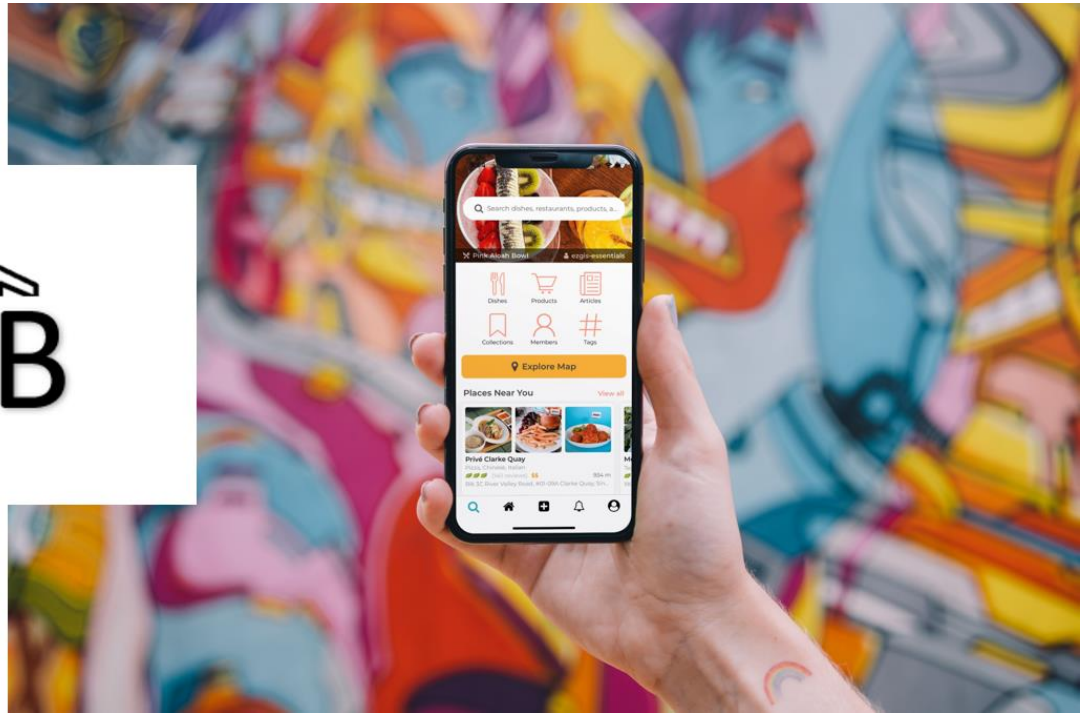
The flavor of your favourite food
is just a click away...

FOOD HUB

Supported by iOS and Android



Food hub Analysis Project
By: Sushma Rao

Background

- The app allows the restaurants to receive a direct online order from a customer.
- The app assigns a delivery person from the company to pick up the order after it is confirmed by the restaurant.
- The delivery person then uses the map to reach the restaurant and waits for the food package. Once the food package is handed over to the delivery person, he/she confirms the pick-up in the app and travels to the customer's location to deliver the food.
- The delivery person confirms the drop-off in the app after delivering the food package to the customer.
- The customer can rate the order in the app.
- The food aggregator earns money by collecting a fixed margin of the delivery order from the restaurants.

Business Problem Overview and Solution Approach

OBJECTIVE

- The food aggregator company has stored the data of the different orders made by the registered customers in their online portal.
- They want to analyze the data to get a fair idea about the demand of different restaurants which will help them in enhancing their customer experience.

SOLUTION APPROACH

- Collect the necessary information, Data Scientist in this company and the Data Science team has shared some of the key questions that need to be answered.
- Perform Exploratory data analysis to find answers to these questions that will help the company to improve the business.

