# Portfolio Analysis

Religare Enterprises
Vakrangee Software
Petronet LNG
Reliance Industries

Rajat Tomar UID: 229039 Roll no: 28

## **Executive summary**

In this portfolio analysis report, we analyze a four-stock portfolio to demonstrate quantitative techniques for assessing risk and return Using one year of daily Price data, returns were calculated and summary statistics were computed. The goal is to understand the impact of combining several financial assets on portfolio returns and portfolio risk.

In an equally weighted (25%) portfolio, Vakrangee is the most volatile stock with a negative mean daily return of -0.00115. Correlation is not present suggesting it's a good model portfolio with annualized risk free return of 8.5% and annualized risk of 22%. Although the risk is a little high, overall returns are good. While a simple equally weighted approach was used, more advanced optimization techniques could improve the risk-return profile. The results can inform investment decisions, though further research is needed, particularly with more assets.

Thus, the project demonstrated core portfolio analysis techniques and provided evidence to support asset selection and weighting decisions aligned with investor risk return preferences. More complex methods could further improve portfolio construction.

## Introduction

Portfolio Analysis is the process of reviewing or assessing the elements of the entire portfolio of securities or products in a business. The review is done for careful analysis of risk and return. Portfolio analysis conducted at regular intervals helps the investor to make changes in the portfolio allocation and change them according to the changing market and different circumstances. The analysis also helps in proper resource / asset allocation to different elements in the portfolio.

In this analysis we examine a portfolio including four different company stocks by collecting their data of daily stock returns for over a 1-year period from September 2022 to August 2023. The goal is to understand the impact of combining several financial assets on portfolio returns and portfolio risk. We take four stocks of four Companies and analyze their daily return and then Portfolio daily returns. We Calculate Annualized Daily return and try to find an

optimal way to balance it with annualized risk. Summary statistics were computed on the daily returns, including means, medians, standard deviations, and measures of skewness and kurtosis. A variance covariance matrix was produced to assess relationships between the assets' returns. Correlations were visualized in a matrix plot. Assuming equal portfolio weights of 25% in each stock, statistics were calculated for the overall portfolio, including daily and annualized means and standard deviations

#### **ANALYSIS**

## finance\_Portfolio

```
R Markdown
library(moments)
library(stats)
Loading the Data
religare<-read.csv('c:/Users/Rajat/Downloads/RELIGARE.NS.csv')</pre>
vakrange<-read.csv('c:/Users/Rajat/Downloads/VAKRANGEE.NS.csv')</pre>
Petronet<-read.csv("C:/Users/Rajat/Downloads/PETRONET.NS.csv")</pre>
reliance<-read.csv('c:/Users/Rajat/Downloads/RELIANCE.NS.csv')</pre>
reliance
##
             Date
                     0pen
                             High
                                      Low
                                            Close Adj.Close
                                                              Volume
## 1
       2022-09-01 2582.65 2604.95 2550.70 2560.40
                                                             9188434
                                                   2551.387
## 2
       2022-09-02 2560.40 2575.35 2525.70 2530.50
                                                   2521.593
                                                             5999196
## 3
       2022-09-05 2531.00 2581.50 2531.00 2569.80
                                                   2560.754
                                                             5227785
## 4
       2022-09-06 2573.00 2606.00 2572.00 2596.85
                                                   2587.709
                                                             5030172
       2022-09-07 2575.00 2594.90 2570.00 2581.75
                                                   2572.662
## 5
                                                             3455942
## 6
       2022-09-08 2588.25 2598.00 2571.00 2585.40
                                                   2576.299
                                                             3256840
## 7
       2022-09-09 2610.00 2610.00 2564.00 2569.30 2560.256
                                                             3837302
       2022-09-12 2570.55 2612.00 2570.55 2598.05
## 8
                                                   2588.905
                                                             3431445
## 9
       2022-09-13 2618.00 2629.70 2601.00 2619.75
                                                  2610.529
                                                             4102114
      2022-09-14 2575.00 2610.00 2572.75 2588.35
## 10
                                                   2579.239
                                                             4004997
## 11
       2022-09-15 2583.00 2603.55 2556.75 2562.70
                                                   2553.679
                                                             4783723
## 12
      2022-09-16 2543.75 2553.00 2491.00 2499.20
                                                   2490.403
                                                             9330469
## 13
       2022-09-19 2499.20 2522.70 2481.35 2502.45
                                                   2493.641
                                                             3498286
## 14
      2022-09-20 2522.45 2537.70 2494.70 2502.85
                                                   2494.040
                                                             3881882
## 15
       2022-09-21 2496.75 2533.00 2495.00 2509.75
                                                   2500.916
                                                             4249172
## 16
       2022-09-22 2486.00 2503.00 2472.10 2486.10
                                                   2477.349
                                                             4757219
## 17
       2022-09-23 2485.00 2495.95 2436.10 2439.50 2430.913
                                                             4397194
```

```
2022-09-26 2394.05 2417.80 2375.15 2377.35
## 18
                                                    2368.982
                                                               5759298
       2022-09-27 2394.00 2426.00 2360.10 2396.25
## 19
                                                    2387.815
                                                               7455448
##
  20
       2022-09-28 2360.35 2378.00 2327.10 2332.45
                                                    2324.240
                                                               7844140
                                                    2317.115
## 21
       2022-09-29 2360.00 2367.50 2313.00 2325.30
                                                               6771046
##
  22
       2022-09-30 2311.00 2402.00 2311.00 2377.75
                                                    2369.380
                                                               8589908
## 23
       2022-10-03 2391.50 2416.95 2363.00 2369.50
                                                    2361.159
                                                               5470030
##
  24
       2022-10-04 2397.80 2418.00 2390.15 2413.20
                                                    2404.706
                                                               4129893
##
  25
       2022-10-06 2429.00 2450.00 2418.15 2422.10
                                                    2413.574
                                                               6162021
  26
       2022-10-07 2414.65 2443.90 2414.65 2432.35
                                                    2423.788
                                                               3560167
##
##
  27
       2022-10-10 2405.00 2417.60 2388.00 2405.80
                                                    2397.332
                                                               2921076
## 28
       2022-10-11 2414.00 2414.00 2351.10 2357.90
                                                    2349.600
                                                               4252803
       2022-10-12 2352.00 2381.70 2343.10 2375.25
                                                               3422992
##
  29
                                                    2366.889
##
  30
       2022-10-13 2371.40 2394.00 2360.10 2382.80
                                                    2374.413
                                                               3382098
## 31
       2022-10-14 2415.00 2416.35 2369.10 2370.70
                                                    2362.355
                                                               4202459
##
  32
       2022-10-17 2355.00 2414.00 2343.60 2408.75
                                                    2400.271
                                                               7720595
  33
       2022-10-18 2422.00 2463.00 2420.15 2451.25
                                                    2442.622
                                                               5729899
##
  34
       2022-10-19 2454.50 2527.85 2441.70 2493.90
                                                    2485.121
                                                               8882553
##
  35
       2022-10-20 2485.00 2519.00 2485.00 2500.60
                                                    2491.798
                                                               4022919
##
  36
       2022-10-21 2507.70 2516.80 2467.00 2471.60
                                                    2462.900
                                                               3804352
## 37
       2022-10-24 2460.00 2502.50 2455.30 2479.85
                                                    2471.121
                                                               1555270
## 38
       2022-10-25 2499.00 2499.00 2438.00 2441.55
                                                    2432.956
                                                               5645639
##
  39
       2022-10-27 2458.00 2468.45 2432.80 2451.15
                                                    2442.522
                                                               5774775
## 40
       2022-10-28 2465.00 2535.00 2459.45 2526.15
                                                    2517.258
                                                               8126824
## 41
       2022-10-31 2541.00 2560.95 2532.20 2549.60
                                                    2540.625
                                                               5731802
## 42
                                                    2520.945
       2022-11-01 2600.00 2600.00 2508.00 2529.85
                                                               6443999
## 43
       2022-11-02 2532.30 2550.20 2515.00 2545.65
                                                    2536.689
                                                               4145144
## 44
       2022-11-03 2529.85 2559.55 2525.05 2555.15
                                                    2546.156
                                                               3089026
       2022-11-04 2553.90 2600.00 2551.10 2592.75
                                                    2583.624
## 45
                                                               5803737
## 46
       2022-11-07 2591.00 2610.30 2574.00 2606.60
                                                    2597.425
                                                               5440967
## 47
       2022-11-09 2610.30 2621.95 2590.05 2604.00
                                                    2594.834
                                                               5193814
## 48
       2022-11-10 2590.00 2596.55 2563.00 2572.50
                                                    2563.445
                                                               2753420
## 49
       2022-11-11 2600.00 2636.00 2588.00 2631.80
                                                    2622.536
                                                               5681124
##
  50
       2022-11-14 2630.75 2642.00 2605.15 2619.05
                                                    2609.831
                                                               4173395
##
  51
       2022-11-15 2622.30 2626.40 2590.00 2607.30
                                                    2598.122
                                                               3270388
                                                    2583.225
## 52
       2022-11-16 2610.00 2615.95 2581.35 2592.35
                                                               4484007
##
  53
       2022-11-17 2584.95 2613.00 2580.00 2599.05
                                                    2589.901
                                                               3074259
## 54
       2022-11-18 2606.75 2609.00 2571.10 2597.65
                                                    2588.506
                                                               2447425
## 55
       2022-11-21 2588.00 2588.00 2543.10 2550.90
                                                    2541.921
                                                               2949108
## 56
       2022-11-22 2545.00 2568.50 2536.50 2565.05
                                                    2556.021
                                                               3051201
##
  57
       2022-11-23 2575.00 2577.90 2552.25 2557.05
                                                    2548.049
                                                               2959787
##
  58
       2022-11-24 2566.00 2594.00 2548.20 2579.10
                                                    2570.022
                                                               4333225
## 59
       2022-11-25 2589.00 2624.90 2582.10 2617.60
                                                    2608.386
                                                               3391988
## 60
       2022-11-28 2608.90 2721.05 2502.00 2707.55
                                                    2698.020 14549929
       2022-11-29 2703.95 2731.65 2694.00 2712.20
                                                    2702.653
## 61
                                                               5103687
       2022-11-30 2712.50 2745.45 2698.20 2731.35
## 62
                                                    2721.736 12075137
## 63
       2022-12-01 2741.80 2755.00 2716.00 2723.30
                                                    2713.714
                                                               4377696
## 64
       2022-12-02 2730.00 2748.00 2700.60 2722.15
                                                    2712.568
                                                               5348595
       2022-12-05 2712.00 2716.75 2678.00 2682.45
                                                    2673.008
                                                               6843367
## 65
## 66
       2022-12-06 2665.10 2697.00 2661.00 2690.20
                                                    2680.730
                                                               3966243
       2022-12-07 2685.00 2695.00 2642.15 2650.50 2641.170
                                                              3905263
```

```
## 68
       2022-12-08 2660.00 2665.00 2640.10 2649.25 2639.925
                                                             3579858
##
  69
      2022-12-09 2646.00 2660.00 2601.85 2609.10 2599.916
                                                             5840633
##
  70
      2022-12-12 2585.50 2623.00 2585.00 2613.10 2603.902
                                                             4374946
##
  71
      2022-12-13 2613.10 2633.00 2606.70 2625.00 2615.760
                                                             3845839
##
  72
      2022-12-14 2637.65 2638.95 2611.00 2615.50 2606.293
                                                             3354618
  73
##
      2022-12-15 2602.50 2615.00 2571.00 2578.35 2569.274
                                                             4009765
      2022-12-16 2571.00 2618.80 2558.15 2565.60 2556.569
                                                             7308934
  75
##
      2022-12-19 2581.00 2604.00 2566.70 2599.30 2590.150
                                                             3567363
  76
##
      2022-12-20 2583.90 2626.00 2566.00 2621.80 2612.571
                                                             3446291
##
  77
      2022-12-21 2621.00 2633.00 2576.10 2584.50 2575.403
                                                             3935463
## 78
      2022-12-22 2598.00 2604.65 2566.75 2577.80 2568.726
                                                             3438692
  79
      2022-12-23 2563.30 2590.50 2492.25 2502.20
                                                  2493.392
##
                                                             4733657
##
  80
      2022-12-26 2514.75 2542.00 2492.40 2524.05
                                                  2515.165
                                                             2764496
## 81
      2022-12-27 2530.00 2548.80 2515.25 2544.70
                                                 2535.743
                                                             2659749
## 82
      2022-12-28 2538.00 2549.80 2521.50 2544.45 2535.493
                                                             3442509
##
  83
      2022-12-29 2527.00 2548.90 2525.50 2543.30 2534.348
                                                             3198493
## 84
      2022-12-30 2545.10 2577.00 2541.10 2547.20 2538.234
                                                             3364092
## 85
      2023-01-02 2550.00 2579.00 2548.20 2575.90 2566.833
                                                             2453414
##
  86
      2023-01-03 2565.05 2573.00 2547.80 2557.05 2548.049
                                                             3534596
##
  87
      2023-01-04 2557.00 2561.05 2514.00 2518.55 2509.685
                                                             4275746
## 88
      2023-01-05 2523.50 2536.40 2504.00 2514.05 2505.201
                                                             6293519
