Findings:

The dataset contains **1,898 rows** and **9 columns**.

- There are 9 columns:
    - order_id, customer_id, food_preparation_time, and delivery_time are integers.
    - cost_of_the_order is a float.
    - restaurant_name, cuisine_type, day_of_the_week, and rating are objects (strings).

**Are there any missing values?**

- There are no missing values in any column.

**Statistical summary of food preparation time**

- **Minimum time**: 20 minutes
- **Average time**: 27.37 minutes
- **Maximum time**: 35 minutes

**How many orders are not rated?**

- There are **736 orders** with the rating "Not given".

**Unique Counts**

1. **Order ID**: Number of unique orders.
2. **Customer ID**: Number of unique customers.
3. **Restaurant Name**: Number of unique restaurants.

**Unique Counts:**

- **Unique Order IDs**: 1,898 (Each order is unique, as expected)
- **Unique Customer IDs**: 1,200
- **Unique Restaurant Names**: 178

**Observations from the Visualizations:**

1. **Order Costs**:
    - The distribution of order costs shows a peak around $10-$15, indicating most orders are relatively inexpensive.
    - There are some higher-cost orders but very few.
2. **Food Preparation Time**:
    - The boxplot reveals a fairly uniform distribution with a median preparation time of ~27 minutes.
    - There are no significant outliers in the data.
3. **Cuisine Types**:
    - **American cuisine** is the most popular, followed by **Japanese** and **Italian**.
    - Other cuisines like Vietnamese, Spanish, and Korean are less frequently ordered.

**Univariate Analysis Results:**

1. **Cuisine Type**:
    - There are **14 unique cuisine types**.
    - American cuisine dominates the orders, followed by Japanese and Italian cuisines.
2. **Cost of the Order**:
    - The histogram shows that most orders cost between $10 and $20, with a peak around $10-$15.
    - The boxplot confirms that there are no significant outliers in the cost of orders.
3. **Day of the Week**:
    - The unique values for days are: Weekend and Weekday.
    - Orders are more frequent on weekends compared to weekdays.

 **Ratings**:

- Unique rating values: ['Not given', '5', '3', '4']
- Most ratings are "Not given," followed by ratings of 5, 4, and 3.

 **Food Preparation Time**:

- The histogram shows a fairly uniform distribution between 20 to 35 minutes.
- The boxplot confirms no significant outliers, with a median around 27 minutes.

 **Delivery Time**:

- The histogram shows a peak around 25 minutes.
- The boxplot confirms the data is evenly distributed, with most values between 20 and 30 minutes.

 **Top 5 Restaurants by Number of Orders**:

- Shake Shack: 219 orders
- The Meatball Shop: 132 orders
- Blue Ribbon Sushi: 119 orders
- Blue Ribbon Fried Chicken: 96 orders
- Parm: 68 orders

 **Most Popular Cuisine on Weekends**:

- **American cuisine** is the most popular on weekends.

 **Percentage of Orders Costing More Than $20**:

- **29.24%** of the orders cost more than $20.

**Multivariate Analysis Visualizations and Observations:**

1. **Cuisine vs Cost of Order**:
    - The boxplot indicates variations in the cost of orders across different cuisines.
    - Some cuisines like Japanese and Italian have a higher median cost compared to others.

2. **Cuisine vs Food Preparation Time**:
    - Food preparation times vary significantly across cuisines, with some cuisines (e.g., Thai and Vietnamese) showing longer preparation times.
3. **Day of the Week vs Delivery Time**:
    - Delivery times are generally longer on weekdays compared to weekends.
4. **Top 14 Restaurants by Revenue**:
    - Shake Shack leads with the highest revenue, followed by The Meatball Shop and Blue Ribbon Sushi.
5. **Rating vs Delivery Time**:
    - Delivery times show slight variations with different ratings, but the relationship appears weak.
6. **Rating vs Food Preparation Time**:
    - Food preparation times show minimal variation across ratings.
7. **Rating vs Cost of Order**:
    - Higher ratings (e.g., 5) are slightly associated with higher costs of orders.
8. **Correlation Among Variables**:
    - The heatmap shows weak correlations among the variables (cost_of_the_order, food_preparation_time, and delivery_time), suggesting minimal linear relationships.

**Question 13: Restaurants Eligible for Promotional Offers** The following restaurants meet the criteria of having more than 50 ratings and an average rating greater than 4:

1. The Meatball Shop: 4.51 average rating
2. Blue Ribbon Fried Chicken: 4.33 average rating
3. Shake Shack: 4.28 average rating
4. Blue Ribbon Sushi: 4.22 average rating

**Question 14: Net Revenue Generated by the Company** The total revenue generated by the company is **$6,166.30**.

**Question 15: Percentage of Orders with Total Time > 60 Minutes** Approximately **10.54%** of the orders take more than 60 minutes to prepare and deliver.

**Question 16: Mean Delivery Time on Weekdays vs Weekends**

- **Weekdays**: The mean delivery time is around **28.34 minutes**.
- **Weekends**: The mean delivery time is around **22.47 minutes**.