Stevens Institute of Technology

SYS-601 Homework Cover Sheet

Date:	1/26/2018	HW #:	1
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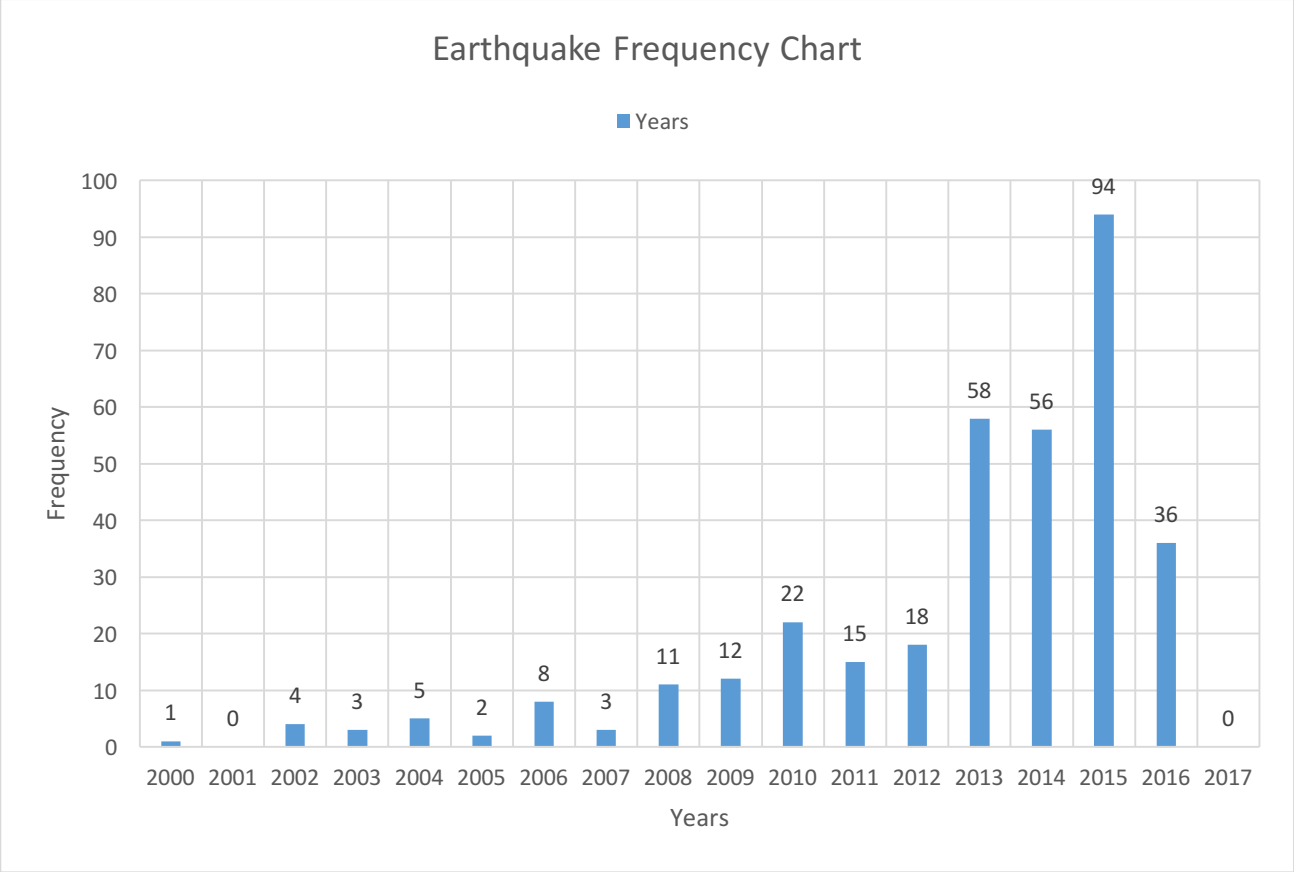
Plotting an Earthquake Dataset

a. From the data set, identify one of the columns conforming to each data type:
   i. Nominal
   ii. Interval
   iii. Ratio

   Here are the data sets which I found suits to a particular data type:
   Nominal - Place
   Interval - Date
   Ratio - Magnitude