##
  89
      2023-01-06 2526.65 2547.95 2518.30 2536.90 2527.970
                                                             2930338
##
  90
      2023-01-09 2545.30 2602.00 2543.35 2596.80 2587.659
                                                             4948549
##
  91
      2023-01-10 2606.00 2606.00 2546.00 2558.40 2549.394
                                                             3713755
##
  92
      2023-01-11 2552.50 2558.00 2521.10 2526.15 2517.258
                                                             5311657
## 93
      2023-01-12 2524.85 2532.50 2465.00 2471.60 2462.900
                                                             8163366
## 94
      2023-01-13 2458.40 2472.90 2434.60 2467.60 2458.914
                                                             9515473
## 95
      2023-01-16 2472.70 2479.65 2427.00 2444.10 2435.497
                                                             6287407
## 96
      2023-01-17 2458.00 2483.00 2450.60 2478.80 2470.075
                                                             4961585
      2023-01-18 2473.50 2491.10 2460.35 2474.70 2465.989
## 97
                                                             6206382
      2023-01-19 2472.90 2481.15 2456.65 2472.05 2463.348
                                                             5510333
## 98
      2023-01-20 2475.00 2475.00 2437.25 2442.65 2434.052
                                                             6890325
  100 2023-01-23 2449.00 2466.20 2425.00 2430.30 2421.745
                                                             5055324
## 101 2023-01-24 2440.00 2443.65 2387.35 2415.95 2407.446
                                                             7609558
## 102 2023-01-25 2412.45 2414.70 2380.00 2382.55
                                                  2374.163
                                                             5715684
## 103 2023-01-27 2384.40 2387.35 2311.65 2337.35
                                                  2329.123 11920991
## 104 2023-01-30 2331.70 2371.90 2301.00 2359.75 2351.444 10047822
## 105 2023-01-31 2382.00 2387.65 2341.00 2353.85
                                                  2345.564 10472167
## 106 2023-02-01 2379.95 2379.95 2305.00 2339.90 2331.663
                                                             8929007
## 107 2023-02-02 2318.00 2348.00 2311.00 2326.95 2318.759
                                                             6305317
## 108 2023-02-03 2349.00 2349.00 2293.00 2329.00 2320.802 11398850
## 109 2023-02-06 2315.00 2321.00 2305.80 2311.45 2303.314
                                                             6847679
## 110 2023-02-07 2312.00 2327.40 2293.00 2305.90 2297.783
                                                             6985001
## 111 2023-02-08 2313.00 2359.90 2307.00 2351.95 2343.671
                                                             9765490
## 112 2023-02-09 2353.45 2370.85 2334.00 2356.05 2347.757
                                                             6079228
## 113 2023-02-10 2354.90 2354.90 2321.30 2336.65 2328.425
                                                             4979789
## 114 2023-02-13 2340.20 2350.00 2313.55 2323.35 2315.172
                                                             4777674
## 115 2023-02-14 2329.95 2381.90 2323.65 2378.10 2369.729
                                                            6609564
## 116 2023-02-15 2376.00 2437.20 2373.00 2431.95 2423.389 15461902
## 117 2023-02-16 2449.45 2463.80 2425.05 2430.05 2421.496 7967558
```

```
## 118 2023-02-17 2420.00 2447.50 2410.60 2440.20 2431.610
                                                              5450092
## 119 2023-02-20 2445.00 2449.75 2410.10 2414.40
                                                  2405.901
                                                              4078245
## 120 2023-02-21 2424.00 2446.80 2412.35 2434.10
                                                   2425.532
                                                             6143298
## 121 2023-02-22 2425.95 2430.00 2375.05 2378.90
                                                   2370.526
                                                              5087729
## 122 2023-02-23 2378.00 2394.75 2361.35 2367.50
                                                   2359.166
                                                             4546655
## 123 2023-02-24 2372.00 2396.15 2368.00 2383.70
                                                   2375.309
                                                             4353814
## 124 2023-02-27 2382.00 2389.65 2351.70 2367.85
                                                   2359.515
                                                              5168667
## 125 2023-02-28 2356.10 2367.00 2313.65 2322.55
                                                   2314.375 10150245
## 126 2023-03-01 2344.00 2345.50 2323.25 2343.90
                                                   2335.649
                                                              5330852
## 127 2023-03-02 2337.00 2351.65 2321.60 2326.05
                                                   2317.862
                                                             4307425
## 128 2023-03-03 2349.15 2393.45 2341.55 2385.40
                                                   2377.003
                                                             6758115
## 129 2023-03-06 2400.00 2424.60 2400.00 2408.70
                                                   2400.221
                                                             4694338
## 130 2023-03-08 2408.70 2419.00 2385.00 2417.35
                                                   2408.841
                                                             7283694
## 131 2023-03-09 2416.00 2416.90 2355.10 2359.25
                                                   2350.945
                                                              7492509
## 132 2023-03-10 2341.50 2344.00 2315.05 2322.70
                                                   2314.524
                                                              6153681
## 133 2023-03-13 2329.00 2344.00 2275.00 2284.50
                                                   2276.458
                                                              5894088
## 134 2023-03-14 2280.00 2304.95 2269.05 2275.95
                                                   2267.938
                                                             7396699
## 135 2023-03-15 2284.10 2298.30 2227.40 2237.05
                                                   2229.176 10027725
## 136 2023-03-16 2243.00 2254.00 2202.20 2225.90
                                                   2218.065
                                                             8474595
## 137 2023-03-17 2244.75 2251.95 2212.70 2223.10
                                                   2215.275 15697554
## 138 2023-03-20 2215.00 2220.00 2180.00 2201.25
                                                   2193.501
                                                             9010595
## 139 2023-03-21 2218.95 2274.00 2217.00 2269.70
                                                   2261.711
                                                             9876263
## 140 2023-03-22 2285.00 2291.45 2270.00 2276.60
                                                  2268.586
                                                              5039622
## 141 2023-03-23 2268.00 2269.90 2243.05 2247.80
                                                   2239.888
                                                              7499082
## 142 2023-03-24 2245.25 2250.00 2198.00 2203.30
                                                   2195.544
                                                              5711497
## 143 2023-03-27 2217.50 2254.00 2200.20 2237.55
                                                   2229.674
                                                             6486068
## 144 2023-03-28 2245.00 2256.50 2237.00 2248.00
                                                   2240.087
                                                              5804018
## 145 2023-03-29 2239.00 2244.80 2211.10 2234.70
                                                   2226.834
                                                             8678073
## 146 2023-03-31 2255.00 2343.45 2254.70 2331.05
                                                   2322.845 13001005
## 147 2023-04-03 2345.00 2349.00 2315.00 2331.45
                                                   2323.243
                                                             4750238
## 148 2023-04-05 2348.00 2348.00 2308.55 2325.85
                                                   2317.663
                                                             7505339
## 149 2023-04-06 2318.15 2354.00 2318.15 2341.45
                                                   2333.208
                                                             8507771
## 150 2023-04-10 2350.00 2350.40 2321.55 2324.85
                                                   2316.667
                                                              5981688
## 151 2023-04-11 2334.00 2341.00 2324.05 2336.35
                                                  2328.126
                                                             4865301
## 152 2023-04-12 2336.35 2367.80 2330.05 2346.65
                                                   2338.390
                                                             8389646
## 153 2023-04-13 2353.00 2365.80 2342.00 2355.50
                                                   2347.208
                                                              5712541
## 154 2023-04-17 2424.95 2424.95 2349.05 2367.45
                                                   2359.116
                                                             8274452
## 155 2023-04-18 2377.00 2377.00 2326.00 2340.35
                                                   2332.112
                                                             4802172
## 156 2023-04-19 2339.05 2357.90 2332.20 2352.00
                                                   2343.721
                                                             5664207
## 157 2023-04-20 2354.10 2359.00 2332.10 2346.05
                                                   2337.792
                                                             3233882
## 158 2023-04-21 2350.65 2361.00 2336.40 2349.00
                                                   2340.731
                                                              3529236
## 159 2023-04-24 2375.00 2380.90 2348.00 2358.00
                                                   2349.700
                                                              5970048
## 160 2023-04-25 2366.00 2380.60 2350.50 2376.05
                                                   2367.686
                                                              4262471
## 161 2023-04-26 2379.00 2386.10 2354.05 2362.10
                                                   2353.785
                                                              3977129
## 162 2023-04-27 2375.00 2384.00 2364.00 2377.05
                                                             4230627
                                                   2368.683
## 163 2023-04-28 2382.00 2423.90 2381.75 2420.50
                                                   2411.980
                                                             7183342
## 164 2023-05-02 2436.20 2445.80 2428.10 2441.05
                                                   2432.458
                                                              5991101
## 165 2023-05-03 2445.00 2445.00 2413.05 2420.10
                                                  2411.581
                                                             3259053
## 166 2023-05-04 2421.15 2452.85 2414.60 2448.00 2439.383
                                                              3985159
## 167 2023-05-05 2441.00 2461.35 2436.00 2441.75 2433.155
                                                             4036548
```

```
## 168 2023-05-08 2450.00 2483.65 2444.15 2471.90
                                                   2463.199
                                                              4224469
## 169 2023-05-09 2475.00 2486.80 2463.25 2479.55
                                                  2470.822
                                                              2983468
## 170 2023-05-10 2490.00 2499.85 2481.20 2496.60
                                                   2487.812
                                                              5017544
## 171 2023-05-11 2498.95 2509.50 2476.55 2480.30
                                                   2471.569
                                                              4872451
## 172 2023-05-12 2469.80 2487.40 2456.50 2484.35
                                                    2475.605
                                                              3209889
## 173 2023-05-15 2489.90 2504.55 2473.15 2489.25
                                                    2480.488
                                                              3153587
## 174 2023-05-16 2494.00 2499.60 2450.15 2453.80
                                                    2445.163
                                                              4023000
## 175 2023-05-17 2463.00 2465.00 2429.00 2439.30
                                                    2430.714
                                                              4060722
## 176 2023-05-18 2449.55 2457.00 2427.15 2434.05
                                                    2425.482
                                                              4857531
## 177 2023-05-19 2434.05 2445.95 2418.85 2441.95
                                                    2433.354
                                                              3715280
## 178 2023-05-22 2435.00 2466.00 2432.35 2455.00
                                                    2446.358
                                                              3431208
## 179 2023-05-23 2460.65 2468.00 2451.45 2454.55
                                                    2445.910
                                                              2811473
## 180 2023-05-24 2445.90 2464.00 2433.45 2440.25
                                                    2431.660
                                                              3743804
## 181 2023-05-25 2433.90 2449.00 2416.05 2439.95
                                                   2431.361
                                                              5301647
## 182 2023-05-26 2458.00 2509.00 2450.75 2506.50
                                                    2497.677
                                                              5827017
## 183 2023-05-29 2521.00 2530.00 2507.20 2520.60
                                                    2511.728
                                                              4619754
## 184 2023-05-30 2520.60 2537.70 2514.35 2519.95
                                                    2511.080
                                                              5234564
## 185 2023-05-31 2500.00 2509.85 2461.00 2469.90
                                                   2461.206 12510304
## 186 2023-06-01 2480.15 2484.90 2458.00 2463.25
                                                    2454.579
                                                              6734525
## 187 2023-06-02 2471.00 2482.85 2451.00 2455.20
                                                    2446.558
                                                              7291995
                                                    2468.530
## 188 2023-06-05 2467.20 2483.75 2458.45 2477.25
                                                              5034355
## 189 2023-06-06 2483.45 2487.70 2462.00 2479.35
                                                    2470.623
                                                              3458161
## 190 2023-06-07 2487.00 2500.00 2472.60 2498.15
                                                   2489.356
                                                              4759238
## 191 2023-06-08 2506.00 2516.85 2491.00 2499.65
                                                    2490.851
                                                              5570815
## 192 2023-06-09 2507.00 2508.55 2478.00 2481.95
                                                    2473.213
                                                              2712243
## 193 2023-06-12 2475.50 2489.20 2465.00 2484.15
                                                    2475.406
                                                              2949893
## 194 2023-06-13 2495.00 2523.45 2486.25 2520.85
                                                   2511.977
                                                              5190958
## 195 2023-06-14 2521.00 2555.00 2517.00 2551.85
                                                    2542.868
                                                              6127509
## 196 2023-06-15 2551.80 2562.55 2535.50 2552.55
                                                    2543.565
                                                              5451926
## 197 2023-06-16 2560.20 2582.40 2560.20 2577.40
                                                    2568.327 11155180
## 198 2023-06-19 2584.00 2584.00 2542.65 2551.80
                                                    2542.818
                                                              3137532
## 199 2023-06-20 2547.55 2564.00 2535.00 2557.10
                                                   2548.099
                                                              3194085
## 200 2023-06-21 2557.00 2569.85 2548.00 2564.30
                                                    2555.274
                                                              3212779
## 201 2023-06-22 2556.00 2573.30 2532.00 2535.50
                                                   2526.575
                                                              3516244
## 202 2023-06-23 2528.90 2533.40 2512.00 2514.75
                                                    2505.898
                                                              3059084
## 203 2023-06-26 2507.00 2515.40 2488.70 2495.55
                                                   2486.766
                                                              5833893
## 204 2023-06-27 2496.55 2509.50 2486.65 2496.45
                                                              4471687
                                                    2487.662
## 205 2023-06-28 2496.45 2496.45 2496.45 2496.45
                                                    2487.662
                                                                    0
## 206 2023-06-30 2546.40 2556.65 2533.45 2550.25
                                                    2541.273
                                                              5146441
## 207 2023-07-03 2558.05 2622.00 2555.35 2615.70
                                                    2606.493
                                                              5609248
## 208 2023-07-04 2625.00 2625.00 2573.25 2588.75
                                                   2579.637
                                                              3720447
## 209 2023-07-05 2609.00 2609.00 2575.80 2584.50
                                                    2575.403
                                                              4729479
                                                              8822948
## 210 2023-07-06 2576.05 2644.45 2576.05 2638.75
                                                    2629.462
## 211 2023-07-07 2635.00 2664.95 2628.00 2633.60
                                                    2624.330
                                                              6172684
## 212 2023-07-10 2688.90 2756.00 2675.00 2735.05
                                                    2725.423 15340262
## 213 2023-07-11 2752.90 2770.00 2737.60 2764.70
                                                    2754.968
                                                              9262001
## 214 2023-07-12 2766.30 2802.00 2761.65 2767.75
                                                    2758.008
                                                              8645662
## 215 2023-07-13 2783.90 2799.00 2737.25 2743.00
                                                   2733.345
                                                              6776172
## 216 2023-07-14 2750.00 2760.90 2725.10 2740.70 2731.053
                                                              6979790
## 217 2023-07-17 2747.00 2815.05 2728.00 2796.70 2786.855 10254545
```

```
## 218 2023-07-18 2817.00 2837.45 2793.00 2820.45 2810.522 11937761
## 219 2023-07-19 2830.00 2856.00 2797.00 2841.85 2831.847 18054869
## 220 2023-07-20 2580.00 2630.95 2580.00 2619.85 2610.628 19358812
## 221 2023-07-21 2609.00 2614.90 2523.60 2538.75
                                                  2529.813 15124619
## 222 2023-07-24 2481.00 2514.95 2469.30 2487.40
                                                  2478.644 11863933
## 223 2023-07-25 2494.00 2505.20 2480.00 2485.80
                                                   2477.050
                                                             6013010
## 224 2023-07-26 2485.00 2547.00 2485.00 2526.20
                                                  2517.308
                                                             6455506
## 225 2023-07-27 2534.05 2537.65 2490.35 2502.70
                                                   2493.890
                                                             8613449
## 226 2023-07-28 2512.05 2542.85 2500.55 2527.85
                                                  2518.952 10413926
## 227 2023-07-31 2527.85 2553.90 2517.95 2549.25
                                                   2540.277
                                                             4275587
## 228 2023-08-01 2555.00 2559.00 2505.30 2513.20
                                                  2504.354
                                                             4768316
## 229 2023-08-02 2509.20 2512.00 2463.60 2486.35
                                                   2477.598
                                                             6374107
## 230 2023-08-03 2475.30 2500.90 2458.05 2475.90
                                                  2467.185
                                                             5084175
                                                  2500.716 11442805
## 231 2023-08-04 2498.80 2516.00 2471.60 2509.55
## 232 2023-08-07 2521.00 2528.40 2505.00 2523.85
                                                   2514.966
                                                             2991435
## 233 2023-08-08 2528.00 2534.45 2499.55 2508.65
                                                  2499.819
                                                             4922036
## 234 2023-08-09 2504.85 2529.00 2481.10 2525.20
                                                   2516.311
                                                             5743293
## 235 2023-08-10 2524.95 2550.00 2508.45 2536.45
                                                  2527.522
                                                             7735299
## 236 2023-08-11 2532.45 2558.85 2512.35 2547.15
                                                  2538.184 11089665
                                                             4787906
## 237 2023-08-14 2539.00 2582.30 2525.00 2577.25
                                                   2568.178
## 238 2023-08-16 2551.00 2582.80 2551.00 2575.15
                                                  2566.085
                                                             5101556
## 239 2023-08-17 2567.10 2578.10 2532.85 2538.00
                                                  2529.066
                                                             6836872
## 240 2023-08-18 2531.25 2577.60 2508.55 2556.80
                                                  2547.800
                                                             9319989
## 241 2023-08-21 2539.95 2555.45 2515.65 2520.00
                                                   2520.000
                                                             4610873
## 242 2023-08-22 2516.90 2537.95 2499.00 2519.40
                                                  2519.400
                                                             3856522
## 243 2023-08-23 2524.20 2542.85 2516.95 2522.20
                                                   2522.200
                                                             4758976
## 244 2023-08-24 2539.90 2539.90 2471.00 2479.80
                                                  2479.800
                                                             7070010
## 245 2023-08-25 2456.00 2505.00 2442.60 2468.35
                                                   2468.350 11111200
## 246 2023-08-28 2472.00 2484.00 2431.10 2443.75
                                                   2443.750
                                                             6290413
## 247 2023-08-29 2452.05 2453.45 2408.15 2420.35
                                                  2420.350
                                                             8438322
## 248 2023-08-30 2432.00 2443.00 2415.00 2418.05
                                                  2418.050
                                                             6084473
## 249 2023-08-31 2423.00 2425.00 2399.90 2407.00
                                                  2407.000 10819300
  250 2023-09-01 2406.55 2425.65 2401.65 2412.65
                                                   2412.650
                                                             9056421
## 251 2023-09-04 2412.65 2423.65 2405.30 2410.70
                                                  2410.700
                                                             4673813
## 252 2023-09-05 2420.00 2433.95 2412.45 2423.60
                                                  2423.600
                                                             4337938
## 253 2023-09-06 2421.10 2436.15 2417.25 2428.70
                                                  2428.700
                                                             4100185
## 254 2023-09-07 2421.70 2438.25 2411.00 2432.00
                                                  2432.000
                                                             6826286
## 255 2023-09-08 2440.00 2456.00 2422.95 2448.20
                                                   2448.200 11554644
## 256 2023-09-11 2452.00 2476.85 2452.00 2474.60
                                                  2474.600
                                                             6635537
## 257 2023-09-12 2483.00 2483.00 2435.95 2438.85
                                                   2438.850
                                                             8127833
## 258 2023-09-13 2440.00 2462.65 2426.25 2451.05
                                                  2451.050
                                                             6401669
## 259 2023-09-14 2460.00 2465.80 2445.00 2453.30
                                                   2453.300
                                                             4604818
## 260 2023-09-15 2468.00 2468.00 2449.50 2457.85
                                                   2457.850 12734296
## 261 2023-09-18 2440.05 2451.00 2432.05 2436.45
                                                   2436.450
                                                             3758150
## 262 2023-09-20 2423.05 2427.60 2355.00 2382.15
                                                  2382.150 28540942
## 263 2023-09-21 2374.95 2390.10 2360.00 2364.80
                                                  2364.800
                                                             6113091
## 264 2023-09-22 2376.00 2382.45 2350.00 2354.95
                                                   2354.950
                                                             9588393
## 265 2023-09-25 2350.40 2360.70 2335.10 2340.45 2340.450
                                                             7127442
## 266 2023-09-26 2338.55 2350.20 2335.60 2342.50 2342.500
                                                             5043891
## 267 2023-09-27 2343.50 2371.80 2338.50 2368.90 2368.900 5861389
```

```
## 268 2023-09-28 2383.00 2383.00 2325.00 2334.10
                                                   2334.100
                                                              7259173
## 269 2023-09-29 2341.80 2369.10 2334.10 2345.00 2345.000
                                                              6171007
vakrange
##
             Date Open High
                                Low Close Adj.Close
                                                       Volume
## 1
       2022-09-01 27.50 27.85 27.50 27.70
                                           27.57525
                                                      1240326
       2022-09-02 27.75 27.85 27.50 27.55
## 2
                                           27.42592
                                                      1445871
## 3
       2022-09-05 27.55 33.05 27.45 32.90
                                           32.75183 37733108
       2022-09-06 34.45 35.10 31.45 32.95
                                           32.80161 27356416
## 4
                                           36.88314 58153003
## 5
       2022-09-07 32.65 37.90 32.30 37.05
## 6
       2022-09-08 37.65 38.25 35.65 35.85
                                           35.68854 16464712
       2022-09-09 35.90 39.00 35.35 37.65
## 7
                                           37.48043 34087363
## 8
       2022-09-12 38.00 40.80 37.90 40.30
                                          40.11850 29752179
## 9
       2022-09-13 41.00 45.70 40.95 45.30
                                           45.09598 49454484
## 10
       2022-09-14 43.70 44.70 42.40 42.85
                                           42.65702 23784277
## 11
       2022-09-15 42.95 43.95 38.80 39.15
                                           38.97368 23017712
## 12
       2022-09-16 39.05 42.50 38.90 41.05
                                           40.86512 27813909
## 13
       2022-09-19 41.30 42.70 40.55 41.80 41.61174 13383620
## 14
       2022-09-20 42.25 43.20 40.40 40.90
                                           40.71580
                                                      8329122
## 15
       2022-09-21 41.05 41.35 38.80 39.00
                                           38.82436
                                                      7466943
## 16
       2022-09-22 38.70 40.70 38.60 40.25
                                           40.12016
                                                      8729312
## 17
       2022-09-23 40.50 40.65 38.50 38.90
                                           38.77452
                                                      7804070
## 18
       2022-09-26 38.40 38.55 35.65 35.95
                                           35.83403
                                                      6574271
## 19
       2022-09-27 36.35 37.20 34.20 34.75
                                           34.63791
                                                      7737450
## 20
       2022-09-28 34.50 36.20 33.90 34.10
                                           33.99000 12487623
## 21
       2022-09-29 34.85 35.30 32.70 33.10
                                           32.99323
                                                      5909598
```

