Significant Earthquake Data Visualization

```
In [11]: import numpy as np
         import pandas as pd
         import matplotlib.pyplot as plt
         from matplotlib import colors
         %matplotlib inline

         import seaborn as sns
         sns.set(style="darkgrid")
         import datetime
```

```
In [12]: data = pd.read_csv('C:/Users/Harsh Patel/Desktop/Mini Project/dataset/final_da
         ta.csv')
```

```
In [13]: data = data.loc[:,["Date","Time","Latitude","Magnitude","Longitude","Type","De
         pth"]]
         data.head()
```

Out[13]:

	Date	Time	Latitude	Magnitude	Longitude	Type	Depth
0	02/01/1965	13:44:18	19.246	6.0	145.616	Earthquake	131.6
1	04/01/1965	11:29:49	1.863	5.8	127.352	Earthquake	80.0
2	05/01/1965	18:05:58	-20.579	6.2	-173.972	Earthquake	20.0
3	08/01/1965	18:49:43	-59.076	5.8	-23.557	Earthquake	15.0
4	09/01/1965	13:32:50	11.938	5.8	126.427	Earthquake	15.0

In [14]:
```python
plt.hist(data['Magnitude'],color='red')
plt.xlabel('Magnitude Size')
plt.ylabel('Number of Occurrences')
```

Out[14]: Text(0, 0.5, 'Number of Occurrences')
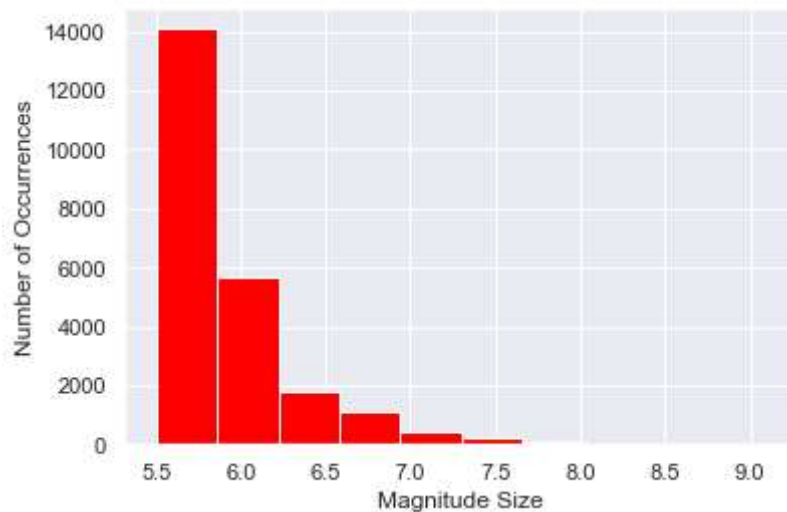
In [15]:
```python
data.loc[data['Magnitude'] > 8, 'Class'] = 'Great'
data.loc[ (data['Magnitude'] >= 7) & (data['Magnitude'] < 7.9), 'Class'] = 'Major'
data.loc[ (data['Magnitude'] >= 6) & (data['Magnitude'] < 6.9), 'Class'] = 'Strong'
data.loc[ (data['Magnitude'] >= 5.5) & (data['Magnitude'] < 5.9), 'Class'] = 'Moderate'
```

In [16]:
```python
# Magnitude Class distribution

sns.countplot(x="Class", data=data)
plt.ylabel('Frequency')
plt.title('Magnitude Class VS Frequency')
```

Out[16]: Text(0.5, 1.0, 'Magnitude Class VS Frequency')
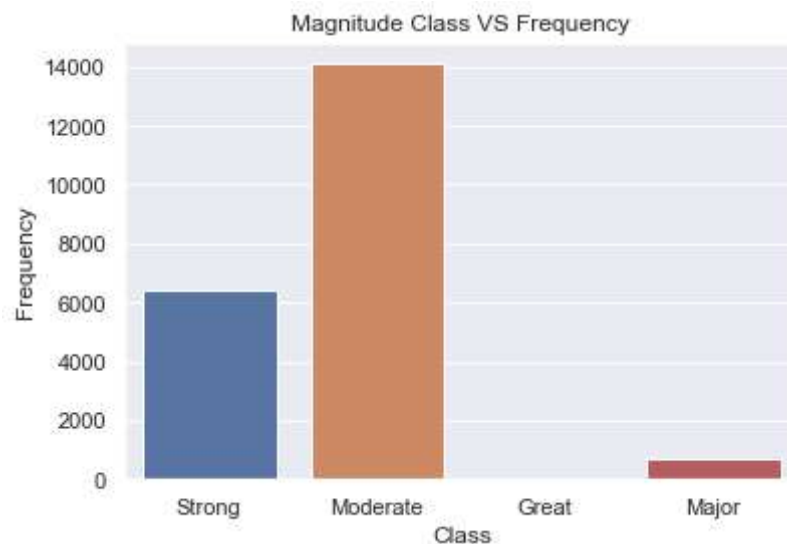
In [17]:
```python
# Latitude vs Longitude

# Simple distribution  maping

plt.figure(figsize=(13, 10))

sns.lmplot('Longitude', 'Latitude',
          data=data,
          fit_reg=True,
          scatter_kws={"color": "green"}, line_kws={"color": "red"}
          )
```
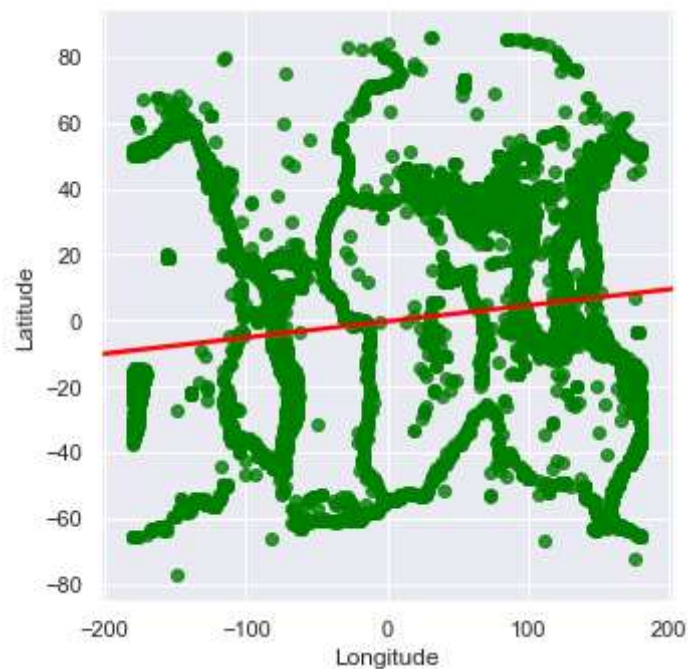
Out[17]: <seaborn.axisgrid.FacetGrid at 0x2a60695e240>