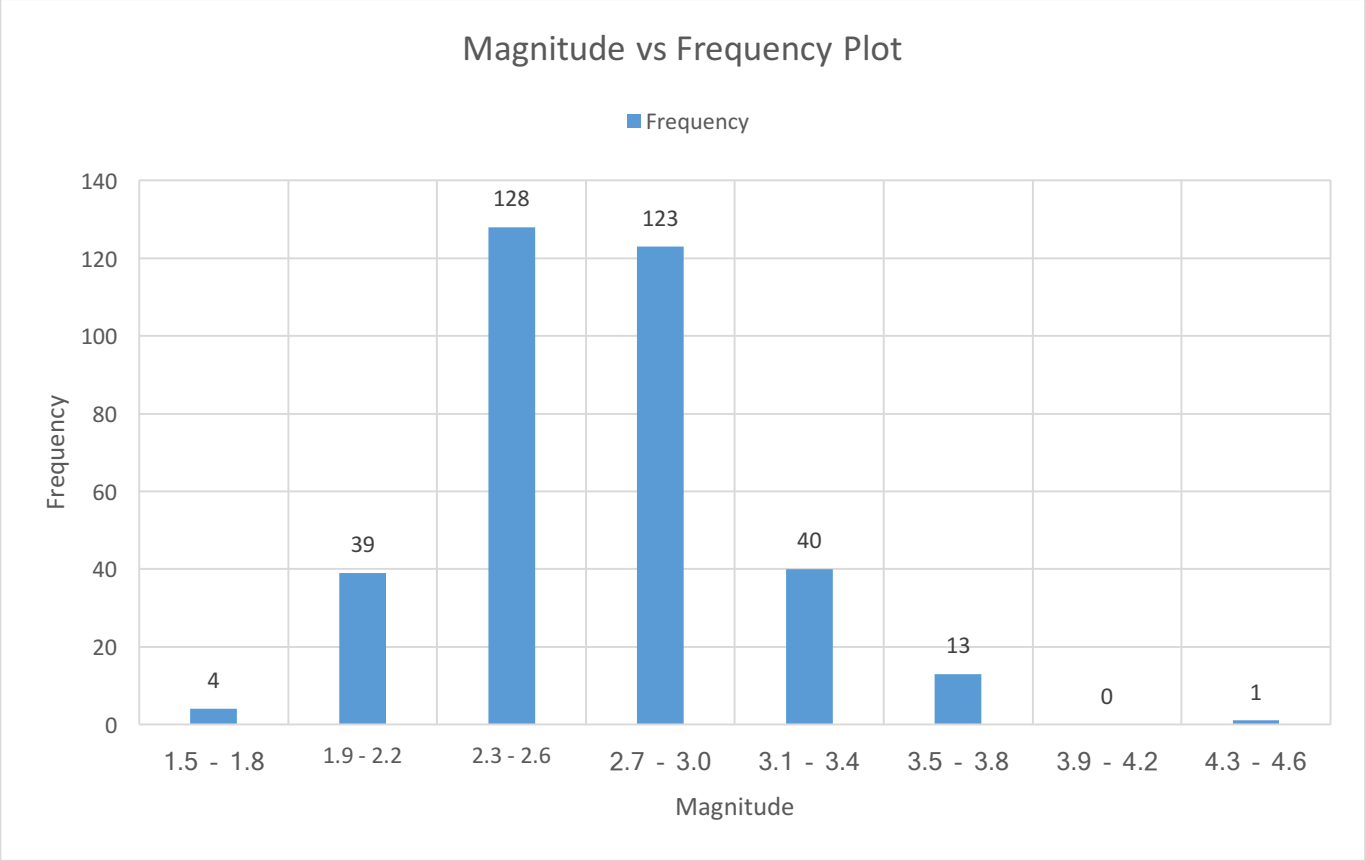
b. Create a bar chart to show the frequency of earthquakes for each year 2000 - 2016. Label both axes.

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



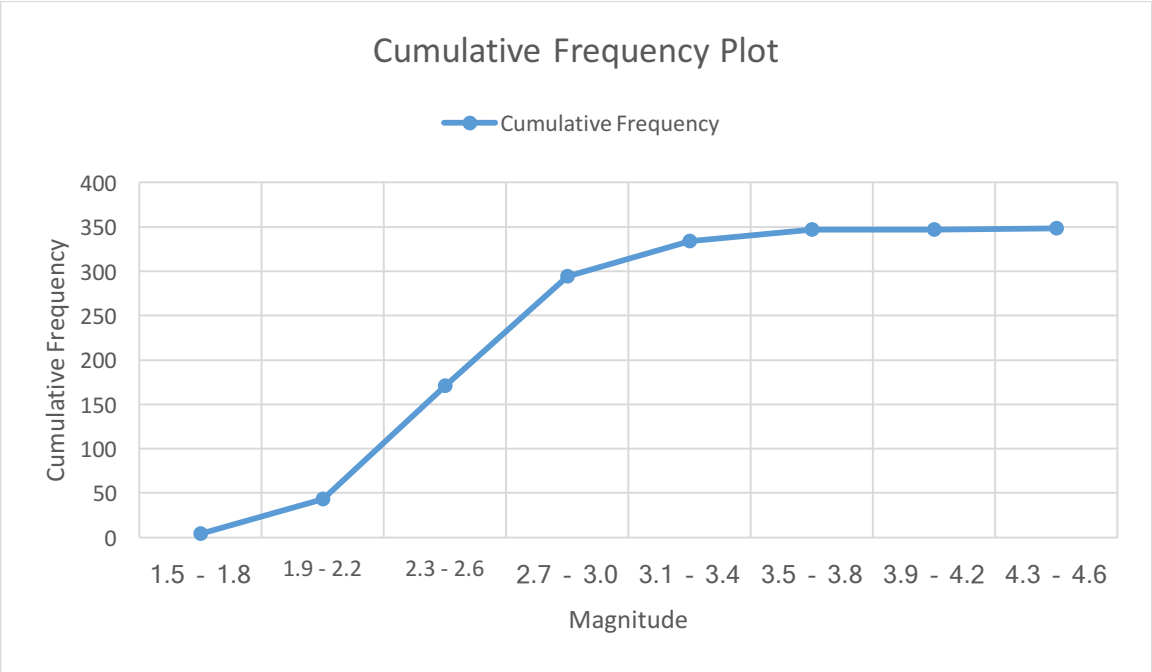
c. Create a histogram to show the number of earthquakes categorized by magnitude using an appropriate bin size. Label both axes.