## 22 2022-09-30 33.15 34.95 32.40 34.50 34.38871 9965788 ## 23 2022-10-03 34.45 36.00 33.85 35.65 35.53500 7638414 ## 24 2022-10-04 36.30 39.40 36.25 38.85 38.72467 12092548 ## 25 2022-10-06 39.65 40.00 38.50 39.20 39.07355 8446604 ## 26 2022-10-07 39.20 39.55 38.60 38.80 38.67484 5462037 ## 27 2022-10-10 37.80 38.15 36.85 37.05 36.93048 4899231 ## 28 2022-10-11 37.25 37.55 34.35 35.00 34.88710 6759167 29 2022-10-12 35.20 35.75 33.90 35.00 ## 34.88710 4869979 ## 30 2022-10-13 35.10 35.45 34.30 34.90 34.78742 3893503 ## 31 2022-10-14 36.00 36.20 34.05 34.40 34.28903 8089433 ## 32 2022-10-17 34.00 34.20 32.90 33.15 33.04307 4553206 ## 33 2022-10-18 33.40 35.35 33.40 33.85 33.74081 9626870 ## 34 2022-10-19 34.10 34.40 32.95 33.45 33.34210 4033163 ## 35 2022-10-20 33.00 33.65 32.85 33.00 32.89355 3758450 32.59452 ## 36 2022-10-21 33.20 33.65 32.50 32.70 2690621 ## 37 2022-10-24 32.70 33.20 32.45 32.70 32.59452 1116822 ## 38 2022-10-25 32.25 32.90 32.20 32.40 32.29549 2404066 ## 39 2022-10-27 32.70 33.30 31.80 32.10 31.99645 4483766 ## 40 2022-10-28 32.20 32.70 31.45 31.95 31.84694 3514155 ## 41 2022-10-31 32.20 32.60 31.35 31.50 31.39839 3900524 ## 42 2022-11-01 31.65 31.80 31.30 31.50 31.39839 2529629 ## 43 2022-11-02 31.90 34.70 31.55 34.00 33.89032 17983319 ## 44

