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In [1]: # =====  
# LEVEL 2 - ALL TASKS  
# =====
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In [2]: import pandas as pd  
import matplotlib.pyplot as plt
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In [3]: df = pd.read_csv("C:/Users/jadha/Downloads/Dataset .csv")  
df['Cuisines'] = df['Cuisines'].fillna("Not Specified")
```

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In [4]: # Task 1: Table Booking & Online Delivery
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In [5]: print("Table Booking %:\n", df['Has Table booking'].value_counts(normalize=True))
```

Table Booking %:
Has Table booking
No 87.875615
Yes 12.124385
Name: proportion, dtype: float64

```
In [6]: print("Online Delivery %:\n", df['Has Online delivery'].value_counts(normalize=True))
```

Online Delivery %:
Has Online delivery
No 74.337766
Yes 25.662234
Name: proportion, dtype: float64

```
In [7]: print("Average Rating by Booking:\n", df.groupby('Has Table booking')['Aggregate rating'].mean())
```

Average Rating by Booking:
Has Table booking
No 2.559359
Yes 3.441969
Name: Aggregate rating, dtype: float64

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In [8]: # Task 2: Price Range Analysis
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In [9]: print("Most Common Price Range:\n", df['Price range'].value_counts())
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Most Common Price Range:
Price range
1 4444
2 3113
3 1408
4 586
Name: count, dtype: int64

```
In [10]: avg_price = df.groupby('Price range')['Aggregate rating'].mean()  
print("Average Rating per Price Range:\n", avg_price)
```

Average Rating per Price Range:
Price range
1 1.999887
2 2.941054
3 3.683381
4 3.817918
Name: Aggregate rating, dtype: float64

```
In [11]: plt.figure()
avg_price.plot(kind='bar')
plt.title("Average Rating by Price Range")
plt.xlabel("Price Range")
plt.ylabel("Average Rating")
plt.show()
```



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In [12]: # Task 3: Feature Engineering
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In [13]: df['Name_Length'] = df['Restaurant Name'].apply(len)
df['Has_Table_Booking'] = df['Has Table booking'].map({'Yes':1, 'No':0})
df['Has_Online_Delivery'] = df['Has Online delivery'].map({'Yes':1, 'No':0})

print(df[['Name_Length', 'Has_Table_Booking', 'Has_Online_Delivery']].head())
```

	Name_Length	Has_Table_Booking	Has_Online_Delivery
0	16	1	0
1	16	1	0
2	22	1	0
3	4	0	0
4	11	1	0

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