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

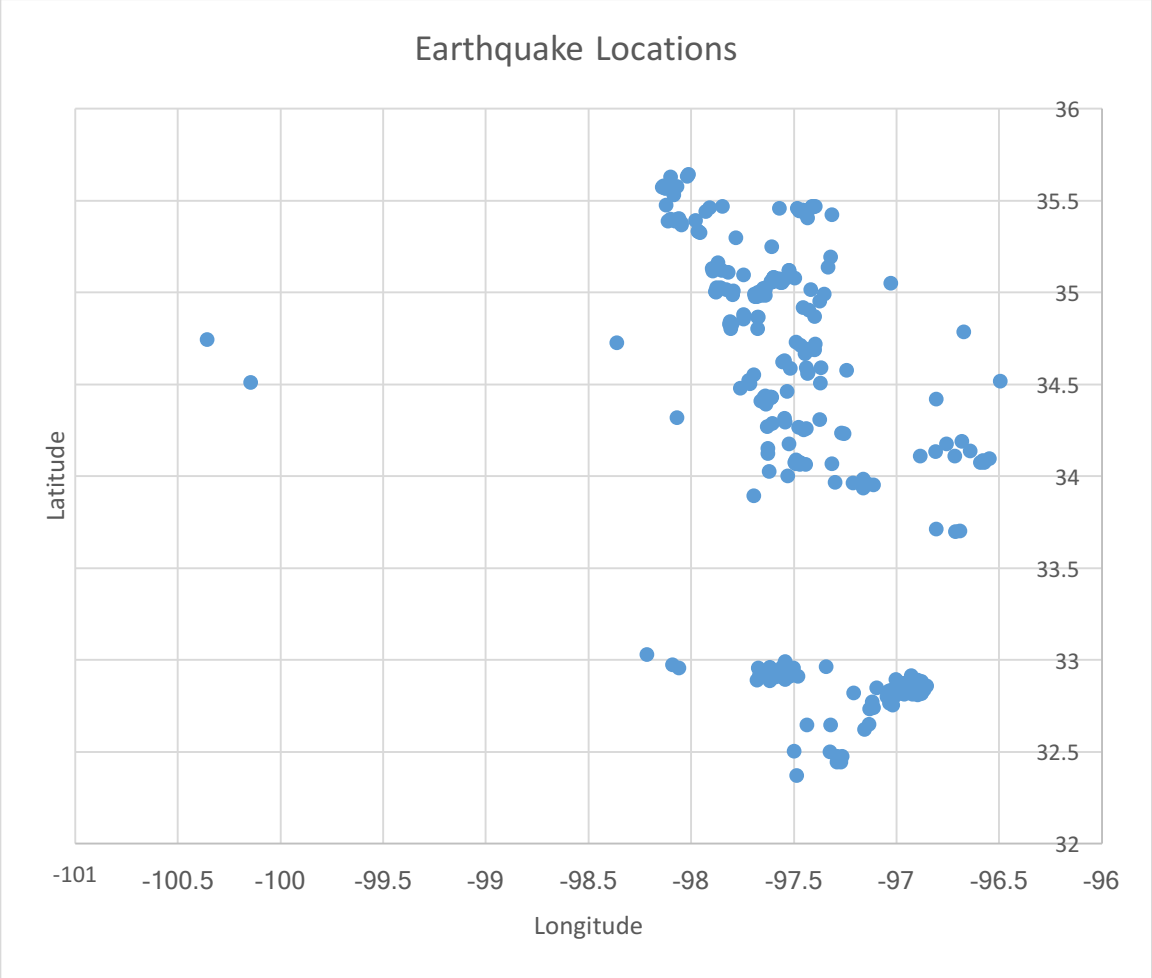


d. Create a plot to show the cumulative frequency of earthquakes by magnitude (i.e. number of earthquakes with magnitude below x). Label both axes.

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



e. Create a scatter plot to show the longitude (x-axis) and latitude (y-axis) location of each earthquake. Label both axes.



f. 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