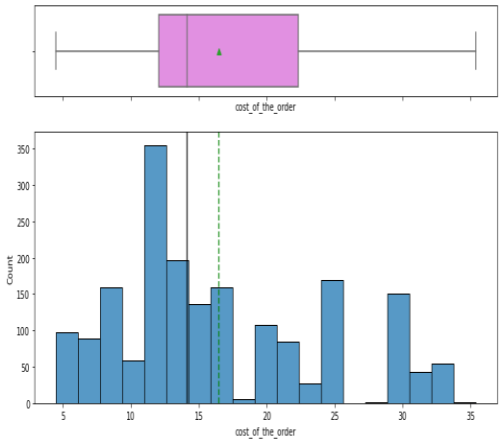
Data Overview

VARIABLE	DESCRIPTION
1.order_id 2.customer_id	Unique ID of the order ID of the customer who ordered the food
3.restaurant_name 4.cuisine_type	Name of the restaurant Cuisine ordered by the customer
5.cost	Cost of the order
6.Day of the week	Indicates whether the order is placed on a weekday or weekend
7.rating	Rating given by the customer out of 5
8.Food preparation time	Time (in minutes) taken by the restaurant to prepare the food.
9.Delivery time	Time (in minutes) taken by the delivery person to deliver the food package.

observations	variables
1898	9

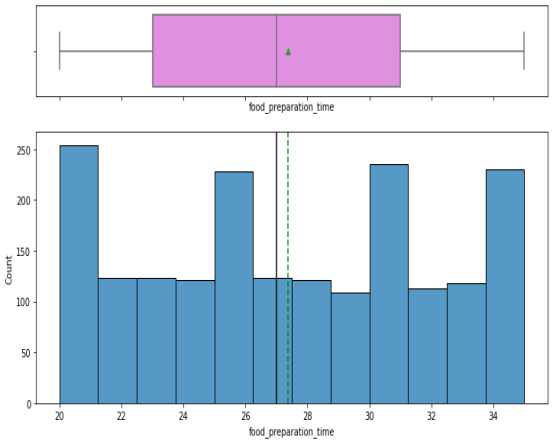
Exploratory Data Analysis (EDA) Univariate analysis

Let us first explore some of the variables and how they are distributed



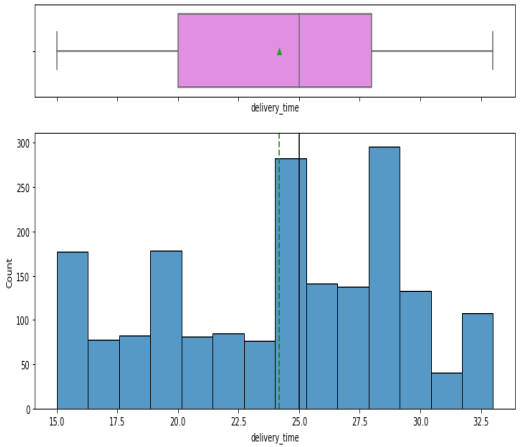
Cost of the order

1. mean is higher than the median.
2. There are few outliers, there are few orders with maximum cost.



Food preparation time

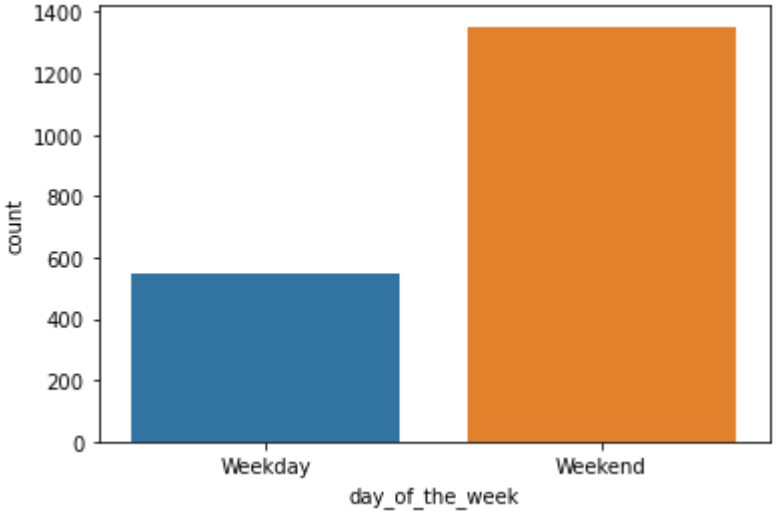
1.The mean and median are close to each other.
2.There are no outliers.
3.The time taken for food preparation does not show much variation.

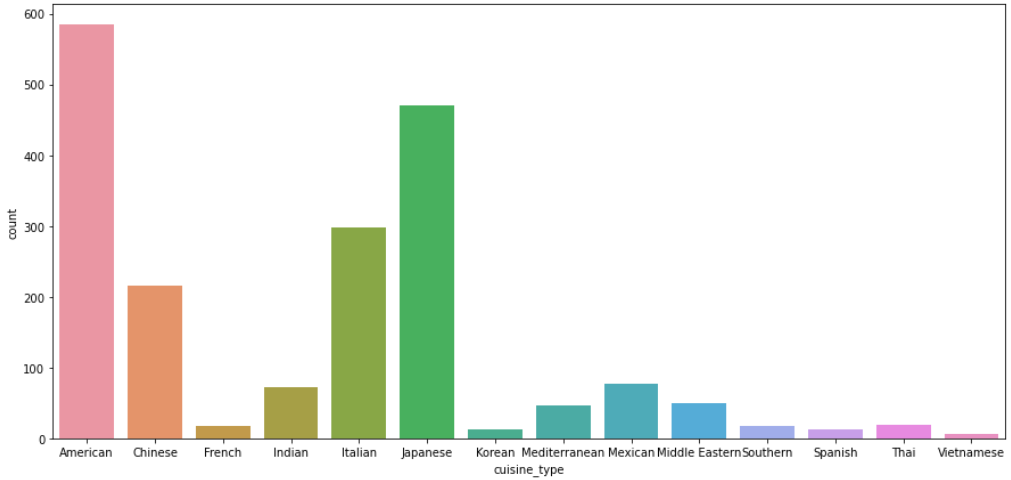


Delivery time

1.The mean is less than the median.
2.It doesn't show significantly any unusual delivery times, there are no outliers.

Exploratory data analysis (EDA)-Univariate categorical variables





Day of the week

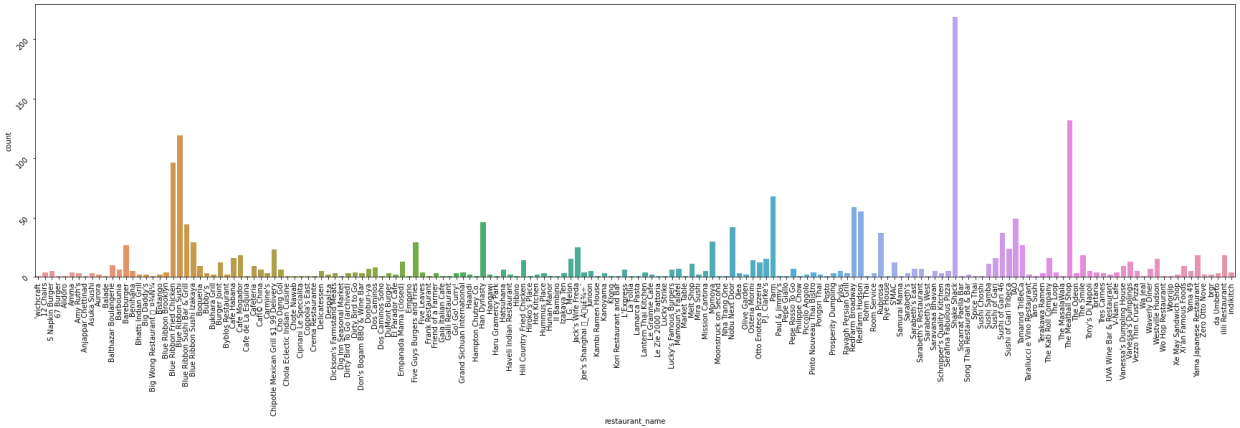
There are more weekends than weekdays ,which indicates that there are a greater number of orders on weekends compared to weekdays**.**

Cuisine type

1.American cuisine is the most preferred cuisine followed by Japanese.

2.Vietnamese is the least preferred cuisine.

EDA –Continued..

