Banu Boopalan: Module1 Homework

Principles of Data Visualization and Introduction to ggplot2

I have provided you with data about the 5,000 fastest growing companies in the US, as compiled by Inc. magazine. lets read this in:

```
inc <- read.csv("https://raw.githubusercontent.com/charleyferrari/CUNY_DATA_608/master/module1/Data/inc5
```

And lets preview this data:

```
head(inc)
```

```
##   Rank                          Name Growth_Rate   Revenue
## 1    1                          Fuhu      421.48 1.179e+08
## 2    2        FederalConference.com      248.31 4.960e+07
## 3    3                The HCI Group      245.45 2.550e+07
## 4    4                      Bridger      233.08 1.900e+09
## 5    5                       DataXu      213.37 8.700e+07
## 6    6 MileStone Community Builders      179.38 4.570e+07
##                       Industry Employees         City State
## 1 Consumer Products & Services       104   El Segundo    CA
## 2          Government Services        51     Dumfries    VA
## 3                       Health       132 Jacksonville    FL
## 4                       Energy        50      Addison    TX
## 5      Advertising & Marketing       220       Boston    MA
## 6                  Real Estate        63       Austin    TX
```

```
summary(inc)
```

```
##       Rank          Name              Growth_Rate         Revenue
##  Min.   :   1   Length:5001        Min.   :  0.340   Min.   :2.000e+06
##  1st Qu.:1252   Class :character   1st Qu.:  0.770   1st Qu.:5.100e+06
##  Median :2502   Mode  :character   Median :  1.420   Median :1.090e+07
##  Mean   :2502                      Mean   :  4.612   Mean   :4.822e+07
##  3rd Qu.:3751                      3rd Qu.:  3.290   3rd Qu.:2.860e+07
##  Max.   :5000                      Max.   :421.480   Max.   :1.010e+10
##
##    Industry           Employees           City              State
##  Length:5001        Min.   :    1.0   Length:5001        Length:5001
##  Class :character   1st Qu.:   25.0   Class :character   Class :character
##  Mode  :character   Median :   53.0   Mode  :character   Mode  :character
##                     Mean   :  232.7
##                     3rd Qu.:  132.0
##                     Max.   :66803.0
##                     NA's   :12
```

Think a bit on what these summaries mean. Use the space below to add some more relevant non-visual exploratory information you think helps you understand this data:

##Answer tried to understand by summarizing to understand he data.

```
#install.packages("kableExtra")

library(kableExtra)
```

```
## Warning: package 'kableExtra' was built under R version 4.1.3
```

```
library(dplyr)
```

```
##
## Attaching package: 'dplyr'

## The following object is masked from 'package:kableExtra':
##
##     group_rows

## The following objects are masked from 'package:stats':
##
##     filter, lag

## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
#install.packages("ggthemes")
library(ggthemes)
```

```
## Warning: package 'ggthemes' was built under R version 4.1.3
```

```
str(inc)
```

```
## 'data.frame':    5001 obs. of  8 variables:
##  $ Rank       : int  1 2 3 4 5 6 7 8 9 10 ...
##  $ Name       : chr  "Fuhu" "FederalConference.com" "The HCI Group" "Bridger" ...
##  $ Growth_Rate: num  421 248 245 233 213 ...
##  $ Revenue    : num  1.18e+08 4.96e+07 2.55e+07 1.90e+09 8.70e+07 ...
##  $ Industry   : chr  "Consumer Products & Services" "Government Services" "Health" "Energy" ...
##  $ Employees  : int  104 51 132 50 220 63 27 75 97 15 ...
##  $ City       : chr  "El Segundo" "Dumfries" "Jacksonville" "Addison" ...
##  $ State      : chr  "CA" "VA" "FL" "TX" ...
```

```
library(tidyverse)
```

```
## Warning: package 'tidyverse' was built under R version 4.1.2
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.1 --
```

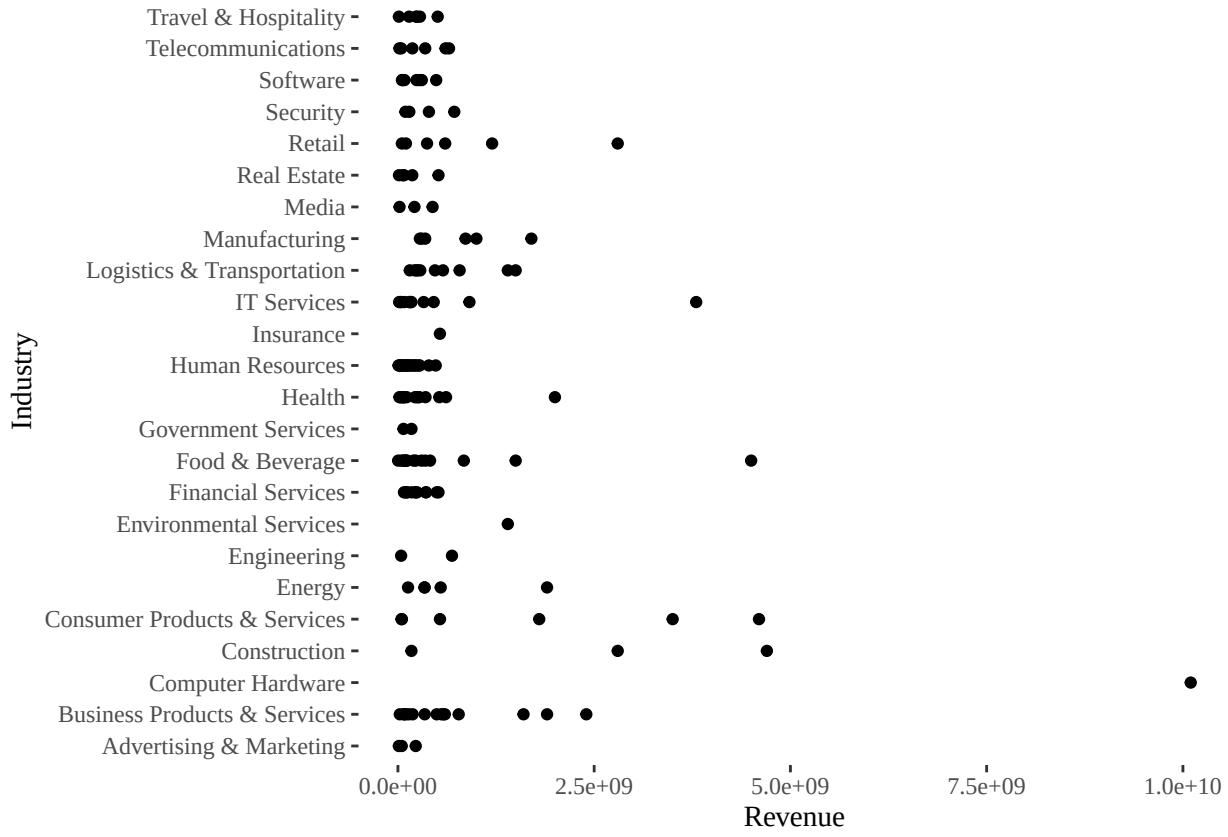
```
## v ggplot2 3.3.5     v purrr   0.3.4
## v tibble  3.1.5     v stringr 1.4.0
## v tidyr   1.1.4     v forcats 0.5.1
## v readr   2.1.1
```

```
## Warning: package 'readr' was built under R version 4.1.2
```

