# Plotting an Earthquake Dataset

1. **From the data set, identify one of the columns conforming to each data type:** 
   1. **Nominal**
   2. **Interval**
   3. **Ratio**

Here are the data sets which I found suits to a particular data type:

Nominal - Place

Interval - Date

Ratio - Magnitude

1. **Create a bar chart to show the frequency of earthquakes for each year 2000 - 2016. Label both axes.**

|  |  |
| --- | --- |
| Year | Frequency |
| 2000 | 1 |
| 2001 | 0 |
| 2002 | 4 |
| 2003 | 3 |
| 2004 | 5 |
| 2005 | 2 |
| 2006 | 8 |
| 2007 | 3 |
| 2008 | 11 |
| 2009 | 12 |
| 2010 | 22 |
| 2011 | 15 |
| 2012 | 18 |
| 2013 | 58 |
| 2014 | 56 |
| 2015 | 94 |
| 2016 | 36 |
| 2017 | 0 |

1. **Create a histogram to show the number of earthquakes categorized by magnitude using an appropriate bin size. Label both axes.**

|  |  |
| --- | --- |
| Magnitude | Frequency |
| 1.5 - 1.8 | 4 |
| 1.9 - 2.2 | 39 |
| 2.3 - 2.6 | 128 |
| 2.7 - 3.0 | 123 |
| 3.1 - 3.4 | 40 |
| 3.5 - 3.8 | 13 |
| 3.9 - 4.2 | 0 |
| 4.3 - 4.6 | 1 |

1. **Create a plot to show the cumulative frequency of earthquakes by magnitude (i.e. number of earthquakes with magnitude below x). Label both axes.**

|  |  |  |
| --- | --- | --- |
| Magnitude | Frequency | Cumulative Frequency |
| 1.5 - 1.8 | 4 | 4 |
| 1.9 - 2.2 | 39 | 43 |
| 2.3 - 2.6 | 128 | 171 |
| 2.7 - 3.0 | 123 | 294 |
| 3.1 - 3.4 | 40 | 334 |
| 3.5 - 3.8 | 13 | 347 |
| 3.9 - 4.2 | 0 | 347 |
| 4.3 - 4.6 | 1 | 348 |

1. **Create a scatter plot to show the longitude (x-axis) and latitude (y-axis) location of each earthquake. Label both axes.**
2. **Briefly describe any interesting or troubling trends you observe in this data set.**

The number of earthquakes have steadily increased over the years. The majority of earthquakes are of magnitude between 2 and 3, mostly concentrated over the area in Latitudes between 32 & 36 and Longitutes -96.5 & -98.5