Task: Geospatial Analysis

Importing libraries

```
In [1]:  import pandas as pd
         import matplotlib.pyplot as plt
```

```
In [2]:  df = pd.read_csv('N:\Dataset .csv')
```

Data Characteristics

In [3]: `df.head()`

Out[3]:

	Restaurant ID	Restaurant Name	Country Code	City	Address	Locality	Locality Verbose	Longitu
0	6317637	Le Petit Souffle	162	Makati City	Third Floor, Century City Mall, Kalayaan Avenu...	Century City Mall, Poblacion, Makati City	Century City Mall, Poblacion, Makati City, Mak...	121.0275
1	6304287	Izakaya Kikufuji	162	Makati City	Little Tokyo, 2277 Chino Roces Avenue, Legaspi...	Little Tokyo, Legaspi Village, Makati City	Little Tokyo, Legaspi Village, Makati City, Ma...	121.0141
2	6300002	Heat - Edsa Shangri-La	162	Mandaluyong City	Edsa Shangri-La, 1 Garden Way, Ortigas, Mandal...	Edsa Shangri-La, Ortigas, Mandaluyong City	Edsa Shangri-La, Ortigas, Mandaluyong City, Ma...	121.0568
3	6318506	Ooma	162	Mandaluyong City	Third Floor, Mega Fashion Hall, SM Megamall, O...	SM Megamall, Ortigas, Mandaluyong City	SM Megamall, Ortigas, Mandaluyong City, Mandal...	121.0564
4	6314302	Sambo Kojin	162	Mandaluyong City	Third Floor, Mega Atrium, SM Megamall, Ortigas...	SM Megamall, Ortigas, Mandaluyong City	SM Megamall, Ortigas, Mandaluyong City, Mandal...	121.0575

5 rows × 21 columns

In [4]: `df.tail()`

Out[4]:

	Restaurant ID	Restaurant Name	Country Code	City	Address	Locality	Loc Ver
9546	5915730	Naml� Gurme	208	��stanbul	Kemanke�� Karamustafa Pa��a Mahallesi, R�ht�m ...	Karak�_y	Karak ��st
9547	5908749	Ceviz A��ac�	208	��stanbul	Ko��uyolu Mahallesi, Muhittin ��st�_nda�� Cadd...	Ko��uyolu	Ko��u ��st
9548	5915807	Huqqa	208	��stanbul	Kuru�_e��me Mahallesi, Muallim Naci Caddesi, N...	Kuru�_e��me	Kuru�_e� ��st
9549	5916112	A���k Kahve	208	��stanbul	Kuru�_e��me Mahallesi, Muallim Naci Caddesi, N...	Kuru�_e��me	Kuru�_e� ��st
9550	5927402	Walter's Coffee Roastery	208	��stanbul	Cafea��a Mahallesi, Bademalt� Sokak, No 21/B, ...	Moda	M ��st

5 rows × 21 columns

In [5]: `df.isnull().sum()`

Out[5]:
```
Restaurant ID              0
Restaurant Name            0
Country Code               0
City                       0
Address                    0
Locality                   0
Locality Verbose           0
Longitude                  0
Latitude                   0
Cuisines                   9
Average Cost for two       0
Currency                   0
Has Table booking          0
Has Online delivery        0
Is delivering now          0
Switch to order menu       0
Price range                0
Aggregate rating           0
Rating color               0
Rating text                0
Votes                      0
dtype: int64
```
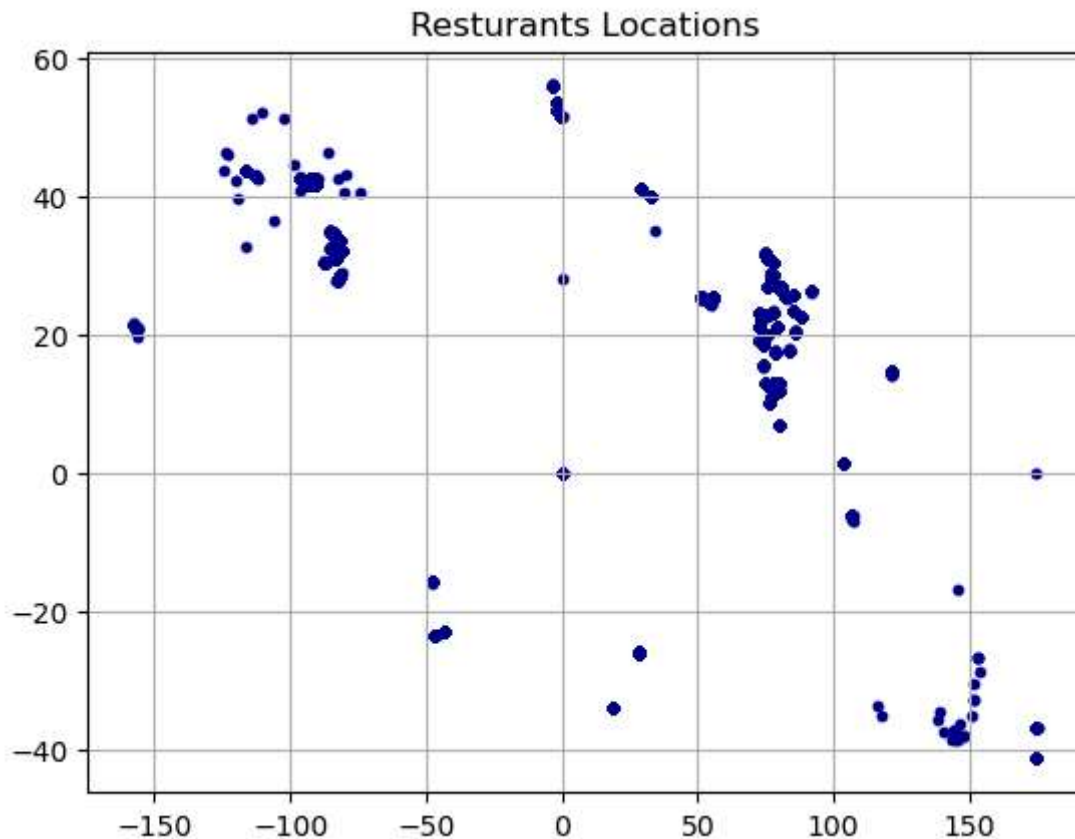
Visualize the locations of restaurants on amap using latitude and longitude information.

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In [6]:
```python
plt.scatter(x=df['Longitude'],y=df['Latitude'],c='darkblue',s=10)
plt.title('Resturants Locations')
plt.grid(True)
plt.show()
```


In [7]:
```python
city_count=df['City'].value_counts()
print(city_count)
```

```
City
New Delhi            5473
Gurgaon              1118
Noida                1080
Faridabad             251
Ghaziabad              25
                    ...
Panchkula               1
Mc Millan               1
Mayfield                1
Macedon                 1
Vineland Station        1
Name: count, Length: 141, dtype: int64
```

Determine if there is any correlation between the restaurant's location and its rating

In [8]:
```python
plt.scatter(x=df['Longitude'],y=df['Votes'],c='red',s=10)
plt.title('Correlation betwwen Longitude vs votes')
plt.xlabel('Longitude')
plt.ylabel('votes')
plt.show()
```
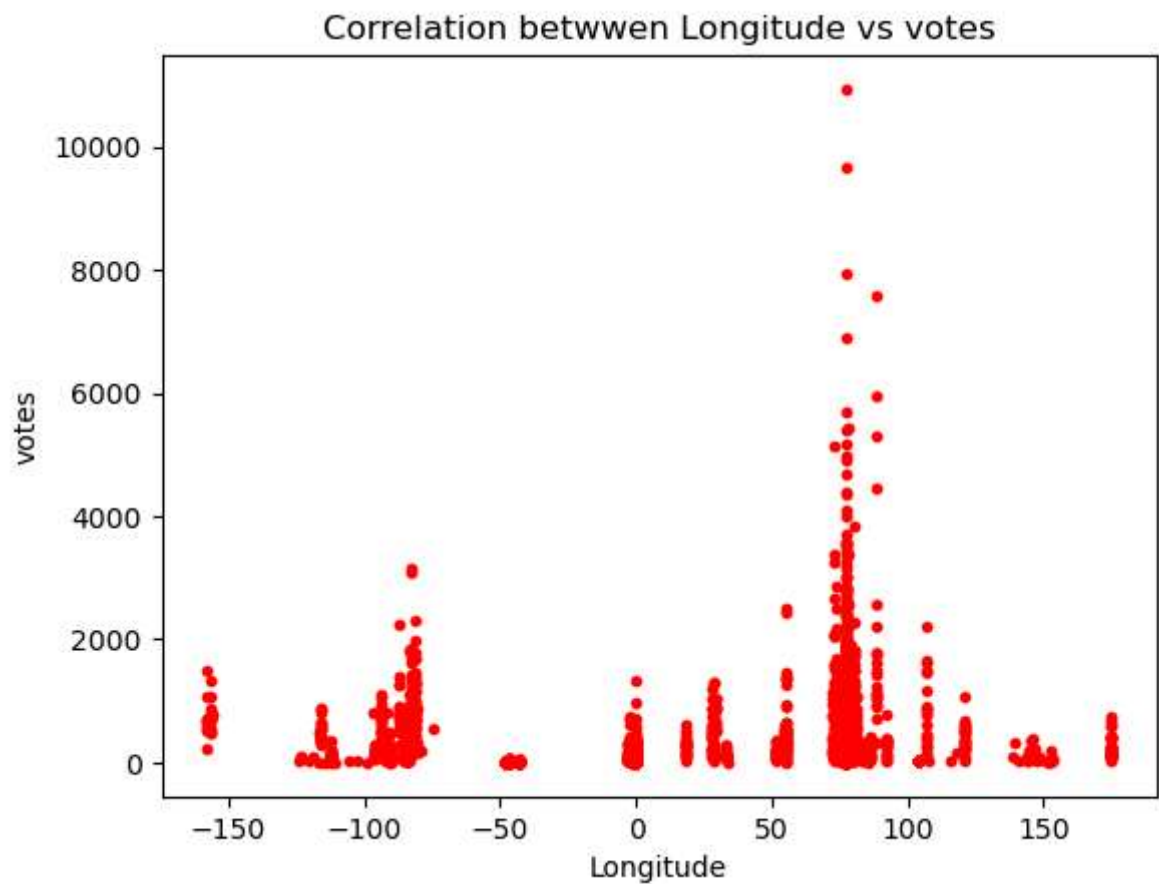
In [9]:
```python
plt.scatter(x=df['Latitude'],y=df['Votes'],c='red',s=10)
plt.title('Correlation betwwen Latitude vs votes')
plt.xlabel('Latitude')
plt.ylabel('votes')
plt.show()
```


Correlation betwwen Latitude vs votes
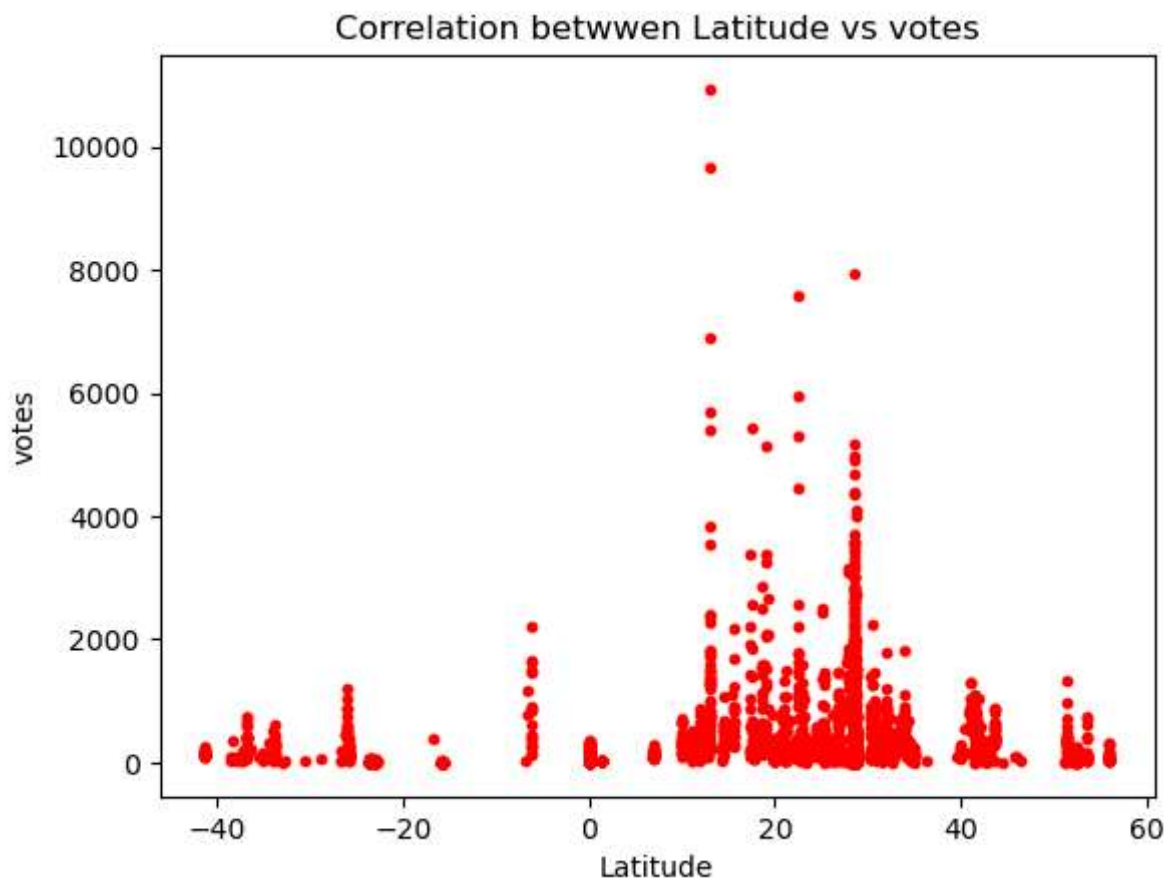
In [11]:
```python
long_corr = df['Longitude'].corr(df['Votes'])
lat_corr = df['Latitude'].corr(df['Votes'])
print(f"Correlation betwwen Longitude vs votes: {long_corr}")
print(f"Correlation betwwen Latitude vs votes: {long_corr}")
```

```
Correlation betwwen Longitude vs votes: -0.08510141778549533
Correlation betwwen Latitude vs votes: -0.08510141778549533
```