<Figure size 936x720 with 0 Axes>

In [19]:
```python
data['date'] = data['Date'].apply(lambda x: pd.to_datetime(x))
```
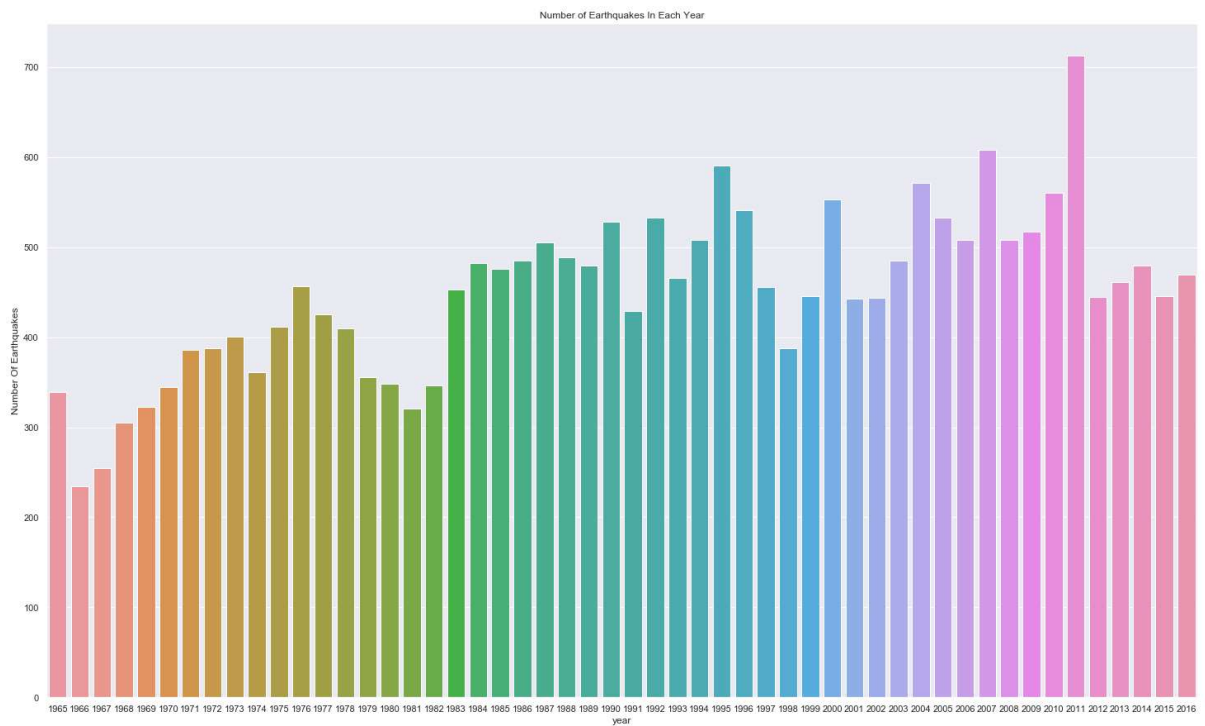
In [20]:
```python
# Earthquakes by Year

# Process the year from 'Date' column

data['year'] = data['date'].apply(lambda x: str(x).split('-')[0])
```

In [21]: `# Earthquakes by Year`

```python
plt.figure(figsize=(25, 15))
sns.set(font_scale=1.0)
sns.countplot(x="year", data=data)
plt.ylabel('Number Of Earthquakes')
plt.title('Number of Earthquakes In Each Year')
```

Out[21]: `Text(0.5, 1.0, 'Number of Earthquakes In Each Year')`

In [ ]: