Wrangling DJIA data

1) reading the data

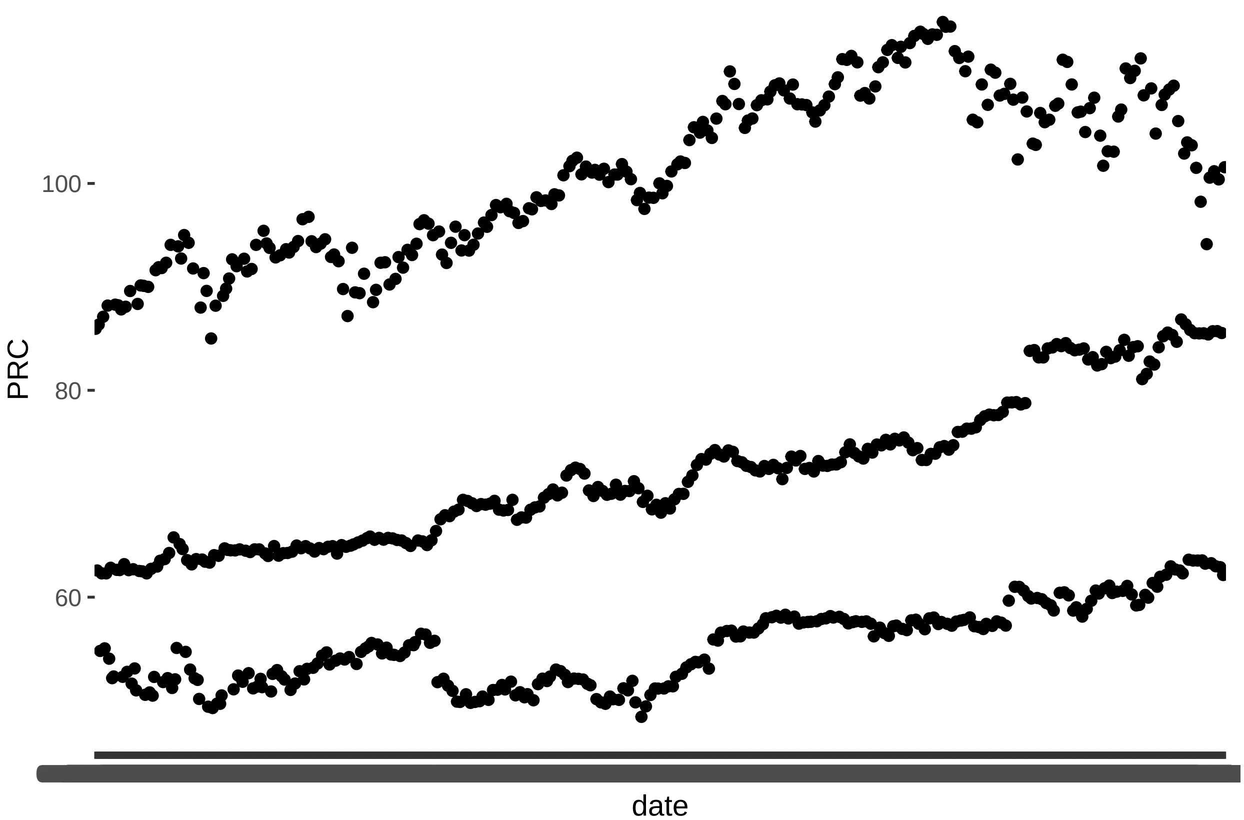
```
DJIA_2015_Present <- read.csv("/Users/dillonjacob/Desktop/Zach and Dillon Thesis/Dillon-and-Zach-Thesis/
```

2) isolating microsoft returns

```
library(tidyverse)
```

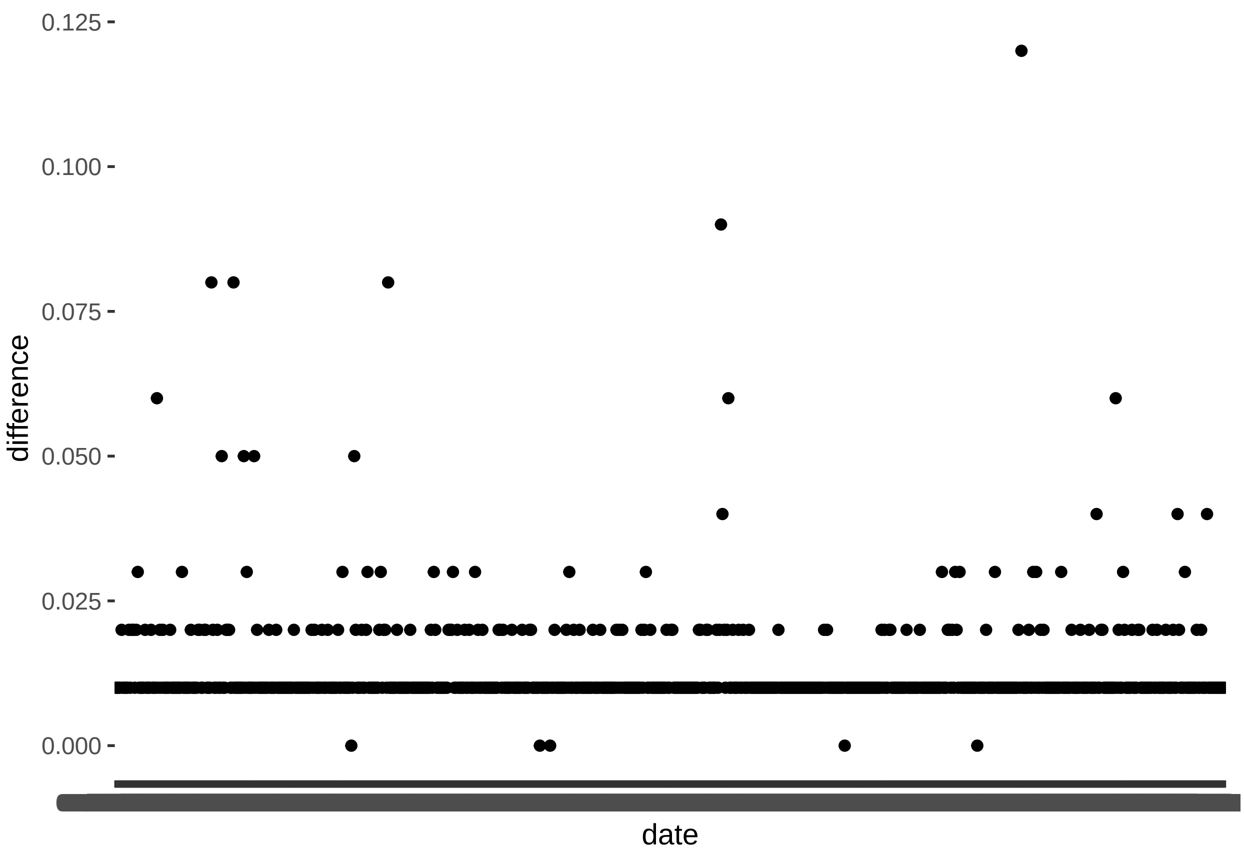
```
## -- Attaching packages ---------------------------------------------------------------------------------

## v ggplot2 3.2.0     v purrr   0.3.2
## v tibble  2.1.3     v dplyr   0.8.1
## v tidyr   0.8.3     v stringr 1.4.0
## v readr   1.3.1     v forcats 0.4.0

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

```
MSFT_Data <- DJIA_2015_Present %>%
  filter(TSYMBOL == "MSFT")


ggplot(MSFT_Data) + geom_point(mapping = aes(date, PRC))
```



3) calculating and plotting bid ask spreads

```
library(tidyverse)
bid_ask <- MSFT_Data %>%
  mutate(difference = ASK - BID)


ggplot(bid_ask) + geom_point(mapping = aes(date,difference))
```




```
mean(bid_ask$difference)
```

```
## [1] 0.01310345
```