# Swiggy projecy using in python library

In [1]:
```
#import libarary
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
%matplotlib inline
sns.set_style('darkgrid')
```

In [2]:
```
#import csv file
swiggy=pd.read_csv('swiggy.csv')
swiggy
```

Out[2]:

| | ID | Area | City | Restaurant | Price | Avg ratings | Total ratings | |
|---|---|---|---|---|---|---|---|---|
| **0** | 211 | Koramangala | Bangalore | Tandoor Hut | 300.0 | 4.4 | 100 | Biryani,C Indian, |
| **1** | 221 | Koramangala | Bangalore | Tunday Kababi | 300.0 | 4.1 | 100 | Mugh |
| **2** | 246 | Jogupalya | Bangalore | Kim Lee | 650.0 | 4.4 | 100 | |
| **3** | 248 | Indiranagar | Bangalore | New Punjabi Hotel | 250.0 | 3.9 | 500 | Indian,Punjabi,Tanc |
| **4** | 249 | Indiranagar | Bangalore | Nh8 | 350.0 | 4.0 | 50 | Rajasthani,G Indian,Sna |
| **...** | ... | ... | ... | ... | ... | ... | ... | |
| **8675** | 464626 | Panjarapole Cross Road | Ahmedabad | Malt Pizza | 500.0 | 2.9 | 80 | |
| **8676** | 465835 | Rohini | Delhi | Jay Mata Ji Home Kitchen | 200.0 | 2.9 | 80 | |
| **8677** | 465872 | Rohini | Delhi | Chinese Kitchen King | 150.0 | 2.9 | 80 | Chinese,Sna |
| **8678** | 465990 | Rohini | Delhi | Shree Ram Paratha Wala | 150.0 | 2.9 | 80 | North Indian,In |
| **8679** | 466488 | Navrangpura | Ahmedabad | Sassy Street | 250.0 | 2.9 | 80 | Chaat,Sna |

8680 rows × 10 columns

#Data Analysis

In [3]:
```
# first five data
swiggy.head()
```

Out[3]:

| | ID | Area | City | Restaurant | Price | Avg ratings | Total ratings | Food ty |
|---|---|---|---|---|---|---|---|---|
| **0** | 211 | Koramangala | Bangalore | Tandoor Hut | 300.0 | 4.4 | 100 | Biryani,Chinese,Nc Indian,South Ind |
| **1** | 221 | Koramangala | Bangalore | Tunday Kababi | 300.0 | 4.1 | 100 | Mughlai,Luckn |
| **2** | 246 | Jogupalya | Bangalore | Kim Lee | 650.0 | 4.4 | 100 | Chin |
| **3** | 248 | Indiranagar | Bangalore | New Punjabi Hotel | 250.0 | 3.9 | 500 | Nc Indian,Punjabi,Tandoor,Chin |
| **4** | 249 | Indiranagar | Bangalore | Nh8 | 350.0 | 4.0 | 50 | Rajasthani,Gujarati,Nc Indian,Snacks,Desse |

In [4]:
```
#last five data
swiggy.tail()
```

Out[4]:

| | ID | Area | City | Restaurant | Price | Avg ratings | Total ratings | Food |
|---|---|---|---|---|---|---|---|---|
| **8675** | 464626 | Panjarapole Cross Road | Ahmedabad | Malt Pizza | 500.0 | 2.9 | 80 | P |
| **8676** | 465835 | Rohini | Delhi | Jay Mata Ji Home Kitchen | 200.0 | 2.9 | 80 | South I |
| **8677** | 465872 | Rohini | Delhi | Chinese Kitchen King | 150.0 | 2.9 | 80 | Chinese,Snacks,Ta |
| **8678** | 465990 | Rohini | Delhi | Shree Ram Paratha Wala | 150.0 | 2.9 | 80 | Indian,Indian,Sı |
| **8679** | 466488 | Navrangpura | Ahmedabad | Sassy Street | 250.0 | 2.9 | 80 | Chaat,Snacks,Ch |

In [5]:
```
# check the null value
swiggy.isnull()
```

Out[5]:

| | ID | Area | City | Restaurant | Price | Avg ratings | Total ratings | Food type | Address | Delivery time |
|---|---|---|---|---|---|---|---|---|---|---|
| **0** | False | False | False | False | False | False | False | False | False | False |
| **1** | False | False | False | False | False | False | False | False | False | False |
| **2** | False | False | False | False | False | False | False | False | False | False |
| **3** | False | False | False | False | False | False | False | False | False | False |
| **4** | False | False | False | False | False | False | False | False | False | False |
| **...** | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| **8675** | False | False | False | False | False | False | False | False | False | False |
| **8676** | False | False | False | False | False | False | False | False | False | False |
| **8677** | False | False | False | False | False | False | False | False | False | False |
| **8678** | False | False | False | False | False | False | False | False | False | False |
| **8679** | False | False | False | False | False | False | False | False | False | False |

8680 rows × 10 columns

In [6]:
```
swiggy.isnull().sum()
# No null value
```

Out[6]:
```
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 [7]:
```
# info data
swiggy.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 [8]:
```
# statistic Describe
swiggy.describe().transpose()
```

Out[8]:

| | count | mean | std | min | 25% | 50% | 75% | max |
|---|---|---|---|---|---|---|---|---|
| **ID** | 8680.0 | 244812.071429 | 158671.617188 | 211.0 | 72664.0 | 283442.0 | 393425.25 | 466928.0 |
| **Price** | 8680.0 | 348.444470 | 230.940074 | 0.0 | 200.0 | 300.0 | 400.00 | 2500.0 |
| **Avg ratings** | 8680.0 | 3.655104 | 0.647629 | 2.0 | 2.9 | 3.9 | 4.20 | 5.0 |
| **Total ratings** | 8680.0 | 156.634793 | 391.448014 | 20.0 | 50.0 | 80.0 | 100.00 | 10000.0 |
| **Delivery time** | 8680.0 | 53.967051 | 14.292335 | 20.0 | 44.0 | 53.0 | 64.00 | 109.0 |

In [9]:
```
# columns
swiggy.columns
```

Out[9]:
```
Index(['ID', 'Area', 'City', 'Restaurant', 'Price', 'Avg ratings',
       'Total ratings', 'Food type', 'Address', 'Delivery time'],
      dtype='object')
```

In [10]:
```
# index
swiggy.index
```

Out[10]:
```
RangeIndex(start=0, stop=8680, step=1)
```

In [11]:
```
swiggy.nunique()
```

Out[11]:
```
ID              8680
Area             833
City               9
Restaurant      7865
Price            120
Avg ratings       30
Total ratings      8
Food type       3734
Address         2339
Delivery time     81
dtype: int64
```

In [12]:
```
swiggy.shape
```

Out[12]:
```
(8680, 10)
```

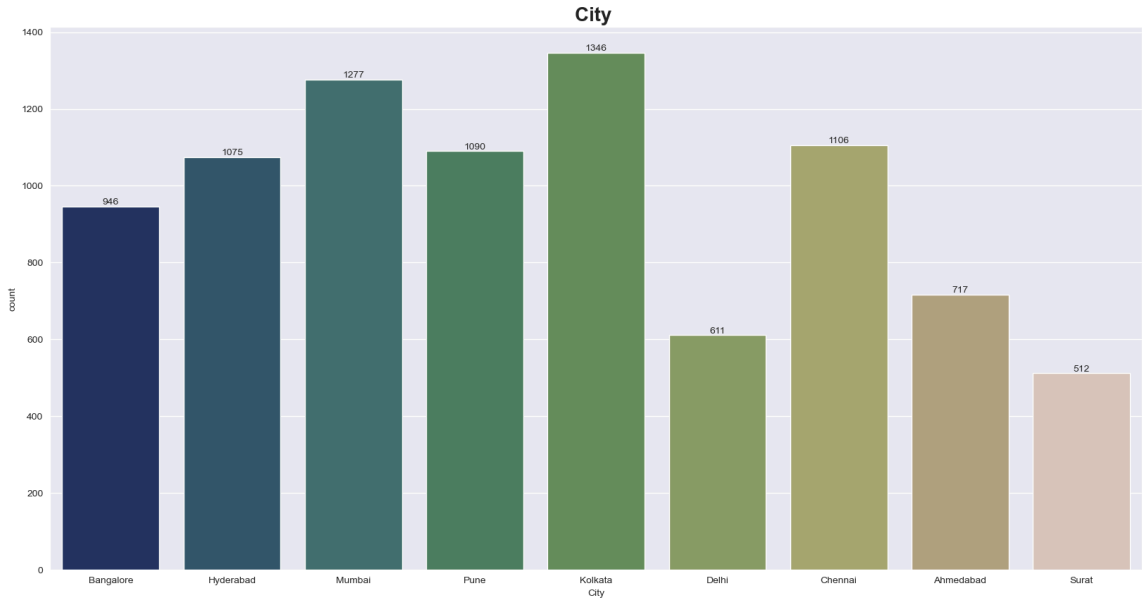
# Data Visualize

In [13]:
```
swiggy.head(2)
```

Out[13]:

| | ID | Area | City | Restaurant | Price | Avg ratings | Total ratings | Food type | Add |
|---|---|---|---|---|---|---|---|---|---|
| **0** | 211 | Koramangala | Bangalore | Tandoor Hut | 300.0 | 4.4 | 100 | Biryani,Chinese,North Indian,South Indian | E |
| **1** | 221 | Koramangala | Bangalore | Tunday Kababi | 300.0 | 4.1 | 100 | Mughlai,Lucknowi | E |

In [14]:
```
# count the swiggy branch Average city
plt.figure(figsize=(20,10))
ax=sns.countplot(x='City',
                 data=swiggy,
                    palette='gist_earth',
                    saturation=0.6)
plt.title('City ',
          fontweight='bold',
           fontsize=20
          )
for bars in ax.containers:
    ax.bar_label(bars)
```



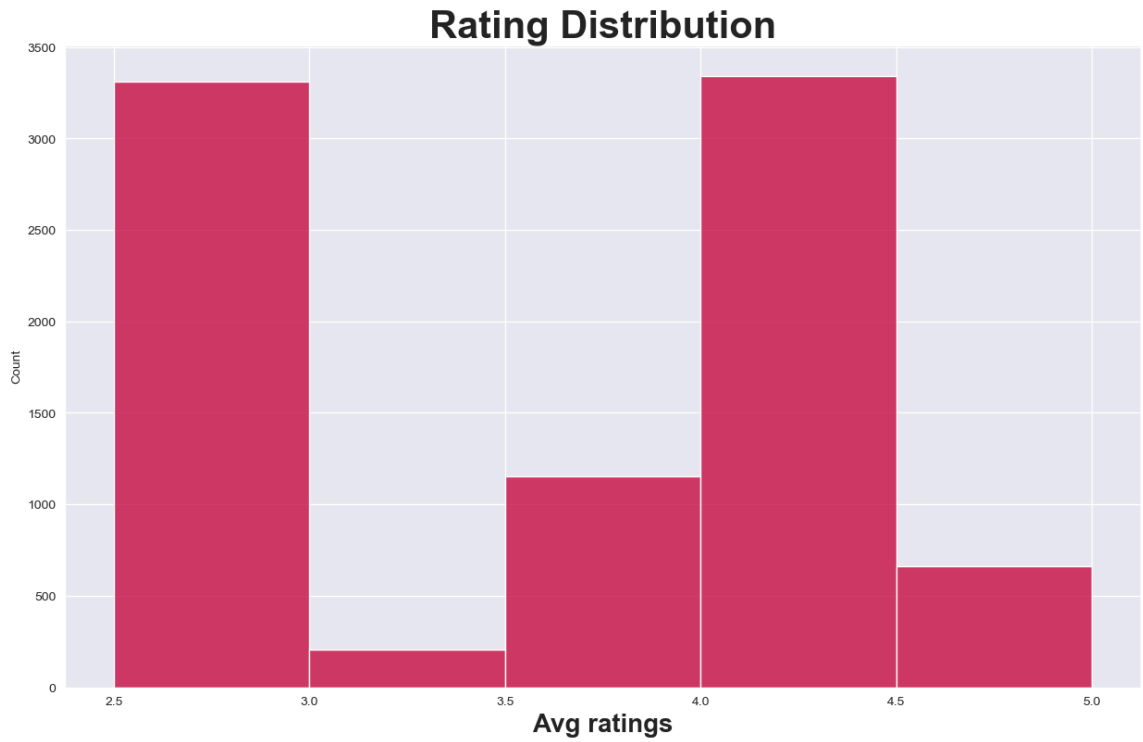

#Conclusion=: Highest Majority Are of Kolkata

In [15]:
```
swiggy.head(3)
```

Out[15]:

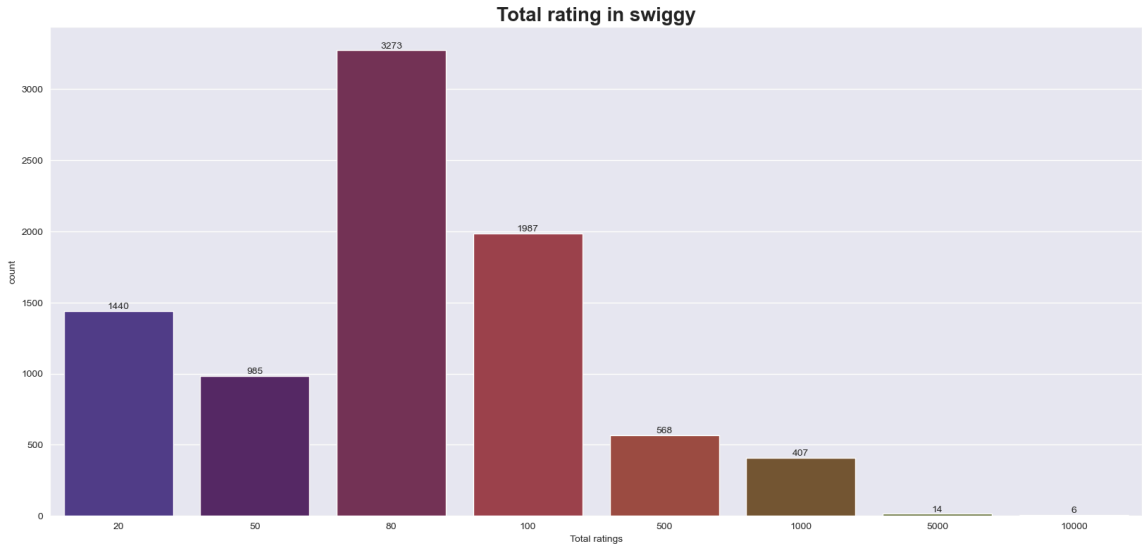
| | ID | Area | City | Restaurant | Price | Avg ratings | Total ratings | Food type | Add |
|---|---|---|---|---|---|---|---|---|---|
| **0** | 211 | Koramangala | Bangalore | Tandoor Hut | 300.0 | 4.4 | 100 | Biryani,Chinese,North Indian,South Indian | E |
| **1** | 221 | Koramangala | Bangalore | Tunday Kababi | 300.0 | 4.1 | 100 | Mughlai,Lucknowi | E |
| **2** | 246 | Jogupalya | Bangalore | Kim Lee | 650.0 | 4.4 | 100 | Chinese | Dc F |

In [16]:
```
#Rating Distribution
plt.figure(figsize=(15,9))
sns.histplot(swiggy['Avg ratings'],
             bins=[2.5,3.0,3.5,4.0,4.5,5.0],
             color='#C70039')
plt.xlabel('Avg ratings',
           fontweight='bold',
            fontsize=20
           )
plt.title('Rating Distribution',
           fontweight='bold',
            fontsize=30
           );
```




Conclusion:Average majorityrating in 4.0 to 4.5 Maximum

In [17]:
```
#total Rating Count in plot
plt.figure(figsize=(20,9))
ax=sns.countplot(x='Total ratings',
                 data=swiggy,
                 palette='brg',
                 saturation=0.4)
plt.title('Total rating in swiggy',
          fontsize=20,
          fontweight='bold');
for bars in ax.containers:
    ax.bar_label(bars)
```




Conclusion:Total Rating is majority 100 is High Recieved

In [18]:
```
swiggy.head(2)
```

Out[18]:

| | ID | Area | City | Restaurant | Price | Avg ratings | Total ratings | Food type | Add |
|---|---|---|---|---|---|---|---|---|---|
| **0** | 211 | Koramangala | Bangalore | Tandoor Hut | 300.0 | 4.4 | 100 | Biryani,Chinese,North Indian,South Indian | E |
| **1** | 221 | Koramangala | Bangalore | Tunday Kababi | 300.0 | 4.1 | 100 | Mughlai,Lucknowi | E |

In [19]:
```
#price Distribution Average food Type Price
plt.figure(figsize=(15,8))
sns.histplot(swiggy['Price'],
             bins=[0,500,1000,1500,2000,2500],
              color='#374d35')
plt.title('Food type Price Distribution',
         fontweight='bold',
         fontsize=20);
plt.xlabel('Price',
          fontweight='bold',
           fontsize=20
          )
plt.ylabel('Count',
          fontweight='bold',
           fontsize=20
          )
```

Out[19]:
```
Text(0, 0.5, 'Count')
```


Conclusion :Average Price of food type Between in 0 to 500 highest

In [20]:
```
swiggy.head(3)
```

Out[20]:

| | ID | Area | City | Restaurant | Price | Avg ratings | Total ratings | Food type | Add |
|---|---|---|---|---|---|---|---|---|---|
| **0** | 211 | Koramangala | Bangalore | Tandoor Hut | 300.0 | 4.4 | 100 | Biryani,Chinese,North Indian,South Indian | E |
| **1** | 221 | Koramangala | Bangalore | Tunday Kababi | 300.0 | 4.1 | 100 | Mughlai,Lucknowi | E |
| **2** | 246 | Jogupalya | Bangalore | Kim Lee | 650.0 | 4.4 | 100 | Chinese | Dc F |

In [21]:
```
#most 20 resturant Rating
plt.figure(figsize=(20,9))
top=swiggy.head(10)
ax=sns.barplot(x='Restaurant',
               y='Avg ratings',
               data=top,
                  palette='winter',
                  alpha=0.6)
plt.title('Resturant Avg raings',
          fontweight='bold',
           fontsize=30
          )
plt.xlabel('Resturant',
          fontweight='bold',
           fontsize=20
          )
plt.xlabel('Avg ratings',
          fontweight='bold',
           fontsize=20
          )
for bars in ax.containers:
    ax.bar_label(bars)
```

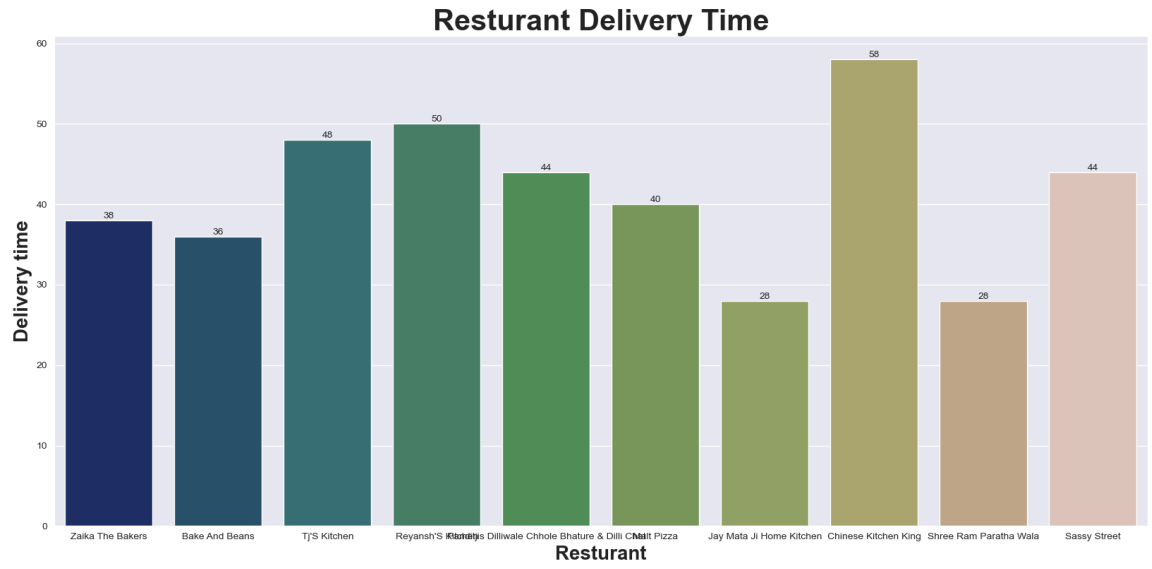

Conclusion: High rating Resturant Top 10 in Treat and chinita Real

In [22]:
```
swiggy.head(2)
```

Out[22]:

| | ID | Area | City | Restaurant | Price | Avg ratings | Total ratings | Food type | Add |
|---|---|---|---|---|---|---|---|---|---|
| **0** | 211 | Koramangala | Bangalore | Tandoor Hut | 300.0 | 4.4 | 100 | Biryani,Chinese,North Indian,South Indian | E |
| **1** | 221 | Koramangala | Bangalore | Tunday Kababi | 300.0 | 4.1 | 100 | Mughlai,Lucknowi | E |

In [23]:
```
#rd=swiggy.groupby(['Restaurant'],as_index=False)['Delivery time'].sum().so
#
#top 20 REsturant Delivery Time
plt.figure(figsize=(20,9))
top=swiggy.tail(10)
ax=sns.barplot(x='Restaurant',
               y='Delivery time',
               data=top,
               palette='gist_earth',
               saturation=0.7
              )
plt.title('Resturant Delivery Time',
          fontsize=30,
          fontweight='bold');
plt.xlabel('Resturant',
           fontweight='bold',
            fontsize=20
           )
plt.ylabel('Delivery time',
           fontweight='bold',
            fontsize=20
           )
for bars in ax.containers:
    ax.bar_label(bars)
```



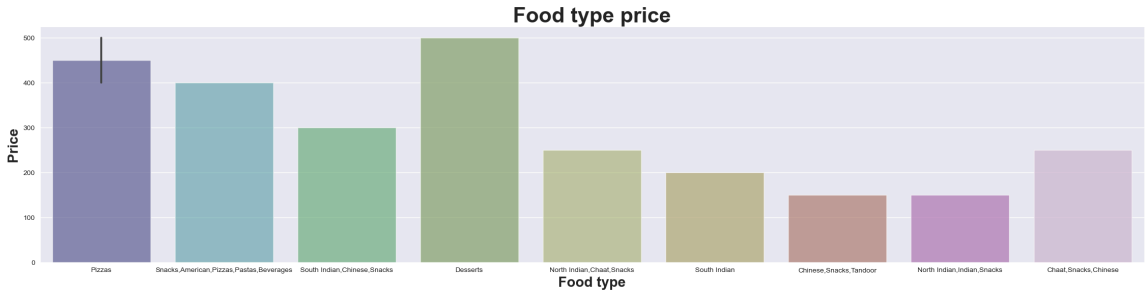

In [24]:
```
#conculasion:
```

In [25]:
```
swiggy.head(3)
```

Out[25]:

| | ID | Area | City | Restaurant | Price | Avg ratings | Total ratings | Food type | Add |
|---|---|---|---|---|---|---|---|---|---|
| **0** | 211 | Koramangala | Bangalore | Tandoor Hut | 300.0 | 4.4 | 100 | Biryani,Chinese,North Indian,South Indian | E |
| **1** | 221 | Koramangala | Bangalore | Tunday Kababi | 300.0 | 4.1 | 100 | Mughlai,Lucknowi | E |
| **2** | 246 | Jogupalya | Bangalore | Kim Lee | 650.0 | 4.4 | 100 | Chinese | Dc F |

In [26]:
```
# total food price food type
plt.figure(figsize=(28,6))
# food type with price
high=swiggy.tail(10)
sns.barplot(x='Food type',
            y='Price',
            data=high,
            palette='gist_ncar',
            saturation=0.3,
            alpha=0.6)
plt.title('Food type price',
          fontsize=30,
          fontweight='bold')
plt.xlabel('Food type',
           fontweight='bold',
            fontsize=20
           )
plt.ylabel('Price',
           fontweight='bold',
            fontsize=20
           );
#fp=swiggy.groupby(['Food type'],as_index=False)['Avg ratings'].sum().sort_
#fp
```




connclusion:Majority of price of swigggy food type high price in Desert

In [27]:
```
swiggy.head(3)
```

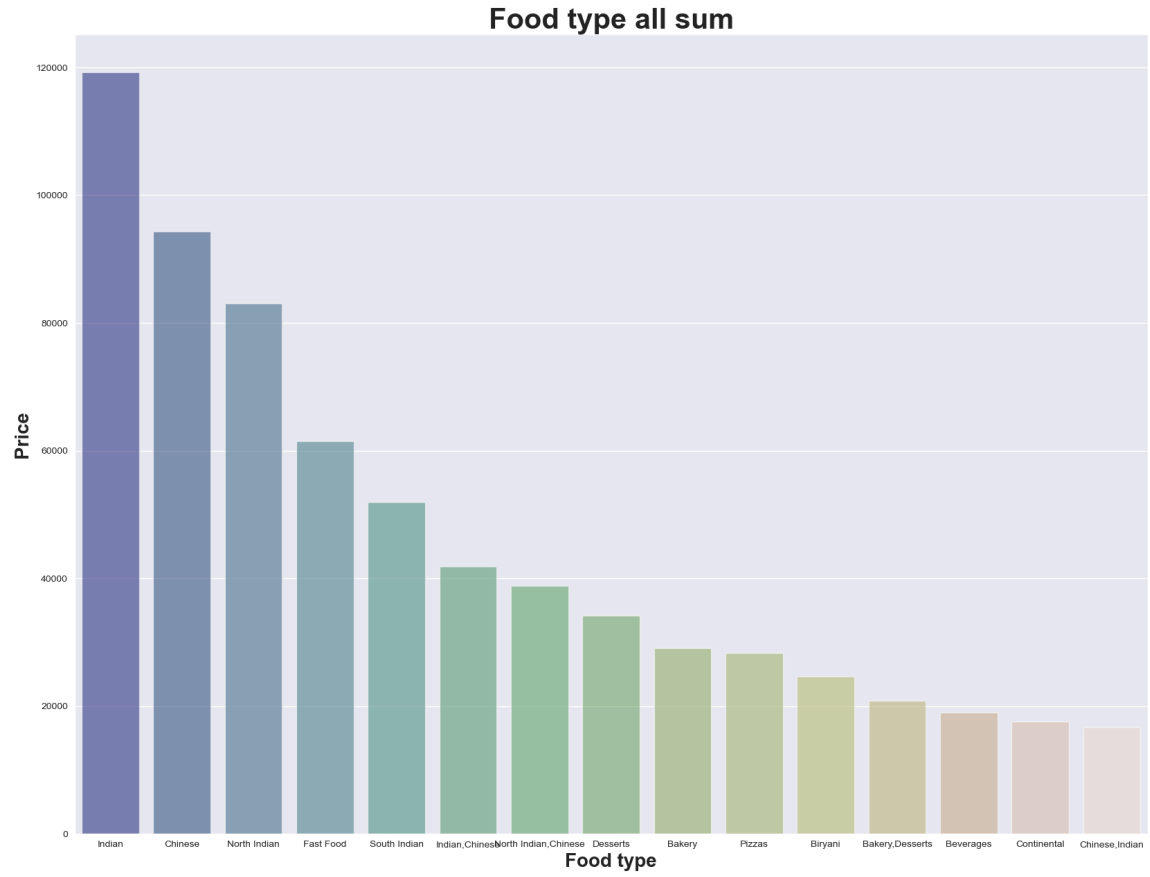
Out[27]:

| | ID | Area | City | Restaurant | Price | Avg ratings | Total ratings | Food type | Add |
|---|---|---|---|---|---|---|---|---|---|
| **0** | 211 | Koramangala | Bangalore | Tandoor Hut | 300.0 | 4.4 | 100 | Biryani,Chinese,North Indian,South Indian | E |
| **1** | 221 | Koramangala | Bangalore | Tunday Kababi | 300.0 | 4.1 | 100 | Mughlai,Lucknowi | E |
| **2** | 246 | Jogupalya | Bangalore | Kim Lee | 650.0 | 4.4 | 100 | Chinese | Dc F |

In [28]:
```
#Food type distribute in Price include to all sum top_20
plt.figure(figsize=(20,15))
inclu=swiggy.groupby(['Food type'],as_index=False)['Price'].sum().sort_valu
ax=sns.barplot(x='Food type',
               y='Price',
               data=inclu,
               palette='gist_earth',
               saturation=0.9,
               alpha=0.5)
plt.title('Food type all sum',
          fontsize=30,
          fontweight='bold')
plt.xlabel('Food type',
           fontweight='bold',
            fontsize=20
           )
plt.ylabel('Price',
           fontweight='bold',
            fontsize=20
           )
inclu
```

Out[28]:

| | Food type | Price |
|---|---|---|
| **1829** | Indian | 119219.0 |
| **751** | Chinese | 94255.0 |
| **2525** | North Indian | 83027.0 |
| **1447** | Fast Food | 61467.0 |
| **3386** | South Indian | 51955.0 |
| **1933** | Indian,Chinese | 41880.0 |
| **2653** | North Indian,Chinese | 38850.0 |
| **1337** | Desserts | 34200.0 |
| **198** | Bakery | 29049.0 |
| **3080** | Pizzas | 28293.0 |
| **455** | Biryani | 24653.0 |
| **236** | Bakery,Desserts | 20805.0 |
| **339** | Beverages | 18950.0 |
| **1208** | Continental | 17534.0 |
| **958** | Chinese,Indian | 16690.0 |




conclusion=: High sum of Food type price {india}

In [29]:
```
swiggy.head(4)
```

Out[29]:

| | ID | Area | City | Restaurant | Price | Avg ratings | Total ratings | Food ty |
|---|---|---|---|---|---|---|---|---|
| **0** | 211 | Koramangala | Bangalore | Tandoor Hut | 300.0 | 4.4 | 100 | Biryani,Chinese,Nc Indian,South Ind |
| **1** | 221 | Koramangala | Bangalore | Tunday Kababi | 300.0 | 4.1 | 100 | Mughlai,Luckn |
| **2** | 246 | Jogupalya | Bangalore | Kim Lee | 650.0 | 4.4 | 100 | Chine |
| **3** | 248 | Indiranagar | Bangalore | New Punjabi Hotel | 250.0 | 3.9 | 500 | Nc Indian,Punjabi,Tandoor,Chine |

In [30]:
```
swiggy.nunique()
```

Out[30]:
```
ID              8680
Area             833
City               9
Restaurant      7865
Price            120
Avg ratings       30
Total ratings      8
Food type       3734
Address         2339
Delivery time     81
dtype: int64
```

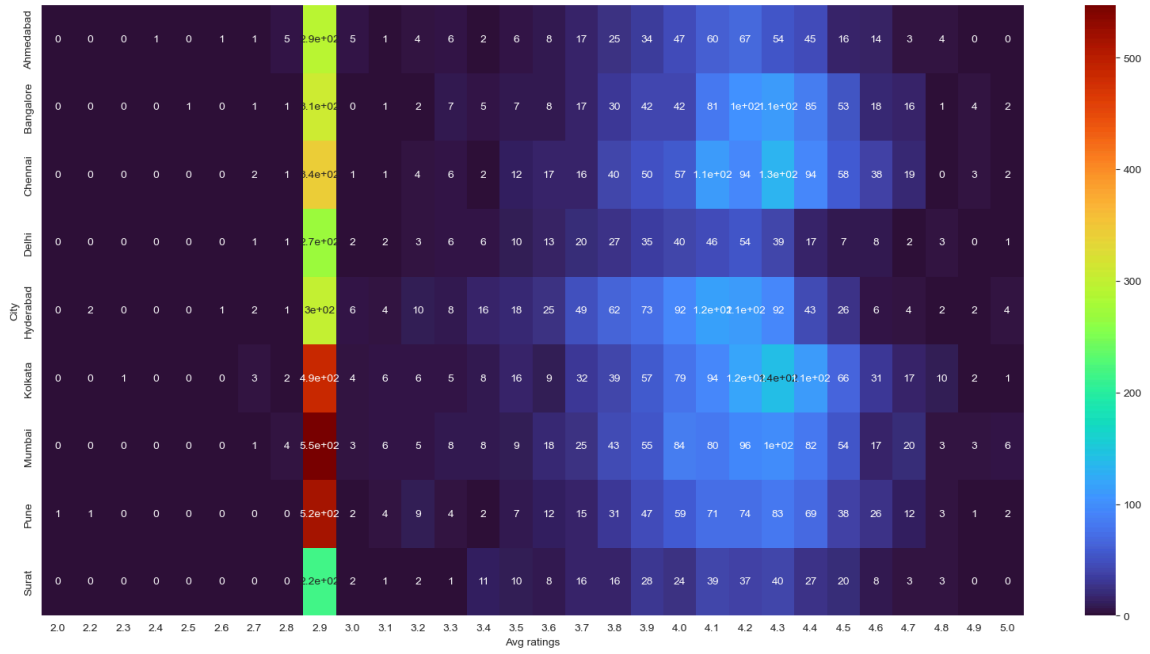
In [31]:
```
top=swiggy.groupby('City')['Price'].sum().reset_index()
#top_1=swiggy.groupby(['City'],as_index=False)['Price'].sum().sort_values(by
top
#top_1
plt.figure(figsize=(20,9))
sns.lineplot(x='City',
             y='Price',
             data=top,
              color='black',
              marker='.',
              linewidth=3,
              linestyle=':'
             )
plt.title('City with Price',
          fontsize=30,
          fontweight='bold')
plt.xlabel('City ',
          fontsize=20,
          fontweight='bold')
plt.ylabel('Price',
          fontsize=20,
          fontweight='bold');
top
```

Out[31]:

| | City | Price |
|---|---|---|
| **0** | Ahmedabad | 228098.0 |
| **1** | Bangalore | 361868.0 |
| **2** | Chennai | 394010.0 |
| **3** | Delhi | 203647.0 |
| **4** | Hyderabad | 322421.0 |
| **5** | Kolkata | 487648.0 |
| **6** | Mumbai | 502876.0 |
| **7** | Pune | 385602.0 |
| **8** | Surat | 138328.0 |


Conclusion= City price Majority of Mumbai

In [32]:
```
plt.figure(figsize=(20,10))
table=swiggy.pivot_table(index='City',
                                columns='Avg ratings',
                                aggfunc='size',
                                fill_value=0)
sns.heatmap(table,
            annot=True,
            cmap='turbo');
             #fmt=True)
            #vmin=2.0,
           # vmax=5.0);
```




In [33]:
```
swiggy.head(1)
```

Out[33]:

| | ID | Area | City | Restaurant | Price | Avg ratings | Total ratings | Food type | Add |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 211 | Koramangala | Bangalore | Tandoor Hut | 300.0 | 4.4 | 100 | Biryani,Chinese,North Indian,South Indian | E |

In [ ]:
```
swiggy.head(2)
```

In [40]:
```
#to=swiggy.groupby(['City','Area','Restaurant'],as_index=False)[['Price','A
#to
```

In [ ]:

In [ ]: