ECON 470 Homework 2

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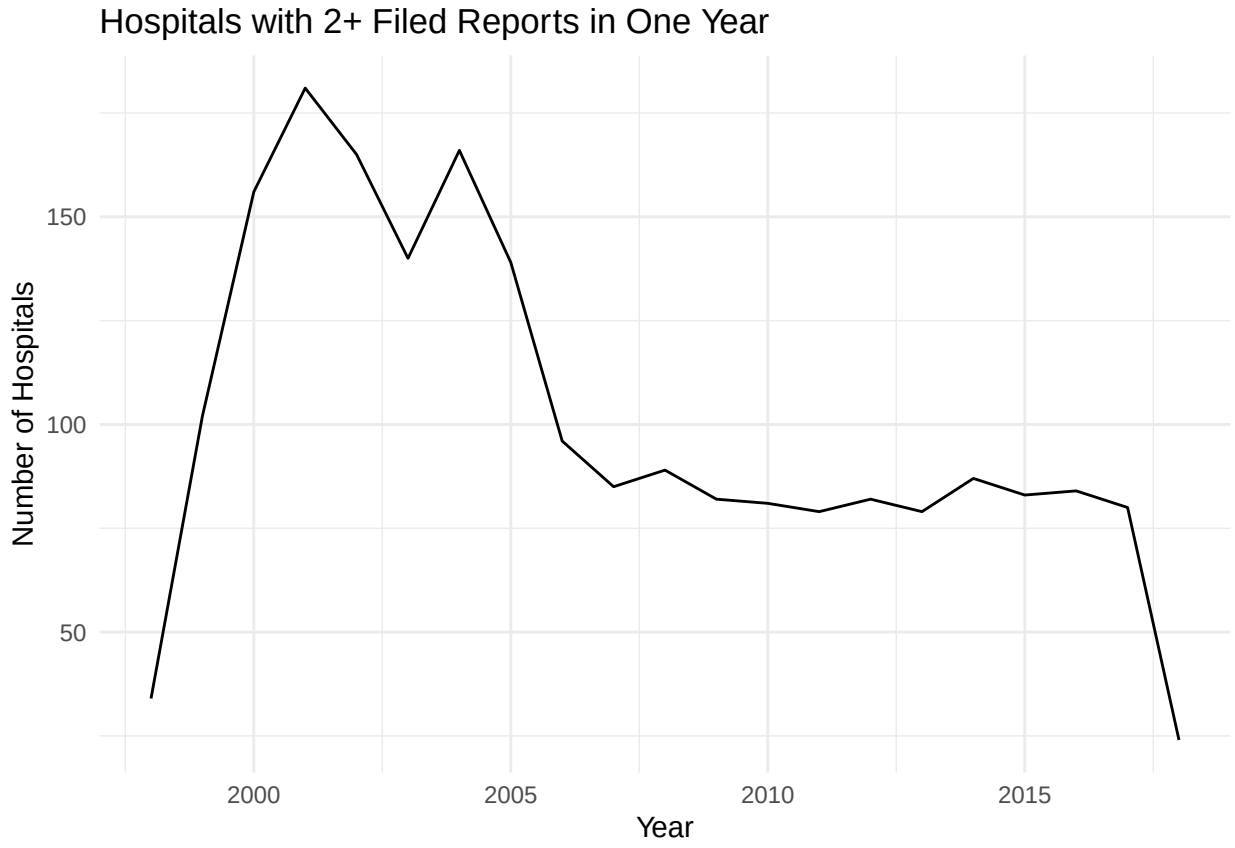
Question 1