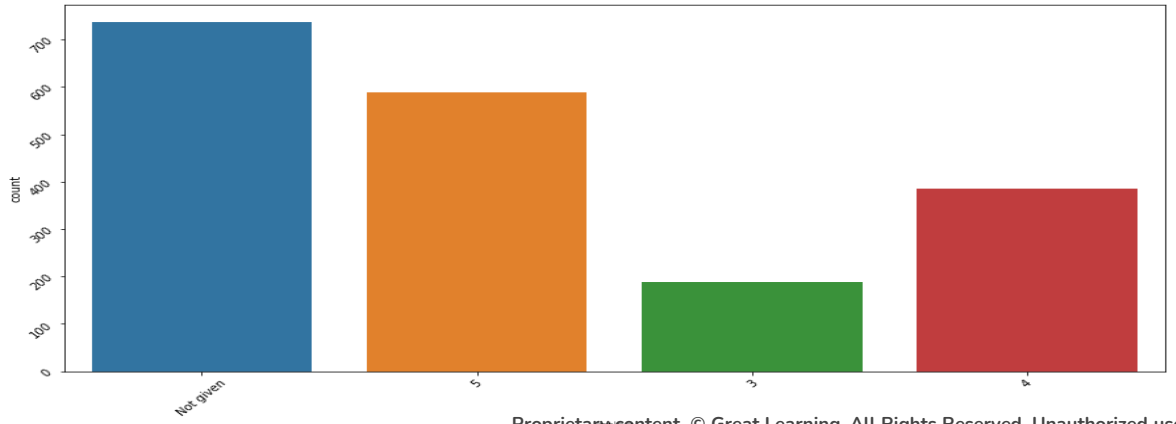


Restaurant name

1. There are totally 178 different restaurants.

2. Shake Shack is the most preferred restaurant followed by The Meatball Shop and Blue-Ribbon Sushi.

3. There are many Restaurants which have single orders.

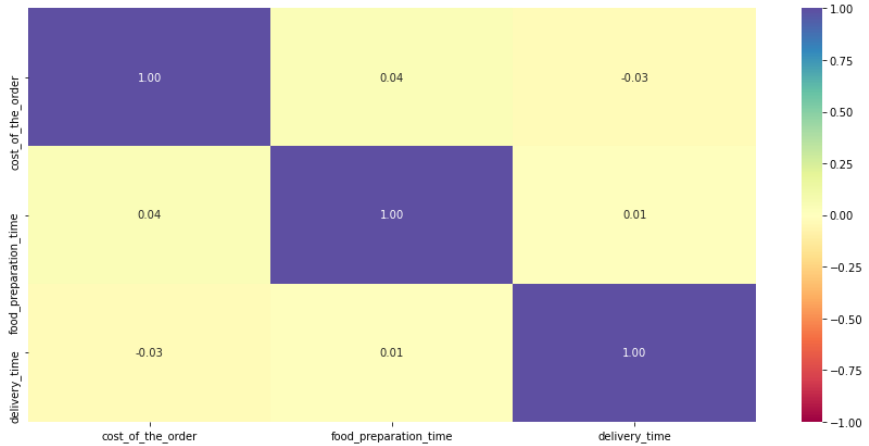


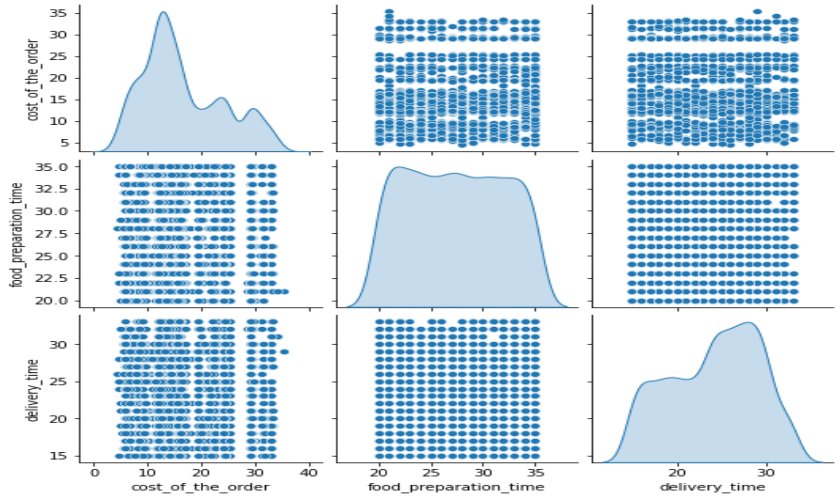
Rating

1. Most of the orders are not been rated.

2. Among the rated orders , most of them have a 5 rating.

EDA-Bivariate and Multivariate Analysis
Analyzing the correlation between numerical variables



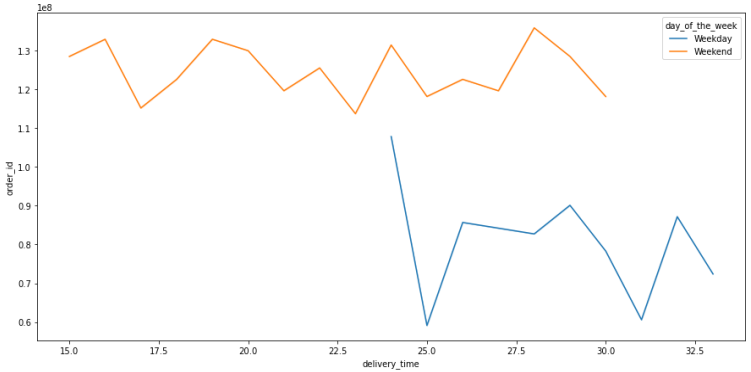


observations:

1. All the correlation coefficients are close to 0.

2.The insights we get from both heat map and the pair plot indicates that there is no strong relation between cost of the order, delivery time and food preparation time.

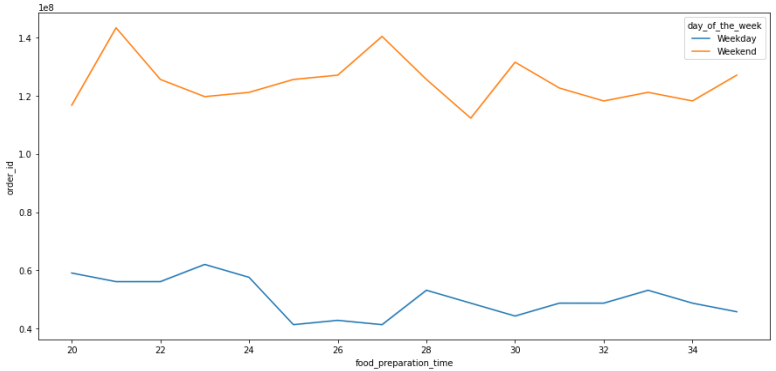
Bivariate Analysis



Delivery time for orders on weekdays and weekends

observations:

Delivery time is more during weekdays compared to weekends, may be due to peak traffic

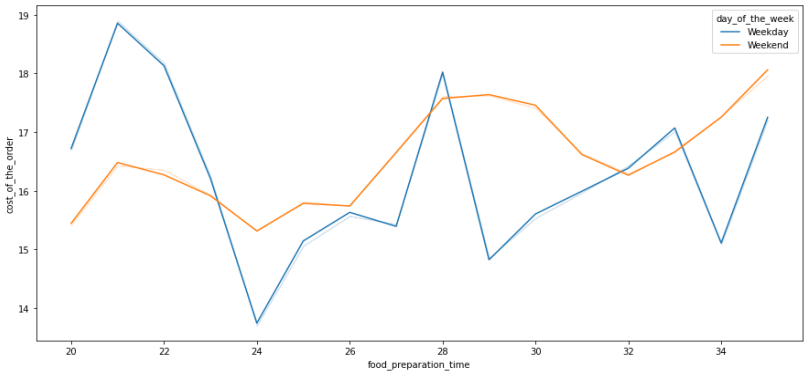


Food preparation time for orders on weekdays and weekends

Observation:

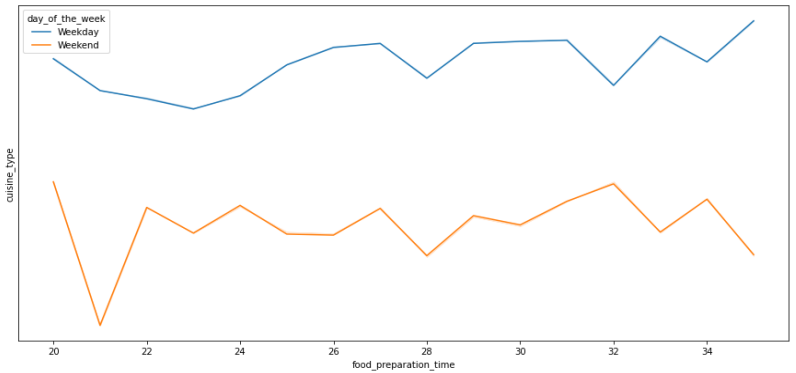
The food preparation time does not show significant variation for all the orders. The time taken to prepare the food does not vary much based on the day of the week.

Bivariate Analysis



Food preparation time based on cost of the order

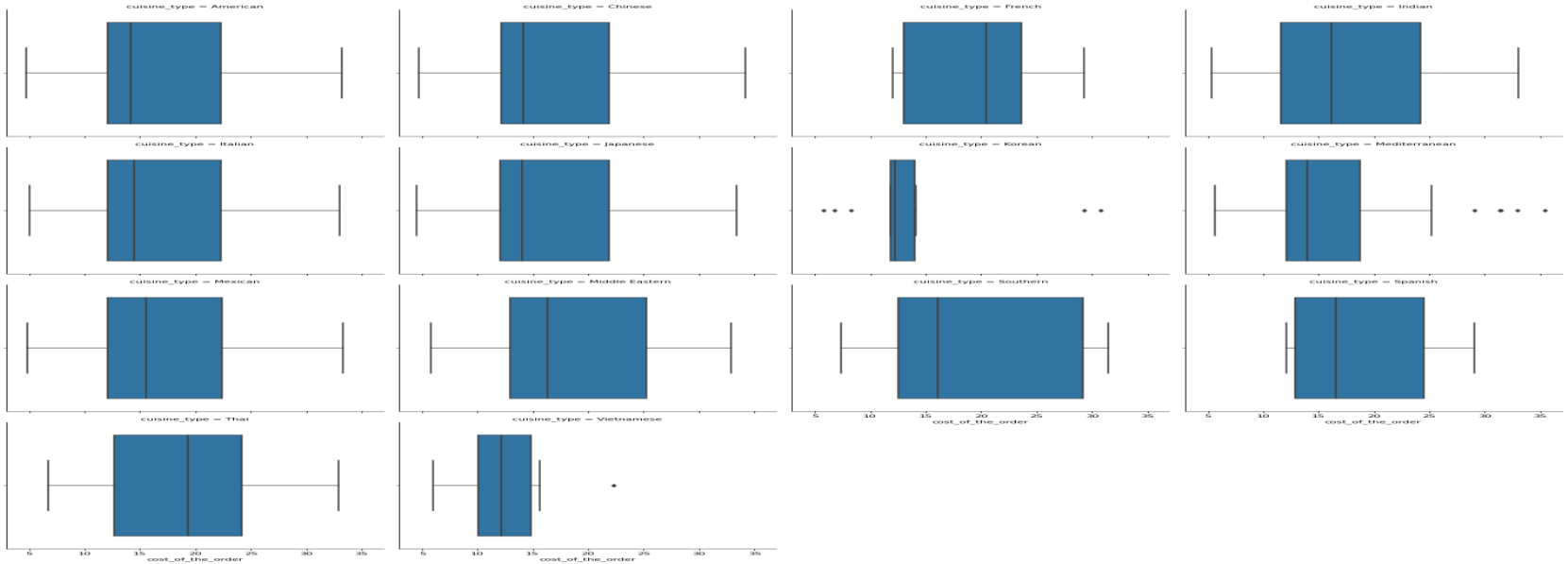
Observations:
Food preparation time and cost of the order does not show any strong relationship.



Food preparation time for different Cuisine types
Observations:
The food preparation time also does not show any significant changes based on the cuisine type except for a few orders.

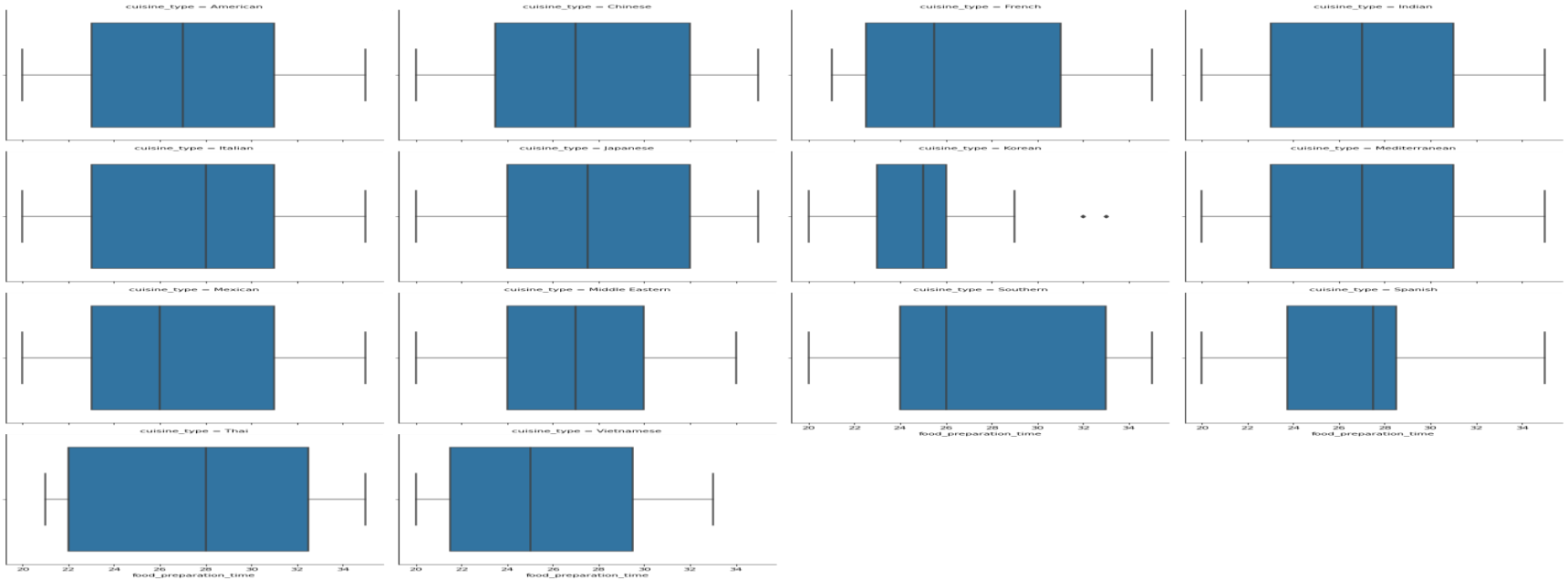
Exploratory data analysis

Exploring the cost of the orders for different cuisine types



Observations:
The cost of the order for all the cuisine types does not show significant variation except for Korean, Mediterranean and Vietnamese.

Exploring the food preparation time for different cuisine types



Observations:

The Korean cuisine shows a right skew.
Most of the restaurants have uniform distribution.

Business Insights

Analyzing a Food Hub data set having 1898 rows and 9 columns, the data set provided had different variables like the order-id, customer id ,the time needed for preparation and delivery, it also shows the ratings . I had to analyze the data to get a fair idea about the demand of different restaurants which will help them in enhancing their customer experience. I have Performed the data analysis to find answers to these questions that will help the company to improve the business.

CONCLUSIONS:

1. The number of orders are more during the weekends compared to weekdays.
2. American cuisine is the most preferred cuisine .
3. Shake Shack restaurant is the most preferred restaurant among the customer.
4. Delivery time is less during the weekends.
5. Vietnamese cuisine has the least number of orders.
6. The net profit made by the orders costing more than 20 dollars is more than the profit made by the orders costing between 5 and 20 dollars.
7. Most preferred restaurants have an average rating more than 4.

Recommendations

Based on the analysis, there are following recommendations that can help the business grow:

1. Since the number of orders are more on weekends and the delivery time is also less during weekends, it is the best time to attract new customers and make maximum profit.
2. The best way to attract new customers or to increase the number of orders of the least preferred cuisines, it is necessary to use some marketing strategies, like discounts, free kids' meal etc.
3. American cuisine is the most preferred cuisine , so the food hub can include more American restaurants in their chain of restaurants.
4. To increase business during the weekdays, new marketing strategies like gift vouchers etc. must be introduced. Also, if they can reduce the food preparation time(pre-prep),without compromising the quality, the they can reduce the total delivery time.
5. The delivery persons can avoid the routes with delays to reduce the delivery time.

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Happy Learning !