In [1]:
```
#Extracting the data

import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sb
import plotly.express as px

ed = pd.read_csv(r"C:\Users\Namit\OneDrive\Desktop\Data Science\Project _Swiggy\swiggy_data.cs
ed
```

Out[1]:

	Restaurant Name	Cuisine	Rating	Number of Ratings	Average Price	Number of Offers	Offer Name	Area	Pure Veg	L
0	La Pino'Z Pizza	Pizzas, Pastas	4	10+ ratings	₹250 for two	2	FLAT DEAL\nFLAT ₹125 OFF\nUSE FLAT125ABOVE ₹69...	LALA LAJPAT RAI MARKET	No	
1	The Second Wife	Indian, North Indian	3.6	50+ ratings	₹250 for two	2	30% OFF UPTO ₹75\nUSE TRYNEWABOVE ₹149, FLAT ₹...	Central Abohar	No	
2	Tasty Bites	Italian, Beverages	3.8	10+ ratings	₹200 for two	1	FLAT ₹120 OFF\nUSE AXIS120ABOVE ₹500	Central Abohar	Yes	
3	Food Studio	Pizzas, Burgers	3.5	8 ratings	₹49 for two	5	50% OFF UPTO ₹100\nUSE TRYNEWABOVE ₹129, FLAT ...	Central Abohar	Yes	
4	Roll Express	Fast Food, Snacks	4.3	100+ ratings	₹200 for two	2	DEAL OF DAY\n10% OFF UPTO ₹40\nUSE STEALDEALAB...	Circular Road	No	
...	...	...	...	...	...	...	...	...	...	
140652	Yummy Momo'S Cafe	Chinese, Fast Food	4.6	3 ratings	₹100 for two	3	20% OFF UPTO ₹50\nUSE TRYNEWABOVE ₹149, FLAT ₹...	Yavatmal Locality	Yes	Y
140653	CAFE FIRST FLOOR	Beverages, Snacks	3.2	3 ratings	₹200 for two	2	FLAT ₹120 OFF\nUSE AXIS120ABOVE ₹500, FLAT ₹50...	Yavatmal City	Yes	Y
140654	Cafe Coffee Aani Barach Kahi	Snacks	3.2	50+ ratings	₹150 for two	2	FLAT ₹120 OFF\nUSE AXIS120ABOVE ₹500, FLAT ₹50...	Yavatmal Locality	Yes	Y
140655	Patil Family Restaurant	North Indian, Biryani	4.3	9 ratings	₹200 for two	2	FLAT ₹120 OFF\nUSE AXIS120ABOVE ₹500, FLAT ₹50...	Yavatmal Locality	No	Y
140656	Prabhakar Mama Cha Dhaba	North Indian	--	Too Few Ratings	₹350 for two	2	FLAT ₹120 OFF\nUSE AXIS120ABOVE ₹500, FLAT ₹50...	Yavatmal Locality	No	Y

140657 rows × 10 columns

In [2]:
```
#Cleaning the data

ed['Average Price'] = ed['Average Price'].astype(str).str.extract(r'(\d+)').fillna('0').astyp
ed
```

Out[2]:

	Restaurant Name	Cuisine	Rating	Number of Ratings	Average Price	Number of Offers	Offer Name	Area	Pure Veg	L
0	La Pino'Z Pizza	Pizzas, Pastas	4	10+ ratings	250	2	FLAT DEAL\nFLAT ₹125 OFF\nUSE FLAT125ABOVE ₹69...	LALA LAJPAT RAI MARKET	No	
1	The Second Wife	Indian, North Indian	3.6	50+ ratings	250	2	30% OFF UPTO ₹75\nUSE TRYNEWABOVE ₹149, FLAT ₹...	Central Abohar	No	
2	Tasty Bites	Italian, Beverages	3.8	10+ ratings	200	1	FLAT ₹120 OFF\nUSE AXIS120ABOVE ₹500	Central Abohar	Yes	
3	Food Studio	Pizzas, Burgers	3.5	8 ratings	49	5	50% OFF UPTO ₹100\nUSE TRYNEWABOVE ₹129, FLAT ...	Central Abohar	Yes	
4	Roll Express	Fast Food, Snacks	4.3	100+ ratings	200	2	DEAL OF DAY\n10% OFF UPTO ₹40\nUSE STEALDEALAB...	Circular Road	No	
...	...	...	...	...	...	...	...	...	...	
140652	Yummy Momo'S Cafe	Chinese, Fast Food	4.6	3 ratings	100	3	20% OFF UPTO ₹50\nUSE TRYNEWABOVE ₹149, FLAT ₹...	Yavatmal Locality	Yes	Y
140653	CAFE FIRST FLOOR	Beverages, Snacks	3.2	3 ratings	200	2	FLAT ₹120 OFF\nUSE AXIS120ABOVE ₹500, FLAT ₹50...	Yavatmal City	Yes	Y
140654	Cafe Coffee Aani Barach Kahi	Snacks	3.2	50+ ratings	150	2	FLAT ₹120 OFF\nUSE AXIS120ABOVE ₹500, FLAT ₹50...	Yavatmal Locality	Yes	Y
140655	Patil Family Restaurant	North Indian, Biryani	4.3	9 ratings	200	2	FLAT ₹120 OFF\nUSE AXIS120ABOVE ₹500, FLAT ₹50...	Yavatmal Locality	No	Y
140656	Prabhakar Mama Cha Dhaba	North Indian	--	Too Few Ratings	350	2	FLAT ₹120 OFF\nUSE AXIS120ABOVE ₹500, FLAT ₹50...	Yavatmal Locality	No	Y