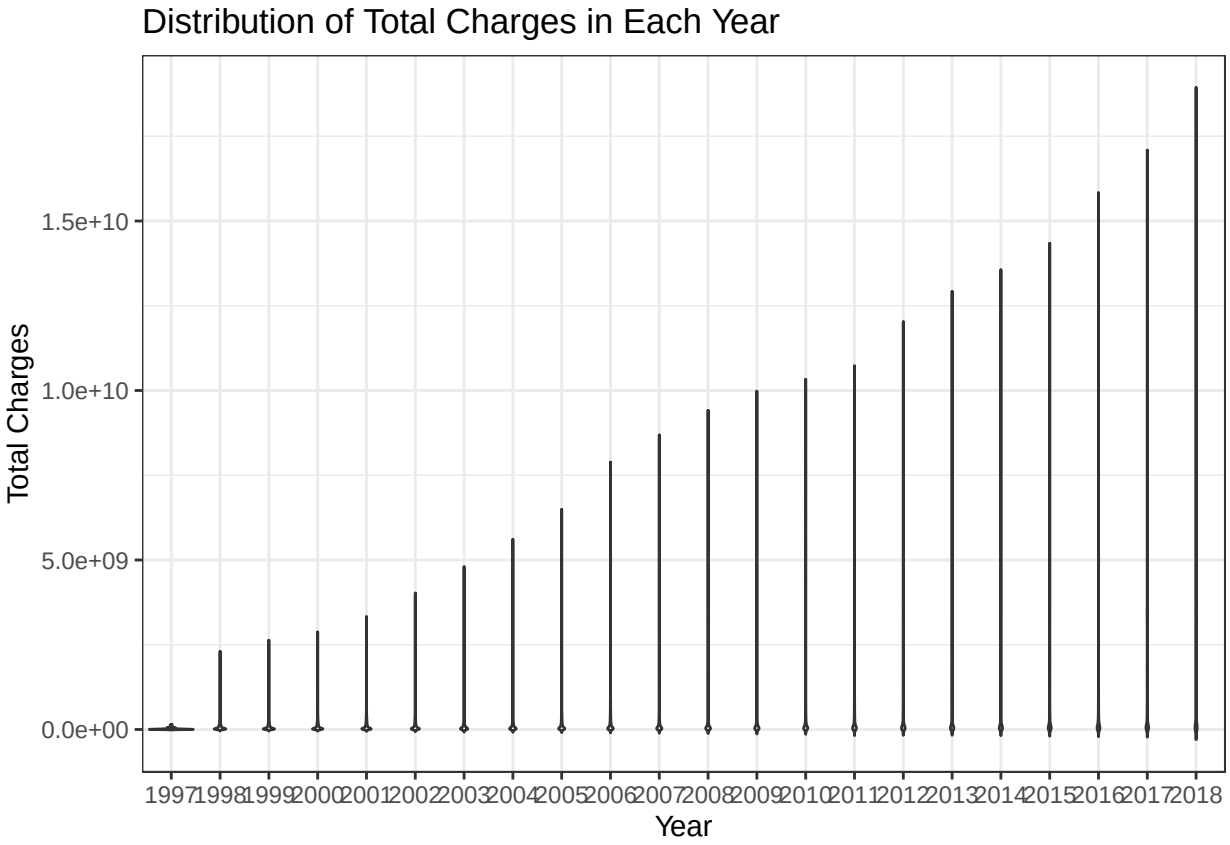
2,114 hospitals filed more than one report in the same year, from 1997 to 2018.

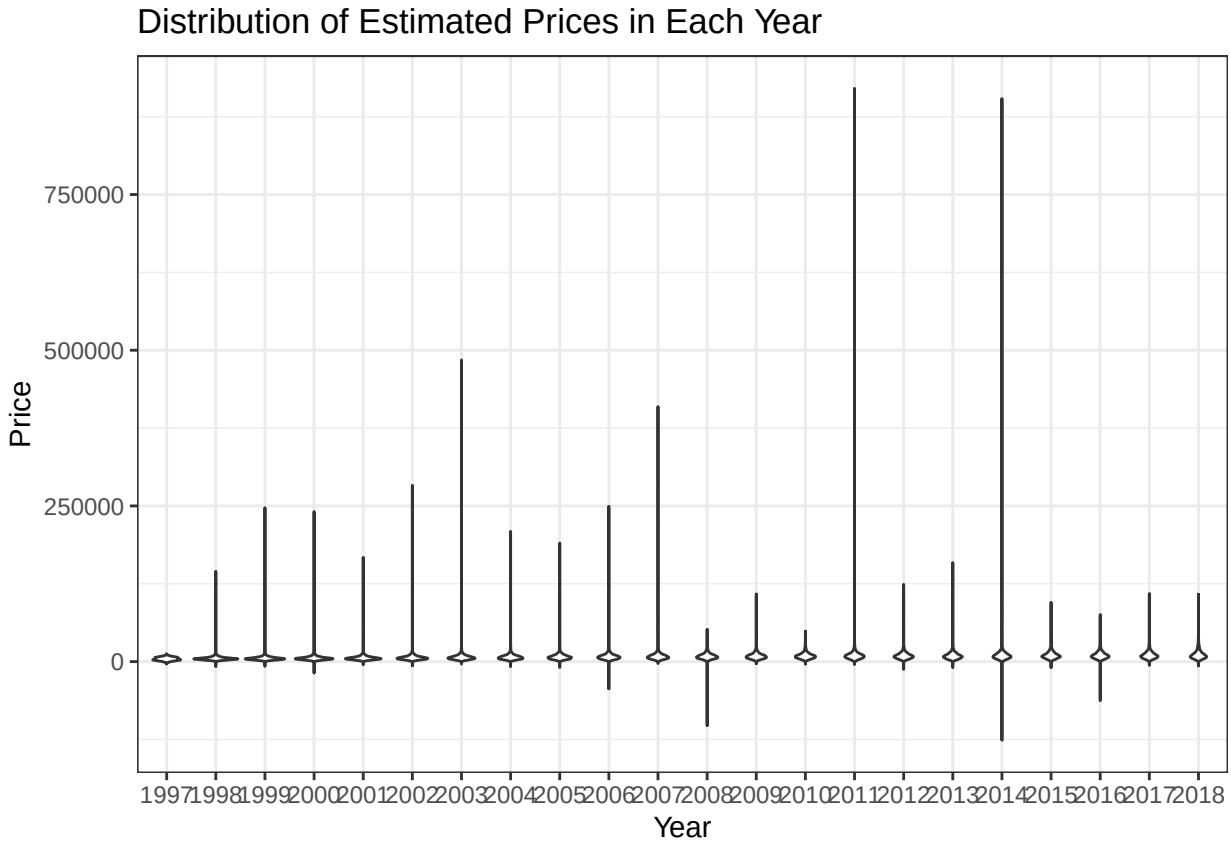


Question 2

The total number of unique hospital IDs in the dataset is 9323.

Question 3


Distribution of Total Charges in Each Year
Total Charges
1.5e+10
1.0e+10
5.0e+09
0.0e+00
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
Year



Question 4

Question 5

```
## # A tibble: 2 x 2
##   penalty  price
##     <dbl>  <dbl>
## 1       0  9752.
## 2       1 10235.
```

Question 6

```
## # A tibble: 8 x 3
## # Groups:   quartile [4]
##   quartile penalty avg_price
##      <int>   <dbl>     <dbl>
## 1        1       0      NaN
## 2        1       1      NaN
## 3        2       0    10032.
## 4        2       1     6680.
## 5        3       0     8004.
## 6        3       1    10079.
## 7        4       0    11076.
## 8        4       1    11264.
```

Question 7

While I understand that parts 1-4 of this question pertain to the slides/lecture, of which I understand the concepts, I could not understand how to code the ATEs and then organize them into a table. I hope to learn more in class Monday. I attempted to use the equations for the inverse variance and Mahalanobis distances, but the code only returned errors.

Question 8

This answer will depend on the answers to Question 7, but I believe the results will return as similar but not identical.

Question 9 Again, this answer will depend on the previous questions' answers, but I predict that we cannot be estimating a causal effect of the penalty, and more of a correlation instead.

Question 10 My experience working with this data set was a lot better than last homework's.I learned how to create a violin plot in R; my previous work with violin plots was very basic ones in Python instead. However, I still wish I could make it a more aesthetically pleasing graph with graphics on density. Question 7 aggravated me a bit as I could not understand how to properly code what to do to answer the question, so there was a knowledge gap of what I wanted to do and what I could.