```python
In [2]:  import pandas as pd
         import numpy as np
         import matplotlib.pyplot as plt
         import seaborn as sns
```

```python
In [3]:  import matplotlib
         plt.style.use('ggplot')
         from matplotlib.pyplot import figure


         get_ipython().run_line_magic('matplotlib', 'inline')
         matplotlib.rcParams['figure.figsize'] = (16,8)
```

```python
In [4]:  df=pd.read_csv(r"C:\Users\Lenovo\Desktop\swiggy.csv")
```

```python
In [13]: print(df)
```

```
            ID                 Area       City                 Restaurant  \
0          211          Koramangala  Bangalore                Tandoor Hut
1          221          Koramangala  Bangalore               Tunday Kababi
2          246            Jogupalya  Bangalore                     Kim Lee
3          248           Indiranagar  Bangalore           New Punjabi Hotel
4          249           Indiranagar  Bangalore                        Nh8
...        ...                  ...        ...                        ...
8675    464626  Panjarapole Cross Road  Ahmedabad                Malt Pizza
8676    465835                Rohini      Delhi  Jay Mata Ji Home Kitchen
8677    465872                Rohini      Delhi       Chinese Kitchen King
8678    465990                Rohini      Delhi     Shree Ram Paratha Wala
8679    466488           Navrangpura  Ahmedabad                Sassy Street

       Price  Avg ratings  Total ratings  \
0      300.0          4.4            100
1      300.0          4.1            100
2      650.0          4.4            100
3      250.0          3.9            500
4      350.0          4.0             50
...      ...          ...            ...
8675   500.0          2.9             80
8676   200.0          2.9             80
8677   150.0          2.9             80
8678   150.0          2.9             80
8679   250.0          2.9             80

                                            Food type      Address  \
0            Biryani,Chinese,North Indian,South Indian    5Th Block
1                                    Mughlai,Lucknowi    5Th Block
2                                             Chinese  Double Road
3               North Indian,Punjabi,Tandoor,Chinese  80 Feet Road
4     Rajasthani,Gujarati,North Indian,Snacks,Desser...  80 Feet Road
...                                               ...          ...
8675                                           Pizzas   Navrangpura
8676                                     South Indian       Rohini
8677                         Chinese,Snacks,Tandoor       Rohini
8678                   North Indian,Indian,Snacks       Rohini
8679                         Chaat,Snacks,Chinese   Navrangpura

       Delivery time
0                 59
1                 56
2                 50
3                 57
4                 63
...              ...
8675              40
8676              28
8677              58
8678              28
8679              44

[8680 rows x 10 columns]
```

```python
In [14]: print(df.shape)
```

```
(8680, 10)
```

```python
In [16]: df.head()
```

	ID	Area	City	Restaurant	Price	Avg ratings	Total ratings	Food type	Address	Delivery time
0	211	Koramangala	Bangalore	Tandoor Hut	300.0	4.4	100	Biryani,Chinese,North Indian,South Indian	5Th Block	59
1	221	Koramangala	Bangalore	Tunday Kababi	300.0	4.1	100	Mughlai,Lucknowi	5Th Block	56
2	246	Jogupalya	Bangalore	Kim Lee	650.0	4.4	100	Chinese	Double Road	50
3	248	Indiranagar	Bangalore	New Punjabi Hotel	250.0	3.9	500	North Indian,Punjabi,Tandoor,Chinese	80 Feet Road	57
4	249	Indiranagar	Bangalore	Nh8	350.0	4.0	50	Rajasthani,Gujarati,North Indian,Snacks,Desser...	80 Feet Road	63

```
In [17]: df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 8680 entries, 0 to 8679
Data columns (total 10 columns):
 #   Column         Non-Null Count  Dtype
---  ------         --------------  -----
 0   ID             8680 non-null   int64
 1   Area           8680 non-null   object
 2   City           8680 non-null   object
 3   Restaurant     8680 non-null   object
 4   Price          8680 non-null   float64
 5   Avg ratings    8680 non-null   float64
 6   Total ratings  8680 non-null   int64
 7   Food type      8680 non-null   object
 8   Address        8680 non-null   object
 9   Delivery time  8680 non-null   int64
dtypes: float64(2), int64(3), object(5)
memory usage: 678.3+ KB
```

```
In [18]: df.describe()
```

Out[18]:

	ID	Price	Avg ratings	Total ratings	Delivery time
count	8680.000000	8680.000000	8680.000000	8680.000000	8680.000000
mean	244812.071429	348.444470	3.655104	156.634793	53.967051
std	158671.617188	230.940074	0.647629	391.448014	14.292335
min	211.000000	0.000000	2.000000	20.000000	20.000000
25%	72664.000000	200.000000	2.900000	50.000000	44.000000
50%	283442.000000	300.000000	3.900000	80.000000	53.000000
75%	393425.250000	400.000000	4.200000	100.000000	64.000000
max	466928.000000	2500.000000	5.000000	10000.000000	109.000000

```
In [21]: df.isnull().sum()
```

```
Out[21]: ID               0
         Area             0
         City             0
         Restaurant       0
         Price            0
         Avg ratings      0
         Total ratings    0
         Food type        0
         Address          0
         Delivery time    0
         dtype: int64
```

```
In [23]: df[df.duplicated()]
```

Out[23]:

ID	Area	City	Restaurant	Price	Avg ratings	Total ratings	Food type	Address	Delivery time

```
In [24]: df=df.drop_duplicates()
```

```
In [25]: restraunt_count_per_city=df["City"].value_counts()
         restraunt_count_per_city
```

```
Out[25]: City
         Kolkata      1346
         Mumbai       1277
         Chennai      1106
         Pune         1090
         Hyderabad    1075
         Bangalore     946
         Ahmedabad     717
         Delhi         611
         Surat         512
         Name: count, dtype: int64
```
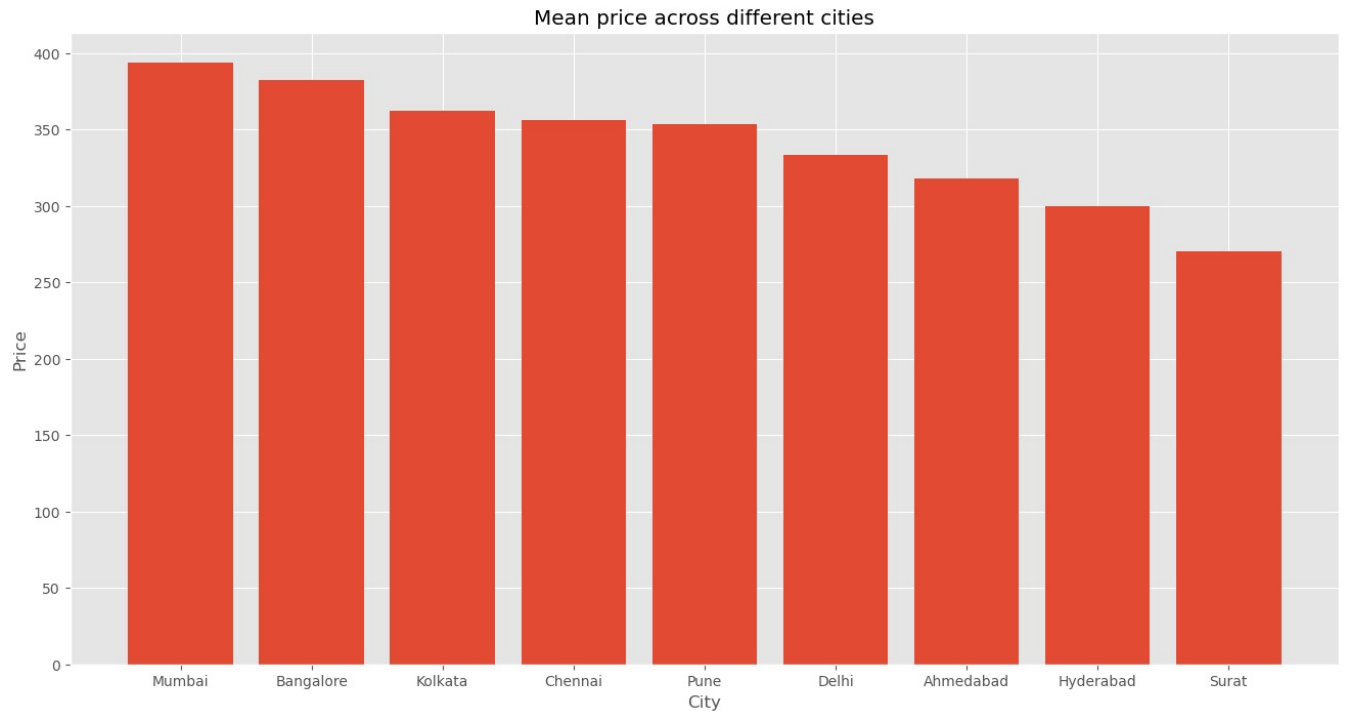
```
In [26]:  mean_price_per_city = df.groupby("City")["Price"].mean()