140657 rows × 10 columns

In [3]:

```
ed['Rating'] = ed['Rating'].replace('--' , '0')
ed['Number of Ratings'] = ed['Number of Ratings'].replace('Too Few Ratings' , '0')
ed
```

Out[3]:

	Restaurant Name	Cuisine	Rating	Number of Ratings	Average Price	Number of Offers	Offer Name	Area	Pure Veg	L
0	La Pino'Z Pizza	Pizzas, Pastas	4	10+ ratings	250	2	FLAT DEAL\nFLAT ₹125 OFF\nUSE FLAT125ABOVE ₹69...	LALA LAJPAT RAI MARKET	No	
1	The Second Wife	Indian, North Indian	3.6	50+ ratings	250	2	30% OFF UPTO ₹75\nUSE TRYNEWABOVE ₹149, FLAT ₹...	Central Abohar	No	
2	Tasty Bites	Italian, Beverages	3.8	10+ ratings	200	1	FLAT ₹120 OFF\nUSE AXIS120ABOVE ₹500	Central Abohar	Yes	
3	Food Studio	Pizzas, Burgers	3.5	8 ratings	49	5	50% OFF UPTO ₹100\nUSE TRYNEWABOVE ₹129, FLAT ...	Central Abohar	Yes	
4	Roll Express	Fast Food, Snacks	4.3	100+ ratings	200	2	DEAL OF DAY\n10% OFF UPTO ₹40\nUSE STEALDEALAB...	Circular Road	No	
...	...	...	...	...	...	...	...	...	...	
140652	Yummy Momo'S Cafe	Chinese, Fast Food	4.6	3 ratings	100	3	20% OFF UPTO ₹50\nUSE TRYNEWABOVE ₹149, FLAT ₹...	Yavatmal Locality	Yes	Y
140653	CAFE FIRST FLOOR	Beverages, Snacks	3.2	3 ratings	200	2	FLAT ₹120 OFF\nUSE AXIS120ABOVE ₹500, FLAT ₹50...	Yavatmal City	Yes	Y
140654	Cafe Coffee Aani Barach Kahi	Snacks	3.2	50+ ratings	150	2	FLAT ₹120 OFF\nUSE AXIS120ABOVE ₹500, FLAT ₹50...	Yavatmal Locality	Yes	Y
140655	Patil Family Restaurant	North Indian, Biryani	4.3	9 ratings	200	2	FLAT ₹120 OFF\nUSE AXIS120ABOVE ₹500, FLAT ₹50...	Yavatmal Locality	No	Y
140656	Prabhakar Mama Cha Dhaba	North Indian	0	0	350	2	FLAT ₹120 OFF\nUSE AXIS120ABOVE ₹500, FLAT ₹50...	Yavatmal Locality	No	Y

140657 rows × 10 columns

In [4]:

```
ed['Number of Ratings'] = ed['Number of Ratings'].str.replace(r'\+.*', '' , regex = True)
ed['Number of Ratings'] = ed['Number of Ratings'].str.replace(r'\D', '' , regex = True)
ed
```

Out[4]:

	Restaurant Name	Cuisine	Rating	Number of Ratings	Average Price	Number of Offers	Offer Name	Area	Pure Veg	L
0	La Pino'Z Pizza	Pizzas, Pastas	4	10	250	2	FLAT DEAL\nFLAT ₹125 OFF\nUSE FLAT125ABOVE ₹69...	LALA LAJPAT RAI MARKET	No	
1	The Second Wife	Indian, North Indian	3.6	50	250	2	30% OFF UPTO ₹75\nUSE TRYNEWABOVE ₹149, FLAT ₹...	Central Abohar	No	
2	Tasty Bites	Italian, Beverages	3.8	10	200	1	FLAT ₹120 OFF\nUSE AXIS120ABOVE ₹500	Central Abohar	Yes	
3	Food Studio	Pizzas, Burgers	3.5	8	49	5	50% OFF UPTO ₹100\nUSE TRYNEWABOVE ₹129, FLAT ...	Central Abohar	Yes	
4	Roll Express	Fast Food, Snacks	4.3	100	200	2	DEAL OF DAY\n10% OFF UPTO ₹40\nUSE STEALDEALAB...	Circular Road	No	
...	...	...	...	...	...	...	...	...	...	
140652	Yummy Momo'S Cafe	Chinese, Fast Food	4.6	3	100	3	20% OFF UPTO ₹50\nUSE TRYNEWABOVE ₹149, FLAT ₹...	Yavatmal Locality	Yes	Y
140653	CAFE FIRST FLOOR	Beverages, Snacks	3.2	3	200	2	FLAT ₹120 OFF\nUSE AXIS120ABOVE ₹500, FLAT ₹50...	Yavatmal City	Yes	Y
140654	Cafe Coffee Aani Barach Kahi	Snacks	3.2	50	150	2	FLAT ₹120 OFF\nUSE AXIS120ABOVE ₹500, FLAT ₹50...	Yavatmal Locality	Yes	Y
140655	Patil Family Restaurant	North Indian, Biryani	4.3	9	200	2	FLAT ₹120 OFF\nUSE AXIS120ABOVE ₹500, FLAT ₹50...	Yavatmal Locality	No	Y
140656	Prabhakar Mama Cha Dhaba	North Indian	0	0	350	2	FLAT ₹120 OFF\nUSE AXIS120ABOVE ₹500, FLAT ₹50...	Yavatmal Locality	No	Y

140657 rows × 10 columns

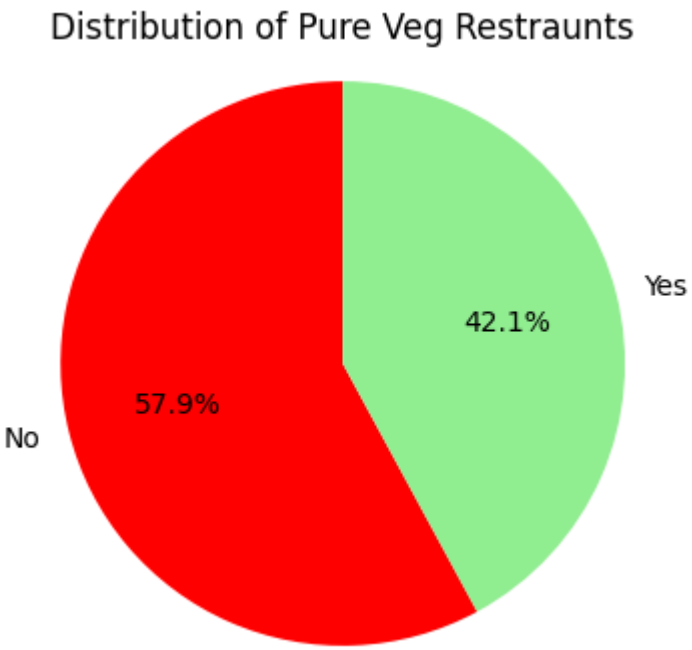
In [5]:
```
ed['Offer Name'] = ed['Offer Name'].str.replace('\n' , ',')
ed
```

Out[5]:

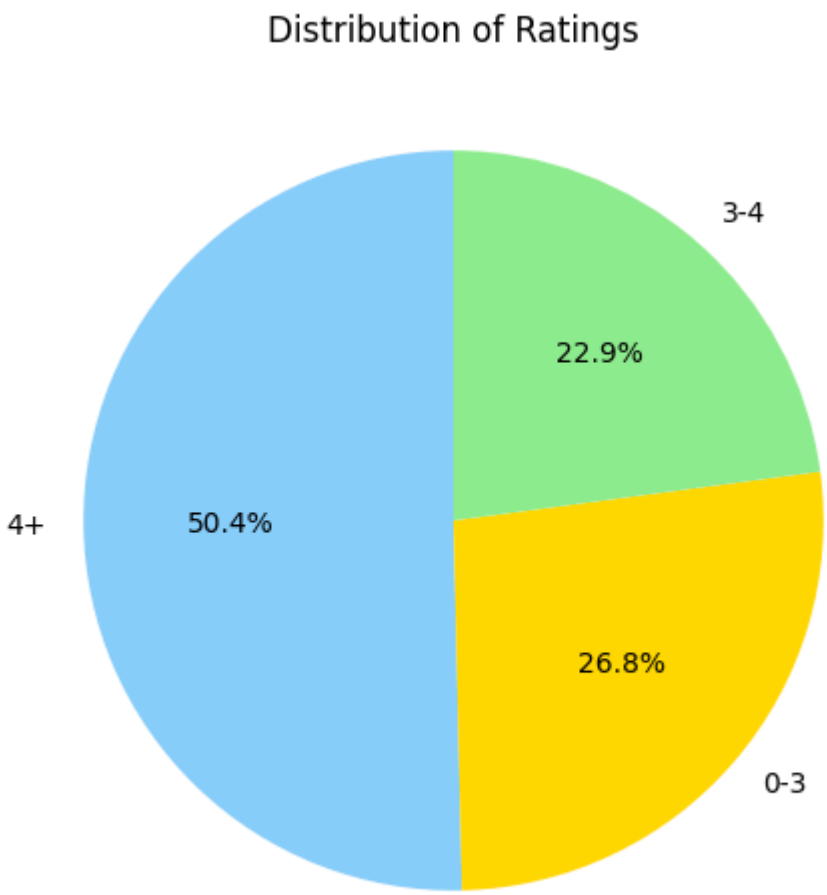
	Restaurant Name	Cuisine	Rating	Number of Ratings	Average Price	Number of Offers	Offer Name	Area	Pure Veg
0	La Pino'Z Pizza	Pizzas, Pastas	4	10	250	2	FLAT DEAL,FLAT ₹125 OFF,USE FLAT125ABOVE ₹699,...	LALA LAJPAT RAI MARKET	No
1	The Second Wife	Indian, North Indian	3.6	50	250	2	30% OFF UPTO ₹75,USE TRYNEWABOVE ₹149, FLAT ₹1...	Central Abohar	No
2	Tasty Bites	Italian, Beverages	3.8	10	200	1	FLAT ₹120 OFF,USE AXIS120ABOVE ₹500	Central Abohar	Yes
3	Food Studio	Pizzas, Burgers	3.5	8	49	5	50% OFF UPTO ₹100,USE TRYNEWABOVE ₹129, FLAT D...	Central Abohar	Yes
4	Roll Express	Fast Food, Snacks	4.3	100	200	2	DEAL OF DAY,10% OFF UPTO ₹40,USE STEALDEALABOV...	Circular Road	No
...	...	...	...	...	...	...	...	...	...
140652	Yummy Momo'S Cafe	Chinese, Fast Food	4.6	3	100	3	20% OFF UPTO ₹50,USE TRYNEWABOVE ₹149, FLAT ₹1...	Yavatmal Locality	Yes
140653	CAFE FIRST FLOOR	Beverages, Snacks	3.2	3	200	2	FLAT ₹120 OFF,USE AXIS120ABOVE ₹500, FLAT ₹50 ...	Yavatmal City	Yes
140654	Cafe Coffee Aani Barach Kahi	Snacks	3.2	50	150	2	FLAT ₹120 OFF,USE AXIS120ABOVE ₹500, FLAT ₹50 ...	Yavatmal Locality	Yes
140655	Patil Family Restaurant	North Indian, Biryani	4.3	9	200	2	FLAT ₹120 OFF,USE AXIS120ABOVE ₹500, FLAT ₹50 ...	Yavatmal Locality	No
140656	Prabhakar Mama Cha Dhaba	North Indian	0	0	350	2	FLAT ₹120 OFF,USE AXIS120ABOVE ₹500, FLAT ₹50 ...	Yavatmal Locality	No

140657 rows × 10 columns

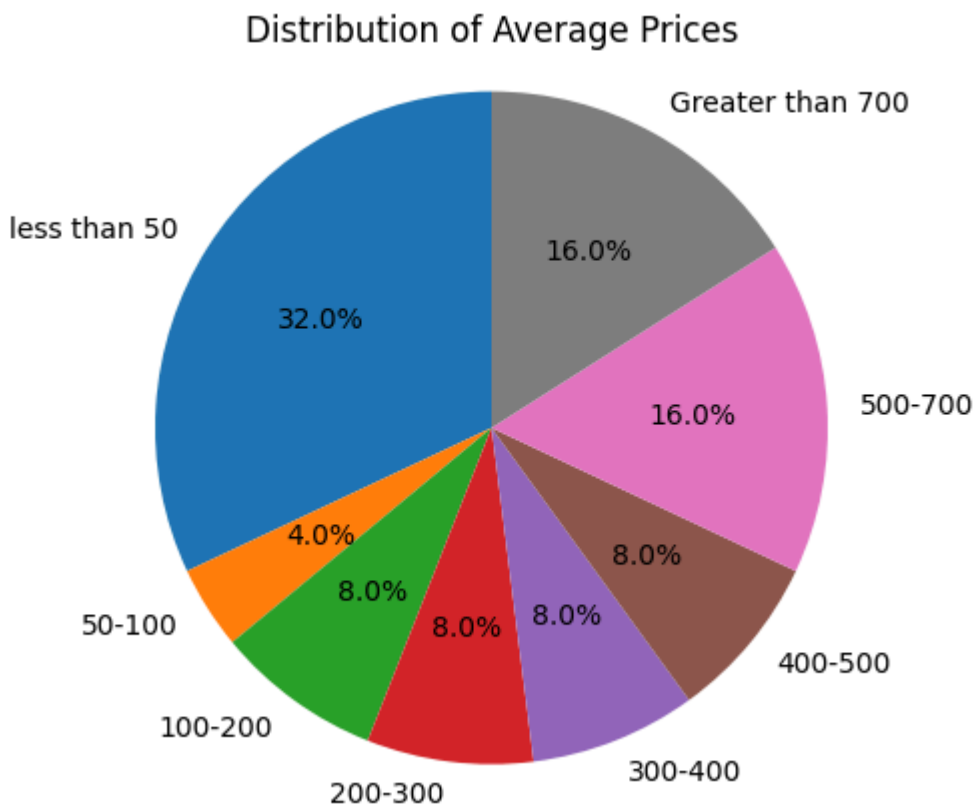
In [6]:
```
import matplotlib.pyplot as plt

pure_veg_counts = ed['Pure Veg'].value_counts().reset_index()
pure_veg_counts.columns = ['Pure Veg', 'Count']

labels = ['No' , 'Yes']
sizes = [57.9 , 42.1]  # Percentage distribution
colors = ['red' , 'lightgreen']  # Colors for each slice
#explode = (0.1, 0, 0, 0)  # Explode the first slice (Apples)

# Plot
plt.figure(figsize=(4, 4))  # Aspect ratio 1:1 for a circular pie chart
plt.pie(sizes, labels=labels, colors=colors, autopct='%1.1f%%', shadow=False, startangle=90)
plt.axis('equal')  # Equal aspect ratio ensures that pie is drawn as a circle
plt.title('Distribution of Pure Veg Restraunts' , size = 12)
# Show plot
plt.show()
```



In [7]:
```
import matplotlib.pyplot as plt

# Convert 'Rating' column to numeric
ed['Rating'] = pd.to_numeric(ed['Rating'], errors='coerce') #The errors='coerce' parameter en
#values that can't be converted to numeric are replaced with NaN.
ed['Rating Category'] = ed['Rating'].apply(lambda x: '0-3' if pd.isna(x) or x<3 else ('3-4' i

# Get value counts of rating categories
rating_counts = ed['Rating Category'].value_counts()
colors = ['lightskyblue','gold','lightgreen']

plt.figure(figsize=(6, 6))
plt.pie(rating_counts, labels = rating_counts.index , colors=colors, autopct='%1.1f%%', start
plt.title('Distribution of Ratings')
plt.show()
```



In [8]:
```
#ed['Average Price'] = ed['Average Price'].astype(str).str.replace('for two' , '')
#ed['Average Price'] = ed['Average Price'].str.replace('₹' , '')
#Unique_Price= ed['Average Price'].unique()
#print (Unique_Price)
#Unique_Price = ed['Average Price'].value_counts()
#print(Unique_Price)
Unique_Price = [50, 100, 150, 200, 250, 300, 500, 400, 350, 450, 40, 0, 550, 48, 1, 600, 32,

 #Define the price ranges
price_ranges = {
    'less than 50' : lambda x: x < 50,
    '50-100': lambda x: 50 <= x < 100,
    '100-200': lambda x: 100 <=x < 200,
    '200-300': lambda x: 200 <= x < 300,
    '300-400': lambda x: 300 <= x < 400,
    '400-500': lambda x: 400 <= x < 500,
    '500-700': lambda x: 500 <= x <700,
    'Greater than 700': lambda x: x > 700
}

price_counts = {range_name: sum(price_range(price) for price in Unique_Price) for range_name,

labels = price_counts.keys()
sizes = price_counts.values()

fig, ax = plt.subplots()
ax.pie(sizes, labels=labels, autopct='%1.1f%%', startangle=90)
ax.axis('equal')
plt.title('Distribution of Average Prices')
plt.show()
```

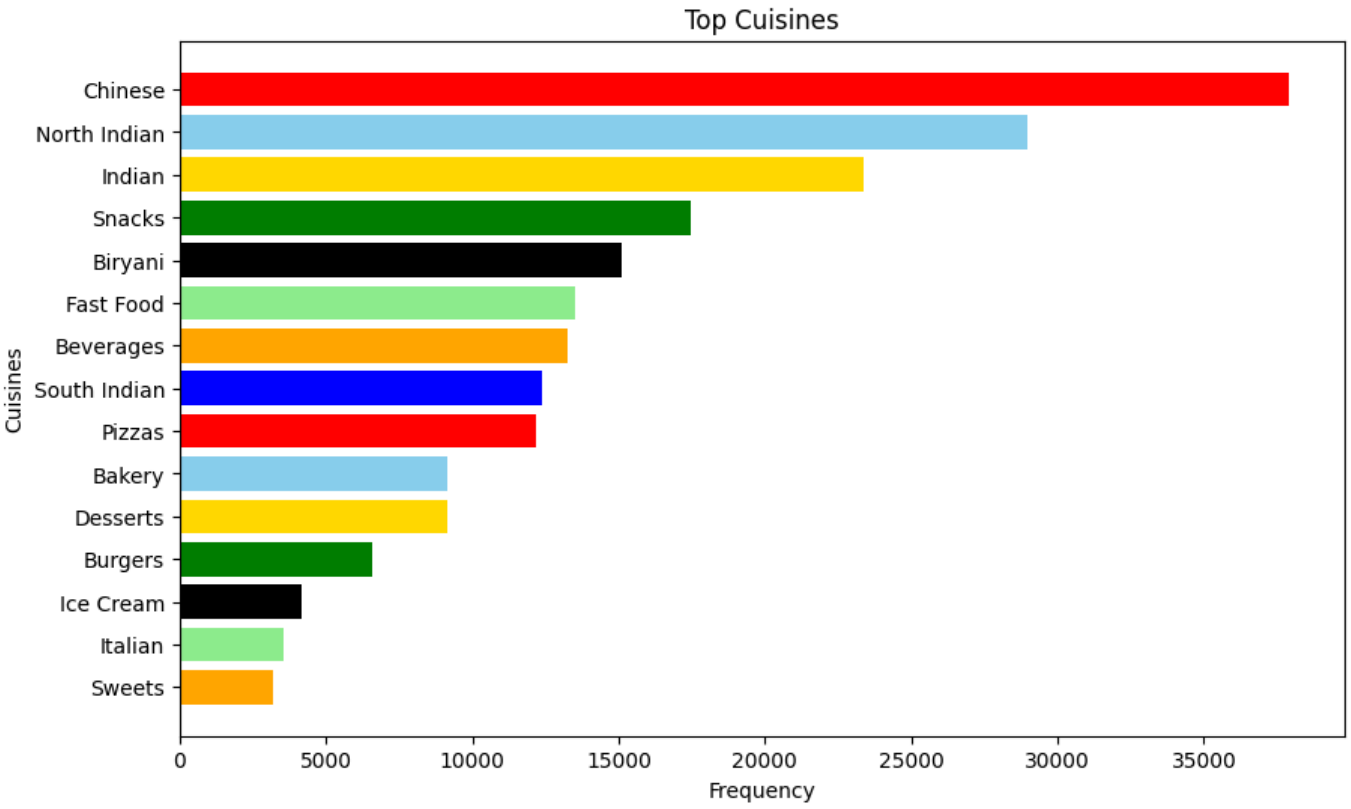


In [9]:
```
cuisine_column = ed['Cuisine']
all_cuisine = [cuisine.split(', ') for cuisine in cuisine_column if pd.notna(cuisine)]
unique_cuisine = set([c for sublist in all_cuisine for c in sublist])
print("All Possible Cuisine:", unique_cuisine)
```

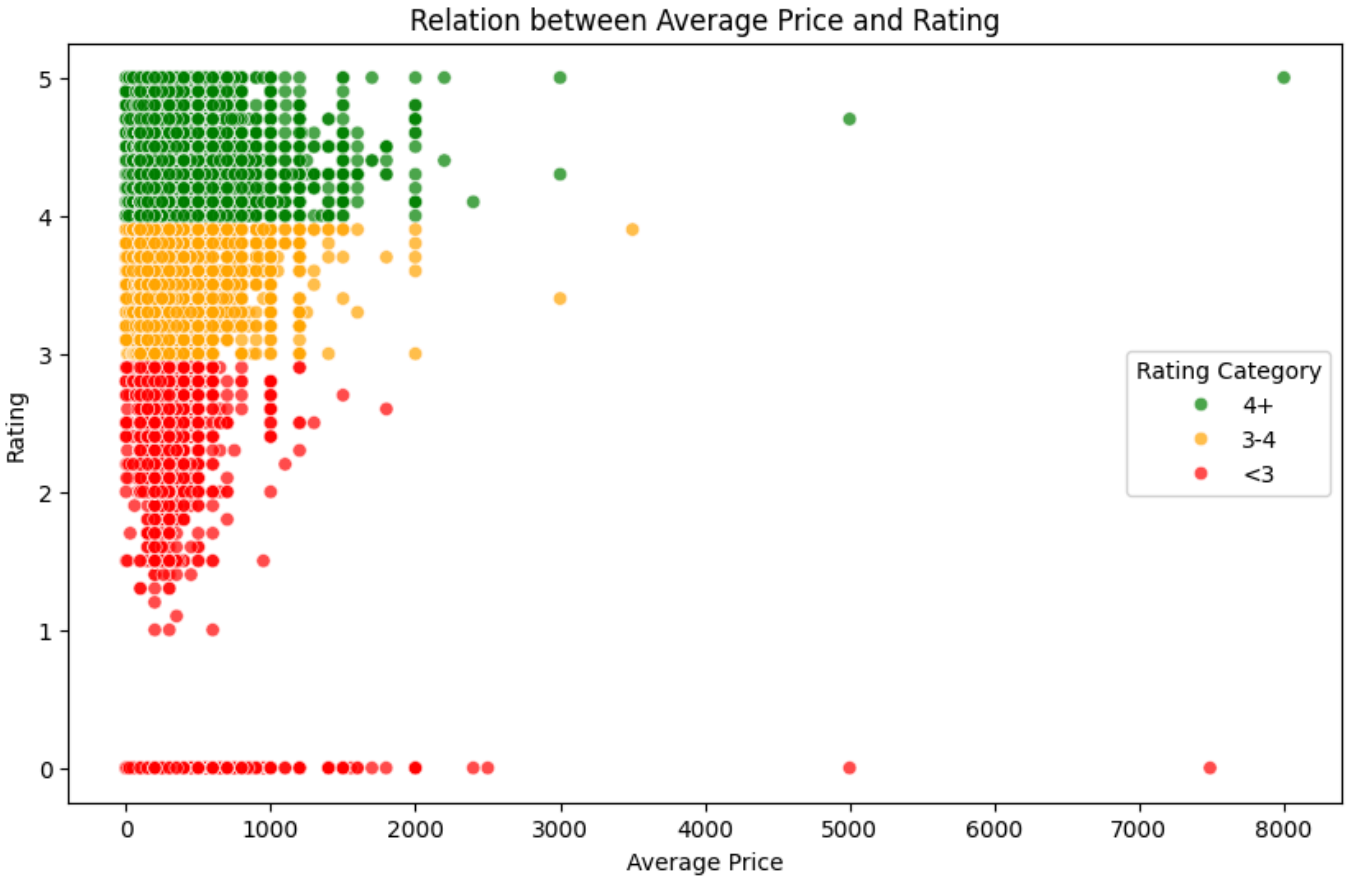
```
All Possible Cuisine: {'Thai', 'Sushi', 'fast food', 'Home Food', 'snacks', 'Biryani', 'Telang
ana', 'Persian', 'Mughlai', 'Haleem', 'Chinese', 'Sindhi', 'Keto', 'Seafood', 'Mangalorean',
'African', 'Rs.40 Off', 'Rolls', 'Oriya', 'Default', 'burgers', 'Rajasthani', 'Arabian', 'Goa
n', 'Combo', 'Hyderabadi', 'Chaat', 'Assamese', 'Italian-American', 'Jain', 'Tex-Mex', 'Baker
y', 'Paan', 'chinese', 'Thalis', 'Nepalese', 'Pizzas', 'Korean', 'Grill', 'Navratri Special',
'Bubble Tea', 'Bhutanese', 'Burger', 'Discount offer from Garden Cafe Express Kankurgachi', 'B
engali', 'South indian', 'Continental', 'Italian', 'Japanese', 'Mediterranean', 'Snacks', 'Tan
door ', 'Bangladeshi', 'Kashmiri', 'Buffalo meat', 'Lebanese', 'North Indian', 'Andhra', 'Fast
Food', 'Cakes and Pastries', 'Mexican', 'Khasi', 'Desserts', 'Special Discount from (The Scoo
p)', 'Kerala', 'Popular Brand Store', 'Afghani', 'Tibetan', 'Lucknowi', 'South Indian', 'Ameri
can', 'British', 'Healthy Food', 'Juices', 'Rolls & Wraps', 'Naga', 'North Indian,', 'SVANidhi
Street Food Vendor', 'Portuguese', 'European', 'North indian', 'Sweets', 'Pastas', 'Meat', 'Fr
ee Delivery ! Limited Stocks!', 'Mongolian', 'Spanish', 'Turkish', 'Indian', 'Street Food', 'M
alwani', 'Salads', 'South American', 'Awadhi', 'Singaporean', 'French', 'Konkan', 'To Avail Th
is Use Code AZAD105', 'Greek', 'Barbecue', 'Waffle', 'Burgers', 'Oriental', 'Burmese', 'india
n', 'Malaysian', 'Asian', 'Parsi', 'Middle Eastern', 'Cafe', 'Rayalaseema', 'Kebabs', 'Gujarat
i', 'Bihari', 'German', 'Pan-Asian', 'Coastal', 'Code valid on bill over Rs.500', 'Maharashtri
an', 'Indonesian', 'Ice Cream Cakes', 'Ice Cream', 'Punjabi', 'Steakhouse', 'Beverages', 'Viet
namese', 'Tandoor', 'North Eastern', 'Chettinad', 'Momos', 'Tribal'}
```

In [10]:
```
import matplotlib.pyplot as plt

cuisine_counts = ed['Cuisine'].str.split(', ').explode().value_counts()
Top_Cuisine = cuisine_counts.head(15)
#print(Top_Cuisine)

# Extracting cuisine names and their respective counts
cuisine_name = Top_Cuisine.index
cuisine_count = Top_Cuisine.values

color = ('red','skyblue','gold','green','black','lightgreen','orange','blue')
plt.figure(figsize=(10,6))
plt.barh(cuisine_name,cuisine_count, color = color)
```

```
#Adding labels
plt.xlabel('Frequency')
plt.ylabel('Cuisines')
plt.title("Top Cuisines")
plt.gca().invert_yaxis()

plt.show()
```



In [11]:
```
import matplotlib.pyplot as plt
import seaborn as sns

average_price = ed['Average Price']
ed['Rating'] = pd.to_numeric(ed['Rating'], errors='coerce')

# Define rating categories
def categorize_rating(rating):
    if rating < 3:
        return '<3'
    elif 3 <= rating < 4:
        return '3-4'
    else:
        return '4+'

ed['Rating Category'] = ed['Rating'].apply(categorize_rating)

# Define a color palette for each category
palette = {'<3': 'red', '3-4': 'orange', '4+': 'green'}

plt.figure(figsize=(10, 6))
sns.scatterplot(x=average_price, y=ed['Rating'], hue=ed['Rating Category'], palette=palette,
plt.title('Relation between Average Price and Rating')
plt.xlabel('Average Price')
plt.ylabel('Rating')
plt.legend(title='Rating Category')
plt.show()
```


Relation between Average Price and Rating
Rating
Average Price
Rating Category
4+
3-4
<3
0
1
2
3
4
5
0
1000
2000
3000
4000
5000
6000
7000
8000