

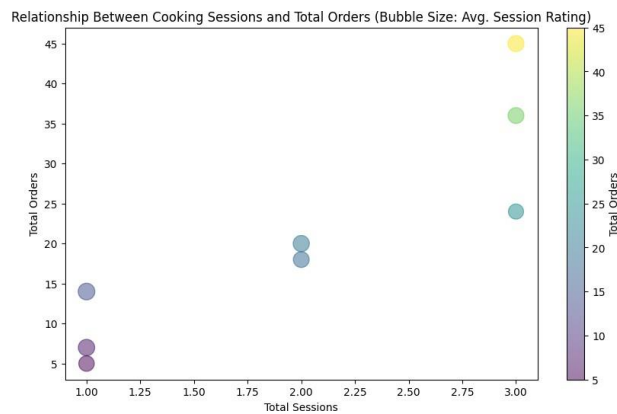
ASSIGNMENT REPORT

Workflow of the assignment

- 1) Merged Data
- 2) Merged Cooking session and Order details on Session ID
- 3) Merged the result with User_details on User_ID
- 4) Data Preprocessing
- 5) Dropped redundant columns (User_ID_cooking, User_ID)
- 6) Filled missing values with 0
- 7) Saved Merged Data
- 8) Saved merged data to DataAnalystIntern.csv
- 9) Data Visualization
- 10) Bubble Chart: Show relationship between Total Sessions and Total Orders
- 11) Top 3 Popular Dishes: Display bar plot of the most frequent dishes
- 12) Sessions and Orders by Age Group: Plot sessions and orders for different age groups
- 13) Distribution of Session Ratings: Plot the distribution of session ratings
- 14) Favourite Meals Distribution: Display a pie chart of favourite meals
- 15) Heatmap: Show dish popularity by meal type
- 16) Order Trend: Plot the number of orders over time
- 17) Box Plot for Session Duration: Display a box plot of session durations by meal type
- 18) Geographical Distribution
- 19) Initialize Map: Create a Folium map centered at a general location
- 20) Iterate over Rows: For each location in the merged dataset
 - a) Geocode location using geopy
 - b) Add marker with popup displaying:
 - i) Location
 - ii) Favourite Meal
 - iii) Popular Dish
 - iv) Latitude & Longitude

VISUALIZATIONS WITH INSIGHTS

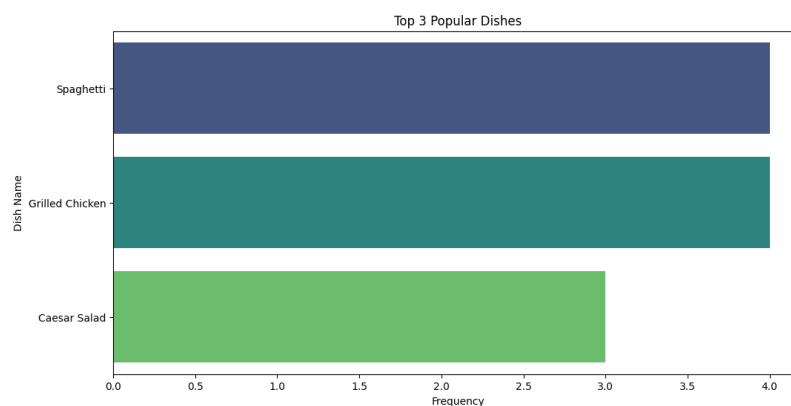
1. Relationship Between Cooking Sessions and Total Orders (Bubble Size: Avg. Session Rating)



Key Insights:

- Increasing the number of cooking sessions is associated with higher total orders.
- Higher session ratings (larger bubbles) are linked to higher total orders.
- The data suggests that improving session ratings and increasing the number of sessions could lead to more orders.

