EDA

SDLG

2/25/2022

Taking a look at the dataset

```
billionaire.data = read.csv("C:\\Users\\Servando\\Downloads\\archive (34)\\Billionaire.csv")
head(billionaire.data)
```

```
##                        Name NetWorth       Country             Source Rank Age
## 1               Jeff Bezos   $177 B United States             Amazon    1  57
## 2                Elon Musk   $151 B United States      Tesla, SpaceX    2  49
## 3 Bernard Arnault & family   $150 B        France               LVMH    3  72
## 4               Bill Gates   $124 B United States          Microsoft    4  65
## 5          Mark Zuckerberg    $97 B United States           Facebook    5  36
## 6           Warren Buffett    $96 B United States Berkshire Hathaway    6  90
##                Industry
## 1            Technology
## 2            Automotive
## 3      Fashion & Retail
## 4            Technology
## 5            Technology
## 6 Finance & Investments
```

Checking for type errors and fixing them with casting.(Data Cleaning)

```
require("readr")
```

```
## Loading required package: readr
```

```
#Checking types
typeof(billionaire.data$NetWorth)
```

```
## [1] "character"
```

```
typeof(billionaire.data$Age)
```

```
## [1] "character"
```

```
#Changing types to appropiate ones
billionaire.data$NetWorth <- as.numeric(parse_number(billionaire.data$NetWorth))
billionaire.data$Age <- as.numeric(billionaire.data$Age)
```

```
## Warning: NAs introduced by coercion
```

```
#Changing column name
colnames(billionaire.data)[2]<-"Net_Worth_Billions"
#Checking dataframe
head(billionaire.data)
```

```
##                        Name Net_Worth_Billions       Country             Source
## 1                Jeff Bezos                177 United States             Amazon
## 2                 Elon Musk                151 United States      Tesla, SpaceX
## 3 Bernard Arnault & family                150        France               LVMH
## 4                Bill Gates                124 United States          Microsoft
## 5           Mark Zuckerberg                 97 United States           Facebook
## 6            Warren Buffett                 96 United States Berkshire Hathaway
##   Rank Age              Industry
## 1    1  57            Technology
## 2    2  49            Automotive
## 3    3  72      Fashion & Retail
## 4    4  65            Technology
## 5    5  36            Technology
## 6    6  90 Finance & Investments
```

How does the five number summary look like for net worth? What's the standard deviation?

```
summary(billionaire.data$Net_Worth_Billions)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   1.000   1.500   2.300   4.749   4.200 177.000
```

```
sd(na.omit(billionaire.data$Net_Worth_Billions))
```

```
## [1] 9.615358
```

Let's figure out how the distribution looks like.

```
require("ggplot2")
```

```
## Loading required package: ggplot2
```

