

# swiggy-dataset

August 3, 2023

## 1 Import All Necessary Libraries of Python

```
[1]: import numpy as np
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
from sklearn.model_selection import train_test_split
from sklearn import metrics, linear_model
from sklearn.preprocessing import StandardScaler, OneHotEncoder
from sklearn.linear_model import LinearRegression
from sklearn.metrics import mean_squared_error, r2_score
```

## 2 Import Datasets

```
[2]: df=pd.read_csv('swiggy.csv')
```

```
[3]: df
```

```
[3]:
```

	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]

```
[4]: df.shape
```

```
[4]: (8680, 10)
```

```
[5]: # Return top 5 rows in the Datasets
df.head()
```

[5]:	ID	Area	City	Restaurant	Price	Avg ratings \
0	211	Koramangala	Bangalore	Tandoor Hut	300.0	4.4
1	221	Koramangala	Bangalore	Tunday Kababi	300.0	4.1
2	246	Jogupalya	Bangalore	Kim Lee	650.0	4.4

3	248	Indiranagar	Bangalore	New Punjabi Hotel	250.0	3.9
4	249	Indiranagar	Bangalore	Nh8	350.0	4.0

	Total ratings	Food type \
0	100	Biryani,Chinese,North Indian,South Indian
1	100	Mughlai,Lucknowi
2	100	Chinese
3	500	North Indian,Punjabi,Tandoor,Chinese
4	50	Rajasthani,Gujarati,North Indian,Snacks,Desser...

	Address	Delivery time
0	5Th Block	59
1	5Th Block	56
2	Double Road	50
3	80 Feet Road	57
4	80 Feet Road	63

```
[6]: # Return bottom 5 rows in the Datasets
df.tail()
```

```
[6]:
```

	ID	Area	City	Restaurant \
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	Food type \
8675	500.0	2.9	80	Pizzas
8676	200.0	2.9	80	South Indian
8677	150.0	2.9	80	Chinese,Snacks,Tandoor
8678	150.0	2.9	80	North Indian,Indian,Snacks
8679	250.0	2.9	80	Chaat,Snacks,Chinese

	Address	Delivery time
8675	Navrangpura	40
8676	Rohini	28
8677	Rohini	58
8678	Rohini	28
8679	Navrangpura	44

### 3 Data Cleaning

```
[7]: # Check for Null values in the Datasets
df.isnull().sum()
```

```
[7]: 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
```

```
[8]: # Check the Datatypes of each column in the Datasets
df.dtypes
```

```
[8]: ID                int64
     Area              object
     City              object
     Restaurant        object
     Price             float64
     Avg ratings       float64
     Total ratings     int64
     Food type         object
     Address           object
     Delivery time     int64
     dtype: object
```

```
[9]: for i in df.columns:
     print(i,df[i].sort_values().unique(),'\n', sep='\n')
```

```
ID
[ 211    221    234 ... 466669 466772 466928]
```

```
Area
[' Akhbar Nagar Circle' ' Begumpet' '26' '3Rd Block Jayanagar'
 'A Unit Of M/S Cohort Ruby Area' 'A.S. Rao Nagar & Sainikpuri' 'Abids'
 'Abids & Koti' 'Acher' 'Adajan' 'Adajan Gam' 'Adajan Patiya'
 'Adarsh Nagar' 'Adikmet' 'Adugodi' 'Afzal Gunj' 'Agarkar Nagar'
 'Ahiritola' 'Ahmedabad' 'Aliabad' 'Alipore' 'Althan' 'Alwarpet'
 'Amarpalli' 'Ambavadi' 'Ambawadi' 'Ambegaon' 'Amberpet' 'Ameerpet'
 'Aminjikarai' 'Amroli' 'Anand Nagar' 'Andheri East' 'Andheri West Area']
```

'Anna Nagar' 'Anna Nagar West' 'Anna Nagar West Extension' 'Anna Salai'  
 'Annamalai Colony' 'Annanagar' 'Annanagar East' 'Antop Hill'  
 'Appa Balwant Chowk Pune' 'Armane Nagar' 'Arumbakkam' 'Asalpha'  
 'Ashok Bhai- Citylight' 'Ashok Nagar' 'Ashok Vihar' 'Asif Nagar' 'Athwa'  
 'Athwa Gate' 'Athwa Station Road' 'Aundh' 'Ayanavaram' 'Azad Nagar'  
 'B.B.D. Bagh' 'Baguiati' 'Baguihati' 'Balaji Nagar' 'Balavinayagar Nagar'  
 'Balkampet' 'Bally' 'Ballygunge' 'Banashankari' 'Bandra Area'  
 'Bandra East' 'Bandra Kurla Complex' 'Bandra West' 'Baner' 'Bangur'  
 'Banjara Hills' 'Banjarahills' 'Bapunagar' 'Barabazar Market' 'Baranagar'  
 'Basavanagudi' 'Basaveshwaranagar' 'Basheer Bagh' 'Battarahalli'  
 'Bavdhan' 'Begampur' 'Begampura' 'Begum Bazar' 'Begumpet' 'Behala'  
 'Behra Enclave Paschim Vihar' 'Belegghata' 'Belgachia' 'Beltala Road'  
 'Beniapukur' 'Benson Town' 'Bentinck St.' 'Bhadra' 'Bhagal' 'Bharthana'  
 'Bhatar Athwa' 'Bhatha' 'Bhavani Nagar Uppal - Hyderabad' 'Bhawani Peth'  
 'Bhimrad' 'Bhowanipore' 'Bibviewadi' 'Bibwewadi' 'Bidhannagar' 'Bkc'  
 'Bldg No15 /402 Aniket Building Shivaji Nagar' 'Block Gg1 Vikasपुरी'  
 'Bn Reddy Nagar' 'Bodakdev' 'Bong Chinese Ruby Area' 'Bopodi' 'Borough'  
 'Borough - Iii' 'Bosepukur' 'Boudhanagar Colony' 'Bowbazar' 'Bowenpally'  
 'Brigade Road' 'Brindavan Colony' 'Broad Street' 'Broadway Mall'  
 'Budh Vihar' 'Budhwar Peth' 'Burrabazar' 'Cambridge Layout' 'Camp'  
 'Central Bangalore' 'Central Bangalore' 'Central Bangalore'  
 'Central Kolkata' 'Central Market Punjabi Bagh'  
 'Central Markt Punjabi Bagh' 'Cg Road' 'Chamrajpet' 'Chanakyapuri'  
 'Chanchalguda' 'Chandkheda' 'Chandrapuri Colony' 'Chandrayangutta'  
 'Charminar' 'Chembur' 'Chembur Colony' 'Chennai' 'Chetla' 'Chetpet'  
 'Chickpet' 'Chilakalguda' 'Chinar Park' 'Chintadripet' 'Chintal'  
 'Chiriamore' 'Choolai' 'Choolaimedu' 'Chowk Bazar' 'Chowpati Athwa'  
 'Chudi Bazaar' 'Church Street' 'Circus Avenue' 'Cit Nagar'  
 'College Square' 'College Street' 'Commercial Street' 'Cooke Town'  
 'Cossipore' 'Cox Town' 'Cunningham Road' 'Dabholi' 'Dahin Nagar'  
 'Danilimda' 'Dapodi' 'Darulshifa' 'Deccan Gymkhana' 'Delhi' 'Dhakuria'  
 'Dhanakawadi' 'Dhankawadi' 'Dharavi' 'Dhole Patil Road' 'Dilsukhnagar'  
 'Dindoli' 'Domlur' 'Dr.Radhakrishnan Salai-Mylapore' 'Drive In Road'  
 'Dudheshwar' 'Dum Dum' 'Dum Dum Park' 'Dumdum' 'Ea Mall Royapettah'  
 'East Kolkata Township' 'Egmore' 'Ejipura' 'Ekdalia' 'Elgin'  
 'Ellisbridge' 'Entally' 'Erandwane' 'Esplanade' 'Express Avenue Mall'  
 'Fathima Nagar' 'Fc Road' 'Fdl\_Scruz Bandra East' 'Feelkhana'  
 'Film Nagar' 'Frazer Town' 'Gaddi Annaram' 'Gaddiannaram' 'Gandhi Bazaar'  
 'Gandhi Nagar' 'Gandhinagar' 'Ganesh Peth' 'Ganga Dham' 'Ganganagar'  
 'Ganj Peth' 'Garfa' 'Gariahat' 'Garodia Nagar' 'Gautam Buddha Nagar'  
 'George Town' 'Ghansi Bazaar' 'Ghatkopar' 'Ghatkopar Ck Mum'  
 'Ghatkopar East' 'Ghatkopar Vikhroli' 'Ghatkopar West' 'Ghatlodia'  
 'Ghod Dod Road' 'Ghod Dod Road Sarelawadi' 'Ghodasar' 'Ghorpadi'  
 'Gidc Naroda' 'Girdhar Nagar' 'Girish Park' 'Gobra' 'Gokhalenagar'  
 'Golconda Fort' 'Golf Green' 'Golpark' 'Gomtipur' 'Gopalapuram'  
 'Gopipura' 'Govandi East' 'Gowliguda' 'Gowlipura' 'Gudimalkapur'  
 'Gulbai Tekra' 'Gultekdi' 'Gunrock Enclave' 'Gunti Jangaiah Nagar'  
 'Guru Nanak Nagar' 'Gurukul' 'Guttahalli' 'Habsiguda' 'Hadapsar'

'Hakimpet' 'Halsuru' 'Haltu' 'Haripura' 'Hatibagan' 'Hatkeshwar' 'Hedua'  
 'Himayat Nagar' 'Himayath Nagar' 'Himayatnagar' 'Hindustan Park'  
 'Hirabaugh' 'Honey Park' 'Huda Colony' 'Huda Complex' 'Humayun Nagar'  
 'Hyderabad' 'Hyderguda Old Mla Home' 'Indiranagar' 'Isanpur' 'J.C.Nagar'  
 'Jadavpur' 'Jam Bagh' 'Jamalia' 'Janakpuri' 'Jashoda Nagar' 'Jayamahall'  
 'Jayanagar' 'Jayanagar - 3Rd Block' 'Jillelaguda' 'Jivraj Park' 'Jm Road'  
 'Jodhpur' 'Jodhpur Cross Road' 'Jodhpur Park' 'Jodhpur Tekra'  
 'Jodhpur Village' 'Jogeshwari East' 'Jogupalya' 'Jorabagan' 'Jorasanko'  
 'Jubilee Hills' 'Juhapura' 'Juhu' 'Jyothi Nagar' 'Kachiguda'  
 'Kadugondanahalli' 'Kailash Plaza' 'Kakurgachi' 'Kalas' 'Kalasiguda'  
 'Kalighat' 'Kalina' 'Kalina Ck' 'Kalupur' 'Kalyan Nagar X Roads'  
 'Kalyani Nagar' 'Kankaria' 'Kankurgachi' 'Kankurgachi Kolkata'  
 'Kapodra Patiya' 'Karam Pura' 'Karkhana' 'Karve Nagar' 'Karvenagar'  
 'Kasba' 'Kasba Peth' 'Katad Khana' 'Katargam' 'Katraj'  
 'Kausar Baugh Nibm Road' 'Kavadiguda' 'Keshav Puram' 'Kestopur'  
 'Kestopur Rabindrapally' 'Kg-Iii' 'Khadia' 'Khairtabad' 'Khamasa'  
 'Khanpur' 'Khar East' 'Khar West' 'Kharkhana & Trimulgherry'  
 'Khatodra Wadi' 'Khilwat' 'Khokhra' 'Kidderpore' 'Kilpauk' 'King Koti'  
 'Kiran Nagar' 'Kirti Nagar' 'Knk- Nungambakam (Cds)- Chennai'  
 'Kodambakkam' 'Kodihalli' 'Kodungaiyur' 'Kolathur' 'Kolkata' 'Kondhwa'  
 'Kondhwa Budruk' 'Koramangala' 'Koramangala - Bangalore' 'Koregaon Park'  
 'Koregoan Park' 'Kothapet' 'Kothapet & Dilshuknagar'  
 'Kothapet & Dilsukhnagar' 'Kothrud' 'Koti' 'Kotturpuram' 'Koyambedu'  
 'Krishan Vihar' 'Krishna Nagar Colony' 'Krishna Park Tilak Nagar'  
 'Kuber Nagar' 'Kurla' 'Kurla (W)' 'Kurla - Mumbai'  
 'Kurla East Nehru Nagar' 'Kurla West' 'Kustia' 'L.B Nagar' 'L.P.Savani'  
 'Lakdi Ka Pul' 'Lakdikapul' 'Lake Gardens' 'Lake Market' 'Lake Town'  
 'Lal Bazar' 'Lal Darwaja' 'Lal Darwaza' 'Laldarwaja' 'Langar Houz'  
 'Langford Gardens' 'Law College Road' 'Laxmi Encleve - Katargam'  
 'Lb Nagar' 'Lingarajapuram Kammanahalli' 'Lnt Mall Musarambagh'  
 'Lord Sinha Rd' 'Lower Parel Area' 'Lower Parel Worli' 'Lullanagar'  
 'Machuabazar' 'Madannapet Colony' 'Madhavaram' 'Madhavaram - Manali'  
 'Madhupura' 'Madhura Nagar' 'Magarpatta' 'Magdalla' 'Magob'  
 'Mahadev Nagar Tekra' 'Mahalaxmi Rd' 'Maharshi Nagar' 'Mahim' 'Majestic'  
 'Majura Gate' 'Malakpet' 'Malkajgiri' 'Malleshwaram' 'Malleswaram'  
 'Mandaveli' 'Mangawadi' 'Manicktala' 'Maniktala' 'Maniktala Main Rd'  
 'Maninagar' 'Manohar Pukur Road' 'Mantri Sqare Mall' 'Marol'  
 'Marol Maroshi Road' 'Marol Sakinaka' 'Masab Tank' 'Matunga'  
 'Matunga East' 'Matunga Wadala' 'Mehdipatnam' 'Memnagar' 'Mg Road'  
 'Mitul Square Piplod' 'Mmda Colony' 'Modi Colony' 'Mogapair' 'Mogappair'  
 'Moghalpura' 'Mohammed Wadi' 'Moonlight Cream Sagrampura' 'Moosarambagh'  
 'Mota Varachha' 'Motera' 'Moti Nagar' 'Mukherjee Nagar' 'Mukti Nagar'  
 'Mumbai' 'Mundhwa' 'Murad Nagar' 'Musheerabad' 'Mylapore' 'Nacharam'  
 'Nagarathpete' 'Nagerbazar' 'Nagole' 'Naktala' 'Nalgonda' 'Nallakunta'  
 'Nallakunta & Vidyanagar' 'Nampally' 'Nana Varachha' 'Nandanam' 'Nangloi'  
 'Nanpura' 'Naranpura' 'Narayan Nagar' 'Narayan Peth' 'Narayanguda'  
 'Narhe' 'Naroda' 'Narol' 'Narolgam' 'Narotam Nagar' 'Nava Naroda'  
 'Nava Vadaj' 'Navjivan' 'Navrangpura' 'Navsari Bazaar'

'Near 7 Point Crossing' 'Near City Centre 1 Petrol Pump'  
 'Near Gurudas Park' 'Near Lal Gate Ramlal Bazarsapuipara'  
 'Near Rto Pal Gam' 'Near Rupbani Cinema' 'Neelasandra'  
 'Nehru Stadium Dark Kitchen Metro Manor Sydenhams' 'Nehrunagar'  
 'New Alipore' 'New Area' 'New Gayatri Nagar' 'New Magdalla'  
 'New Malakpet' 'New Mallepally' 'New Nallakunta' 'New Rander Road'  
 'New Textile Market' 'New Tippasandra' 'Nibm Post Office Road'  
 'Noble Nagar Tenament' 'North Dumdum' 'Nsp' 'Nungambakkam' 'Odhav'  
 'Old Malakpet' 'Old Mla Quarters' 'Old Sangvi' 'Old Wadaj'  
 'Old Wasermenpet' 'Old Washermanpet' 'Opp Padmashree Movie Hall'  
 'Pacific Mall Subhash Nagar' 'Padma Nagar Colony' 'Padmarao Nagar'  
 'Paharganj' 'Paikpara' 'Pal Gam' 'Palanpur' 'Palanpur Jakatnaka'  
 'Palanpur Patia' 'Paldi' 'Paldi & Ambawadi' 'Panjarapole Cross Road'  
 'Pankaj Nagar' 'Park Circus' 'Park Street Area' 'Parvat Patiya' 'Parvati'  
 'Parvati Paytha' 'Paschim Vihar' 'Pashan' 'Patel Nagar' 'Patel Nagar'  
 'Pathar Gatti' 'Pcmc' 'Peeragarhi Camp' 'Peerzadiguda' 'Perambur'  
 'Peravallur' 'Periyamet' 'Phoenix Mall' 'Picnic Garden' 'Piplod'  
 'Pitam Pura' 'Pitampara' 'Pitampura' 'Pocket C-11 Sector 5 Rohini'  
 'Ponniammanmedu' 'Poongavanapuram' 'Powai' 'Powai Area'  
 'Powaiandheri East' 'Prahlaad Nagar' 'Prashant Vihar'  
 'Prashant Vihar Rohini' 'Pulikeshi Nagar' 'Puna Patia' 'Punjab Bagh'  
 'Punjabi Bagh' 'Punjagutta' 'Purasaiwakkam' 'Purasawalkam'  
 'Purba Barisha' 'R.T. Nagar' 'Ra Puram' 'Rabindra Sarovar'  
 'Rabindrapally' 'Raikhad' 'Raja Annamalai Puram' 'Raja Bazar'  
 'Rajajinagar' 'Rajamohallah' 'Rajarhat' 'Rajouri Garden'  
 'Rajouri Garden Extension' 'Ramanthapur' 'Ramdev Nagar' 'Ramesh Nagar'  
 'Ramgopalpet' 'Ramkote' 'Rammandir' 'Ramnas Pura' 'Rander' 'Range Hills'  
 'Rani Bagh' 'Rani Gunj' 'Ranip' 'Rasta Peth' 'Raviwar Peth' 'Redhills'  
 'Residency Road' 'Richmond Town' 'Rithala Rohini' 'Rohini'  
 'Rohini - Sector 16' 'Rohini Sector 7' 'Royapettah' 'Royapuram'  
 'Rt Nagar' 'Ruby Area' 'Ruby Area Kasba East Kolkata Township'  
 'Ruby Park' 'Rustampura' 'Sadar Bazaar' 'Sadashiv Peth'  
 'Safal Square Vesu' 'Sagrampura' 'Sagrampuraathwa' 'Sai Nagar' 'Saidabad'  
 'Saijpur Bogha' 'Sainik Vihar' 'Sainik Vihar Pritampura' 'Saki Naka'  
 'Saki Naka Andheri East' 'Saki Vihar Road' 'Sakivihar' 'Salabatpura'  
 'Saligramam' 'Salt Lake' 'Salt Lake - Kolkata' 'Salt Lake Area'  
 'Salt Lake City' 'Saltlake Sector 1' 'Salunkhe Vihar'  
 'Salunkhe Vihar Road' 'Sampangi Rama Nagar' 'Sampangiram Nagar'  
 'Sangamvadi' 'Sangvi' 'Sanitytestarea' 'Sanjay Nagar'  
 'Sanjay Nagar New Bel Road' 'Sanjeeva Reddy Nagar' 'Santacruz'  
 'Santacruz Bandra East' 'Santacruz East' 'Santacruz East Mumbai.'  
 'Santacruz West' 'Santhome' 'Santosh Nagar' 'Santoshnagar & Saidabad'  
 'Santoshpur' 'Sarat Bose Rd' 'Sarat Park' 'Sardar Colony' 'Sarkhej Road'  
 'Sarhana' 'Sarvagnanagar' 'Sarvodaya Colony' 'Sastri Nager'  
 'Satara Road Bibvewadi' 'Satellite' 'Sayedpura' 'Scruz Bandra East'  
 'Sec-9 Rohini' 'Secot 24Rohini' 'Sector -15' 'Sector -6'  
 'Sector 1 Rohini' 'Sector 10 Rohini' 'Sector 11 Rohini'  
 'Sector 13 Rohini' 'Sector 14 Rohini' 'Sector 15 Rohini'

'Sector 16 Rohini' 'Sector 2 Rohini' 'Sector 29' 'Sector 3'  
 'Sector 3 Rohini' 'Sector 37' 'Sector 4 Rohini' 'Sector 5 Rohini'  
 'Sector 51' 'Sector 6 Rohini' 'Sector 7 Rohini' 'Sector 73' 'Sector 8'  
 'Sector 8 Rohini' 'Sector 8 Rohini' 'Sector 9 Rohini'  
 'Sector V Salt Lake' 'Secunderabad' 'Selimpur' 'Seshadripuram'  
 'Shah-E-Alam Roja' 'Shahpore' 'Shahpur' 'Shakurpur' 'Shalimar Bagh'  
 'Shaniwar Peth' 'Shankarapura' 'Shanti Nagar' 'Shantinagar'  
 'Sheela Vihar Colony' 'Shenoy Nagar' 'Sherkotda' 'Sheshadripuram'  
 'Shivaji Nagar' 'Shivajinagar' 'Shobhabazar' 'Shukrawar Peth'  
 'Shyam Bazar' 'Shyamal' 'Shyambazar Crossing' 'Sima Nagar'  
 'Sindhu Bhavan Road' 'Singanpor' 'Sinhgad Road' 'Sinthee' 'Sion'  
 'Sion Bhakti Park' 'Sion Koliwada' 'Sithaphalmandi' 'Sivanchetti Gardens'  
 'Smarpally Kestopur' 'Somajiguda' 'Somajiguda & Khairtabad'  
 'Someswarapura' 'Somwar Peth' 'Somwarpeth' 'South Dumdum' 'South Kolkata'  
 'South West' 'Southern Avenue Gariahat' 'Sovabazar' 'Sreebhumi'  
 'Sri Durga Enclave' 'Sri Hanuman Nagar Colony' 'Sri Nagar'  
 'Sri Sai Tarun Enclave' 'Srinivas Towers' 'Srirampura'  
 'Station Road Ghatkopar West' 'Subhash Nagar Petrol Pump' 'Sudhama Nagar'  
 'Surat' 'Swargate' 'T Nagar' 'T. Nagar' 'Tad Bun'  
 'Tagore Garden Extension' 'Takara Basthi' 'Tala' 'Talab Katta' 'Taltala'  
 'Tangra' 'Tarnaka' 'Tarnaka Nacharam & Malkajigiri'  
 'Tarnaka Nacharam & Malkajigiri' 'Teynampet' 'Thaltej'  
 'The New Sion Co-Operative Housing Society'  
 'Thirunagar Signal Vadapalani' 'Thousand Lights' 'Tilak Nagar' 'Tiljala'  
 'Tingre Nagar' 'Tiretti' 'Tiruvalléeswarar Nagar' 'Toli Chowki'  
 'Tolichowki' 'Tolichowki Hps Kids School Opposite' 'Tollygunge'  
 'Tondiarpet' 'Topsia' 'Tri Nagar' 'Triplicane' 'Udhna' 'Ulsoor'  
 'Ultadanga' 'Ultadanga Telenga Bagan' 'Umarwada' 'Umra Jakat'  
 'University Area' 'Uppal' 'Uppal - Hyderabad' 'Usmanpura' 'Uttam Nagar'  
 'Uttran' 'Vadapalani' 'Vadgaon Budruk' 'Vakola' 'Valasaravakkam'  
 'Vanasthalipuram' 'Varachha' 'Vardhman Premium Mall' 'Vasanth Nagar'  
 'Vasna' 'Vastral' 'Vastrapur' 'Vatva' 'Velly View Enclave'  
 'Venkateshwara Colony' 'Vesu' 'Victoria Layout' 'Vidyanagar'  
 'Vijay Nagar Colony' 'Vijaya Nagar Colony' 'Vijayanagar' 'Vikaspuri'  
 'Vikhroli' 'Vikhroli West' 'Vile Parle' 'Villivakkam' 'Viman Nagar'  
 'Vip Road' 'Vishal Nagar' 'Vishala' 'Visharant Wadi' 'Vishnu Garden'  
 'Vishrantwadi' 'Viveka Nagar' 'Vv Puram' 'Vyasarpadi'  
 'Wadgaon Budruk Tilak Road' 'Wadgaon Sheri' 'Wallace Garden' 'Wanowrie'  
 'Wanwadi' 'Warje' 'Washermanpet' 'Wazirpur Industrial Area'  
 'West Mambalam' 'West Marredpally' 'Wilson Garden' 'Yakhutpura'  
 'Yakutpura' 'Yamuna Nagar' 'Yerawada' 'Yoginagar Society' 'Yousufguda'  
 'Zamistanpur']

#### City

['Ahmedabad' 'Bangalore' 'Chennai' 'Delhi' 'Hyderabad' 'Kolkata' 'Mumbai'  
 'Pune' 'Surat']



#### Restaurant

[' Conclave At Afraa' ' Hotel Rangda' ' Kishori Lal Paan' ... 'Zuka'  
'Zwarma' 'Zyqa Restaurant']

#### Price

[0.000e+00 1.000e+00 2.000e+00 5.000e+00 1.000e+01 1.500e+01 2.000e+01  
3.000e+01 4.000e+01 4.500e+01 4.800e+01 4.900e+01 5.000e+01 6.000e+01  
6.500e+01 7.000e+01 7.500e+01 8.000e+01 8.500e+01 9.800e+01 9.900e+01  
1.000e+02 1.050e+02 1.100e+02 1.200e+02 1.260e+02 1.290e+02 1.300e+02  
1.370e+02 1.400e+02 1.490e+02 1.500e+02 1.510e+02 1.550e+02 1.590e+02  
1.600e+02 1.700e+02 1.750e+02 1.780e+02 1.800e+02 1.900e+02 1.930e+02  
1.960e+02 1.970e+02 1.980e+02 1.990e+02 2.000e+02 2.050e+02 2.200e+02  
2.250e+02 2.300e+02 2.400e+02 2.490e+02 2.500e+02 2.510e+02 2.560e+02  
2.600e+02 2.700e+02 2.750e+02 2.800e+02 2.890e+02 2.900e+02 2.970e+02  
2.990e+02 3.000e+02 3.200e+02 3.250e+02 3.260e+02 3.300e+02 3.380e+02  
3.400e+02 3.500e+02 3.550e+02 3.600e+02 3.750e+02 3.800e+02 3.840e+02  
3.900e+02 3.980e+02 3.990e+02 4.000e+02 4.200e+02 4.500e+02 4.800e+02  
4.930e+02 4.990e+02 5.000e+02 5.020e+02 5.180e+02 5.320e+02 5.400e+02  
5.500e+02 5.900e+02 5.990e+02 6.000e+02 6.200e+02 6.400e+02 6.500e+02  
7.000e+02 7.500e+02 8.000e+02 8.500e+02 9.000e+02 9.500e+02 9.780e+02  
1.000e+03 1.100e+03 1.200e+03 1.250e+03 1.255e+03 1.300e+03 1.400e+03  
1.500e+03 1.600e+03 1.650e+03 1.700e+03 1.800e+03 1.900e+03 2.000e+03  
2.500e+03]

#### Avg ratings

[2. 2.2 2.3 2.4 2.5 2.6 2.7 2.8 2.9 3. 3.1 3.2 3.3 3.4 3.5 3.6 3.7 3.8  
3.9 4. 4.1 4.2 4.3 4.4 4.5 4.6 4.7 4.8 4.9 5. ]

#### Total ratings

[ 20 50 80 100 500 1000 5000 10000]

#### Food type

['Afghani,Arabian,Indian,Tandoor' 'Afghani,Biryani' 'Afghani,Mughlai' ...  
'Turkish' 'Turkish,Arabian'  
'Turkish,Mediterranean,Middle Eastern,Lebanese,Arabian']

#### Address

['100 Feet Road' '100Ft Road' '10Th Cross' ... 'Zahra Nagar' 'Zampa Bazar'  
'Zee Plaza']

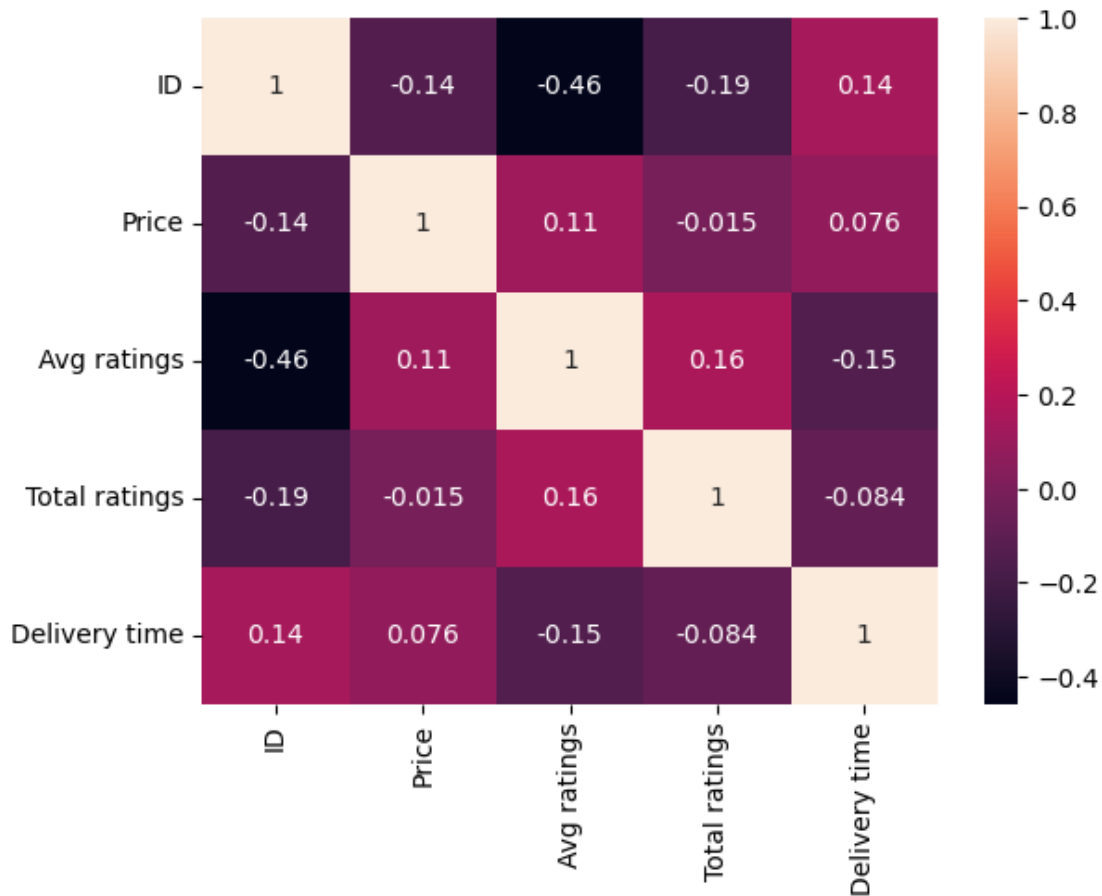
#### Delivery time

```
[ 20  21  22  23  24  25  26  27  28  29  30  31  32  33  34  35  36  37
 38  39  40  41  42  43  44  45  46  47  48  49  50  51  52  53  54  55
 56  57  58  59  60  61  62  63  64  65  66  67  68  69  70  71  72  73
 74  75  76  77  78  79  80  81  82  83  84  85  86  87  88  89  90  91
 92  93  94  95  96  97  98 100 109]
```

## 4 Exploratory Data Analysis(EDA Analysis)

```
[10]: #To check the co-relation of different variables to each other by using heatmap.
sns.heatmap(df.corr(), annot=True)
```

```
[10]: <AxesSubplot:>
```



```
[11]: # Calculate the average price of food item for each of the different cities.
Average_Price_for_Each_City=df.groupby('City')['Price'].mean()
Average_Price_for_Each_City
```

```
[11]: City
      Ahmedabad      318.128312
      Bangalore      382.524313
      Chennai        356.247740
      Delhi          333.301146
      Hyderabad      299.926512
      Kolkata         362.294205
      Mumbai         393.794832
      Pune           353.763303
      Surat          270.171875
      Name: Price, dtype: float64
```

```
[12]: # Caculate the top 10 highest average rating getting by each restaurant.
      Highest_Rating_by_Each_Restaurant=df.groupby('Restaurant')['Avg ratings'].
      ↪mean().nlargest(10)
      Highest_Rating_by_Each_Restaurant
```

```
[12]: Restaurant
      Afresh                      5.0
      Cafe Kokomo                  5.0
      Creams & Bites               5.0
      Diamond Market Pizza Jp      5.0
      Fat Tiger                    5.0
      Get In My Belly              5.0
      Nivala Apka Apna             5.0
      Shree Krishna Juice Bar      5.0
      Snaxx                        5.0
      Splurge - Thickshakes And Milkshakes 5.0
      Name: Avg ratings, dtype: float64
```

```
[13]: # Filter restaurants with a avg rating greater than 4.5 and delivery time less
      ↪than 30 minutes.
      High_Rated_Restaurants=df[(df['Avg ratings'] > 4.5) & (df['Delivery time'] <
      ↪30)]
      High_Rated_Restaurants
```

```
[13]:      ID      Area      City \
2635  251577      Adikmet  Hyderabad
2685  257162      Periyamet  Chennai
4026  365132      Kurla      Mumbai
4802  399267  Himayath Nagar  Hyderabad
6470   7003  Himayatnagar  Hyderabad
6688  27812  Santacruz East      Mumbai
6717  32443  Shivajinagar      Pune
6736  34415  Shivajinagar      Pune
6818  40847  Gulbai Tekra  Ahmedabad
6856  43931  Santacruz East      Mumbai
```

6929	50236	Periyamet	Chennai
7029	58396	Santacruz East	Mumbai
7161	70614	Shukrawar Peth	Pune
7883	260510	Pitam Pura	Delhi
8002	316581	Nanpura	Surat
8124	359804	Nanpura	Surat

	Restaurant	Price	Avg ratings \
2635	Euphoria	800.0	4.7
2685	The Brooklyn Creamery - Healthy Ice Cream	200.0	4.7
4026	Kwality Walls Frozen Dessert And Ice Cream Shop	300.0	4.7
4802	Swiss Castle	500.0	4.6
6470	Almond House	800.0	4.6
6688	Natural Ice Cream	150.0	4.7
6717	Natural Ice Cream	150.0	4.7
6736	Frozen Bottle	250.0	4.7
6818	Havmor Havfunn	250.0	4.6
6856	Baskin Robbins	350.0	4.7
6929	Bombay Kulfi	150.0	4.6
7029	Apsara Ice Creams	150.0	4.6
7161	Wadeshwar (Bajirao Road)	300.0	4.6
7883	Kwality Walls Frozen Dessert & Ice Cream Shop	100.0	4.6
8002	Nic Natural Ice Creams	120.0	4.7
8124	Grameen Kulfi	120.0	4.6

	Total ratings	Food type \
2635	100	Desserts
2685	20	Healthy Food,Desserts,Ice Cream
4026	100	Ice Cream
4802	100	Bakery,Sweets,Desserts
6470	500	Sweets,Desserts,Snacks
6688	100	Ice Cream
6717	100	Ice Cream
6736	50	Beverages,Ice Cream,Desserts
6818	20	Ice Cream,Ice Cream Cakes,Desserts
6856	50	Ice Cream,Desserts
6929	100	Ice Cream,Desserts
7029	100	Ice Cream,Desserts
7161	100	South Indian,Fast Food,Snacks,Street Food,Beve...
7883	500	Desserts,Ice Cream
8002	500	Ice Cream,Desserts
8124	100	Ice Cream,Desserts

	Address	Delivery time
2635	Himayath Nagar	27
2685	Vepery	27
4026	Kurla	29

4802	Himayath Nagar	28
6470	Himayath Nagar Road	29
6688	Kalina Market Santacruz East	27
6717	Opp. Tata Home Finance	28
6736	Fc Road	29
6818	Saffron Tower	25
6856	Opposite Mumbai University Main Gate	29
6929	Vepery	28
7029	Cst Road	24
7161	Shukrawar Peth	26
7883	Nsp	29
8002	Athwa Gate Circlce	28
8124	Athwa Gate Circlce	28

```
[14]: # Filter which particular area of Bengaluru serves the food items at lower
      ↪ cost when price less than 100.
Lower_Cost_in_terms_of_food=df[(df['City'] == 'Bangalore') & (df['Price']<100)]
Lower_Cost_in_terms_of_food
```

```
[14]:
```

	ID	Area	City	Restaurant \
1206	58568	Ashok Nagar	Bangalore	Sweet Chariot
1941	154343	Basavanagudi	Bangalore	Sandwich Guru
2392	222499	Pulikeshi Nagar	Bangalore	Cane Fresh
3851	355450	Chamrajpet	Bangalore	Kolkata Famous Kati Roll
4593	389441	Koramangala	Bangalore	The Tasty Planet
7500	128643	Domlur	Bangalore	Kota Kachori And Falahaar
8231	391694	Frazer Town	Bangalore	Maheshwari Chaats Centre
8393	424609	Jayanagar	Bangalore	Bikaner Sweets
8647	457452	Sanjay Nagar New Bel Road	Bangalore	Sri Ramji Sweets

	Price	Avg ratings	Total ratings \
1206	50.0	2.9	80
1941	99.0	4.3	100
2392	50.0	4.4	50
3851	99.0	2.9	80
4593	70.0	2.9	80
7500	15.0	4.1	1000
8231	99.0	2.9	80
8393	99.0	3.7	20
8647	75.0	2.9	80

	Food type \
1206	Desserts
1941	Snacks,Beverages
2392	Indian,Beverages,Desserts
3851	Snacks,Fast Food,Beverages
4593	Beverages,Fast Food,Salads,Snacks

7500	Chaat,North Indian,Snacks,Rajasthani,Sweets,De...
8231	Chaat,Snacks
8393	Sweets
8647	Sweets

	Address	Delivery time
1206	Brigade Road	36
1941	Jayanagar	50
2392	Coles Road	39
3851	Basavanagudi	52
4593	Koramangala	48
7500	Domlur	50
8231	Frazer Town	49
8393	Jayanagar	50
8647	Sanjay Nagar New Bel Road	51

```
[15]: # Filter the Average delivery time for each restaurant for city?
Average_Delivery_Time=df.groupby(['Restaurant', 'City'])['Delivery time'].mean()
Average_Delivery_Time
```

```
[15]: Restaurant      City
      Conclave At Afraa      Kolkata      75.0
      Hotel Rangda      Pune      63.0
      Kishori Lal Paan      Delhi      77.0
      Momozon      Kolkata      58.0
      Sahadeva Reddy'S Biryani Durbar      Hyderabad      45.0
      ...
      Zouq Fusion Foods      Hyderabad      83.0
      Zoya Biriyani      Kolkata      38.0
      Zuka      Chennai      64.0
      Zwarma      Chennai      62.0
      Zyqa Restaurant      Hyderabad      55.0
      Name: Delivery time, Length: 8547, dtype: float64
```

```
[16]: # Filter the average price of the each food cusines?
Average_Price_of_food=df.groupby('Food type')['Price'].mean()
Average_Price_of_food
```

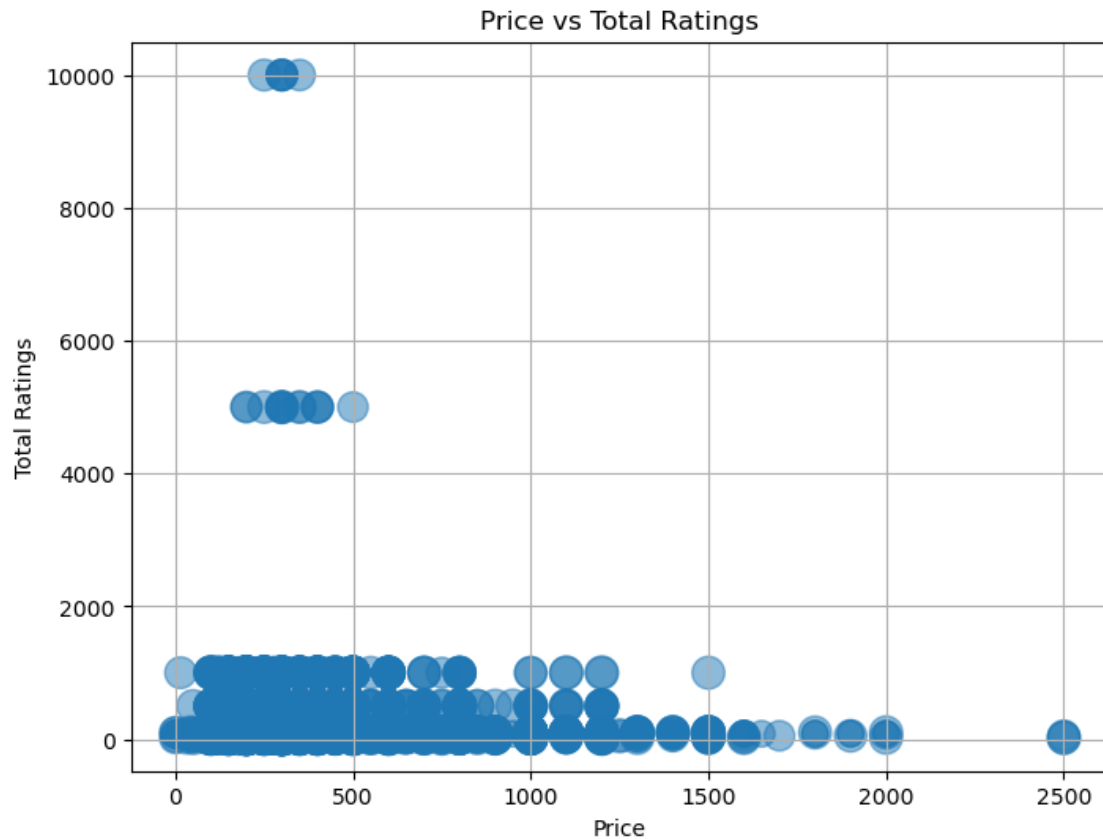
```
[16]: Food type
      Afghani,Arabian,Indian,Tandoor      850.000000
      Afghani,Biryani      400.000000
      Afghani,Mughlai      300.000000
      American      405.714286
      American Beverages Fast Food      350.000000
      ...
      Tibetan,Lebanese,Fast Food,Tandoor      200.000000
      Tribal,Seafood,Chinese      1200.000000
```

```
Turkish      883.333333
Turkish,Arabian  300.000000
Turkish,Mediterranean,Middle Eastern,Lebanese,Arabian  1500.000000
Name: Price, Length: 3734, dtype: float64
```

```
[17]: # Filter what are most popular cuisines among customers?
popular_cuisines=df['Food type'].value_counts().head()
popular_cuisines
```

```
[17]: Indian      389
Chinese      277
North Indian  246
Fast Food    240
South Indian  228
Name: Food type, dtype: int64
```

```
[18]: # Create a Scatter plot for Price vs Total ratings
plt.figure(figsize=(8, 6))
plt.scatter(df['Price'], df['Total ratings'], s=df['Avg ratings']*50, alpha=0.5)
plt.xlabel('Price')
plt.ylabel('Total Ratings')
plt.title('Price vs Total Ratings')
plt.grid(True)
plt.show()
```

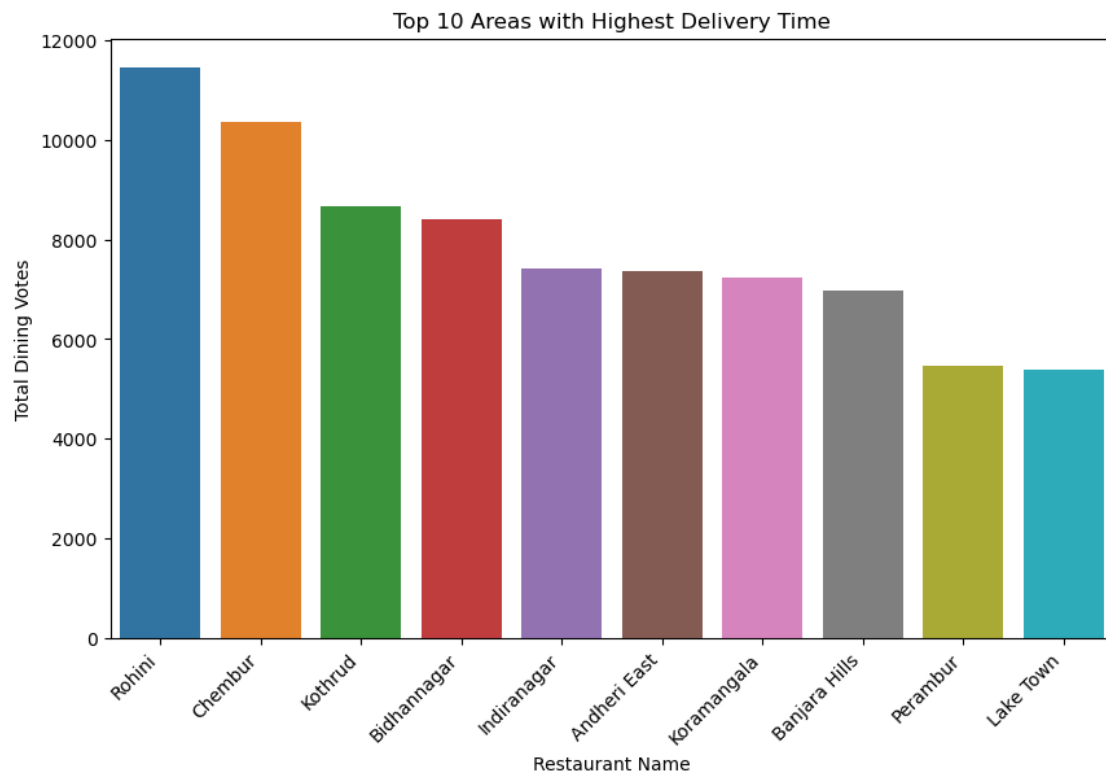


```
[19]: # Create a Top 10 areas with the Highest Delivery time
Top_10_Areas=df.groupby('Area')['Delivery time'].sum().nlargest(10)
print(Top_10_Areas)
plt.figure(figsize=(10,6))
sns.barplot(x=Top_10_Areas.index,y=Top_10_Areas.values)
plt.xticks(rotation=45, ha='right')
plt.xlabel('Restaurant Name')
plt.ylabel('Total Dining Votes')
plt.title('Top 10 Areas with Highest Delivery Time')
plt.show()
```

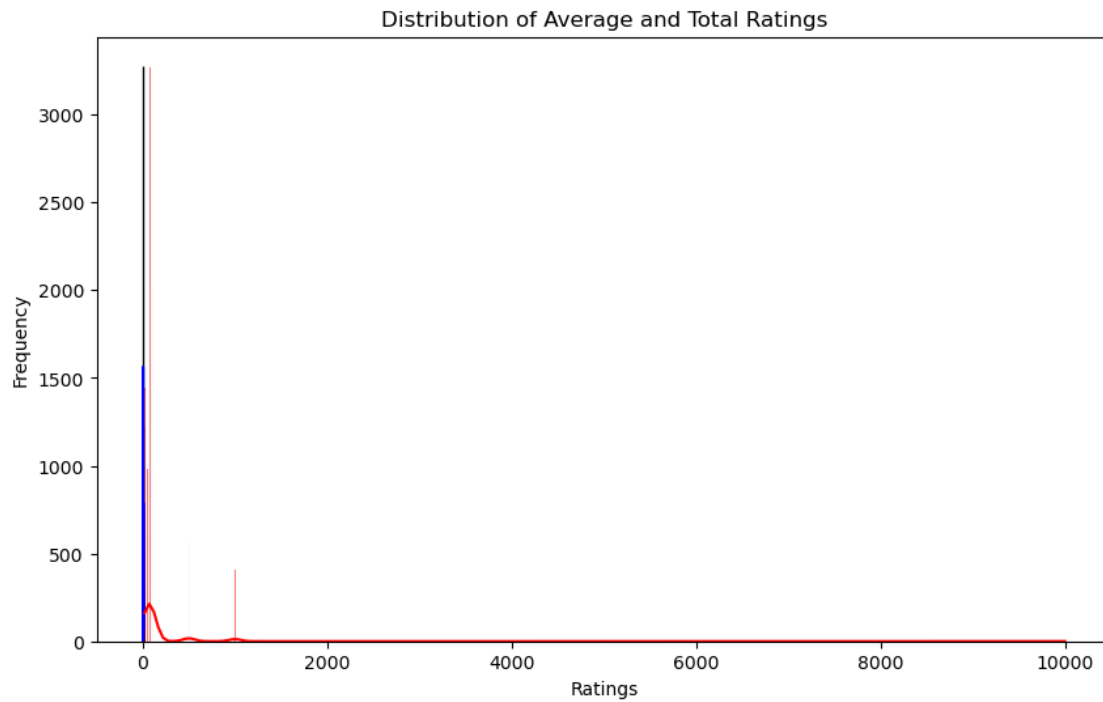
Area	
Rohini	11466
Chembur	10374
Kothrud	8668
Bidhannagar	8419
Indiranagar	7429
Andheri East	7379
Koramangala	7229
Banjara Hills	6974
Perambur	5455



Lake Town 5398  
Name: Delivery time, dtype: int64

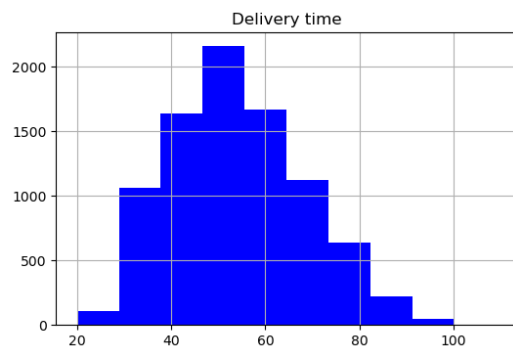
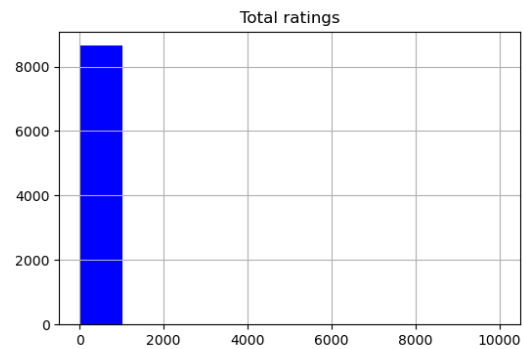
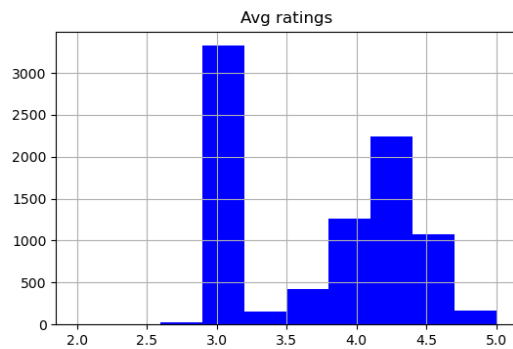
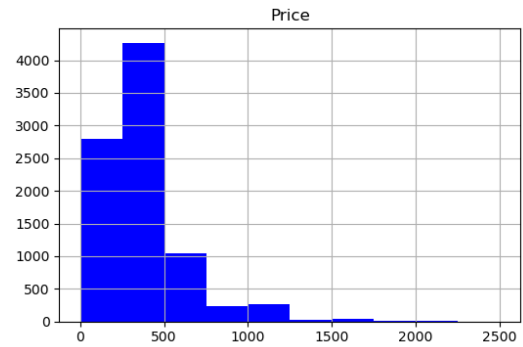
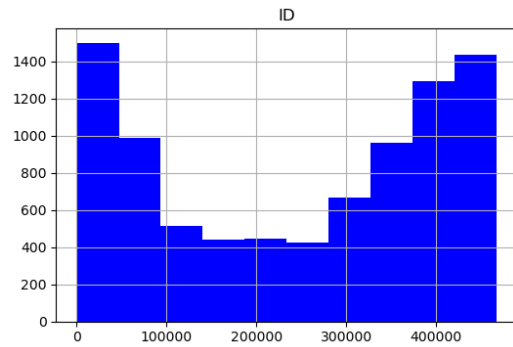


```
[20]: # Distribution of Avg Ratings and Total Ratings
plt.figure(figsize=(10,6))
sns.histplot(df['Avg ratings'], kde=True, color='Blue')
sns.histplot(df['Total ratings'], kde=True, color='Red')
plt.xlabel('Ratings')
plt.ylabel('Frequency')
plt.title('Distribution of Average and Total Ratings')
plt.show()
```

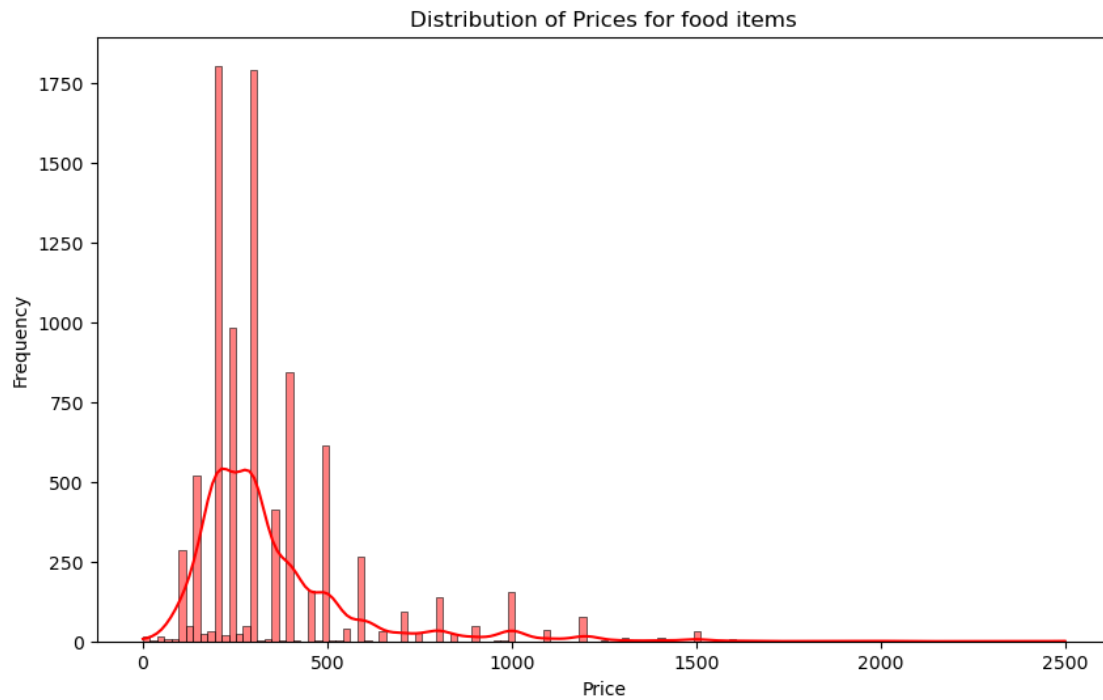


```
[21]: df.hist(figsize=(14,14),color='Blue')
```

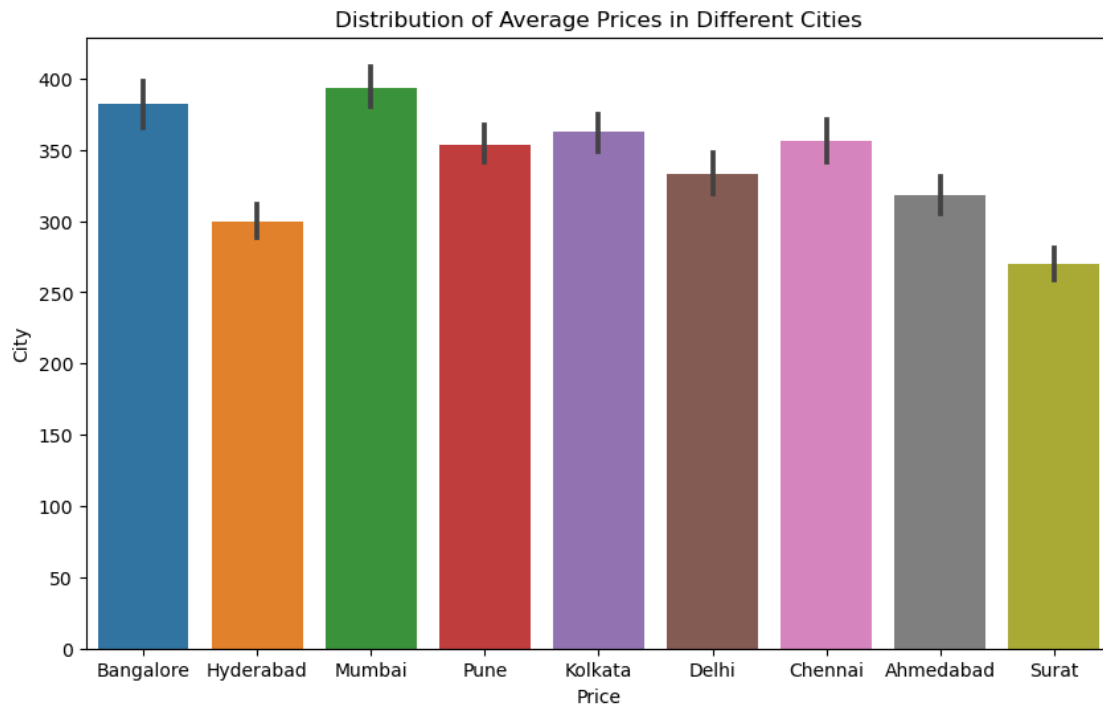
```
[21]: array([[<AxesSubplot:title={'center':'ID'}>,
               <AxesSubplot:title={'center':'Price'}>],
             [<AxesSubplot:title={'center':'Avg ratings'}>,
               <AxesSubplot:title={'center':'Total ratings'}>],
             [<AxesSubplot:title={'center':'Delivery time'}>, <AxesSubplot:>]],
        dtype=object)
```



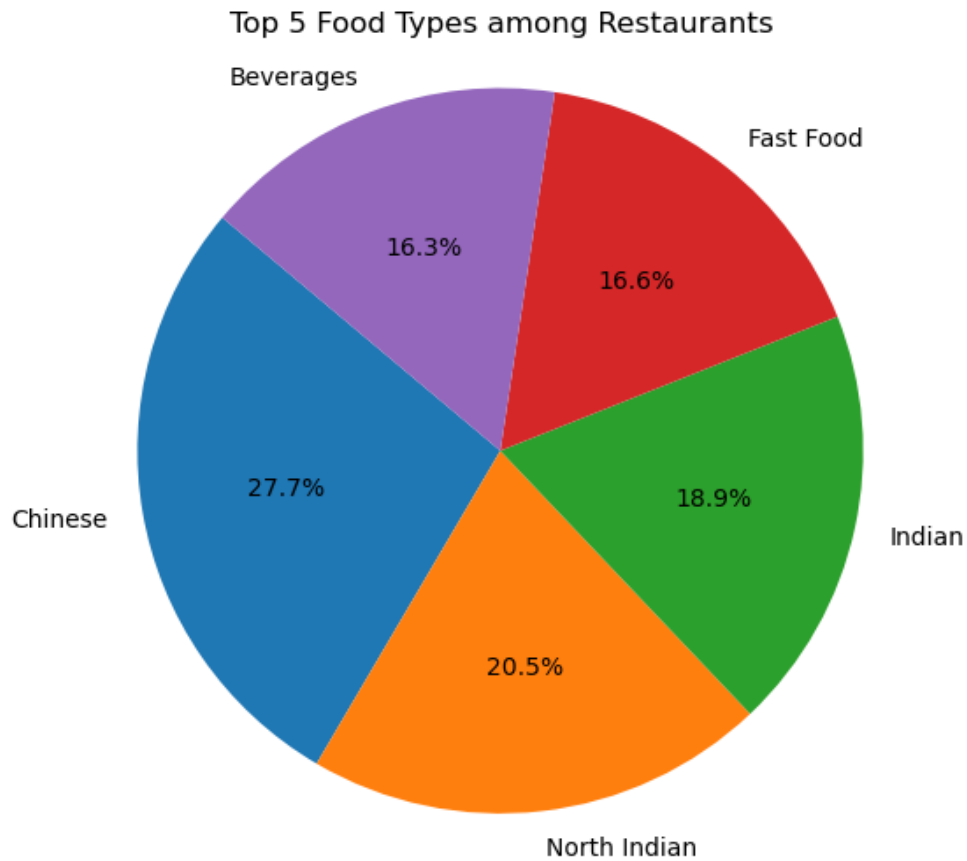
```
[22]: # Distribution of Prices for food items
plt.figure(figsize=(10,6))
sns.histplot(df['Price'], kde=True, color='Red')
plt.xlabel('Price')
plt.ylabel('Frequency')
plt.title('Distribution of Prices for food items')
plt.show()
```



```
[23]: # Average Prices for in Different Cities
plt.figure(figsize=(10,6))
sns.barplot(x='City', y='Price',data=df)
plt.xlabel('Price')
plt.ylabel('City')
plt.title('Distribution of Average Prices in Different Cities')
plt.show()
```



```
[24]: # Count the occurrences of each food type among all restaurants
food_type_counts=df['Food type'].str.split(',', expand=True).stack().
    ↪value_counts()
# Select the top 5 food types
top_5_food_types=food_type_counts.head(5)
# Pie chart for top 5 Restaurants by food types
plt.figure(figsize=(8,6))
plt.pie(top_5_food_types, labels=top_5_food_types.index, autopct='%1.1f%%',
    ↪startangle=140)
plt.axis('equal')
plt.title('Top 5 Food Types among Restaurants')
plt.show()
```



```
[25]: # Separete the Categorical Column and Numerical Column
```

```
cat=[]  
num=[]  
for i in df.columns:  
    if df[i].dtypes=="O":  
        cat.append(i)  
    else:  
        num.append(i)
```

```
[26]: cat
```

```
[26]: ['Area', 'City', 'Restaurant', 'Food type', 'Address']
```

```
[27]: num
```

```
[27]: ['ID', 'Price', 'Avg ratings', 'Total ratings', 'Delivery time']
```

```
[28]: num.remove('Price')
```

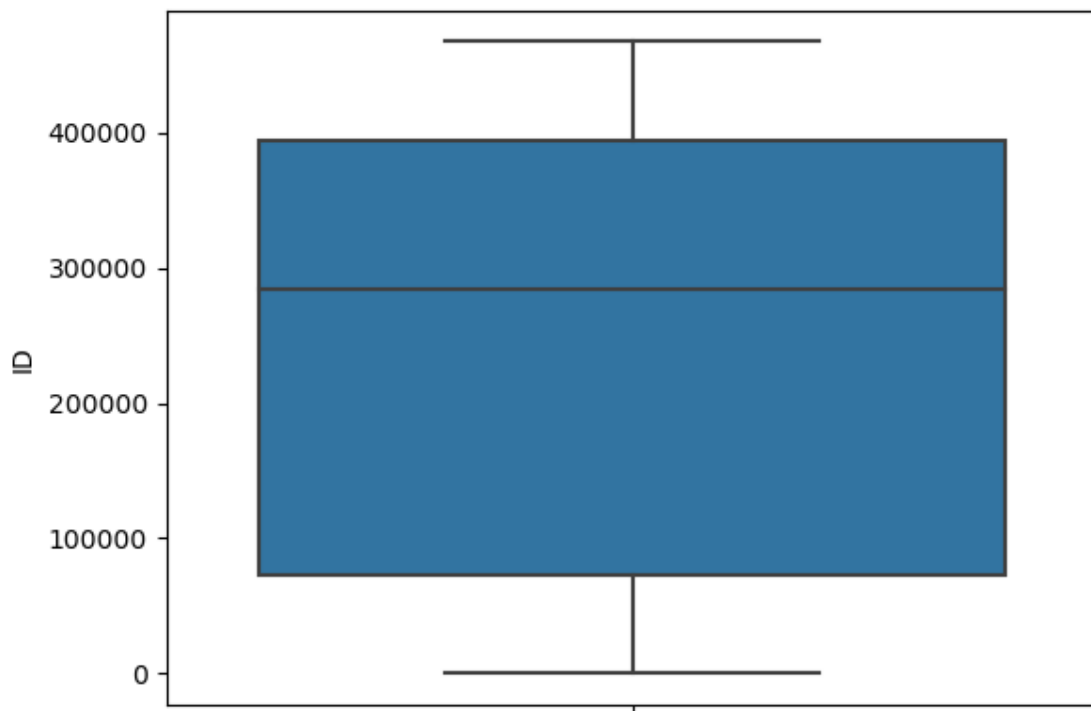
```
[29]: # Stastical Summary of Datasets
df.describe()
```

```
[29]:
```

	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

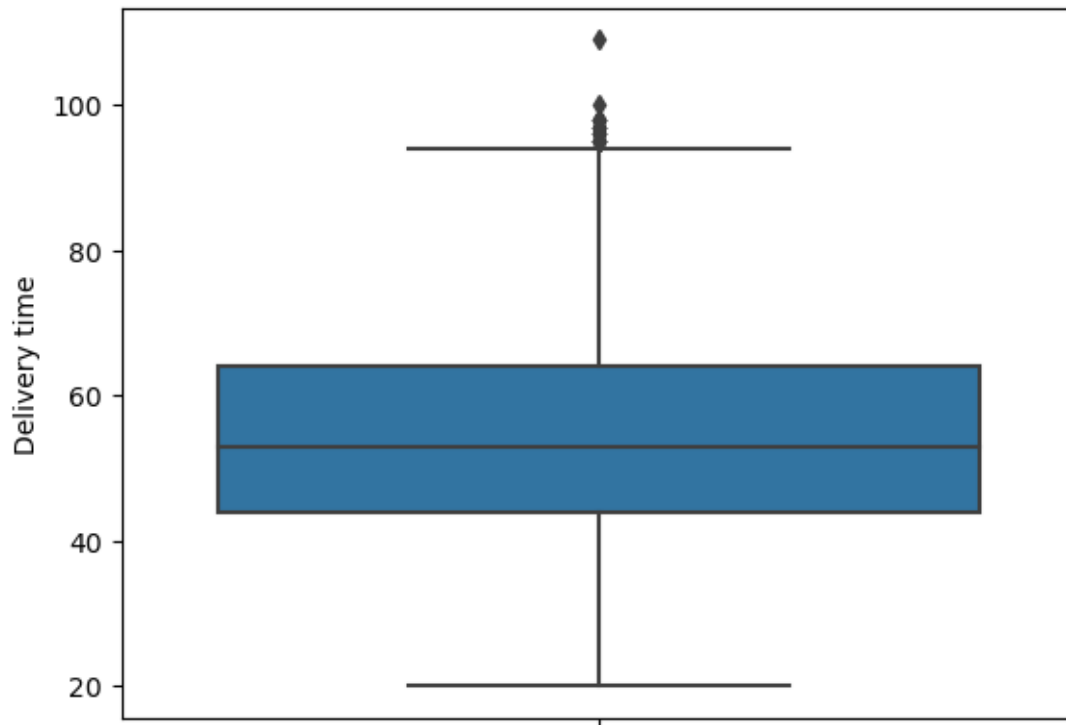
## 5 Outliers Handling

```
[30]: for i in num:
plt.figure()
sns.boxplot(y=i, data=df)
```

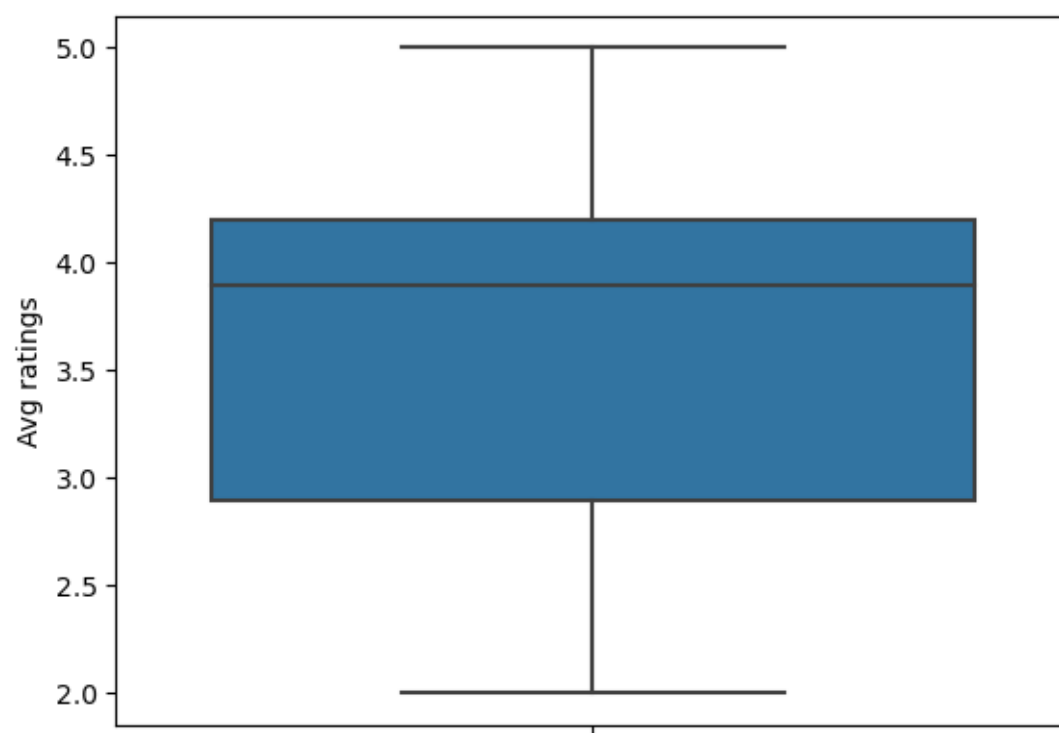
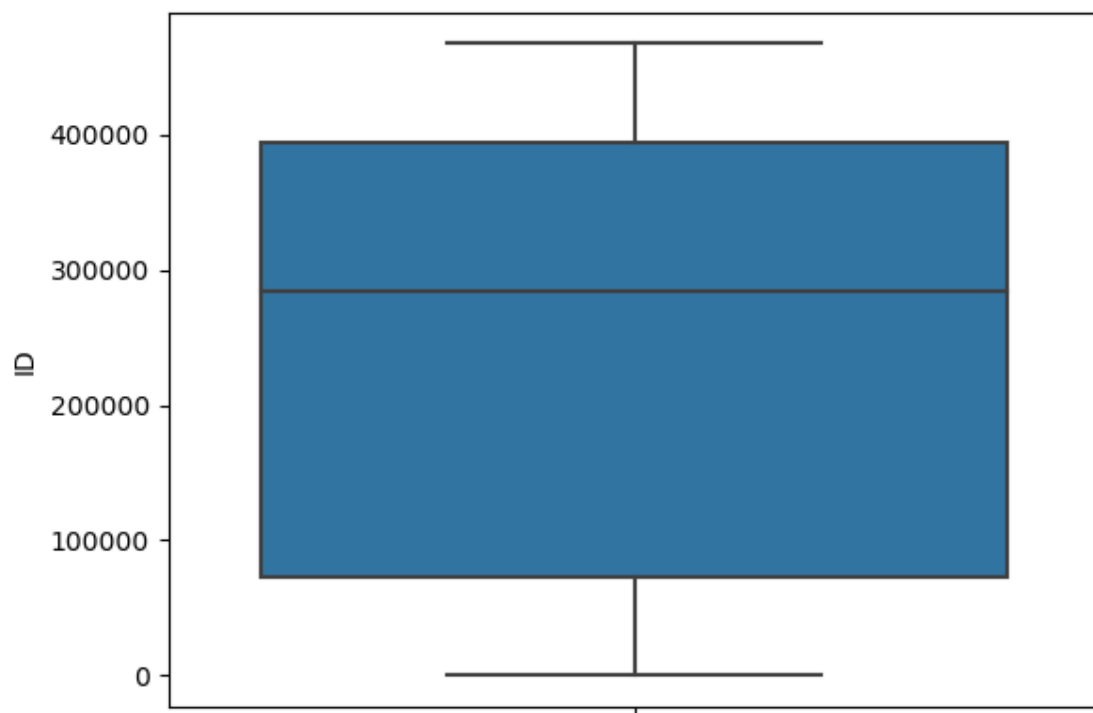


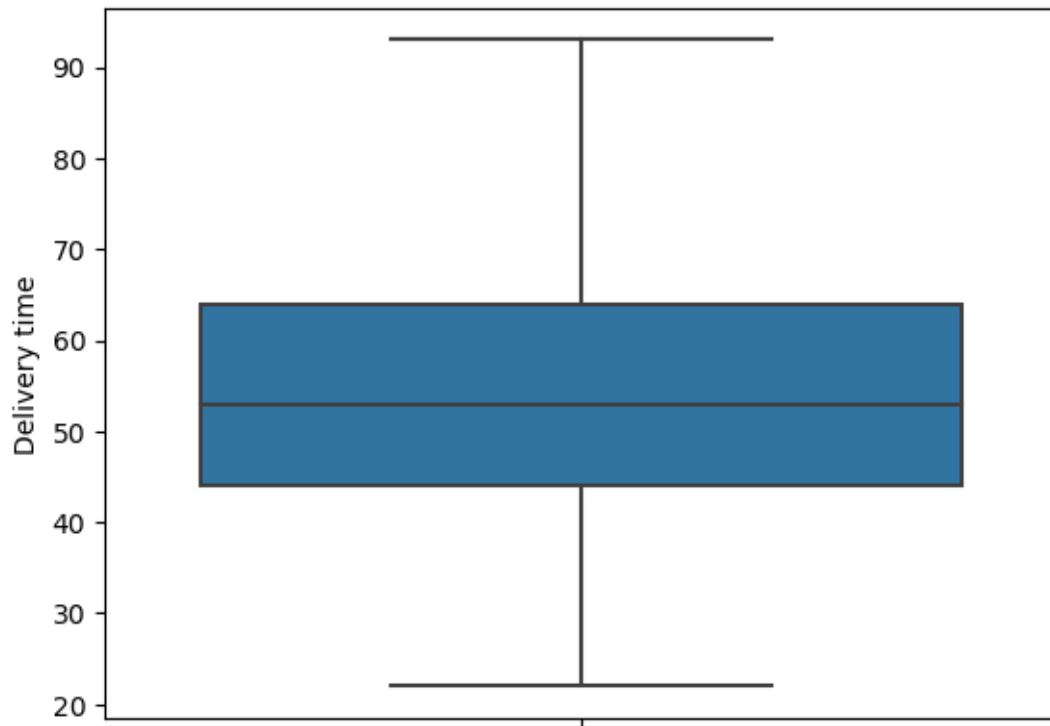
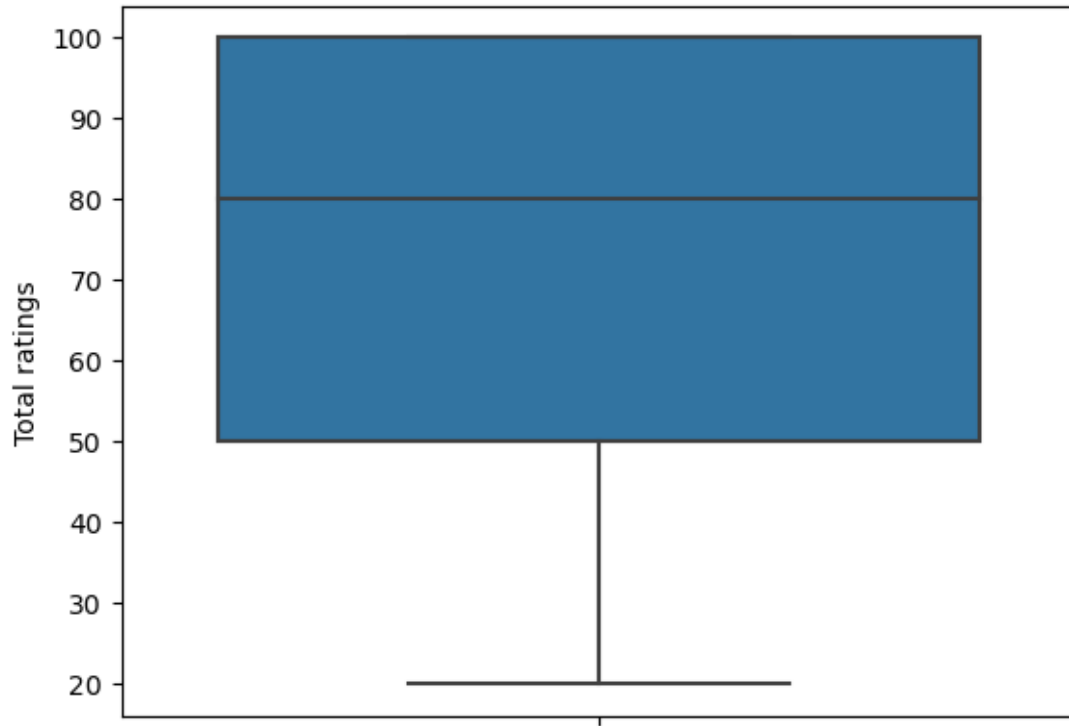






```
[31]: for i in num:
        q1=df[i].quantile(0.25)
        q3=df[i].quantile(0.75)
        iqr=q3-q1
        ll=q1-1.5*iqr
        ul=q3+1.5*iqr
        df=df[(df[i] > ll) & (df[i] < ul)]
        plt.figure()
        sns.boxplot(y=i, data=df)
```





```
[32]: df.shape
```

```
[32]: (7653, 10)
```

## 6 Data Preprocessing

```
[33]: # Scaling the Datasets
sc=StandardScaler()
```

```
[34]: df[num]=sc.fit_transform(df[num])
```

```
[35]: df
```

```
[35]:
```

	ID	Area	City	Restaurant \
0	-1.675983	Koramangala	Bangalore	Tandoor Hut
1	-1.675918	Koramangala	Bangalore	Tunday Kababi
2	-1.675758	Jogupalya	Bangalore	Kim Lee
4	-1.675738	Indiranagar	Bangalore	Nh8
5	-1.675706	Indiranagar	Bangalore	Treat
...	...	...	...	...
8675	1.311832	Panjarapole Cross Road	Ahmedabad	Malt Pizza
8676	1.319610	Rohini	Delhi	Jay Mata Ji Home Kitchen
8677	1.319848	Rohini	Delhi	Chinese Kitchen King
8678	1.320607	Rohini	Delhi	Shree Ram Paratha Wala
8679	1.323811	Navrangpura	Ahmedabad	Sassy Street

	Price	Avg ratings	Total ratings \
0	300.0	1.240651	1.060209
1	300.0	0.781600	1.060209
2	650.0	1.240651	1.060209
4	350.0	0.628583	-0.712132
5	800.0	1.393668	1.060209
...	...	...	...
8675	500.0	-1.054604	0.351272
8676	200.0	-1.054604	0.351272
8677	150.0	-1.054604	0.351272
8678	150.0	-1.054604	0.351272
8679	250.0	-1.054604	0.351272

	Food type	Address \
0	Biryani,Chinese,North Indian,South Indian	5Th Block
1	Mughlai,Lucknowi	5Th Block
2	Chinese	Double Road
4	Rajasthani,Gujarati,North Indian,Snacks,Desser...	80 Feet Road
5	Mughlai,North Indian	100 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	0.334103
1	0.120328
2	-0.307222
4	0.619136
5	0.120328
...	...
8675	-1.019805
8676	-1.874904
8677	0.262845
8678	-1.874904
8679	-0.734771

[7653 rows x 10 columns]

```
[36]: # Encode the Datasets
df_new=pd.get_dummies(df, columns=cat, drop_first=True)
```

```
[37]: df_new
```

```
[37]:
```

	ID	Price	Avg ratings	Total ratings	Delivery time \
0	-1.675983	300.0	1.240651	1.060209	0.334103
1	-1.675918	300.0	0.781600	1.060209	0.120328
2	-1.675758	650.0	1.240651	1.060209	-0.307222
4	-1.675738	350.0	0.628583	-0.712132	0.619136
5	-1.675706	800.0	1.393668	1.060209	0.120328
...	...	...	...	...	...
8675	1.311832	500.0	-1.054604	0.351272	-1.019805
8676	1.319610	200.0	-1.054604	0.351272	-1.874904
8677	1.319848	150.0	-1.054604	0.351272	0.262845
8678	1.320607	150.0	-1.054604	0.351272	-1.874904
8679	1.323811	250.0	-1.054604	0.351272	-0.734771

	Area_ Begumpet	Area_26	Area_A.S. Rao Nagar & Sainikpuri	Area_Abids \
0	0	0	0	0
1	0	0	0	0
2	0	0	0	0
4	0	0	0	0
5	0	0	0	0
...	...	...	...	...
8675	0	0	0	0

8676	0	0	0	0
8677	0	0	0	0
8678	0	0	0	0
8679	0	0	0	0

	Area_Abids & Koti	...	Address_Yash Plaza	Address_Yerawada	\
0	0	...	0	0	
1	0	...	0	0	
2	0	...	0	0	
4	0	...	0	0	
5	0	...	0	0	
...	...	...	...	...	
8675	0	...	0	0	
8676	0	...	0	0	
8677	0	...	0	0	
8678	0	...	0	0	
8679	0	...	0	0	

	Address_Yerwada	Address_Yeshwanthpura	Address_Yewalewadi	\
0	0	0	0	
1	0	0	0	
2	0	0	0	
4	0	0	0	
5	0	0	0	
...	...	...	...	
8675	0	0	0	
8676	0	0	0	
8677	0	0	0	
8678	0	0	0	
8679	0	0	0	

	Address_Ymca Circle	Address_Yogi Chowk	Address_Yums Panjrapole	\
0	0	0	0	
1	0	0	0	
2	0	0	0	
4	0	0	0	
5	0	0	0	
...	...	...	...	
8675	0	0	0	
8676	0	0	0	
8677	0	0	0	
8678	0	0	0	
8679	0	0	0	

	Address_Zahra Nagar	Address_Zampa Bazar
0	0	0
1	0	0

2	0	0
4	0	0
5	0	0
...	...	...
8675	0	0
8676	0	0
8677	0	0
8678	0	0
8679	0	0

[7653 rows x 13046 columns]

```
[38]: # Prepare The Data for Modeling
x=df_new.drop('Price', axis=1)
y=df_new['Price']
```

```
[39]: # Split the Data into training and testing sets(75% train, 25% test)
X_train, X_test, Y_train, Y_test=train_test_split(x, y, test_size=0.25)
```

```
[40]: # Create LinearRegression Model
model=LinearRegression()
```

```
[41]: # Train the LinearRegression Model
model.fit(X_train, Y_train)
```

```
[41]: LinearRegression()
```

```
[42]: # Predict the test set
Y_pred=model.predict(X_test)
```

```
[43]: # Effect on Model Evaluation matrices
mse=metrics.mean_squared_error(Y_test, Y_pred)
rmse=np.sqrt(mse)
r2_score=metrics.r2_score(Y_test, Y_pred)
```

```
[44]: print('Mean Squared Error:', mse)
print('Root Mean Squared Error:', rmse)
print('R-Squared:', r2_score)
```

```
Mean Squared Error: 2.0256383842149286e+27
Root Mean Squared Error: 45007092598999.65
R-Squared: -3.363533503232453e+22
```