**Questions:**

1. which is the most popular cuisine on weekends?

**American Cuisine**

Chart, bar chart

Description automatically generated

1. what percentage of the orders cost more than 20 dollars?

**29.24%**

percgreater20 = (len(foodhub[foodhub['cost\_of\_the\_order']>20])/len(foodhub['cost\_of\_the\_order']))\*100

print(percgreater20)

3) what is the mean order delivery time?

**24.16mins**

#the describe() function can also be used to check this

mean\_delivery\_time = round(foodhub['delivery\_time'].mean(),2)

print(mean\_delivery\_time)

4) The company has decided to give 20% discount vouchers to the top 3 most frequent customers. Find the IDs of these customers and the number of orders they placed.

A screenshot of a computer

Description automatically generated with low confidence

A further analysis on the top 3 customers by amount spent on orders showed that not all the 3 customers with the highest number of orders have spent the highest in terms of amount. Only 2 retained their positions as premium customers.

A screenshot of a computer

Description automatically generated with low confidence

5) Perform a multivariate analysis to explore relationships between the important variables in the dataset (It is a good idea to explore relations between numerical variables as well as relations between numerical and categorical variable).

From the heatmap below, there is no strong correlation between the numerical variables, they are independent of one another.Treemap chart

Description automatically generated

6) The company wants to provide a promotional offer in the advertisement of the restaurants. The condition to get the offer is that the restaurants must have a rating count of more than 59 and the average rating should be greater than 4. Find the restaurants fulfilling the criteria to get the promotional offer.

Restaurants with cumulative ratings above 59

Text

Description automatically generated

The below list consists of restaurants with average rating greater than 4

Text

Description automatically generated

Hence, there are no restaurants fulling the two conditions of above cumulating rating of 59 and average rating of 4.

7) The company charges the restaurant 25% on the orders having cost greater than 20 dollars and 15% on the orders having cost greater than 5 dollars. Find the net revenue generated by the company across all orders.

**Net Revenue generated by the company is $6166.3**

Text

Description automatically generated with medium confidence

8) The company wants to analyse the total time required to deliver the food. What percentage of orders take more than 60 minutes to get delivered from the time the order is placed? (The food has to be prepared and then delivered.)

**10.54%**

Text

Description automatically generated

9) The company wants to analyse the delivery time of the orders on weekdays and weekends. How does the mean delivery time vary during weekdays and weekends?

**The average delivery time during the week is higher than during the weekend.** This may require further investigation to the cause of delay in delivery during the week owing to the fact there are more orders on the weekend than during the week. Some causes in delay may be non-availability of dispatch riders, traffic congestion etc.

Text

Description automatically generated

10) what are your conclusions from the analysis? What recommendations would you like to share to help improve the business? (You can use cuisine type and feedback ratings to drive your business recommendations.)

**KEY POINTS**

The dataset consists of 1898 observation and 9 attributes. Each observation corresponds to an order made by a customer. Checking the datatype of the dataset columns, it is observed that the ratings attribute has the wrong type as it contains both string and integer values. To ensure consistency, the “not given” rating will be changed to 1 and the datatype changed to integer. Also, because the “order\_id” and “customer\_id” are unique values, their types will be changed to string (object).

There are no missing values in the dataset hence no further cleaning needs to be done on the data.

From the below analysis snapshot, I observed that the average cost of any cuisine is $16.50 with an average preparation time of 27.37mins and an average delivery time of 24.16mins.

Text

Description automatically generated

* 14 unique cuisines
* 178 unique restaurants
* 4 top selling cuisines---- American, Japanese, Italian and Chinese cuisines are the top selling ones as they each have orders above 200

Text

Description automatically generated

Chart, bar chart

Description automatically generated

* We have the most sales on weekends

Text

Description automatically generated

Chart

Description automatically generated

* Top 5 restaurants by number of orders processed

Graphical user interface

Description automatically generated

Chart, bar chart

Description automatically generated

* Top 5 profit making restaurants

Text

Description automatically generated

Chart, bar chart

Description automatically generated

**OBSERVATIONS**

Based on the performed analysis and observations made, the following are my recommendations.

1. It will be a fair judgement for FoodHub Limited to use the top 3 customers in terms of amount spent on orders to reward with the 20% discount vouchers. This is because not all the top 3 customers with the orders have spent the highest amount.
2. FoodHub company can provide promotional offer based on highest cumulative rating, highest sales and highest order. As from the analysis, the restaurants with the highest orders have the highest sales and highest ratings.
3. Further investigations to the cause(s) of delay in delivery during the weekdays should be investigated owing to the fact there are more orders on the weekend than during the week. Some causes in delay may be non-availability of dispatch riders, traffic congestion etc.
4. We have 14 unique cuisines out of which American, Japanese, Italian and Chinese cuisines are the most requested or most popular ones. Also the top 5 performing restaurants are

Text

Description automatically generated

Hence, these top selling cuisines should never go out of stock at those restaurants.

1. There are 178 different restaurants and only a few are performing well based on the analysed data. Services should be discontinued from the following 100 restaurants as they have generated the revenue below $20 for the period under review. This will save the company some operational expenses and from running at a loss. A further analysis could also be carried out on them to know why they are not performing; some issues may be due to location of the restaurant.

|  |  |
| --- | --- |
| **RESTAURANT NAME** | **REVENUE GENERATED** |
| Song Thai Restaurant & Bar | 13.35 |
| Pinto Nouveau Thai Bistro | 13.283 |
| Barbounia | 13.2605 |
| Saravanaa Bhavan | 12.9535 |
| Joe's Shanghai ÂŽ\_Ã€ÂŽÃ¼Â£Â¾Ã·Â´ | 12.7865 |
| Vezzo Thin Crust Pizza | 12.537 |
| Dickson's Farmstand Meats | 12.4425 |
| Mamoun's Falafel | 12.4155 |
| Byblos Restaurant | 12.3675 |
| Bistango | 11.52 |
| Donburi-ya | 11.3295 |
| da Umberto | 11.227 |
| Hummus Place | 11.1475 |
| Schnipper's Quality Kitchen | 10.235 |
| V-Nam Cafe | 10.098 |
| indikitch | 9.9015 |
| Le Grainne Cafe | 9.7065 |
| Lucky's Famous Burgers | 9.5745 |
| UVA Wine Bar & Restaurant | 9.485 |
| Hot Kitchen | 9.335 |
| Tarallucci e Vino Restaurant | 9.0135 |
| Friend of a Farmer | 8.9675 |
| Olea | 8.888 |
| Hangawi | 8.6985 |
| Room Service | 8.4155 |
| Dirty Bird to Go | 8.2875 |
| Kambi Ramen House | 8.2325 |
| Tortaria | 8.142 |
| Haveli Indian Restaurant | 8.133 |
| El Parador Cafe | 8.0285 |
| Emporio | 7.8575 |
| Haru Gramercy Park | 7.4575 |
| Il Bambino | 7.3125 |
| Lucky Strike | 7.3125 |
| Rohm Thai | 7.275 |
| Klong | 7.2625 |
| 67 Burger | 7.2625 |
| Ravagh Persian Grill | 7.059 |
| Pongsri Thai | 7.0025 |
| Aurora | 6.4935 |
| Terakawa Ramen | 6.4185 |
| Socarrat Paella Bar | 6.305 |
| Posto | 6.0625 |
| Philippe Chow | 6.05 |
| Prosperity Dumpling | 5.9745 |
| Don's Bogam BBQ & Wine Bar | 5.8365 |
| Five Leaves | 5.67 |
| Dirty Bird To Go (archived) | 5.436 |
| Amy Ruth's | 5.358 |
| Piccolo Angolo | 5.289 |
| The Odeon | 5.0265 |
| DespaÃŒÂ±a | 4.956 |
| Izakaya Ten | 4.695 |
| Big Daddy's | 4.038 |
| Mira Sushi | 3.726 |
| Bukhara Grill | 3.558 |
| Olive Garden | 3.426 |
| Xe May Sandwich Shop | 3.3045 |
| brgr | 2.9685 |
| Haandi | 2.8155 |
| Zero Otto Nove | 2.7075 |
| Anjappar Chettinad | 2.466 |
| Chote Nawab | 2.4225 |
| Galli Restaurant | 2.409 |
| Cafe de La Esquina | 2.409 |
| Taro Sushi | 2.4075 |
| Paul & Jimmy's | 2.4075 |
| Spice Thai | 2.379 |
| Crema Restaurante | 2.379 |
| Dig Inn Seasonal Market | 2.3565 |
| Nha Trang One | 2.3505 |
| Le Zie 2000 Trattoria | 2.3205 |
| Moonstruck on Second | 2.241 |
| Pepe Giallo | 2.19 |
| Wo Hop Restaurant | 2.124 |
| Sarabeth's West | 2.118 |
| Hibino | 2.103 |
| Sushi Choshi | 2.0595 |
| Hiroko's Place | 1.9575 |
| Coppola's East | 1.9575 |
| Dos Caminos Soho | 1.899 |
| Alidoro | 1.8915 |
| Hampton Chutney Co. | 1.8555 |
| Kori Restaurant and Bar | 1.827 |
| The MasalaWala | 1.8195 |
| Rye House | 1.8195 |
| Frank Restaurant | 1.812 |
| Samurai Mama | 1.746 |
| Lamarca Pasta | 1.383 |
| Balade | 1.383 |
| Gaia Italian Cafe | 1.317 |
| Chola Eclectic Indian Cuisine | 1.3095 |
| Woorijip | 1.2375 |
| 'wichcraft | 1.215 |
| La Follia | 1.2075 |
| Market Table | 1.0185 |
| Wa Jeal | 1.011 |
| Cipriani Le Specialita | 0.888 |
| Big Wong Restaurant ÂŒ\_Â¤Â¾Ã‘Â¼ | 0.888 |
| Hunan Manor | 0.858 |