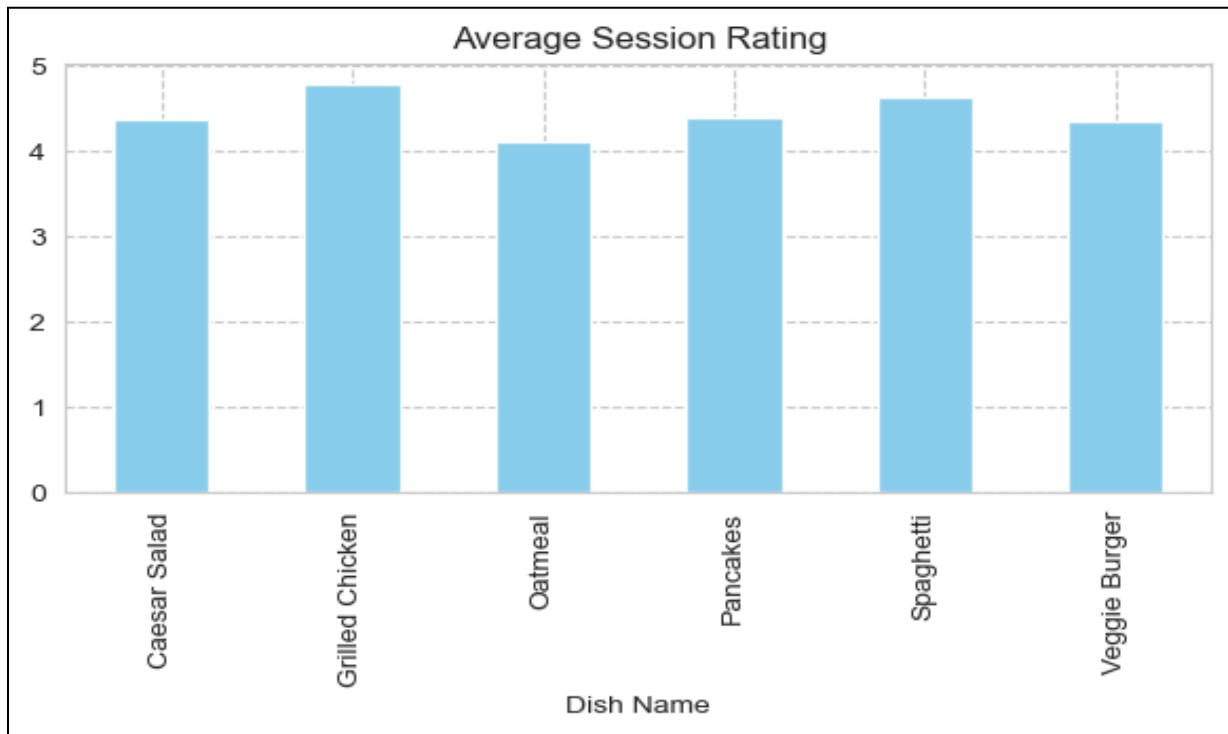
What dishes users like the most?



Insights -

Spaghetti and Grilled Chicken are the most demanded dishes among users.

Average session rating for each dish.

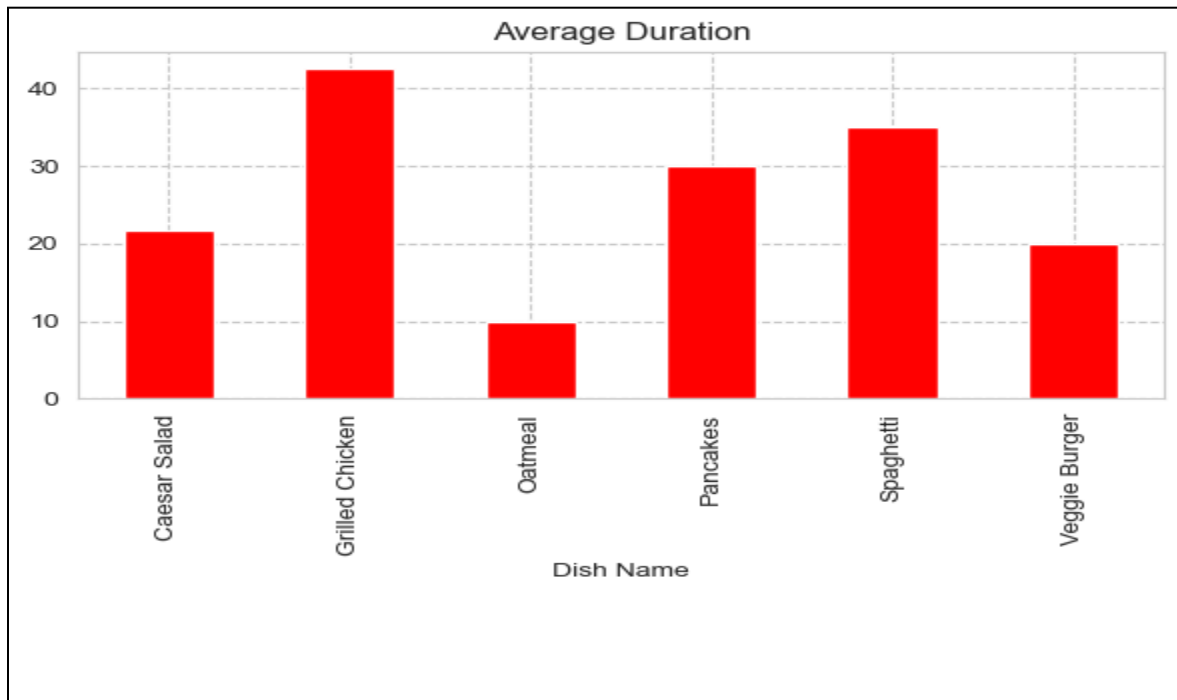


Insights -

All dishes have a high session rating of about 4 and above, which means overall satisfaction.

Grilled Chicken and Spaghetti are a little higher rated and might reflect the quality of the session or their popularity among users. No dish has a significantly low rating, suggesting consistent session quality.

Average session duration for each dish.



Insights -

Grilled Chicken has the longest average session duration, which could mean that this dish is one with which the user interacts longer, either for preparation reasons, its popularity, or probably user interest in personalizing.

Oatmeal has the shortest average session duration: It may suggest that it is a pretty straightforward meal with less modification or interaction involved.

Spaghetti and Pancakes also take considerable time: These dishes may require more preparation steps or engagement from users compared to others like Caesar Salad or Veggie Burger.

Average session duration for meal types.

Meal Type

Breakfast	23.333333
Dinner	38.750000
Lunch	21.000000

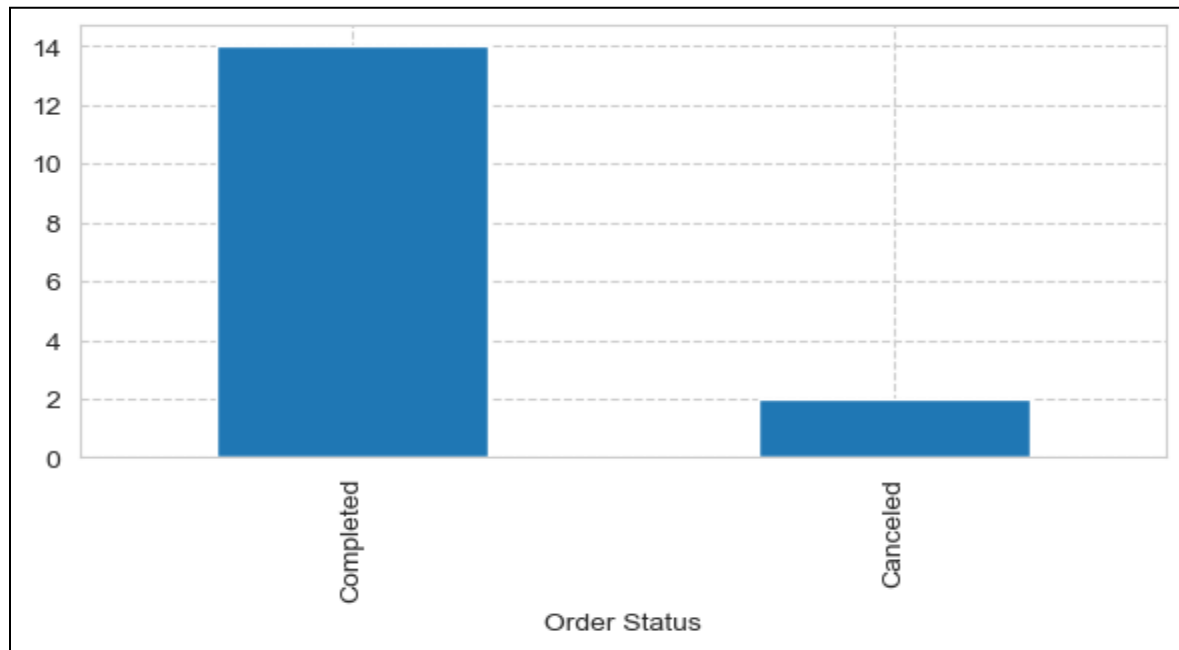
Insights -

Dinner meal type has the longest session duration around 39 mins.

Total spending by each user.

User ID	Amount (USD)
U001	35.0
U002	31.0
U003	32.0
U004	21.5
U005	22.5
U006	13.0
U007	14.0
U008	11.0

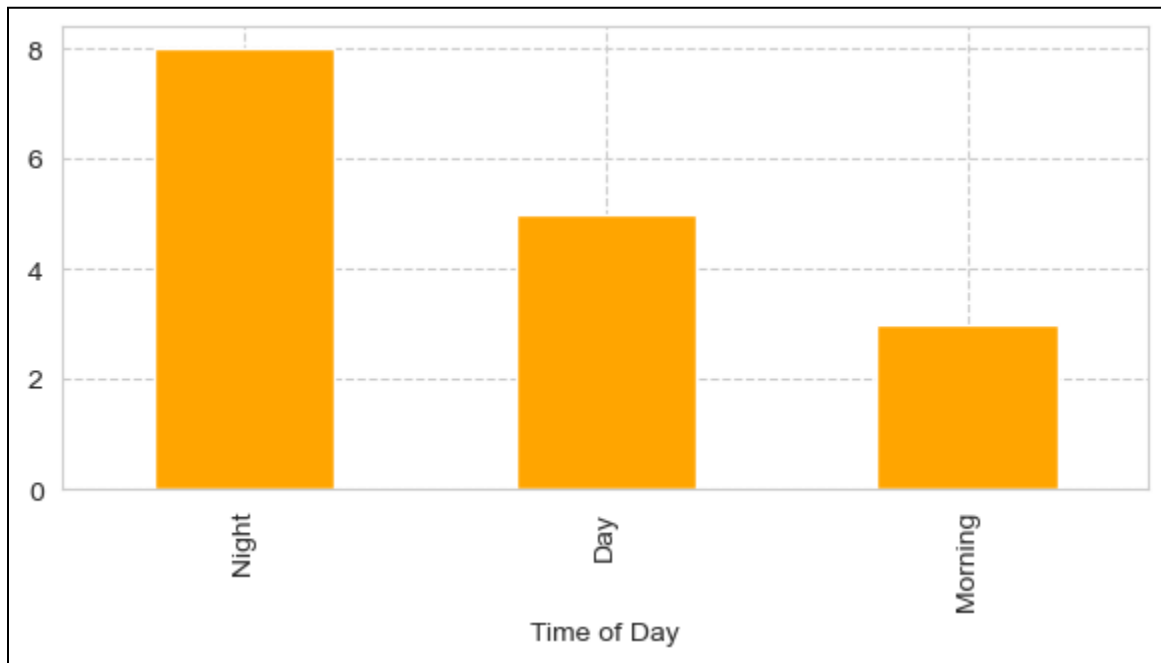
What is the order cancellation rate?



Insights -

Around 12.5% orders are cancelled.

When users are most active during the day.

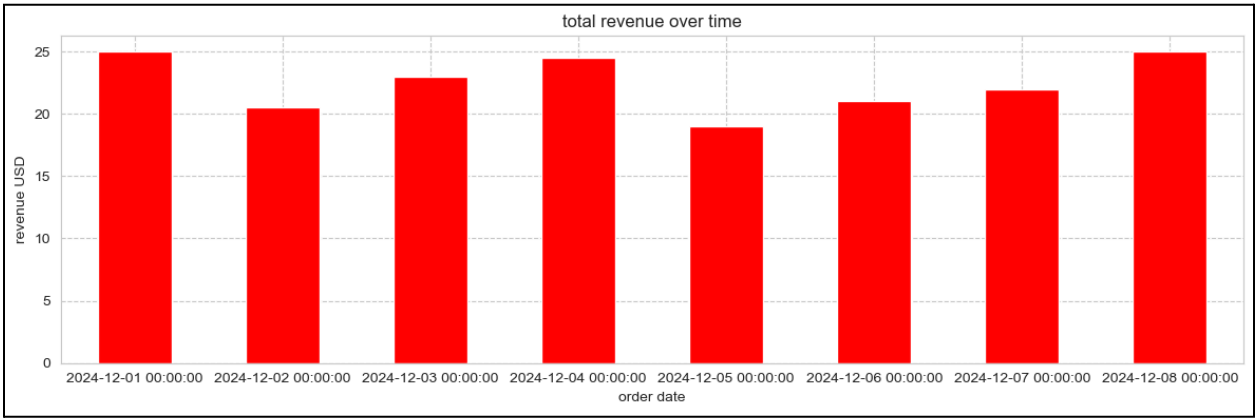


Insights -

Users are most active at night, suggesting that they likely prefer ordering meals or engaging with the service during dinner or late hours.

This could be driven by convenience after work or leisure activities, as well as dinner being a significant meal for ordering food.

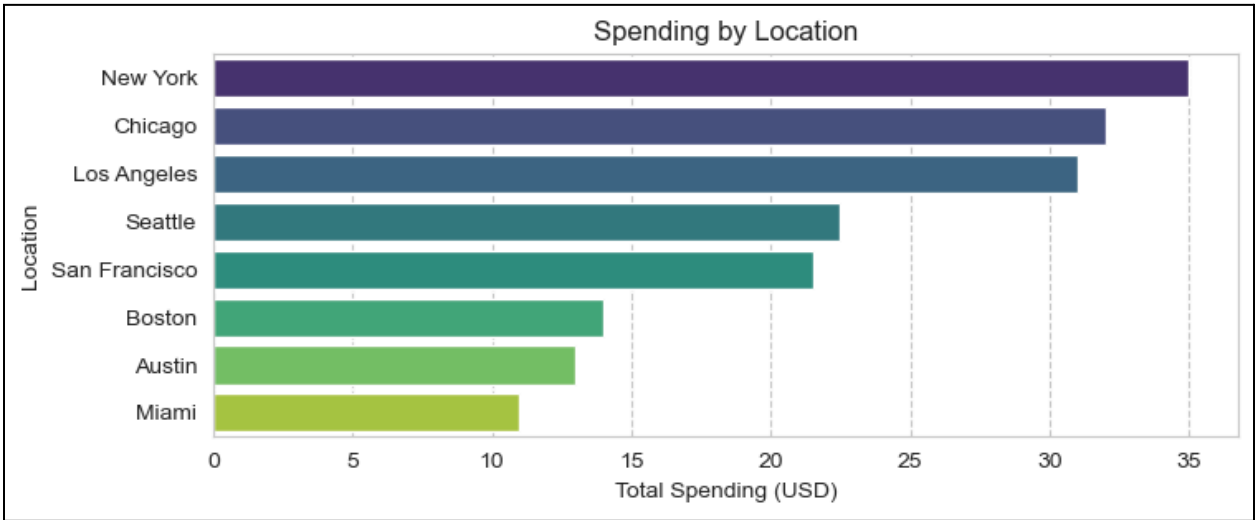
Total revenue trend over time.



Insights-

Revenue peaks on december 1st and 8th, while it dips to its lowest point on dec 5th.

What is the spending behavior in different cities?



What is the order distribution in different cities?



Insights -

New York has the highest total spending among all locations, indicating that users in New York are the most active or spend the most on orders.

Chicago and Los Angeles these two locations follow closely behind New York, showing significant spending, which highlights them as strong contributors to revenue.

Chicago has the highest number of orders with over 40. New York and Los Angeles follow with around 35 and 25 orders respectively. The remaining cities have less than 20 orders each.

Total orders over time.

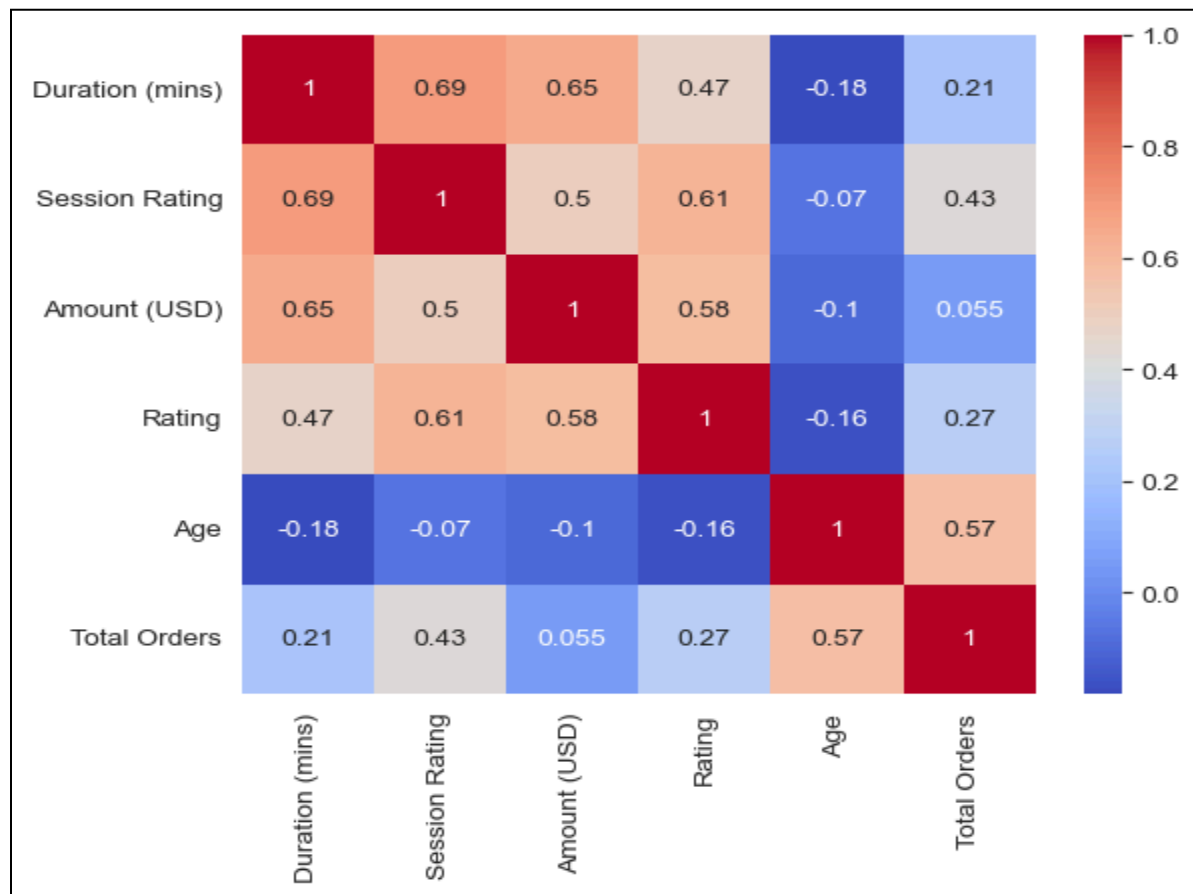


Insights -

The highest number of orders occurred on December 2nd, with over 25 orders. December 7th saw the lowest number of orders, with around 15.

Overall trend the number of orders fluctuates throughout the period, with some days showing higher activity than others

What is the relationship between some of the important variables.



Insights -

Duration (mins) and Session Rating: There's a strong positive correlation between these two. This suggests that longer sessions tend to be associated with higher session ratings.

Amount (USD) and Total Orders: A moderate positive correlation exists, indicating that higher amounts spent are often linked to a greater number of total orders.

Age and Total Orders: There's also a moderate positive correlation here, suggesting that older customers tend to place more orders.

Business Recommendations :

Promote Popular Menu Items - Offer combo deals with popular items such as spaghetti, grilled chicken etc.

Enhance Session Ratings - Reward users for rating sessions and ensure services are always of high quality. And try to keep session duration significant.

Target High-Spending Locations - Increase marketing activities in new york, chicago, and los angeles to hold onto these high-spending users.

Offer loyalty programs or other special deals to encourage repeat purchases.

Identify Opportunities in Low-Spending Locations:

Investigate the causes of lower spending in Miami, Austin, and Boston - Run targeted campaigns or promotions to increase user frequency and order frequency in these places.

Identify the availability of popular items or meal types in places with low spending to determine possible gaps in offerings.