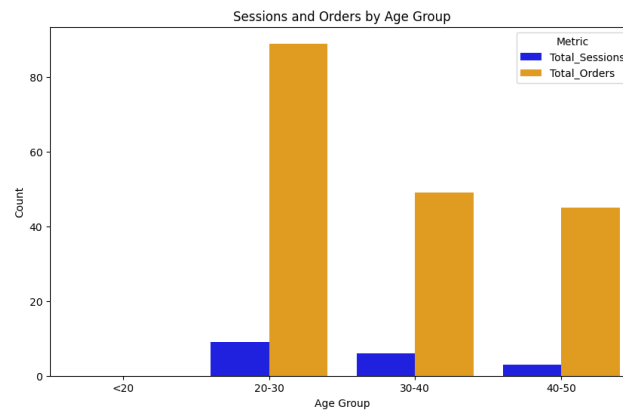
2. Top 3 Popular Dishes Analysis



Key Insights:

- Spaghetti, Grilled Chicken, and Caesar Salad are the most popular items among customers.
- The data indicates that more attention should be directed toward promoting and enhancing the appeal of other dishes, potentially through taste adjustments, promotions, and other strategies to boost their popularity.

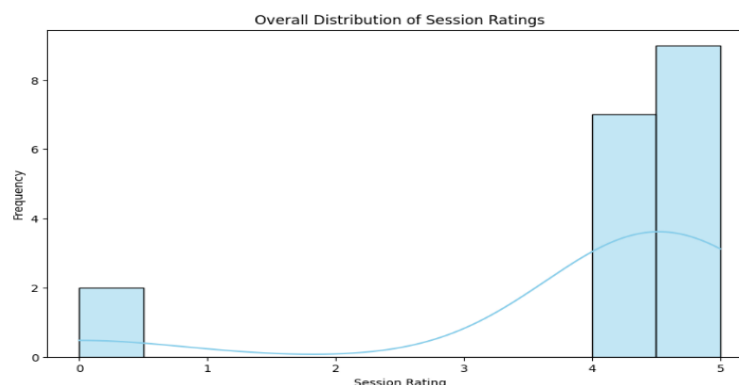
3. Analysis of demographic factors influencing User Behaviour:



Key Insights:

- **High Conversion Rate:** Total Orders exceed Total Sessions across all age groups, suggesting a high conversion rate or potential data inconsistencies.
- **Dominance of 20-30 Age Group:** This group leads with ~90 orders and ~10 sessions, indicating strong engagement and purchasing behavior.
- **Decline with Age:** Orders steadily decrease with age: ~90 in 20-30, ~60 in 30-40, and ~50 in 40-50.
- **Minimal Sessions Across Groups:** Sessions are consistently low (under 10) across all age groups, warranting further investigation.
- **Negligible Activity Under 20:** Users under 20 show very low engagement and purchasing activity.
- **Focus on 20-30:** Prioritizing campaigns for the 20-30 demographic could maximize impact.

4. Session Ratings Distribution:

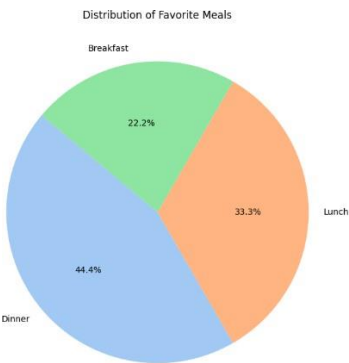


Key Insights:

- The distribution of session ratings indicates that most customers rate their sessions highly, with the highest frequency of ratings being 5 stars, followed by 4 stars.
- The peak between 4 and 5 stars suggests that the majority of users are satisfied with their experience, and the overall session quality appears to be favorable.
- The relatively low frequency of ratings below 4 stars indicates that there is minimal dissatisfaction among the users, and the sessions generally meet customer expectations.

- This pattern implies that the platform is delivering quality sessions that meet or exceed customer expectations, and the ratings reflect positive user experiences.

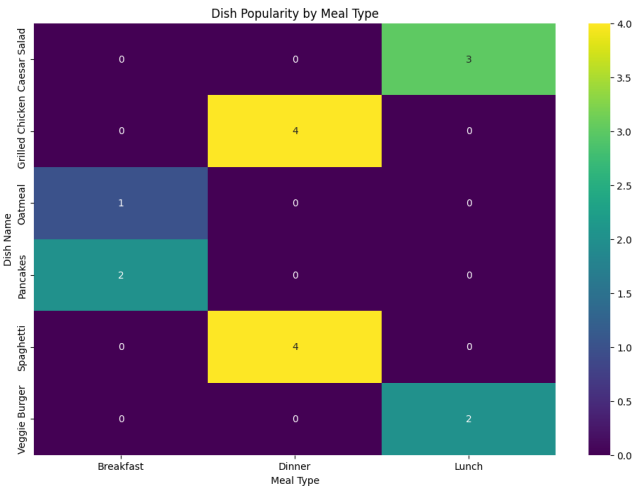
2. Favorite Meals Distribution:



Key Insights:

- i. **Dinner's Popularity:**
 - a. Dinner's high share suggests it's considered the most significant or enjoyable meal of the day, likely due to factors such as more elaborate dishes, relaxed timing, or it being a social/family-oriented occasion.
- ii. **Lunch Preference:**
 - a. Lunch has a solid share, likely because it's a midday meal that serves as an essential energy source. Its popularity could be linked to convenience or the availability of preferred meal options (e.g., salads, burgers, or light meals).
- iii. **Breakfast's Low Preference:**
 - a. Breakfast's lower percentage might reflect habits such as skipping breakfast, eating lighter meals in the morning, or a preference for quick and simple items (e.g., oatmeal or pancakes).

3. Heatmap for Dish and Meal Type Popularity Analysis:



Key Insights:

I. **Distinct Meal Preferences:**

- a. Each dish shows strong associations with a specific meal type:
 - i. **Breakfast:** Oatmeal and pancakes dominate.
 - ii. **Lunch:** Grilled Chicken Caesar Salad and Veggie Burger are preferred.
 - iii. **Dinner:** Spaghetti is the sole choice.

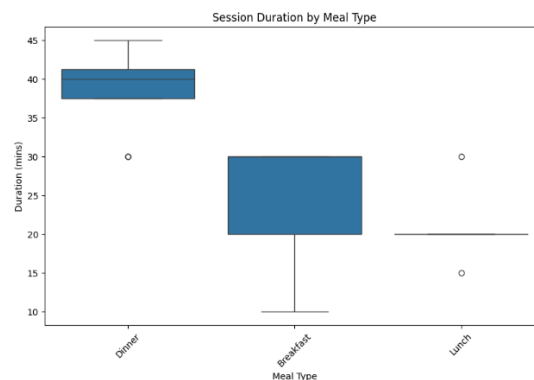
II. **Exclusive Patterns:**

- a. Most dishes are chosen exclusively for one meal type. For example:
 - i. Spaghetti is a **dinner-only** dish.
 - ii. Oatmeal and pancakes are **breakfast-specific**.

III. **Lunch Variety:**

- a. Lunch is the only meal where two dishes (Grilled Chicken Caesar Salad and Veggie Burger) share popularity, indicating a preference for variety at midday.

4. Box Plots for Session Duration by Meal Type or Age Group Analysis:



Key Insights:

- Dinner sessions are the longest and most consistent. Most sessions last around 40 minutes, with minimal variability.
- Breakfast sessions are the most variable. These range from as short as 10 minutes to as long as ~35 minutes, likely reflecting varying morning routines or preferences.
- Lunch sessions are the shortest and most consistent. They have a median of 15 minutes with little variation, suggesting a quick meal timeframe.
- Outliers: Unusual session durations exist across all meal types, particularly a long session for lunch and a very short one for breakfast.

5. Geographical Distribution, Analysis of Popular Dish and Favourite Meal



Key Insights:

- Seattle: Caesar Salad is the most popular dish during lunch, indicating a preference for healthier meal options in the area.
- Los Angeles: Oatmeal is favored for lunch, suggesting a trend towards lighter and healthier dishes in this region as well.
- Phoenix: There is no clear popular dish, which may indicate a need for more targeted marketing or diverse menu options.
- Dallas: Lunch is the preferred meal time, but there is no specific popular dish identified, suggesting an opportunity for promoting dishes tailored to local preferences.
- Chicago and Boston: Both have no identified popular dish, but different favorite meal types—lunch in Chicago and breakfast in Boston—might reflect regional or cultural preferences.
- New York: Dinner is the favorite meal with Grilled Chicken being the most popular dish, aligning with the city's fast-paced lifestyle and demand for hearty, quick meals.