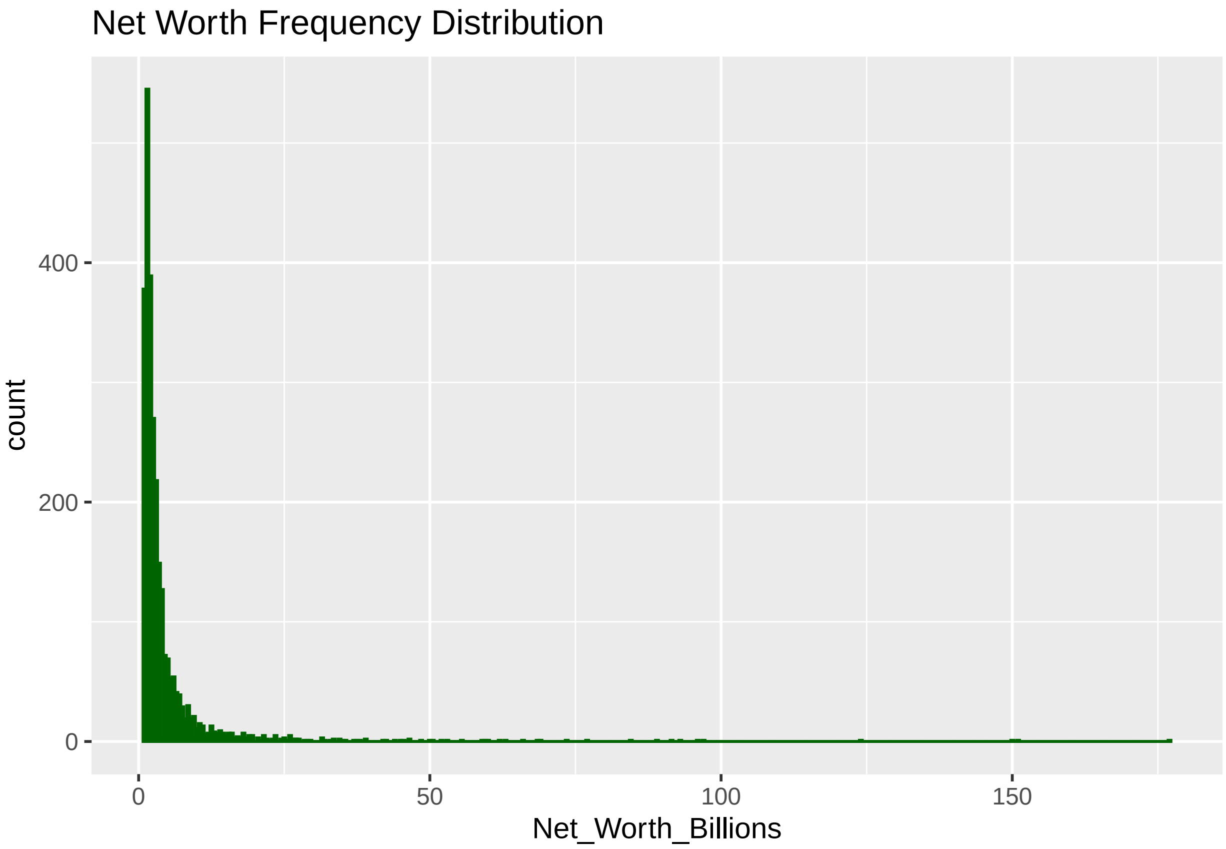
```
require("moments")
```

```
## Loading required package: moments
```

```
Networth_billions <- billionaire.data$Net_Worth_Billions
skewness(billionaire.data$Net_Worth_Billions)
```

```
## [1] 8.671725
```

```
ggplot ( data = billionaire.data)+geom_histogram(mapping = aes(x =Net_Worth_Billions ),binwidth = 0.5,c
```



What’s the number of billionaires per industry?

```
require("dplyr")
```

```
## Loading required package: dplyr
```

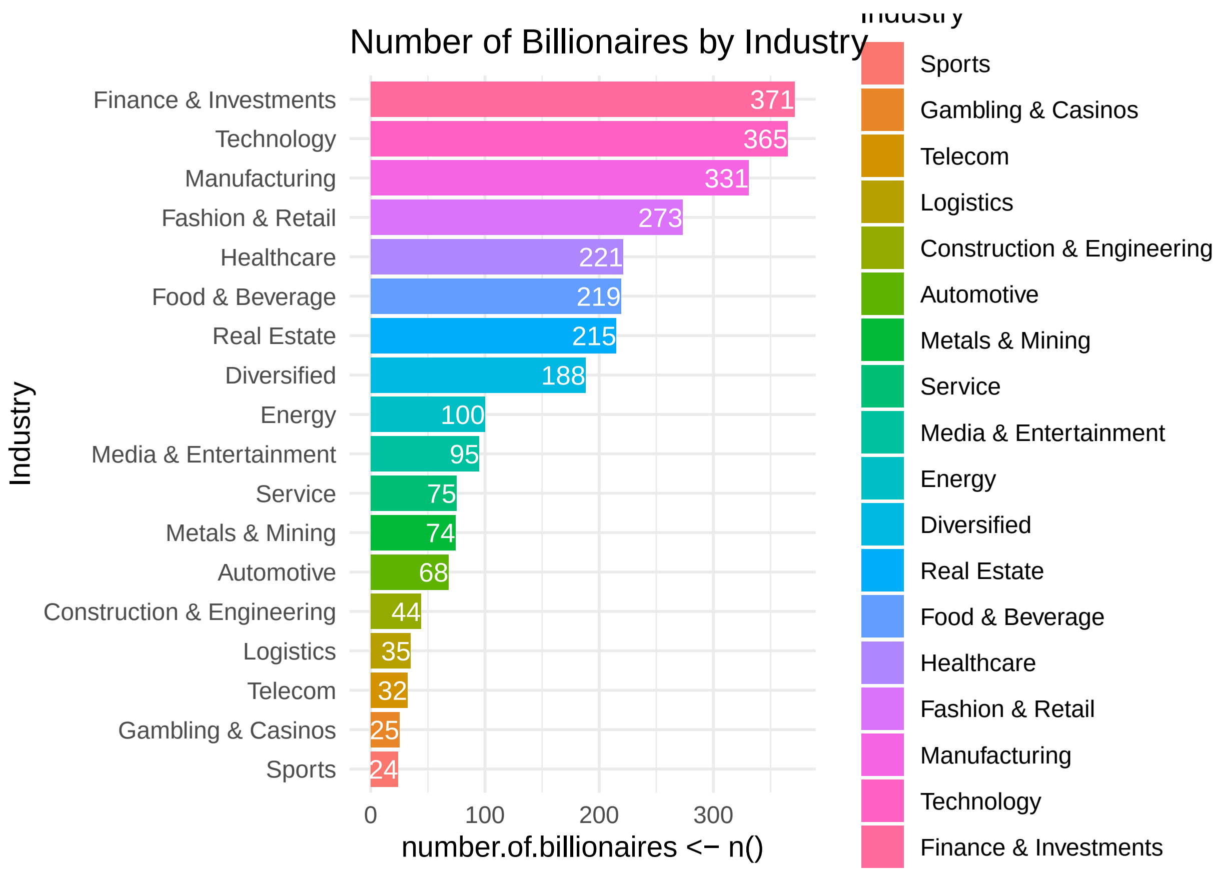
```
##
## Attaching package: 'dplyr'
```

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

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

```
by.industry <- billionaire.data %>%
group_by(Industry) %>%
summarise(number.of.billionaires <- n()
)
```

```
by.industry$Industry<- factor(by.industry$Industry,levels = by.industry$Industry[order(by.industry$`numb
par(mar=c(8,4,4,1))
ggplot(data = by.industry, aes(x = Industry, y =`number.of.billionaires <- n()`, fill = Industry))+ geom
  geom_text(aes(label =`number.of.billionaires <- n()` ), hjust =1 ,color = "white", size = 3.5)+
  theme_minimal()+coord_flip()
```

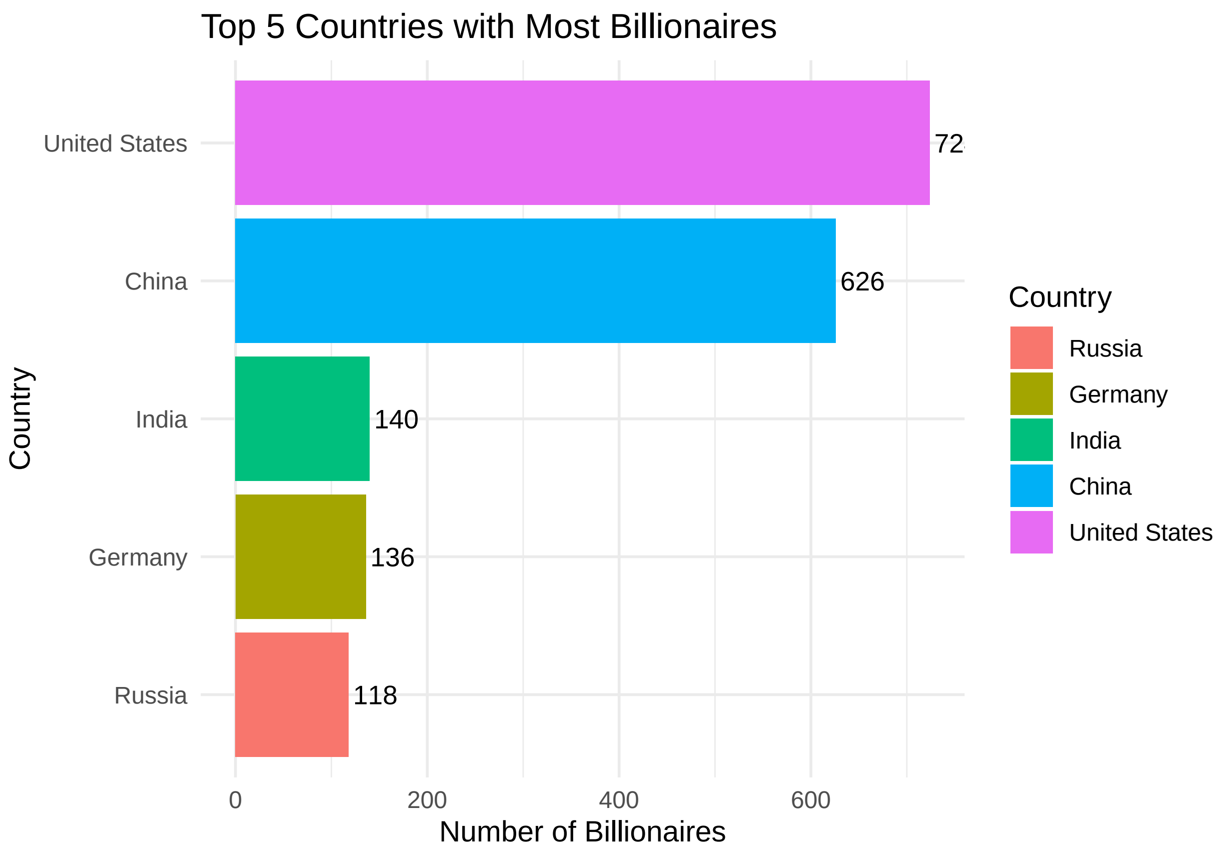


Now, let's break it down by country.

```
by.country <- billionaire.data %>%
group_by(Country) %>%
summarise(number.of.billionaires <- n()
)
by.country <- by.country[order(-by.country$`number.of.billionaires <- n()`),]
colnames(by.country)[2]<-"Number of Billionaires"
top<- top_n(by.country,5)
```

```
## Selecting by Number of Billionaires
```

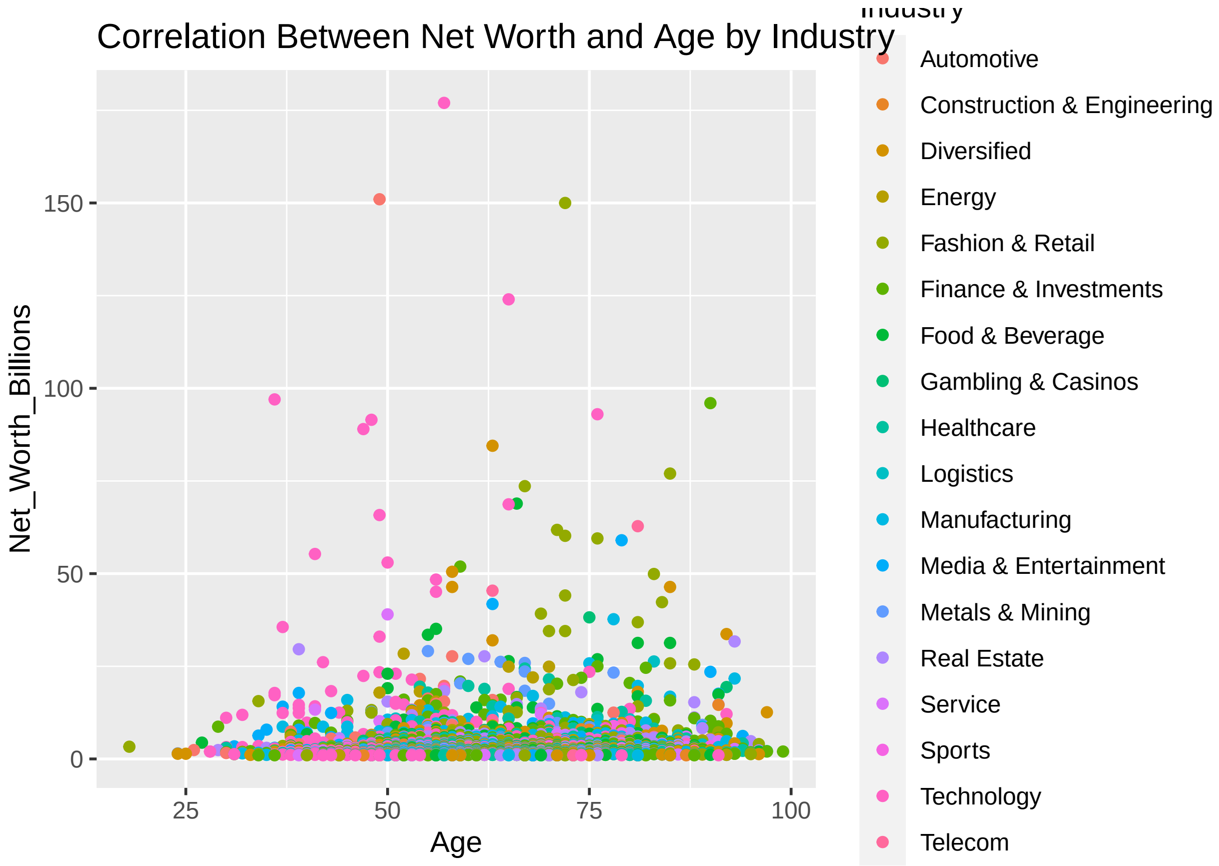
```
top$Country<- factor(top$Country,levels = top$Country[order(top$`Number of Billionaires`)])

ggplot(data = top, aes(x = Country, y =`Number of Billionaires`,fill = Country ))+
  geom_bar(stat = "identity")+ coord_flip() +ggtitle("Top 5 Countries with Most Billionaires") +
  geom_text(aes(label = `Number of Billionaires`), hjust = -.1 , size = 3.5)+
  theme_minimal()
```



Let's check for a correlation between age and NetWorth.

```r
require("ggplot2")
par(mar=c(10,6,6,1))
ggplot(billionaire.data) + geom_point(mapping = aes(x = Age , y = Net_Worth_Billions ,color=Industry))+
  ggtitle("Correlation Between Net Worth and Age by Industry")
```

```
## Warning: Removed 79 rows containing missing values (geom_point).
```



Let's look at the five number summary of the billionaires' age.

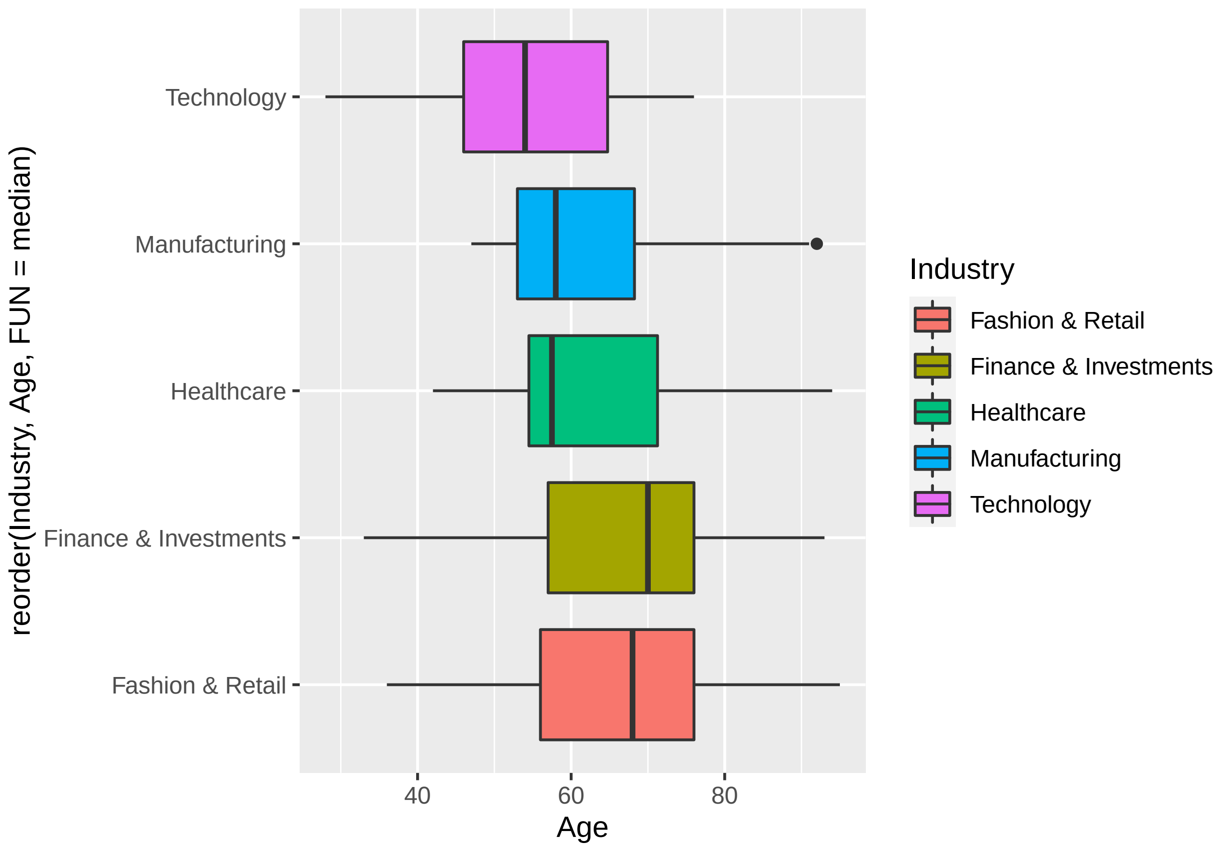
```
summary(billionaire.data$Age)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.    NA's
##   18.00   54.00   63.00   63.11   73.00   99.00      79
```

Now, Let's compare the age of billionaires of the 5 industries with most billionaires

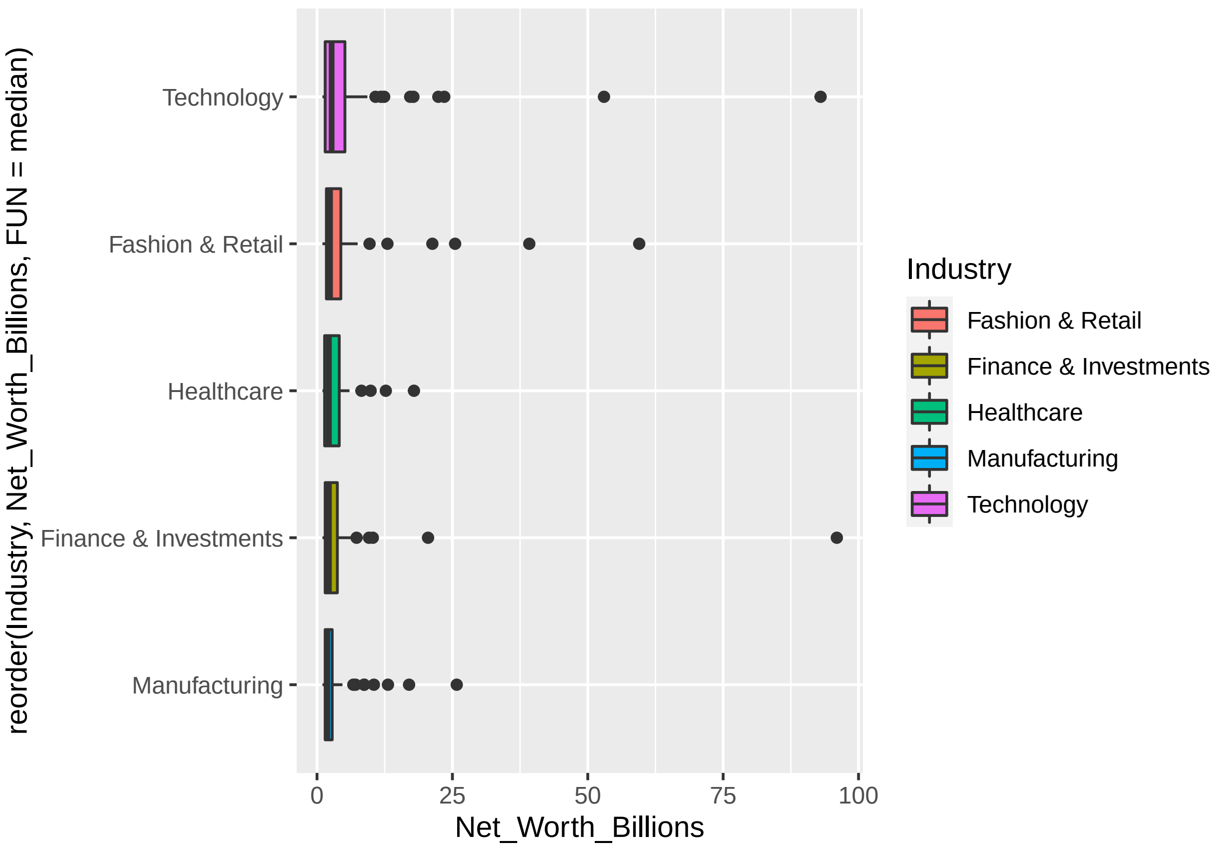
```
five.industries <- billionaire.data %>% filter(Industry == c("Finance & Investments","Technology","Manu

agesplot <- ggplot(data = five.industries , mapping = aes(x=reorder(Industry,Age,FUN=median), y = Age, 
  geom_boxplot() +
  coord_flip()

agesplot
```

```
## Warning: Removed 6 rows containing non-finite values (stat_boxplot).
```



Now, let's see how that comparison it's like for net worth

```
ggplot(data = five.industries , mapping = aes(x=reorder(Industry,Net_Worth_Billions,FUN=median), y = Net
  geom_boxplot() +
  coord_flip()
```


reorder(Industry, Net_Worth_Billions, FUN = median)
Technology
Fashion & Retail
Healthcare
Finance & Investments
Manufacturing
0
25
50
75
100
Net_Worth_Billions
Industry
Fashion & Retail
Finance & Investments
Healthcare
Manufacturing
Technology