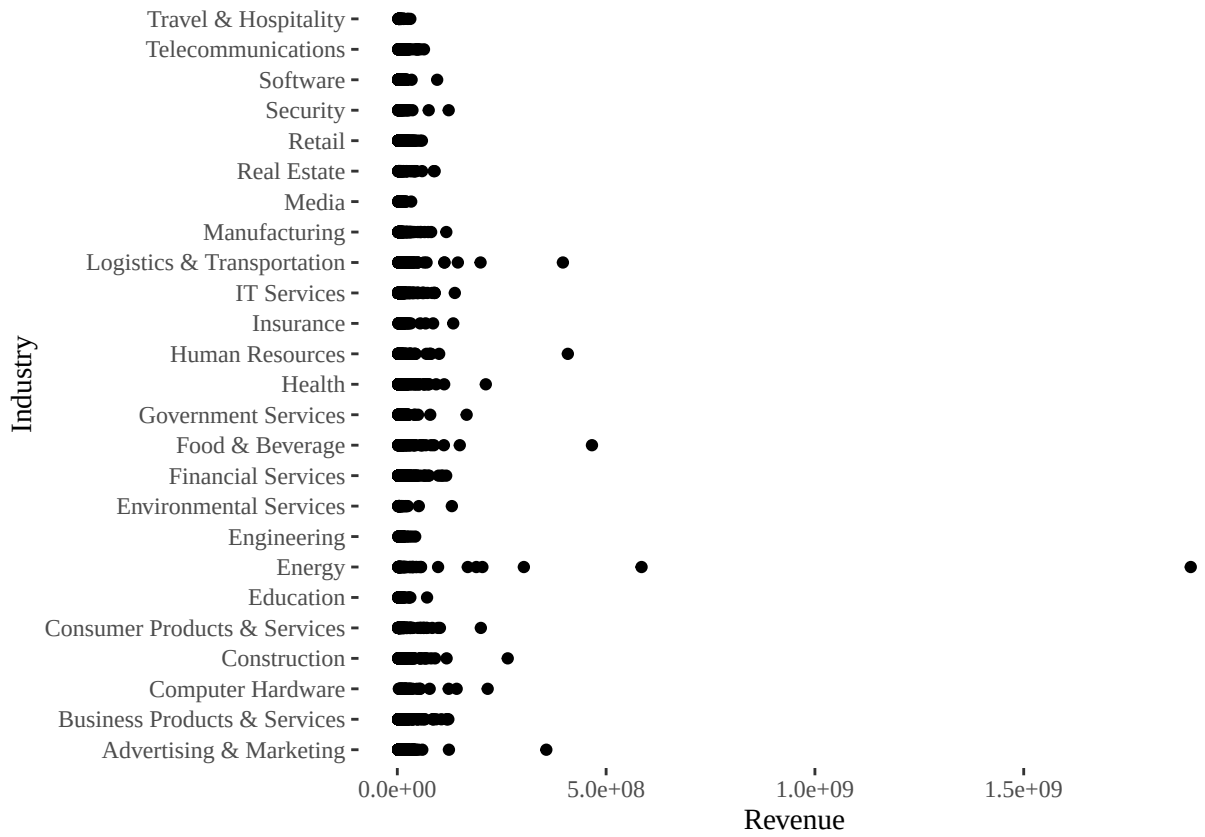
```
## Warning: package 'forcats' was built under R version 4.1.2
```

```
## -- Conflicts ---------------------------------------- tidyverse_conflicts() --
## x dplyr::filter()     masks stats::filter()
## x dplyr::group_rows() masks kableExtra::group_rows()
## x dplyr::lag()        masks stats::lag()
```

```
# Tufe theme. Quick graph showing industries with greater than 1000 employees along with revenue
ggplot(filter(inc,Employees > 1000 ), aes(x = Industry, y = Revenue)) +
  geom_point() +
  labs(x = "Industry", y = "Revenue") +
   theme_tufte() + coord_flip()
```




```
# Tufe theme. Quick graph showing industries with greater than 100 employees along with revenue
ggplot(filter(inc,Employees < 100 ), aes(x = Industry, y = Revenue)) +
  geom_point(fill = "indianred") +
  labs(x = "Industry", y = "Revenue") +
   theme_tufte() + coord_flip()
```




```
#Top 50 records by revenue
revenuetop50 = inc %>% arrange(desc(Revenue)) %>% head(50)
#revenuetop50
revenuetop50$Revenue1 = sapply(revenuetop50$Revenue, function(x) paste(round((x / 1e9), 1), " Billion"))
revenuetop50 %>% kable() %>% kable_styling()
```

```
#print
sample <- revenuetop50 %>% arrange(desc(Revenue)) %>% head(10)

#describe unique value to find unique industries in the sample data
sample
```

```
##    Rank                       Name Growth_Rate  Revenue
## 1  4788                        CDW        0.41 1.01e+10
## 2  3853                  ABC Supply        0.73 4.70e+09
## 3  4936                       Coty        0.36 4.60e+09
## 4  4997                  Dot Foods        0.34 4.50e+09
## 5  4716               Westcon Group        0.44 3.80e+09
## 6  4246 American Tire Distributors        0.59 3.50e+09
## 7  4052                    Kum & Go        0.65 2.80e+09
## 8  4802               Boise Cascade        0.41 2.80e+09
## 9  1397          EnvisionRxOptions        2.88 2.70e+09
## 10 2522                  DLA Piper        1.41 2.40e+09
##                       Industry Employees            City State      Revenue1
## 1             Computer Hardware      6800    Vernon Hills    IL 10.1  Billion
```

Rank	Name	Growth_Rate	Revenue	Industry	Employees
4788	CDW	0.41	1.010e+10	Computer Hardware	6800
3853	ABC Supply	0.73	4.700e+09	Construction	6549
4936	Coty	0.36	4.600e+09	Consumer Products & Services	10000
4997	Dot Foods	0.34	4.500e+09	Food & Beverage	3919
4716	Westcon Group	0.44	3.800e+09	IT Services	3000
4246	American Tire Distributors	0.59	3.500e+09	Consumer Products & Services	3341
4052	Kum & Go	0.65	2.800e+09	Retail	4589
4802	Boise Cascade	0.41	2.800e+09	Construction	4470
1397	EnvisionRxOptions	2.88	2.700e+09	Health	625
2522	DLA Piper	1.41	2.400e+09	Business Products & Services	4036
4629	Prime Therapeutics	0.47	2.000e+09	Health	2549
4	Bridger	233.08	1.900e+09	Energy	50
1843	Sun Coast Resources	2.08	1.900e+09	Energy	1640
3844	Atlas Oil Company	0.74	1.900e+09	Logistics & Transportation	374
4961	Kirkland & Ellis	0.36	1.900e+09	Business Products & Services	1517
1488	Sprouts Farmers Market	2.68	1.800e+09	Consumer Products & Services	13200
4689	Global Brass and Copper Holdings	0.45	1.700e+09	Manufacturing	1986
3463	Hogan Lovells	0.89	1.600e+09	Business Products & Services	2280
2145	AdvancePierre Foods	1.73	1.500e+09	Food & Beverage	4000
3650	Genco	0.82	1.500e+09	Logistics & Transportation	10800
960	Advanced Disposal	4.51	1.400e+09	Environmental Services	5347
2236	Total Quality Logistics	1.65	1.400e+09	Logistics & Transportation	2116
2496	Carahsoft Technology	1.42	1.400e+09	Government Services	365
3414	Restoration Hardware	0.91	1.200e+09	Retail	2900
1908	Diplomat Specialty Pharmacy	1.99	1.100e+09	Health	761
3734	KSS	0.78	1.000e+09	Manufacturing	8500
3425	Blackhawk Network Holdings	0.90	9.591e+08	Financial Services	725
1996	Ambit Energy	1.88	9.303e+08	Energy	492
4532	GoDaddy.com	0.49	9.109e+08	IT Services	3369
2958	ImmixGroup	1.15	8.836e+08	IT Services	252
4793	LORD Corporation	0.41	8.615e+08	Manufacturing	2959
3163	Quinn Emanuel	1.03	8.525e+08	Business Products & Services	697
2961	Genesis-ATC	1.15	8.462e+08	Telecommunications	347
1284	Hearthside Food Solutions	3.17	8.396e+08	Food & Beverage	5000
1480	Coyote Logistics	2.70	7.864e+08	Logistics & Transportation	1219
4765	Squire Sanders	0.42	7.745e+08	Business Products & Services	1257
3921	Granite Telecommunications	0.70	7.362e+08	Telecommunications	1000
4854	Arnold & Porter	0.40	7.310e+08	Business Products & Services	748
1869	Universal Services of America	2.04	7.181e+08	Security	20000
2274	Liberty Power	1.61	7.108e+08	Energy	277
4427	Sunshine Minting	0.53	7.061e+08	Manufacturing	280
4459	Belcan	0.52	6.887e+08	Engineering	10000
2806	Goodman Networks	1.23	6.509e+08	Telecommunications	1693
4009	Schumacher Group	0.67	6.130e+08	Health	1945
4815	Perkins Coie	0.40	6.080e+08	Business Products & Services	823
1768	The Cellular Connection	2.17	6.065e+08	Telecommunications	1428
2537	Wayfair.com	1.40	6.020e+08	Retail	1300
4577	Sutherland Global Services	0.48	5.976e+08	Business Products & Services	32000
4093	Advanced BioEnergy	0.64	5.848e+08	Energy	75
4857	AVI-SPL	0.39	5.807e+08	Business Products & Services	1800

```
## 2                  Construction      6549          Beloit    WI  4.7  Billion
## 3  Consumer Products & Services     10000        New York    NY  4.6  Billion
## 4               Food & Beverage      3919    Mt. Sterling    IL  4.5  Billion
## 5                   IT Services      3000       Tarrytown    NY  3.8  Billion
## 6  Consumer Products & Services      3341    Huntersville    NC  3.5  Billion
## 7                        Retail      4589 West Des Moines    IA  2.8  Billion
## 8                  Construction      4470           Boise    ID  2.8  Billion
## 9                        Health       625       Twinsburg    OH  2.7  Billion
## 10 Business Products & Services      4036         Chicago    IL  2.4  Billion
```

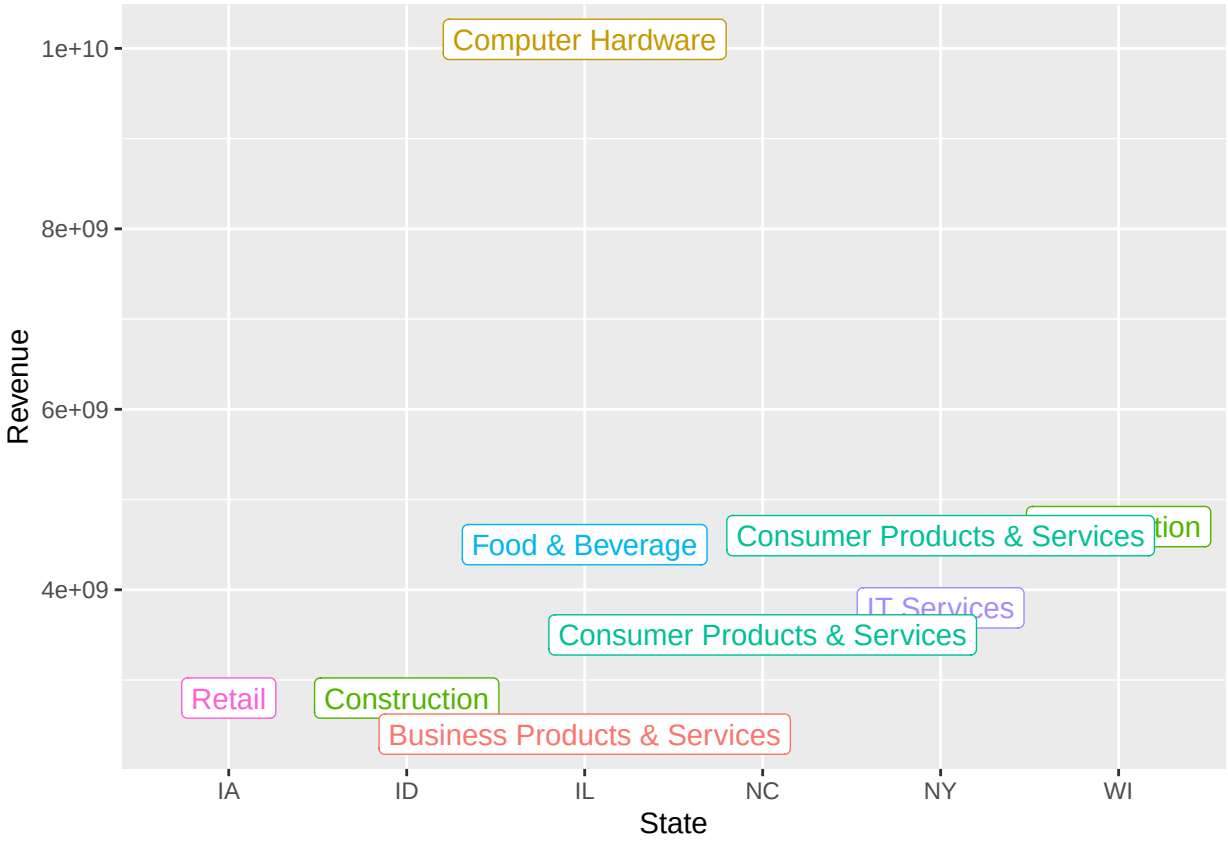
```
unique(inc$Industry)
```

```
##  [1] "Consumer Products & Services" "Government Services"
##  [3] "Health"                       "Energy"
##  [5] "Advertising & Marketing"      "Real Estate"
##  [7] "Financial Services"           "Retail"
##  [9] "Software"                     "Computer Hardware"
## [11] "Logistics & Transportation"   "Food & Beverage"
## [13] "IT Services"                  "Business Products & Services"
## [15] "Education"                    "Construction"
## [17] "Manufacturing"                "Telecommunications"
## [19] "Security"                     "Human Resources"
## [21] "Travel & Hospitality"         "Media"
## [23] "Environmental Services"       "Engineering"
## [25] "Insurance"
```

```
unique(sample$Industry)
```

```
## [1] "Computer Hardware"            "Construction"
## [3] "Consumer Products & Services" "Food & Beverage"
## [5] "IT Services"                  "Retail"
## [7] "Health"                       "Business Products & Services"
```

```
#Plot to show by State, industries with the highest revenue where employees > 1000 from Sample of 50
ggplot(filter(sample, Employees > 1000),aes(x = State, y = Revenue, color = Industry)) +
  geom_point() +
  geom_label(aes(label = Industry)) +
  labs(x = "State", y = "Revenue") +
   theme(legend.position = "none")
```



Question 1

Create a graph that shows the distribution of companies in the dataset by State (ie how many are in each state). There are a lot of States, so consider which axis you should use. This visualization is ultimately going to be consumed on a 'portrait' oriented screen (ie taller than wide), which should further guide your layout choices.

Answer 1

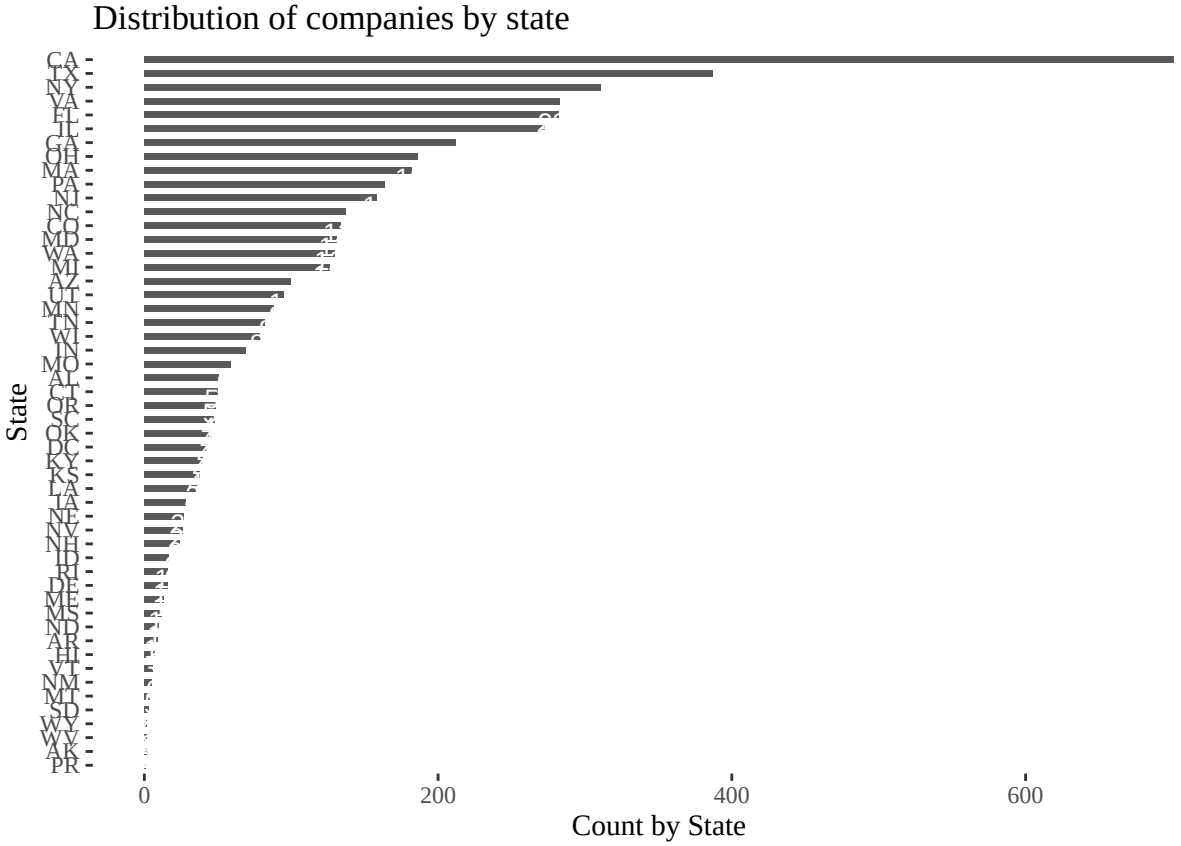
I used ggplot below to show a portrait graph by using coord_flip().Then using Theme_Tufte. Additionally then I tried to plot the numbers on the bar graph and adjusted to size 3 so I can show the numbers on the graph.

```
# Answer Question 1 here

library(ggplot2)
library(tidyverse)
library(dplyr)
library(scales)
```

```
##
## Attaching package: 'scales'
```

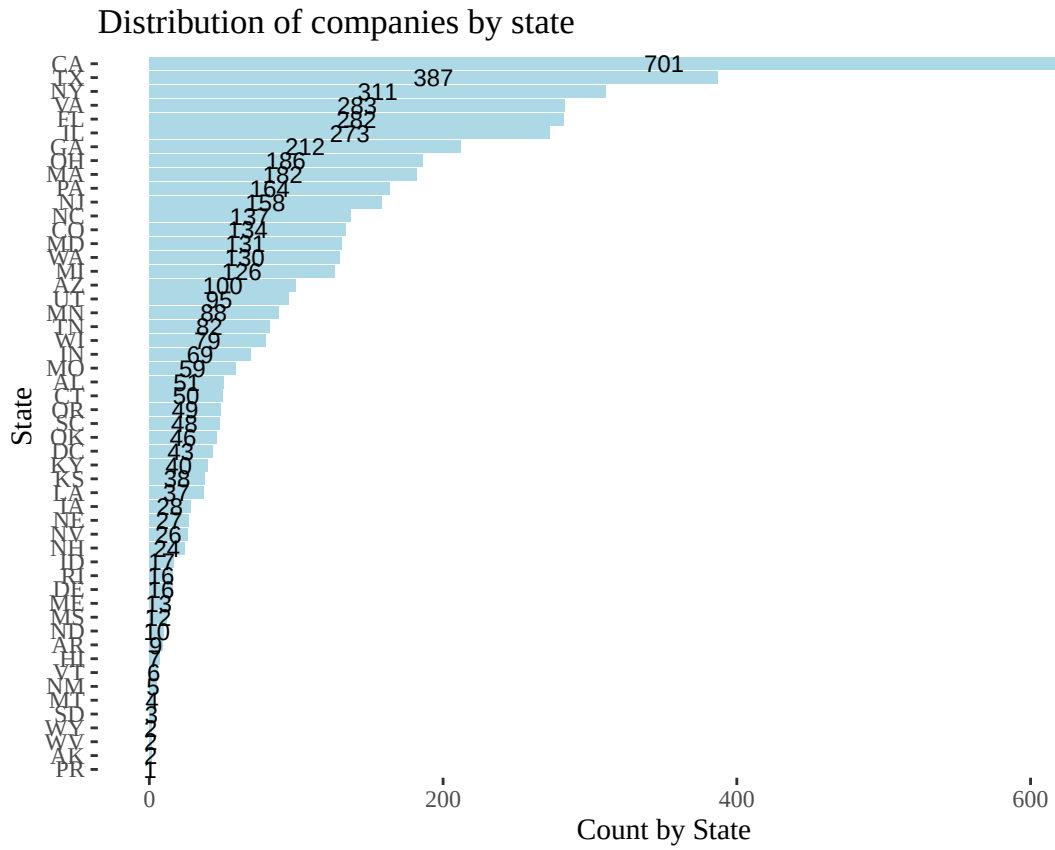
```
## The following object is masked from 'package:purrr':
##
##     discard

## The following object is masked from 'package:readr':
##
##     col_factor
```

```
#graph1
inc %>% count(State) %>%
  ggplot(aes(x=reorder(State, n), y=n)) +
  geom_bar(stat = 'identity',width = 0.5, position = position_dodge(0.8)) +
  geom_text(aes(label=n), vjust=1.6, color="white", size=3.5) +
  coord_flip() +
  theme_tufte() +
  xlab("State") +
  ylab("Count by State") +
  ggtitle("Distribution of companies by state")
```




```
#FINAL GRAPH FOR QUESTION1 : 2graph2 with numbers, and make the color a light blue with blank count of
inc %>% count(State) %>%
  ggplot(aes(x=reorder(State, n), y=n)) +
  geom_bar(stat = 'identity',fill = "light blue", position = "dodge") +
  geom_text(aes(label=n), position = position_stack(vjust= 0.5),
            colour = "black", size = 3) +
```

```
  coord_flip() +
theme_tufte() +
xlab("State") +
ylab("Count by State") +
ggtitle("Distribution of companies by state") + scale_color_brewer(palette = "Pastel1")
```



Question 2

Lets dig in on the state with the 3rd most companies in the data set. Imagine you work for the state and are interested in how many people are employed by companies in different industries. Create a plot that shows the average and/or median employment by industry for companies in this state (only use cases with full data, use R's `complete.cases()` function.) In addition to this, your graph should show how variable the ranges are, and you should deal with outliers.

Answer 2 :

I tried to create a few plots to understand how to show the outlier data using axis transformation for log2 and log10. Also showed triangular on outlier data. User reorder method The "default" method treats its first argument as a categorical variable (Industry), and reorders its levels based on the values of a second variable (Employees), usually numeric

```r
# Answer Question 2 here

#1 Create a plot that shows the average and/or median employment by industry for companies in this stat

# Subset only NY records
NyState <- inc[ which(inc$State == 'NY'), ]
# Remove incomplete records
NyState  <- NyState[complete.cases(NyState ), ]
# show data
head(NyState )
```

```
##    Rank                       Name Growth_Rate  Revenue
## 26   26               BeenVerified       84.43 13700000
## 30   30                   Sailthru       73.22  8100000
## 37   37               YellowHammer       67.40 18000000
## 38   38                  Conductor       67.02  7100000
## 48   48 Cinium Financial Services       53.65  5900000
## 70   70                   33Across       44.99 27900000
##                         Industry Employees      City State
## 26 Consumer Products & Services        17  New York    NY
## 30      Advertising & Marketing        79  New York    NY
## 37      Advertising & Marketing        27  New York    NY
## 38      Advertising & Marketing        89  New York    NY
## 48           Financial Services        32 Rock Hill    NY
## 70      Advertising & Marketing        75  New York    NY
```

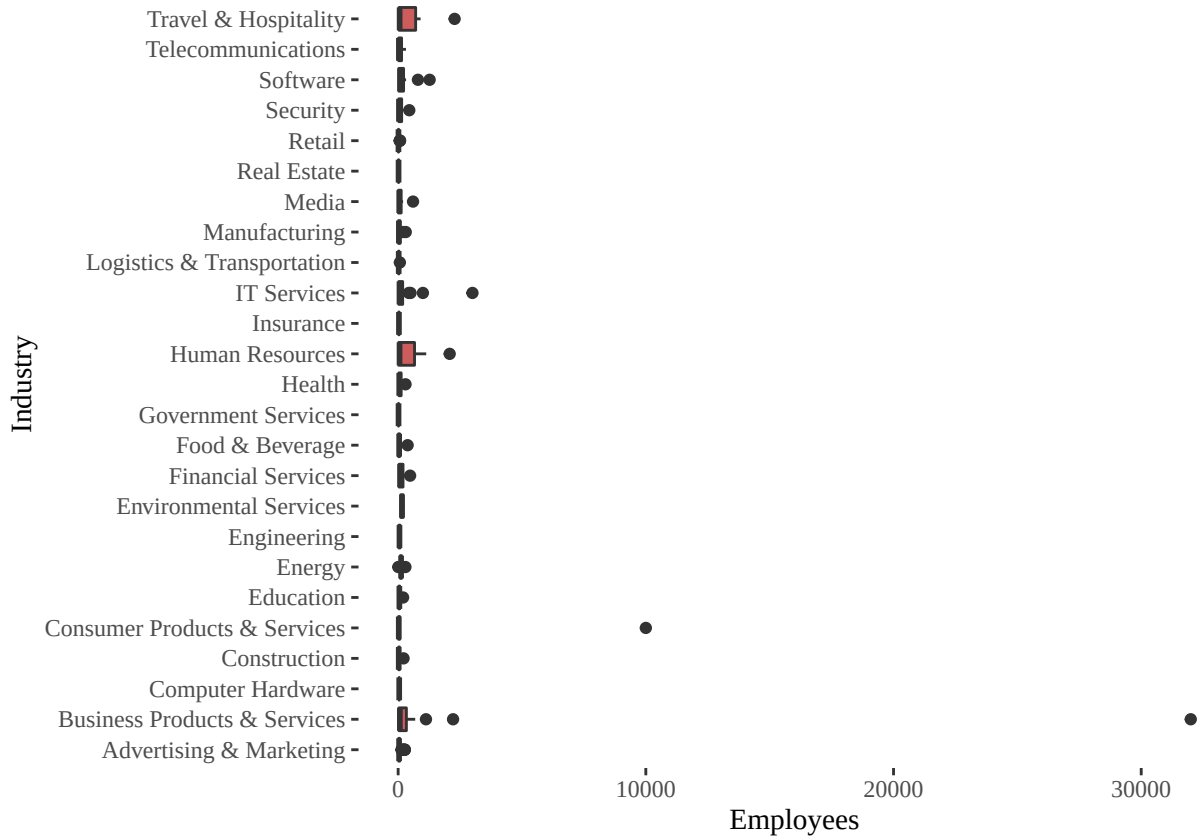
```r
#Find statistics
summary(NyState)
```

```
##       Rank          Name             Growth_Rate        Revenue
##  Min.   :  26   Length:311         Min.   : 0.350   Min.   :2.000e+06
##  1st Qu.:1186   Class :character   1st Qu.: 0.670   1st Qu.:4.300e+06
##  Median :2702   Mode  :character   Median : 1.310   Median :8.800e+06
##  Mean   :2612                      Mean   : 4.371   Mean   :5.872e+07
##  3rd Qu.:4005                      3rd Qu.: 3.580   3rd Qu.:2.570e+07
##  Max.   :4981                      Max.   :84.430   Max.   :4.600e+09
##    Industry           Employees           City              State
##  Length:311         Min.   :    1.0   Length:311         Length:311
##  Class :character   1st Qu.:   21.0   Class :character   Class :character
##  Mode  :character   Median :   45.0   Mode  :character   Mode  :character
##                     Mean   :  271.3
##                     3rd Qu.:  105.5
##                     Max.   :32000.0
```

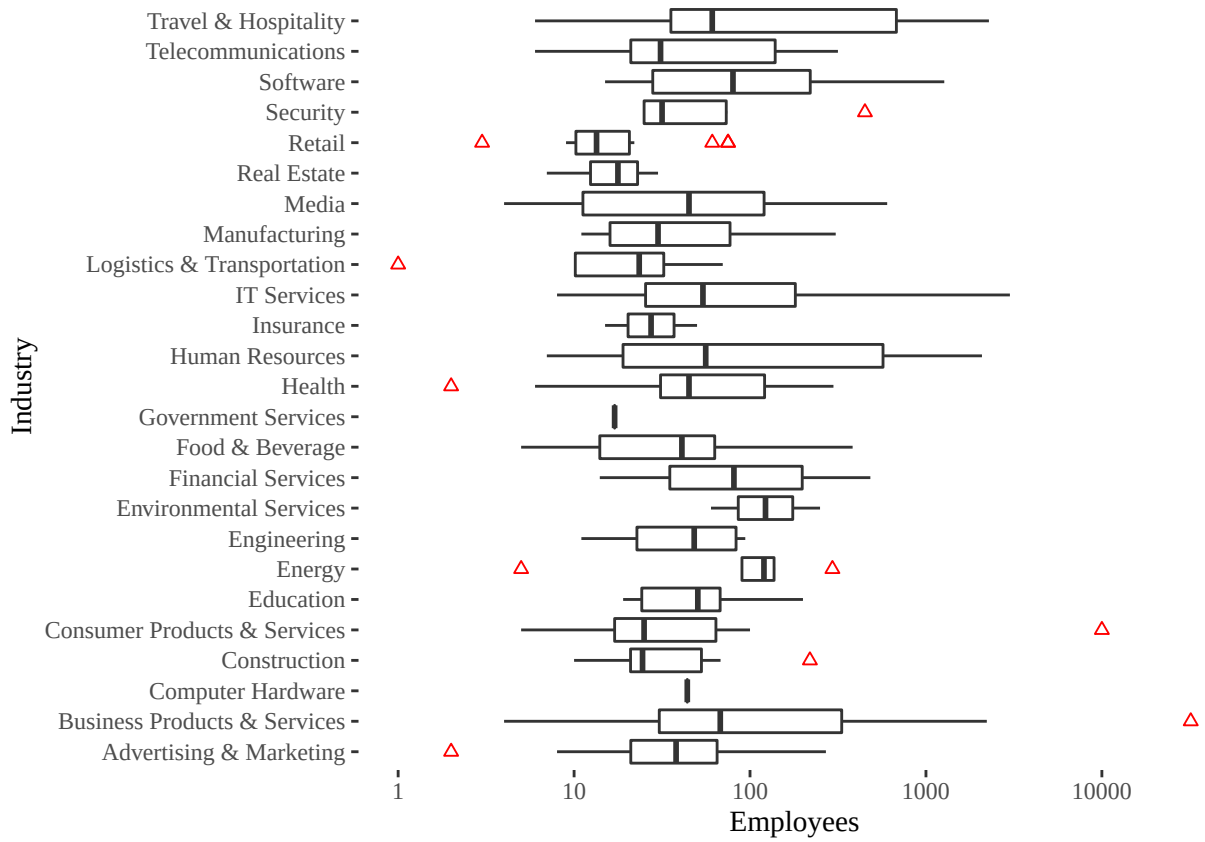
```r
NyState %>% arrange(desc(Employees)) %>% head(50) %>% kable() %>% kable_styling()
```

```r
#quick graph of NY state
ggplot(NyState, aes(x = Industry, y = Employees)) +
  geom_boxplot(fill = "indianred") +
  labs(x = "Industry", y = "Employees") +
   theme_tufte() + coord_flip()
```

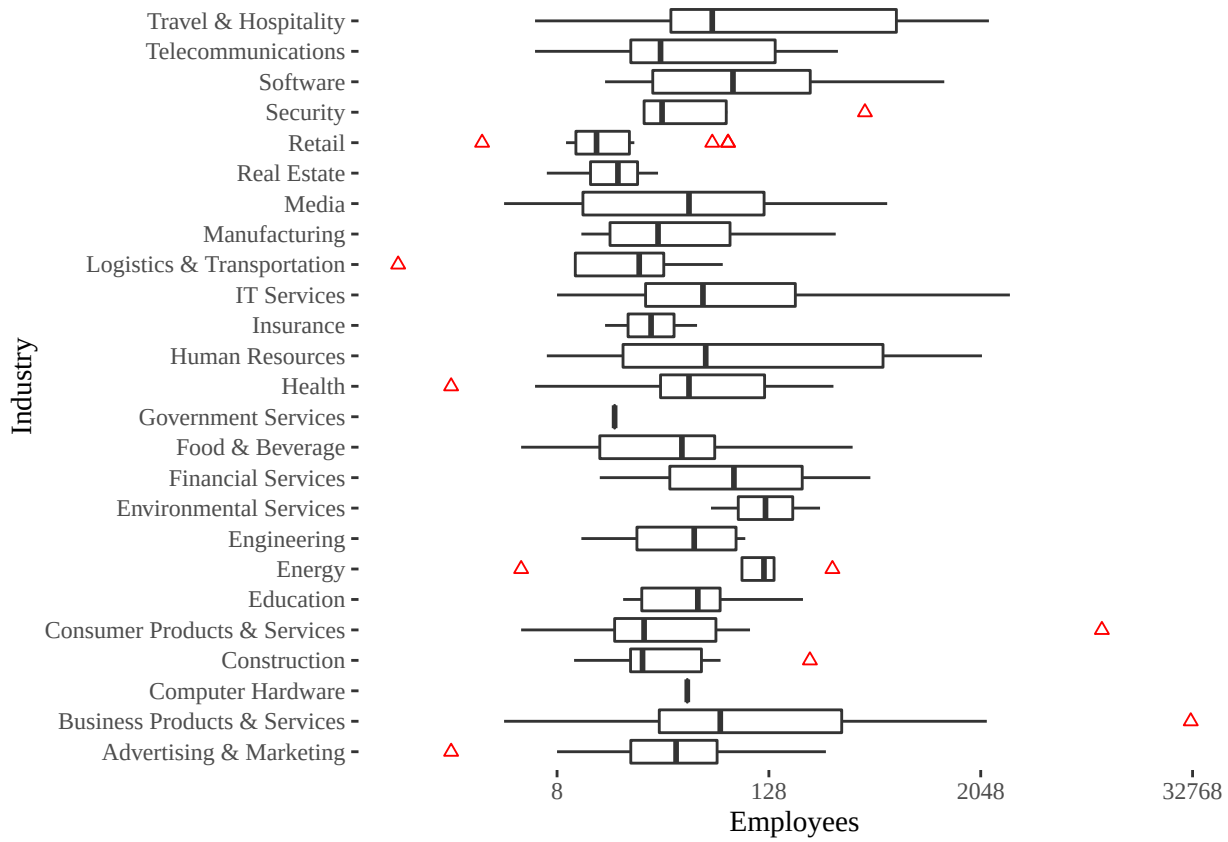
Rank	Name	Growth_Rate	Revenue	Industry
4577	Sutherland Global Services	0.48	5.976e+08	Business Products & Services
4936	Coty	0.36	4.600e+09	Consumer Products & Services
4716	Westcon Group	0.44	3.800e+09	IT Services
3899	Denihan Hospitality Group	0.71	2.808e+08	Travel & Hospitality
4363	TransPerfect	0.55	3.413e+08	Business Products & Services
1499	Sterling Infosystems	2.66	2.149e+08	Human Resources
4465	OpenLink	0.52	3.043e+08	Software
3136	FSO Onsite Outsourcing	1.05	5.530e+07	Human Resources
2830	ReSource Pro	1.22	2.430e+07	Business Products & Services
2995	Pride Technologies	1.13	2.310e+08	Human Resources
3387	Mitchell/Martin	0.92	1.453e+08	IT Services
4747	TravelClick	0.43	2.571e+08	Travel & Hospitality
2964	DataArt	1.14	3.070e+07	Software
4913	Jackson Lewis	0.37	3.520e+08	Business Products & Services
4646	Mimeo.com	0.46	8.770e+07	Business Products & Services
4153	Everyday Health	0.62	1.464e+08	Media
4003	Ovation Travel Group	0.67	5.860e+07	Travel & Hospitality
1640	BlueWolf	2.38	9.040e+07	IT Services
2971	ConServe	1.14	5.270e+07	Financial Services
4727	Arrow Security	0.44	1.400e+07	Security
3584	Infusion	0.84	6.790e+07	IT Services
4535	Capital Access Network	0.49	1.516e+08	Financial Services
4224	Fragomen	0.60	3.465e+08	Business Products & Services
3500	Magnolia Bakery	0.88	2.360e+07	Food & Beverage
1069	Systems Made Simple	3.94	1.671e+08	IT Services
4039	Empire Office	0.66	3.496e+08	Business Products & Services
3704	Infinity Consulting Solutions	0.79	3.570e+07	Human Resources
3021	Linium	1.11	4.590e+07	IT Services
2218	Globo Mobile	1.67	4.500e+06	Software
2896	Telx	1.18	2.143e+08	Telecommunications
4820	Aluf Plastics	0.40	1.029e+08	Manufacturing
2436	Shinetech Software	1.48	1.200e+07	IT Services
3871	eTransMedia Technology	0.72	2.590e+07	Health
4981	SmartSource Computer & Audio Visual Rentals	0.35	5.730e+07	Business Products & Services
1190	Usablenet	3.52	5.900e+07	IT Services
2556	Precision Pipeline Solutions	1.39	3.120e+07	Energy
4944	McElroy Deutsch	0.36	1.165e+08	Business Products & Services
4732	Mycroft	0.43	2.640e+07	IT Services
4552	Paradysz	0.49	4.100e+07	Advertising & Marketing
4738	McMurry/TMG	0.43	9.140e+07	Advertising & Marketing
3009	5Linx Enterprises	1.12	1.036e+08	Telecommunications
1565	Droga5	2.54	6.730e+07	Advertising & Marketing
2997	Fibertech Networks	1.13	1.423e+08	Telecommunications
3661	Environmental Products & Services of Vermont	0.81	4.510e+07	Environmental Services
1895	nfrastructure	2.00	5.320e+07	IT Services
1371	Impelsys	2.94	1.290e+07	Software
3054	DDS Companies	1.09	5.250e+07	Construction
275	Technical Solutions	15.85	1.630e+07	Telecommunications
3262	Sriven Systems	0.98	2.530e+07	IT Services
890	Payoneer	5.00	4.040e+07	Financial Services




```
# Graph to show boxplot with  log10 transformation.
ggplot(NyState, aes(x = Industry, y = Employees)) +
  geom_boxplot(outlier.colour = "Red",
               outlier.shape = 2) + theme_tufte() + coord_flip()+

 scale_y_continuous(trans = "log10")
```

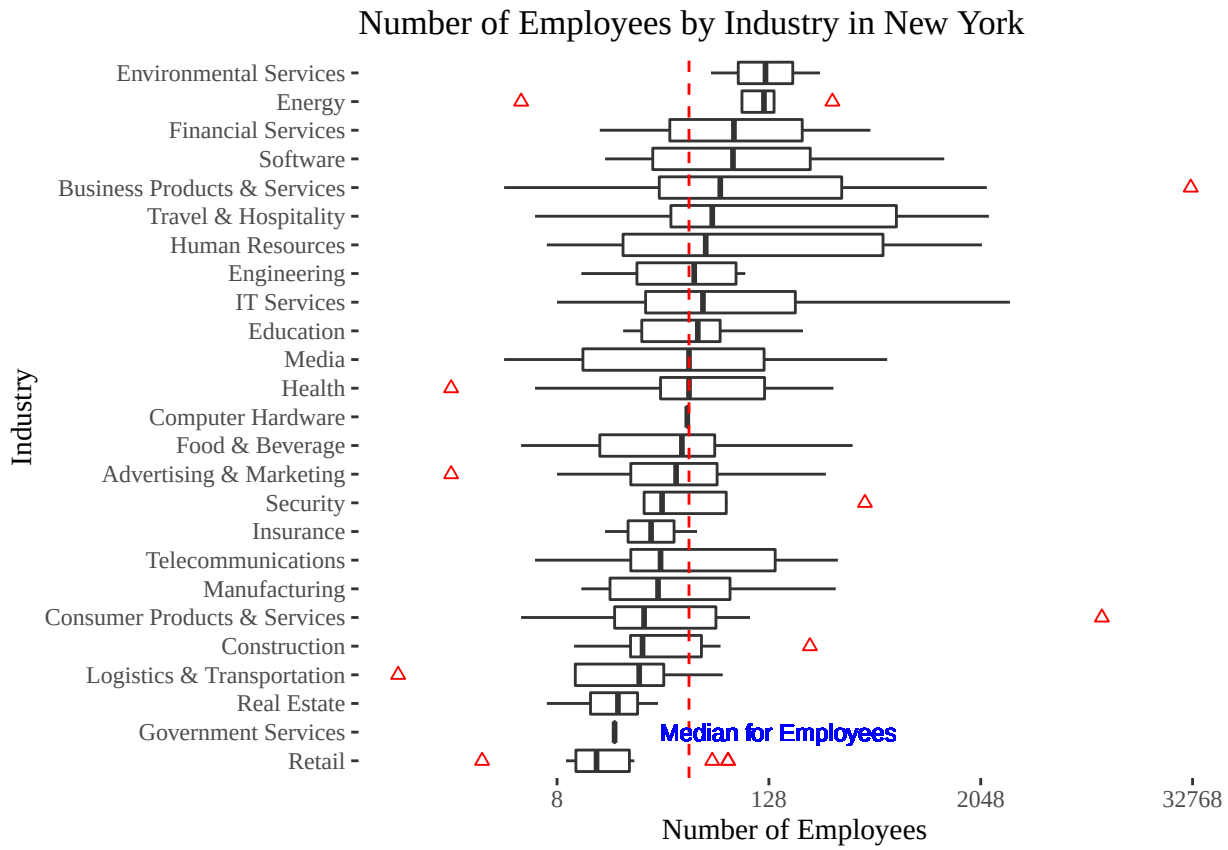



```
#to show boxplot with  log2 transformation.
ggplot(NyState, aes(x = Industry, y = Employees)) +
  geom_boxplot(outlier.colour = "Red",
               outlier.shape = 2) + theme_tufte() + coord_flip() +
scale_y_continuous(trans = "log2")
```




```
#FINAL GRAPH FOR QUESTION2 : Graph to show boxplot with  log2 transformation. Use re-order. Shows Busin
ggplot(NyState, aes(reorder(Industry, Employees, FUN = median), Employees)) +
  geom_boxplot(outlier.colour = "Red",
               outlier.shape = 2) +
 scale_y_continuous(trans = "log2", limits = c(min(NyState$Employees), max(NyState$Employees))) +
  coord_flip() +
  geom_hline(yintercept = median(NyState$Employees),
             color="Red",
             linetype="dashed") +
  geom_text(aes(x=2,
            label="Median for Employees", y = median(NyState$Employees)+100 ),
            size = 3,
            colour="blue") +

  xlab("Industry") +
  ylab("Number of Employees") +
  theme_tufte() +
  ggtitle("Number of Employees by Industry in New York")
```

```
## Warning: Use of `NyState$Employees` is discouraged. Use `Employees` instead.
```



Question 3

Now imagine you work for an investor and want to see which industries generate the most revenue per employee. Create a chart that makes this information clear. Once again, the distribution per industry should be shown.

Answer 3 :

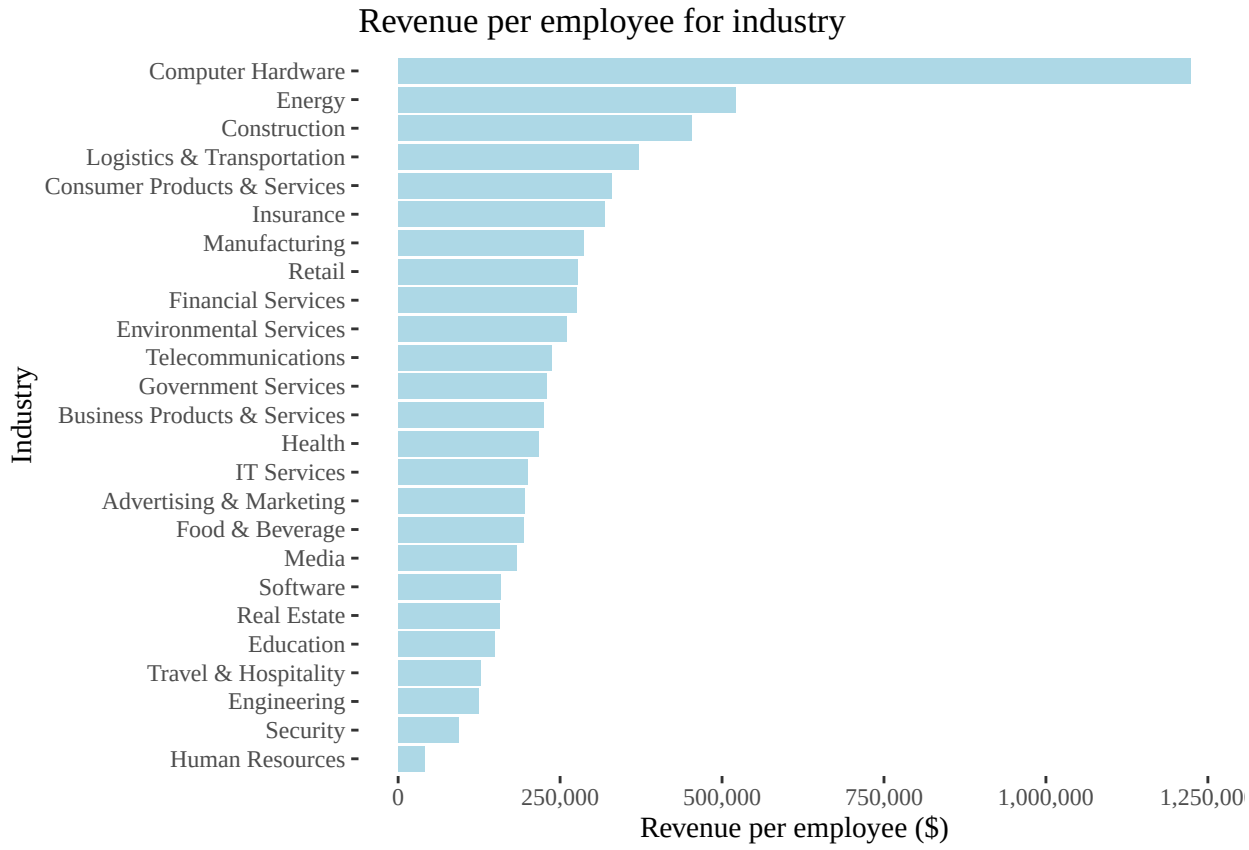
I checked the summary by using table and then colored the graph light blue to keep it more easy to view. Highest revenue is Computer Hardware, which generates revenue and employeers fewer total employees within this industry.

```
inc_nonmissing  <- inc[complete.cases(inc), ]
revemployee <- group_by(inc_nonmissing, Industry) %>% summarise(sum(Revenue),sum(Employees), revperemp =


revemployee %>% arrange(desc(revperemp)) %>% head(50) %>% kable() %>% kable_styling()
```

```
ggplot(revemployee, aes(x=reorder(Industry, revperemp), y=revperemp)) +
  geom_bar(stat = 'Identity',fill = "light blue", position = "dodge") +
   coord_flip() +
  xlab("Industry") +
  ylab("Revenue per employee ($)") +
```

Industry	sum(Revenue)	sum(Employees)	revperemp
Computer Hardware	11885700000	9714	1223563.93
Energy	13771600000	26437	520921.44
Construction	13174300000	29099	452740.64
Logistics & Transportation	14837800000	39994	371000.65
Consumer Products & Services	14956400000	45464	328972.37
Insurance	2337900000	7339	318558.39
Manufacturing	12603600000	43942	286823.54
Retail	10257400000	37068	276718.46
Financial Services	13150900000	47693	275740.67
Environmental Services	2638800000	10155	259852.29
Telecommunications	7287900000	30842	236297.91
Government Services	6009100000	26185	229486.35
Business Products & Services	26345900000	117357	224493.64
Health	17860100000	82430	216669.90
IT Services	20525000000	102788	199682.84
Advertising & Marketing	7785000000	39731	195942.71
Food & Beverage	12812500000	65911	194390.92
Media	1742400000	9532	182794.80
Software	8134600000	51262	158686.75
Real Estate	2956800000	18893	156502.41
Education	1139300000	7685	148249.84
Travel & Hospitality	2931600000	23035	127267.20
Engineering	2532500000	20435	123929.53
Security	3812800000	41059	92861.49
Human Resources	9246100000	226980	40735.31

```
ggtitle("Revenue per employee for industry") +
scale_y_continuous(labels = scales::comma)+
theme_tufte()
```


Revenue per employee for industry
Industry
Computer Hardware
Energy
Construction
Logistics & Transportation
Consumer Products & Services
Insurance
Manufacturing
Retail
Financial Services
Environmental Services
Telecommunications
Government Services
Business Products & Services
Health
IT Services
Advertising & Marketing
Food & Beverage
Media
Software
Real Estate
Education
Travel & Hospitality
Engineering
Security
Human Resources
0
250,000
500,000
750,000
1,000,000
1,250,00
Revenue per employee ($)