          mean_price_per_city = mean_price_per_city.sort_values(ascending=False)
          mean_price_per_city
```

```
Out[26]:  City
          Mumbai       393.794832
          Bangalore    382.524313
          Kolkata      362.294205
          Chennai      356.247740
          Pune         353.763303
          Delhi        333.301146
          Ahmedabad    318.128312
          Hyderabad    299.926512
          Surat        270.171875
          Name: Price, dtype: float64
```
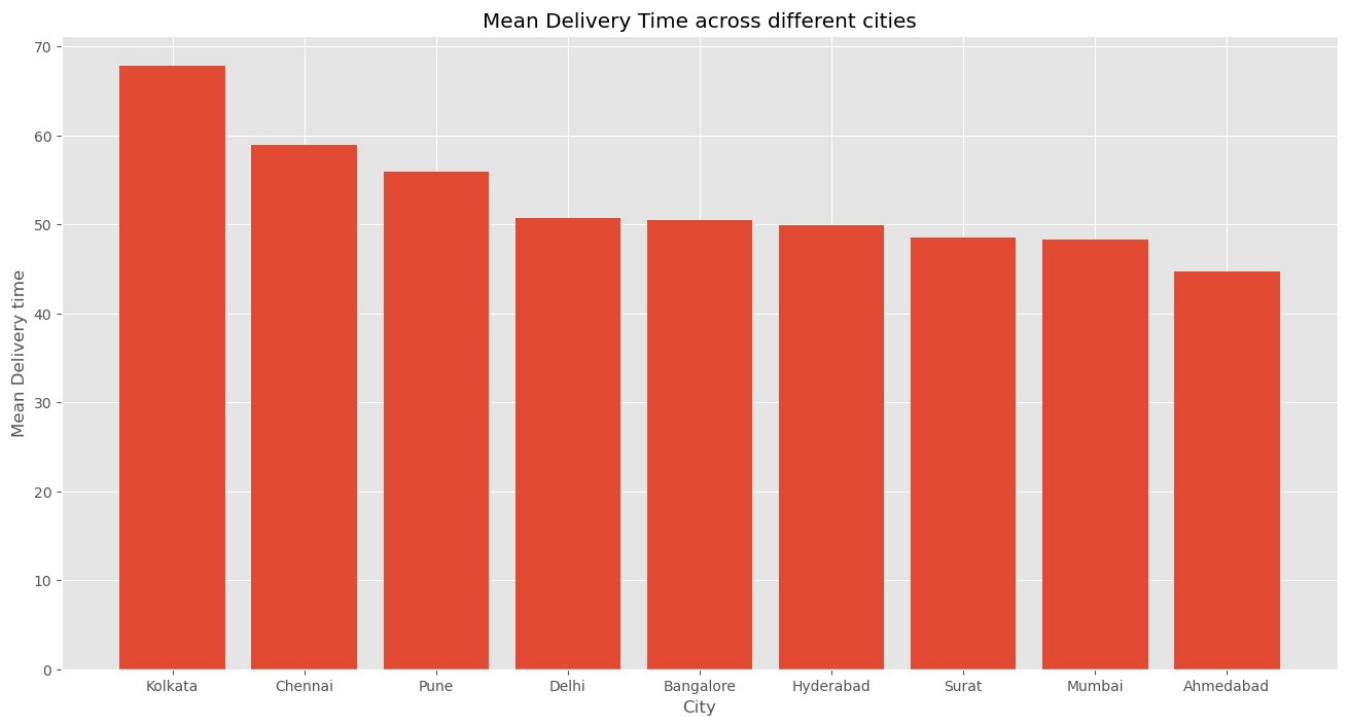
```
In [27]:  plt.bar(mean_price_per_city.index,mean_price_per_city.values)
          plt.xlabel("City")
          plt.ylabel("Price")
          plt.title("Mean price across different cities")
          plt.show()
```
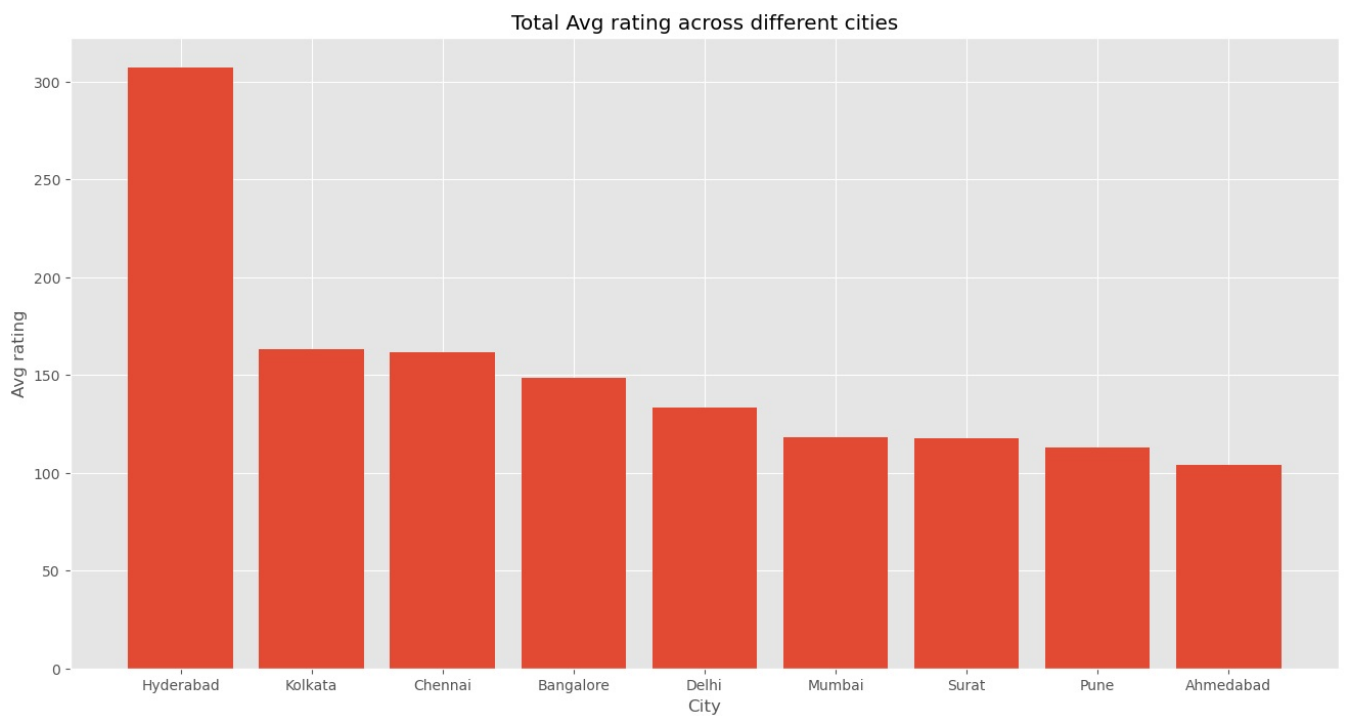


```
In [29]:  mean_deliver_time_per_city=df.groupby("City")["Delivery time"].mean()
          mean_deliver_time_per_city=mean_deliver_time_per_city.sort_values(ascending=False)
          mean_deliver_time_per_city
```

```
Out[29]:  City
          Kolkata      67.809807
          Chennai      58.968354
          Pune         55.854128
          Delhi        50.734861
          Bangalore    50.529598
          Hyderabad    49.933023
          Surat        48.484375
          Mumbai       48.318716
          Ahmedabad    44.709902
          Name: Delivery time, dtype: float64
```

```
In [30]:  plt.bar(mean_deliver_time_per_city.index,mean_deliver_time_per_city.values)
          plt.xlabel("City")
          plt.ylabel("Mean Delivery time")
          plt.title("Mean Delivery Time across different cities")
          plt.show()
```

Mean Delivery Time across different cities

```
plt.bar(mean_total_rating_per_city.index,mean_total_rating_per_city.values)
plt.xlabel("City")
plt.ylabel("Avg rating")
plt.title("Total Avg rating across different cities")
plt.show()
```


Total Avg rating across different cities

In [5]:
```
mean_total_rating_per_city=df.groupby("City")["Total ratings"].mean()
mean_total_rating_per_city=mean_total_rating_per_city.sort_values(ascending=False)
mean_total_rating_per_city
```

Out[5]:
```
City
Hyderabad    307.227907
Kolkata      163.298663
Chennai      161.717902
Bangalore    148.520085
Delhi        133.256956
Mumbai       118.214565
Surat        117.812500
Pune         112.834862
Ahmedabad    103.863319
Name: Total ratings, dtype: float64
```

In [17]:
```
# Drop rows where Age is greater than 30
df = df[df['ID'] <=211]
```

In [19]:
```
print(df)
```

```
    ID        Area        City   Restaurant  Price  Avg ratings  \
0  211  Koramangala  Bangalore  Tandoor Hut  300.0          4.4

   Total ratings                                   Food type    Address  \
0            100  Biryani,Chinese,North Indian,South Indian  5Th Block

   Delivery time
0             59
```

In [ ]: