DATA 607 Assignment 3B

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2025-09-14

Overview

This report loads and analyzes daily stock prices from Microsoft, Apple, Nvidia, and Google. The goal is to calculate the year-to-date average for each stock in 2025 and a six-day moving average.

```
# Loading stock prices from Microsoft, Apple, Nudia, and Google
stocks <- tq_get(c("MSFT", "AAPL", "NVDA", "GOOGL"),
                 from = "2020-01-01",
                 to = Sys.Date(),
                 get = "stock.prices")
head(stocks)
```

```
## # A tibble: 6 x 8
##   symbol date        open  high   low close   volume adjusted
##   <chr>  <date>     <dbl> <dbl> <dbl> <dbl>    <dbl>    <dbl>
## 1 MSFT   2020-01-02  159.  161.  158.  161. 22622100     153.
## 2 MSFT   2020-01-03  158.  160.  158.  159. 21116200     151.
## 3 MSFT   2020-01-06  157.  159.  157.  159. 20813700     151.
## 4 MSFT   2020-01-07  159.  160.  157.  158. 21634100     150.
## 5 MSFT   2020-01-08  159.  161.  158.  160. 27746500     152.
## 6 MSFT   2020-01-09  162.  162.  161.  162. 21385000     154.
```

Year-to-date average

```
year_to_date <- stocks %>%
  filter(year(date) == year(Sys.Date())) %>%
  group_by(symbol) %>%
  summarize(year_to_date_average = mean(adjusted, na.rm = TRUE))

year_to_date
```

```
## # A tibble: 4 x 2
##   symbol year_to_date_average
##   <chr>                 <dbl>
## 1 AAPL                   217.
## 2 GOOGL                  180.
## 3 MSFT                   446.
## 4 NVDA                   140.
```

Six- day moving average for each stock

```
stocks_ma <- stocks %>%
  group_by(symbol) %>%
  arrange(date) %>%
  mutate(six_days_ma = rollmean(adjusted, k = 6, fill = NA, align = "right")) %>%
  select(symbol, date, adjusted, six_days_ma)

stocks_ma %>%
  filter(!is.na(six_days_ma)) %>%
  tail(20)
```

```
## # A tibble: 20 x 4
## # Groups:   symbol [4]
##    symbol date       adjusted six_days_ma
##    <chr>  <date>        <dbl>       <dbl>
##  1 MSFT   2025-09-08     498.        503.
##  2 AAPL   2025-09-08     238.        236.
##  3 NVDA   2025-09-08     168.        170.
##  4 GOOGL  2025-09-08     234.        226.
##  5 MSFT   2025-09-09     498.        502.
##  6 AAPL   2025-09-09     234.        237.
##  7 NVDA   2025-09-09     171.        170.
##  8 GOOGL  2025-09-09     240.        230.
##  9 MSFT   2025-09-10     500.        501.
## 10 AAPL   2025-09-10     227.        236.
## 11 NVDA   2025-09-10     177.        171.
## 12 GOOGL  2025-09-10     239.        235.
## 13 MSFT   2025-09-11     501.        500.
## 14 AAPL   2025-09-11     230.        235.
## 15 NVDA   2025-09-11     177.        172.
## 16 GOOGL  2025-09-11     240.        237.
## 17 MSFT   2025-09-12     510.        500.
## 18 AAPL   2025-09-12     234.        234.
## 19 NVDA   2025-09-12     178.        173.
## 20 GOOGL  2025-09-12     241.        238.
```

Conclusion

We can see that all stocks analyzed have been having a stronger recent performance than the year performance, which tells me the stock market is probably in good shape recently.