2022-11-03 33.50 34.60 33.50 34.00 33.89032 4369705

```
## 45
       2022-11-04 34.20 34.30 33.20 33.70 33.59129
                                                      3714324
## 46
       2022-11-07 33.90 34.30 33.25 33.55
                                            33.44177
                                                      2878815
## 47
       2022-11-09 33.60 33.85 32.90 33.05
                                           32.94339
                                                      2728570
       2022-11-10 33.10 33.25 32.25 32.35
## 48
                                           32.24564
                                                      2379705
## 49
       2022-11-11 32.80 32.85 31.80 32.15
                                            32.04629
                                                      3315413
## 50
       2022-11-14 32.30 33.85 32.05 33.30
                                            33.19258
                                                      5409424
  51
       2022-11-15 33.30 33.45 32.50 32.90
                                            32.79387
                                                      1531193
##
##
  52
       2022-11-16 32.80 32.90 32.15 32.40
                                            32.29549
                                                      1531557
  53
       2022-11-17 32.15 32.90 32.10 32.20
##
                                            32.09613
                                                      1880671
## 54
       2022-11-18 32.35 33.00 30.95 31.10
                                            30.99968
                                                      4718948
## 55
       2022-11-21 31.10 32.05 30.75 30.90
                                           30.80032
                                                      3398601
       2022-11-22 31.05 31.35 28.00 28.40
##
  56
                                           28.30839 11538000
##
  57
       2022-11-23 28.80 30.70 28.60 29.60
                                           29.50452 10710991
## 58
       2022-11-24 29.90 30.60 29.80 30.00
                                           29.90322
                                                      3859468
  59
       2022-11-25 30.05 30.30 29.85 30.00
                                            29.90322
                                                      2885480
##
##
  60
       2022-11-28 30.25 30.80 29.80 29.95
                                            29.85339
                                                      3211085
##
  61
       2022-11-29 30.10 30.35 29.90 30.00
                                            29.90322
                                                      2102044
##
  62
       2022-11-30 30.15 30.90 29.85 30.60
                                           30.50129
                                                      2229196
## 63
       2022-12-01 30.85 31.30 30.60 30.75
                                            30.65081
                                                      3872269
## 64
       2022-12-02 30.75 30.95 30.60 30.85
                                            30.75048
                                                      2879873
       2022-12-05 31.00 31.75 30.40 30.65
                                           30.55113
                                                      7117895
## 65
## 66
       2022-12-06 30.70 30.95 30.10 30.25
                                            30.15242
                                                      3310854
  67
       2022-12-07 30.40 30.40 29.85 29.95
                                            29.85339
                                                      2375749
##
##
  68
       2022-12-08 30.10 30.20 29.75 30.00
                                            29.90322
                                                      2280000
##
  69
       2022-12-09 30.00 30.20 25.60 27.25
                                            27.16210 53032815
##
  70
       2022-12-12 27.45 29.05 27.30 28.45
                                            28.35823 11654629
  71
       2022-12-13 28.70 28.80 28.15 28.50
                                           28.40806
##
                                                      3812167
       2022-12-14 28.75 29.80 28.30 29.55
                                            29.45468
## 72
                                                      7764220
##
  73
       2022-12-15 29.50 29.80 28.70 28.85
                                            28.75693
                                                      5143648
##
  74
       2022-12-16 28.85 29.70 28.25 28.55
                                            28.45790
                                                      5727320
  75
       2022-12-19 28.40 28.95 28.30 28.40
                                            28.30839
##
                                                      6327243
  76
       2022-12-20 28.30 28.50 27.90 28.30
                                            28.20871
                                                      4745162
##
##
  77
       2022-12-21 28.50 28.85 27.45 27.55
                                            27.46113
                                                      5168075
##
  78
       2022-12-22 27.65 27.95 26.80 27.00
                                            26.91290
                                                      2517109
  79
##
       2022-12-23 26.60 26.95 25.50 25.65
                                            25.56726
                                                      3809162
  80
       2022-12-26 25.80 27.50 25.35 27.30
                                                      3528725
##
                                           27.21194
## 81
       2022-12-27 27.80 28.00 27.10 27.25
                                            27.16210
                                                      2173459
## 82
       2022-12-28 27.20 27.90 27.20 27.55
                                            27.46113
                                                      1995400
##
  83
       2022-12-29 27.40 27.50 27.10 27.30
                                            27.21194
                                                      1823006
##
  84
       2022-12-30 27.45 28.05 27.45 27.75
                                            27.66048
                                                      2256739
##
  85
       2023-01-02 27.85 28.40 27.60 27.95
                                            27.85984
                                                      2654152
##
  86
       2023-01-03 27.95 28.50 27.90 28.25
                                            28.15887
                                                      1863778
## 87
       2023-01-04 28.25 28.35 27.65 27.80
                                            27.71032
                                                      1363755
       2023-01-05 27.95 28.00 27.40 27.75
                                            27.66048
## 88
                                                      1198922
  89
##
       2023-01-06 28.20 28.20 27.40 27.55
                                            27.46113
                                                      1407569
## 90
       2023-01-09 27.75 27.95 27.10 27.25
                                            27.16210
                                                      1820327
## 91
       2023-01-10 27.15 27.25 26.90 27.15
                                            27.06242
                                                      1331405
       2023-01-11 27.25 27.45 26.95 27.15
                                            27.06242
                                                      1479239
## 92
## 93
       2023-01-12 27.30 27.30 26.80 26.95
                                            26.86307
                                                      1185363
## 94
       2023-01-13 27.10 27.45 27.00 27.30 27.21194
                                                      1357846
```

```
## 95
       2023-01-16 27.30 27.60 27.05 27.15 27.06242
                                                     1363335
       2023-01-17 27.15 27.35 27.00 27.10 27.01258
## 96
                                                     1464798
       2023-01-18 27.10 27.35 27.00 27.05
## 97
                                          26.96274
                                                     2005672
## 98
       2023-01-19 26.85 27.00 26.50 26.80
                                          26.71355
                                                     1165652
## 99
       2023-01-20 27.00 27.10 26.60 26.65
                                          26.56403
                                                     1426169
## 100 2023-01-23 27.10 27.25 26.65 26.90
                                          26.81322
                                                     1614525
## 101 2023-01-24 26.90 27.10 26.80 26.95
                                           26.86307
                                                     1381848
## 102 2023-01-25 26.85 26.90 26.35 26.50
                                           26.41452
                                                     1274415
## 103 2023-01-27 26.65 26.70 25.55 25.85
                                           25.76661
                                                     2062176
## 104 2023-01-30 25.85 26.05 25.40 25.65
                                           25.56726
                                                     1612227
## 105 2023-01-31 25.80 27.35 25.60 26.95
                                          26.86307
                                                     4231813
## 106 2023-02-01 27.40 27.95 26.15 26.50
                                          26.41452
                                                     3493273
## 107 2023-02-02 26.50 27.30 26.30 26.75
                                          26.66371
                                                     1884613
## 108 2023-02-03 26.80 27.15 25.65 26.15
                                          26.06564
                                                     2585237
## 109 2023-02-06 25.60 26.05 25.15 25.75
                                           25.66693
                                                     2208346
## 110 2023-02-07 25.80 26.00 25.15 25.20
                                           25.11871
                                                     2341918
## 111 2023-02-08 25.25 25.70 25.15 25.30
                                           25.21839
                                                     1524062
## 112 2023-02-09 25.30 25.50 25.10 25.25
                                                     1516200
                                           25.16855
## 113 2023-02-10 25.35 25.35 25.00 25.05
                                           24.96919
                                                     1079884
## 114 2023-02-13 25.15 25.25 24.25 24.35
                                           24.27145
                                                     2075893
## 115 2023-02-14 24.35 24.60 23.70 23.95
                                           23.87274
                                                     1850706
## 116 2023-02-15 23.90 24.10 23.10 23.30
                                           23.22484
                                                     2608327
## 117 2023-02-16 23.45 24.70 23.40 24.00
                                          23.92258
                                                     4096359
## 118 2023-02-17 24.00 24.10 23.20 23.55
                                           23.47403
                                                     1782914
## 119 2023-02-20 23.55 23.65 23.15 23.25
                                           23.17500
                                                     1254938
## 120 2023-02-21 23.25 23.50 23.20 23.30
                                           23.22484
                                                     1195445
## 121 2023-02-22 23.30 23.35 22.60 22.70
                                          22.62678
                                                     1772161
## 122 2023-02-23 22.80 23.95 22.30 22.35
                                          22.27791
                                                     1770476
## 123 2023-02-24 22.50 22.70 21.80 22.30
                                          22.22806
                                                     2777088
## 124 2023-02-27 22.30 22.35 21.45 21.70
                                          21.63000
                                                     1521795
## 125 2023-02-28 21.75 22.70 21.65 21.75
                                           21.67984
                                                     3376782
## 126 2023-03-01 21.80 23.20 21.80 22.95
                                          22.87597
                                                     4604300
## 127 2023-03-02 23.10 23.40 22.85 23.00
                                           22.92581
                                                     1960799
## 128 2023-03-03 23.15 23.25 22.90 23.00
                                          22.92581
                                                     1605702
## 129 2023-03-06 23.00 23.70 22.90 23.00
                                           22.92581
                                                     2346210
## 130 2023-03-08 22.90 22.90 22.35 22.45
                                          22.37758
                                                     2427017
## 131 2023-03-09 22.45 22.65 22.45 22.50
                                          22.42742
                                                     1672659
## 132 2023-03-10 22.35 22.35 21.80 21.90
                                           21.82935
                                                     2509109
## 133 2023-03-13 22.05 22.70 20.70 20.85
                                           20.78274
                                                     3872229
## 134 2023-03-14 20.80 21.00 20.10 20.20
                                           20.13484
                                                     3131654
## 135 2023-03-15 20.40 22.40 20.20 20.45
                                           20.38403 14007305
## 136 2023-03-16 20.75 20.80 19.85 20.00
                                           19.93548
                                                     3868110
## 137 2023-03-17 20.30 20.45 19.35 19.45
                                           19.38726
                                                     6074780
## 138 2023-03-20 19.45 19.65 18.35 18.55
                                           18.49016
                                                     7947597
## 139 2023-03-21 18.70 19.55 17.90 18.05
                                           17.99177
                                                     8784618
## 140 2023-03-22 18.20 18.60 17.40 18.50
                                          18.44032 16658998
## 141 2023-03-23 18.85 19.05 16.25 16.75
                                          16.69597 46521241
## 142 2023-03-24 16.90 17.50 16.50 16.65 16.59629 13018513
## 143 2023-03-27 16.75 17.15 15.20 15.95 15.89855 16638855
## 144 2023-03-28 16.05 16.30 15.25 15.40 15.35032 10555193
```

```
## 145 2023-03-29 15.40 15.50 14.65 14.95 14.90177 15061555
## 146 2023-03-31 15.15 16.55 15.10 16.00 15.94839 24855501
## 147 2023-04-03 16.25 16.80 16.00 16.55 16.49661 13176858
## 148 2023-04-05 16.70 16.70 16.10 16.45
                                          16.39694 9856809
## 149 2023-04-06 16.25 19.70 16.25 18.75
                                          18.68952 67684215
## 150 2023-04-10 18.80 19.25 16.85 17.00
                                          16.94516 47104158
## 151 2023-04-11 17.15 18.20 16.60 17.00
                                          16.94516 46882328
## 152 2023-04-12 17.15 17.20 16.75 16.85
                                           16.79565 12300017
## 153 2023-04-13 16.90 17.20 16.80 16.90
                                           16.84548
                                                     9566722
## 154 2023-04-17 16.90 16.90 16.50 16.70
                                           16.64613
                                                     5634947
## 155 2023-04-18 16.75 17.60 16.70 17.00
                                           16.94516 15547216
## 156 2023-04-19 17.20 17.65 17.00 17.15
                                           17.09468 19336237
## 157 2023-04-20 17.30 17.30 16.80 16.90
                                           16.84548
                                                     6082012
## 158 2023-04-21 17.00 17.25 16.50 17.00
                                          16.94516 14769897
## 159 2023-04-24 16.90 17.00 16.55 16.70
                                           16.64613
                                                     4675609
## 160 2023-04-25 16.75 17.15 16.60 16.65
                                           16.59629
                                                     6738126
## 161 2023-04-26 16.75 16.75 16.50 16.55
                                           16.49661
                                                     3944013
## 162 2023-04-27 16.60 17.25 16.55 16.70
                                          16.64613 14028418
## 163 2023-04-28 16.85 16.95 16.65 16.80
                                          16.74581
                                                    4239594
## 164 2023-05-02 16.90 18.70 16.85 17.75
                                           17.69274 34127337
## 165 2023-05-03 17.70 18.70 17.55 17.90
                                          17.84226 13087686
## 166 2023-05-04 18.10 18.20 17.75 17.95
                                           17.89210
                                                     5418063
## 167 2023-05-05 17.95 18.25 17.65 17.75
                                           17.69274
                                                     4455035
## 168 2023-05-08 17.85 17.90 17.45 17.55
                                           17.49339
                                                     4003127
## 169 2023-05-09 17.60 17.75 17.20 17.35
                                           17.29403
                                                     3790934
## 170 2023-05-10 17.40 17.50 17.00 17.10
                                           17.04484
                                                     3330848
## 171 2023-05-11 17.15 18.70 17.10 17.90
                                           17.84226 34753356
## 172 2023-05-12 17.90 18.90 17.70 18.00
                                           17.94194 25726692
## 173 2023-05-15 18.00 18.25 17.75 18.00
                                           17.94194
                                                     9111684
## 174 2023-05-16 18.10 18.20 17.60 17.75
                                           17.69274
                                                     5216733
## 175 2023-05-17 17.80 17.90 17.30 17.40
                                           17.34387
                                                     6505127
## 176 2023-05-18 17.50 17.75 16.95 17.05
                                           16.99500
                                                     6555523
## 177 2023-05-19 17.05 17.30 16.70 17.10
                                           17.04484
                                                     4195108
## 178 2023-05-22 17.25 17.25 16.80 17.10
                                           17.04484
                                                     3433287
## 179 2023-05-23 17.10 17.25 16.95 17.05
                                           16.99500
                                                     2209204
## 180 2023-05-24 17.00 17.40 16.90 17.25
                                           17.19436
                                                     3445286
## 181 2023-05-25 17.20 17.35 17.00 17.25
                                           17.19436
                                                     2467695
## 182 2023-05-26 17.25 17.35 17.10 17.25
                                           17.19436
                                                     3089962
## 183 2023-05-29 17.50 17.60 17.05 17.40
                                           17.34387
                                                     4210464
## 184 2023-05-30 17.45 17.50 17.05 17.25
                                           17.19436
                                                     2939531
## 185 2023-05-31 17.15 17.20 16.55 16.75
                                           16.69597 14717196
## 186 2023-06-01 16.65 16.90 16.55 16.75
                                           16.69597
                                                     3969332
## 187 2023-06-02 16.85 17.25 16.80 17.15
                                           17.09468
                                                     5063075
## 188 2023-06-05 17.40 18.65 17.30 17.90
                                           17.84226 25582813
## 189 2023-06-06 18.00 18.05 17.55 17.70
                                           17.64290
                                                     4873235
## 190 2023-06-07 17.75 18.05 17.60 17.80
                                           17.74258
                                                     4103220
## 191 2023-06-08 17.90 19.20 17.90 18.15
                                           18.09145 20610287
## 192 2023-06-09 18.25 18.90 17.90 18.70
                                          18.63968 14479232
## 193 2023-06-12 18.85 18.95 18.30 18.50 18.44032
                                                     5754457
## 194 2023-06-13 18.50 18.75 18.10 18.15 18.09145
                                                     4270897
```

```
## 195 2023-06-14 18.15 18.25 17.55 17.70 17.64290
                                                      7765281
## 196 2023-06-15 15.45 16.20 14.75 16.20
                                          16.14774
                                                      1342470
## 197 2023-06-16 16.20 17.00 16.20 17.00
                                           16.94516
                                                      3223203
## 198 2023-06-19 17.55 17.80 16.45 16.65
                                           16.59629
                                                      2782211
## 199 2023-06-20 16.90 16.90 16.25 16.65
                                           16.59629
                                                      1827983
## 200 2023-06-21 16.70 16.85 16.40 16.50
                                           16.44677
                                                      1597323
## 201 2023-06-22 16.70 16.70 16.05 16.15
                                           16.09790
                                                      2309429
## 202 2023-06-23 16.20 16.35 16.10 16.25
                                           16.19758
                                                       604008
## 203 2023-06-26 16.00 16.25 15.95 16.00
                                           15.94839
                                                      1024698
## 204 2023-06-27 16.15 16.55 15.95 16.20
                                           16.14774
                                                       609322
## 205 2023-06-28 16.20 16.20 16.20 16.20
                                           16.14774
## 206 2023-06-30 16.50 16.60 16.20 16.30
                                           16.24742
                                                      3535745
## 207 2023-07-03 16.45 16.75 16.40 16.55
                                           16.49661
                                                      2346205
## 208 2023-07-04 16.65 16.70 16.45 16.55
                                           16.49661
                                                      1840271
## 209 2023-07-05 16.50 16.60 16.45 16.50
                                           16.44677
                                                      1267288
## 210 2023-07-06 16.55 16.60 16.35 16.45
                                           16.39694
                                                      2170727
## 211 2023-07-07 16.45 16.55 16.30 16.50
                                           16.44677
                                                      1755424
## 212 2023-07-10 16.55 16.55 16.15 16.20
                                           16.14774
                                                      2541558
## 213 2023-07-11 16.25 16.45 16.15 16.25
                                           16.19758
                                                      2425921
## 214 2023-07-12 16.25 17.25 16.20 16.65
                                           16.59629
                                                      7825545
## 215 2023-07-13 16.75 16.80 16.15 16.25
                                           16.19758
                                                      1989086
## 216 2023-07-14 16.25 16.85 16.25 16.70
                                           16.64613
                                                      3388659
## 217 2023-07-17 17.30 17.45 16.30 16.35
                                           16.29726
                                                      7296851
## 218 2023-07-18 16.45 16.50 16.10 16.15
                                           16.09790
                                                      2908173
## 219 2023-07-19 16.20 16.30 16.05 16.10
                                           16.04807
                                                      2236372
## 220 2023-07-20 16.15 16.25 15.90 16.00
                                           15.94839
                                                      3356652
## 221 2023-07-21 16.00 16.10 15.80 15.85
                                           15.79887
                                                      2526683
## 222 2023-07-24 15.95 15.95 15.60 15.65
                                           15.59952
                                                      4674426
## 223 2023-07-25 15.70 16.25 15.65 15.85
                                           15.79887
                                                      6946871
## 224 2023-07-26 16.00 16.10 15.80 15.85
                                           15.79887
                                                      1862538
## 225 2023-07-27 15.95 15.95 15.70 15.75
                                           15.69919
                                                      2252092
## 226 2023-07-28 15.75 15.90 15.65 15.70
                                           15.64935
                                                      1912461
## 227 2023-07-31 15.85 15.85 15.70 15.75
                                           15.69919
                                                      1385608
## 228 2023-08-01 15.75 16.10 15.50 15.75
                                           15.69919
                                                      2716063
## 229 2023-08-02 15.80 15.90 15.20 15.40
                                           15.35032
                                                      3191613
## 230 2023-08-03 15.60 15.65 15.20 15.45
                                           15.40016
                                                      2474415
## 231 2023-08-04 15.50 15.55 15.15 15.20
                                           15.15097
                                                      4747512
## 232 2023-08-07 15.30 15.30 14.90 14.95
                                           14.90177
                                                      2253022
## 233 2023-08-08 15.10 15.10 14.55 14.65
                                           14.60274
                                                      3710558
## 234 2023-08-09 14.80 16.50 14.75 16.15
                                           16.09790 41067440
## 235 2023-08-10 16.60 17.70 16.55 17.20
                                           17.14452 92001184
## 236 2023-08-11 17.55 18.00 17.00 17.45
                                           17.39371 36262599
## 237 2023-08-14 17.45 17.45 15.95 16.40
                                           16.34710 23901524
## 238 2023-08-16 16.60 17.15 16.15 16.50
                                           16.44677 20435854
## 239 2023-08-17 16.75 16.80 15.95 16.20
                                           16.14774 13487762
## 240 2023-08-18 16.25 16.55 15.90 16.15
                                           16.09790 19187185
## 241 2023-08-21 16.35 16.40 15.30 15.75
                                           15.69919 12488069
## 242 2023-08-22 15.85 16.00 15.65 15.80
                                           15.74903 10298225
## 243 2023-08-23 15.95 16.40 15.75 15.90 15.84871 13614200
## 244 2023-08-24 16.00 16.05 15.75 15.80 15.74903 4989545
```

```
## 245 2023-08-25 15.75 15.90 15.60 15.70
                                           15.64935
                                                     6510342
## 246 2023-08-28 15.70 15.80 15.45 15.50
                                           15.45000
                                                     6213875
## 247 2023-08-29 15.55 15.65 15.40 15.45
                                           15.40016
                                                     5015019
## 248 2023-08-30 15.45 15.95 15.45 15.70
                                          15.64935
                                                     9490301
## 249 2023-08-31 15.95 16.00 15.45 15.50
                                          15.45000
                                                     6442416
## 250 2023-09-01 15.60 15.80 15.45 15.55
                                           15.55000
                                                     5109451
## 251 2023-09-04 15.65 16.10 15.60 15.85
                                           15.85000
                                                     8607142
## 252 2023-09-05 15.95 16.60 15.90 16.05
                                           16.05000 14643389
## 253 2023-09-06 16.15 16.65 15.95 16.10
                                           16.10000
                                                     9870337
## 254 2023-09-07 16.20 16.65 16.15 16.45
                                           16.45000 12674414
## 255 2023-09-08 16.65 17.20 16.30 16.45
                                           16.45000 19669280
## 256 2023-09-11 16.90 18.65 16.85 17.95
                                          17.95000 62336468
## 257 2023-09-12 18.20 18.25 16.60 16.80
                                          16.80000 23182939
## 258 2023-09-13 17.00 17.35 16.50 17.05
                                          17.05000 12900775
## 259 2023-09-14 17.15 18.50 17.15 17.75
                                           17.75000 40998398
## 260 2023-09-15 17.90 18.15 17.25 17.65
                                           17.65000 24217829
## 261 2023-09-18 17.65 17.85 17.15 17.35
                                           17.35000
                                                     9724027
## 262 2023-09-20 17.25 17.35 16.95 17.00
                                          17.00000
                                                     9124003
## 263 2023-09-21 17.00 17.40 16.80 16.85
                                           16.85000
                                                     6245927
## 264 2023-09-22 16.90 17.05 16.45 16.75
                                           16.75000
                                                     7642897
## 265 2023-09-25 16.85 17.05 16.60 16.70
                                          16.70000
                                                     4847806
## 266 2023-09-26 16.75 17.20 16.70 17.00
                                          17.00000
                                                     7937690
## 267 2023-09-27 17.05 17.50 16.75 17.25
                                          17.25000 12760670
## 268 2023-09-28 17.35 17.45 17.00 17.15
                                           17.15000
                                                     7608390
## 269 2023-09-29 17.15 17.55 17.00 17.45
                                           17.45000
                                                     6813682
```

#### Petronet

```
##
             Date
                    0pen
                           High
                                    Low Close Adj.Close
                                                            Volume
## 1
       2022-09-01 213.60 222.00 213.60 219.60
                                                209.5104
                                                           1922483
## 2
       2022-09-02 220.00 221.50 216.00 216.50
                                                206.5528
                                                            696288
## 3
       2022-09-05 216.60 219.80 213.70 215.95
                                                206.0280
                                                           1076298
## 4
       2022-09-06 217.00 217.90 214.80 216.10
                                                206.1712
                                                           1419440
## 5
       2022-09-07 215.90 219.70 215.15 218.60
                                                208.5563
                                                            555572
       2022-09-08 219.70 220.55 216.70 218.25
## 6
                                                208.2224
                                                            772050
## 7
       2022-09-09 219.90 220.00 217.40 217.85
                                                207.8408
                                                            979452
## 8
       2022-09-12 218.00 219.25 217.05 218.75
                                                208.6994
                                                            493375
## 9
       2022-09-13 219.35 219.95 217.65 218.25
                                                208.2224
                                                            887709
## 10
       2022-09-14 216.00 217.90 215.05 215.30
                                                205.4079
                                                            865479
                                                205.5987
## 11
       2022-09-15 216.00 219.60 214.55 215.50
                                                           1917639
## 12
       2022-09-16 215.55 216.85 209.10 210.05
                                                200.3991
                                                           2927024
                                                198.8249
## 13
       2022-09-19 210.10 210.95 207.50 208.40
                                                            814552
## 14
       2022-09-20 209.45 212.30 208.80 211.10
                                                201.4009
                                                          1196356
## 15
       2022-09-21 209.25 210.40 206.80 207.90
                                                198.3479
                                                           1521682
## 16
       2022-09-22 206.05 209.50 206.05 207.70
                                                198.1571
                                                           1179159
       2022-09-23 207.70 208.70 205.00 205.50
## 17
                                                196.0582
                                                           1115615
##
  18
       2022-09-26 204.05 205.35 198.65 201.45
                                                192.1943
                                                           1383868
  19
       2022-09-27 202.50 204.65 199.65 200.55
                                                191.3356
                                                           1315234
       2022-09-28 200.25 204.00 197.65 199.40
## 20
                                                190.2384
                                                           1237216
## 21
       2022-09-29 200.10 201.55 197.05 199.95
                                                190.7632
                                                          1761700
```

```
## 22
       2022-09-30 199.50 200.90 197.60 199.90
                                                 190.7155
                                                           1903996
  23
##
       2022-10-03 200.90 203.30 198.00 198.65
                                                 189.5229
                                                           1716312
                                                 194.0070
##
   24
       2022-10-04 203.00 203.85 198.70 203.35
                                                           2299740
##
  25
       2022-10-06 207.35 207.75 201.65 204.30
                                                 194.9133
                                                           2842769
##
  26
       2022-10-07 204.50 206.95 202.25 205.75
                                                 196.2967
                                                           1553411
                                                 193.4345
##
  27
       2022-10-10 201.65 204.70 201.25 202.75
                                                           1056877
##
  28
       2022-10-11 203.75 203.75 198.20 198.75
                                                 189.6183
                                                           1409035
##
   29
       2022-10-12 199.50 199.95 198.10 199.50
                                                 190.3338
                                                            840713
  30
##
       2022-10-13 199.50 200.50 195.70 197.40
                                                 188.3303
                                                           1517988
##
  31
       2022-10-14 199.00 204.25 198.45 201.00
                                                 191.7649
                                                           1843181
##
  32
       2022-10-17 200.75 202.00 199.30 200.95
                                                 191.7172
                                                            860178
       2022-10-18 201.90 202.40 199.70 201.45
                                                 192.1943
##
  33
                                                           1141295
##
   34
       2022-10-19 201.70 203.55 200.65 201.85
                                                 192.5759
                                                            909085
##
  35
       2022-10-20 201.00 203.10 200.75 202.60
                                                 193.2914
                                                           1053726
  36
       2022-10-21 203.00 205.00 201.00 202.50
                                                 193.1960
                                                           1093647
##
##
  37
       2022-10-24 204.15 204.15 202.15 202.65
                                                 193.3391
                                                             90550
##
  38
       2022-10-25 202.40 204.05 199.55 202.60
                                                 193.2914
                                                           3225606
##
  39
       2022-10-27 204.00 204.75 201.85 202.35
                                                 193.0529
                                                           2477376
## 40
       2022-10-28 203.40 210.55 203.20 208.95
                                                 199.3497
                                                           5531261
## 41
       2022-10-31 208.95 209.00 203.80 205.55
                                                 196.1059
                                                           2454128
## 42
       2022-11-01 206.60 211.05 206.30 210.60
                                                 200.9239
                                                           2167305
## 43
       2022-11-02 211.00 212.00 208.15 211.35
                                                 201.6394
                                                           1711390
## 44
       2022-11-03 210.05 210.50 208.35 209.15
                                                 199.5405
                                                            977853
## 45
       2022-11-04 209.15 211.20 208.80 210.70
                                                 201.0193
                                                            807437
## 46
       2022-11-07 210.70 213.80 210.50 212.55
                                                 202.7843
                                                           1563880
## 47
       2022-11-09 210.60 214.70 207.00 209.35
                                                 199.7313
                                                           1448129
## 48
                                                 202.8320
       2022-11-10 210.80 218.80 210.45 212.60
                                                           5636686
       2022-11-11 213.70 214.80 211.00 212.20
                                                 202.4503
## 49
                                                           1445726
## 50
       2022-11-14 212.60 214.60 212.10 214.15
                                                 204.3107
                                                            859071
## 51
       2022-11-15 214.70 214.70 212.50 213.90
                                                 204.0722
                                                            725740
  52
       2022-11-16 214.90 215.75 212.25 213.65
                                                 203.8337
##
                                                           1277106
##
  53
       2022-11-17 212.60 215.60 212.60 214.65
                                                 204.7878
                                                            890883
##
   54
       2022-11-18 214.75 215.40 211.00 212.25
                                                 202.4980
                                                           1644363
##
  55
       2022-11-21 206.55 208.75 205.05 208.30
                                                 205.5072
                                                           1293895
##
  56
       2022-11-22 208.50 208.65 205.55 206.30
                                                 203.5340
                                                            988569
##
   57
       2022-11-23 207.00 208.60 205.55 208.10
                                                 205.3098
                                                            615536
## 58
       2022-11-24 208.90 209.50 206.20 207.10
                                                 204.3232
                                                            768999
## 59
       2022-11-25 207.90 209.70 206.20 209.00
                                                 206.1978
                                                           1486704
       2022-11-28 210.00 213.05 210.00 211.10
                                                 208.2696
## 60
                                                           1387480
##
  61
       2022-11-29 211.10 213.00 210.70 211.85
                                                 209.0096
                                                            591659
## 62
       2022-11-30 211.85 214.35 211.45 212.65
                                                 209.7988
                                                           2502692
## 63
       2022-12-01 213.50 214.10 210.55 210.90
                                                 208.0723
                                                           1823793
## 64
       2022-12-02 210.85 213.85 210.20 212.00
                                                 209.1575
                                                           4216968
       2022-12-05 213.30 213.50 211.55 213.15
                                                 210.2921
                                                           1308234
## 65
       2022-12-06 213.15 215.90 212.00 214.75
                                                 211.8707
## 66
                                                           3294411
## 67
       2022-12-07 216.20 220.00 215.00 215.20
                                                 212.3146
                                                           5145444
## 68
       2022-12-08 215.95 218.35 215.05 216.30
                                                 213.3999
                                                           1780164
  69
       2022-12-09 218.15 218.15 212.25 213.75
                                                 210.8841
##
                                                           1170160
##
  70
       2022-12-12 214.50 215.05 211.50 214.35
                                                 211.4760
                                                           1928152
       2022-12-13 215.25 215.55 213.10 214.50
                                                 211.6240
                                                           1428476
```

```
## 72
       2022-12-14 215.00 216.50 214.50 215.85
                                                212.9559
                                                           771083
       2022-12-15 215.85 217.85 213.55 214.25
##
  73
                                                211.3774
                                                          1769788
##
  74
       2022-12-16 214.00 215.70 210.55 211.10
                                                208.2696
                                                          2119661
##
  75
       2022-12-19 211.45 213.70 211.45 213.10
                                                210.2428
                                                          1112675
##
  76
       2022-12-20 212.95 214.45 210.90 213.05
                                                210.1935
                                                           828450
  77
                                                208.7136
##
       2022-12-21 213.40 214.25 210.80 211.55
                                                          1015144
##
  78
       2022-12-22 211.55 213.40 210.65 212.50
                                                209.6508
                                                          1566260
   79
##
       2022-12-23 211.60 212.60 207.30 207.95
                                                205.1618
                                                          2056408
  80
                                                207.0364
##
       2022-12-26 207.00 210.30 206.15 209.85
                                                           599695
##
  81
       2022-12-27 209.85 212.05 209.45 211.90
                                                209.0589
                                                           824369
                                                209.7002
##
  82
       2022-12-28 211.45 213.90 210.45 212.55
                                                          1834446
       2022-12-29 211.55 215.20 210.25 214.50
                                                211.6240
##
  83
                                                          2878465
##
  84
       2022-12-30 215.00 218.65 214.45 215.45
                                                212.5613
                                                          3070732
## 85
       2023-01-02 214.95 217.10 212.75 216.60
                                                213.6959
                                                          1633559
  86
       2023-01-03 216.60 217.20 214.65 216.10
                                                213.2026
##
                                                          1173568
##
  87
       2023-01-04 216.90 219.80 214.25 216.55
                                                213.6465
                                                          3685593
##
  88
       2023-01-05 217.80 221.00 215.60 220.50
                                                217.5436
                                                          3054569
##
  89
       2023-01-06 221.00 221.75 216.40 217.90
                                                214.9784
                                                          1592524
       2023-01-09 219.75 220.25 217.05 219.30
## 90
                                                216.3597
                                                           789323
##
  91
       2023-01-10 219.30 221.35 217.80 219.85
                                                216.9023
                                                          1077675
##
  92
       2023-01-11 220.70 223.50 219.50 220.50
                                                217.5436
                                                          1604601
##
  93
       2023-01-12 221.80 221.80 216.85 218.90
                                                215.9650
                                                          1865692
##
  94
       2023-01-13 221.00 222.40 219.00 221.05
                                                218.0862
                                                          1576515
##
  95
       2023-01-16 222.00 222.50 218.00 219.20
                                                216.2610
                                                           994409
##
  96
       2023-01-17 219.20 220.85 217.55 219.70
                                                216.7543
                                                           938064
##
  97
       2023-01-18 219.95 222.40 219.80 222.00
                                                219.0235
                                                          1270865
## 98
       2023-01-19 221.90 224.35 220.60 222.95
                                                219.9607
                                                          1707061
       2023-01-20 223.40 225.00 222.05 222.95
                                                219.9607
## 99
                                                          1581886
## 100 2023-01-23 223.95 227.20 219.75 226.60
                                                223.5618
                                                          3390465
## 101 2023-01-24 227.90 230.95 227.50 230.05
                                                226.9655
                                                          3315569
## 102 2023-01-25 230.00 230.75 223.85 225.25
                                                222.2299
                                                          1176777
## 103 2023-01-27 226.55 228.25 222.20 225.55
                                                222.5259
                                                          2105185
## 104 2023-01-30 226.95 226.95 218.05 219.50
                                                216.5570
                                                          1966136
                                                          2395004
## 105 2023-01-31 219.95 221.35 216.80 217.25
                                                214.3371
                                                213.4985
## 106 2023-02-01 218.55 219.75 214.10 216.40
                                                          1285362
## 107 2023-02-02 215.10 215.70 210.10 210.95
                                                208.1216
                                                          2026062
## 108 2023-02-03 212.10 212.40 207.00 209.05
                                                206.2471
                                                          1905425
## 109 2023-02-06 209.05 212.95 207.40 212.55
                                                209.7002
                                                          3000925
## 110 2023-02-07 213.95 220.00 212.70 218.75
                                                215.8170
                                                          3962276
## 111 2023-02-08 219.80 225.40 219.40 224.85
                                                221.8353
                                                          2885392
  112 2023-02-09 225.45 226.20 221.70 223.65
                                                220.6513
                                                          2418073
## 113 2023-02-10 222.45 224.60 221.05 222.30
                                                219.3194
                                                           790630
## 114 2023-02-13 222.30 224.25 219.70 220.45
                                                217.4942
                                                           870863
## 115 2023-02-14 219.50 222.35 217.10 221.55
                                                218.5795
                                                          2458513
## 116 2023-02-15 221.40 222.70 218.70 221.80
                                                218.8261
                                                          1185065
## 117 2023-02-16 222.10 223.85 218.70 219.75
                                                216.8036
                                                          2381168
## 118 2023-02-17 219.50 221.00 217.75 218.60
                                                215.6691
                                                           649974
## 119 2023-02-20 219.00 219.50 214.75 215.80
                                                212.9066
                                                          1025116
## 120 2023-02-21 217.40 217.40 212.30 213.45
                                                210.5881
                                                          1303394
## 121 2023-02-22 213.20 217.80 211.65 216.95 214.0412
                                                          1894173
```

```
## 122 2023-02-23 216.90 220.50 215.65 219.65
                                                216.7050
                                                          1889544
## 123 2023-02-24 220.10 222.00 218.80 221.70
                                                218.7275
                                                          2114473
## 124 2023-02-27 221.90 224.00 219.15 223.35
                                                220.3554
                                                          1458035
## 125 2023-02-28 223.35 224.60 220.15 222.55
                                                219.5661
                                                          2820800
## 126 2023-03-01 222.95 223.95 219.55 220.25
                                                217.2969
                                                          2902429
## 127 2023-03-02 219.95 223.00 219.70 221.90
                                                218.9248
                                                          2886039
## 128 2023-03-03 222.95 224.00 222.00 222.95
                                                219.9607
                                                          2554858
## 129 2023-03-06 223.00 225.50 221.45 224.45
                                                221.4406
                                                          2459880
## 130 2023-03-08 224.50 230.95 223.85 230.25
                                                227.1628
                                                          3520030
## 131 2023-03-09 231.05 235.05 230.05 230.70
                                                227.6068
                                                          6982759
## 132 2023-03-10 229.70 232.70 227.25 231.90
                                                228.7907
                                                          1443206
## 133 2023-03-13 231.90 233.90 225.05 225.55
                                                222.5259
                                                          2551442
## 134 2023-03-14 226.00 231.50 225.25 229.10
                                                226.0283
                                                          4026600
## 135 2023-03-15 231.00 237.75 230.60 236.70
                                                233.5264
                                                          4373663
## 136 2023-03-16 236.80 239.80 236.40 237.85
                                                234.6610
                                                          4126157
## 137 2023-03-17 238.00 238.75 231.05 232.55
                                                229.4320
                                                          6723228
## 138 2023-03-20 230.40 233.10 228.45 231.55
                                                228.4454
                                                          2296671
## 139 2023-03-21 232.00 236.40 230.05 234.65
                                                231.5038
                                                          4339052
## 140 2023-03-22 235.70 236.30 231.50 232.45
                                                229.3333
                                                          1170300
## 141 2023-03-23 232.45 233.00 228.30 229.30
                                                226.2256
                                                          2164113
## 142 2023-03-24 229.30 230.15 222.50 223.90
                                                220.8980
                                                          1736636
## 143 2023-03-27 224.00 227.70 222.00 222.85
                                                219.8621
                                                          1918970
## 144 2023-03-28 222.85 224.90 220.05 223.70
                                                220.7007
                                                          1709779
## 145 2023-03-29 224.00 226.10 223.00 224.55
                                                221.5393
                                                          1759982
## 146 2023-03-31 227.00 230.70 224.55 228.85
                                                225.7816
                                                          2925256
## 147 2023-04-03 229.95 234.30 229.10 233.80
                                                230.6653
                                                          4265532
## 148 2023-04-05 232.20 236.10 229.70 235.70
                                                232.5398
                                                          3090789
## 149 2023-04-06 236.00 236.95 232.90 235.80
                                                232.6384
                                                          2062909
## 150 2023-04-10 237.00 237.00 227.20 228.50
                                                225.4363
                                                          4922368
## 151 2023-04-11 228.50 233.60 228.00 233.20
                                                230.0733
                                                          2482620
## 152 2023-04-12 234.00 234.00 229.45 231.45
                                                228.3468
                                                          3009476
## 153 2023-04-13 233.60 233.80 227.05 227.60
                                                224.5484
                                                          4644212
## 154 2023-04-17 227.50 233.95 226.50 233.45
                                                230.3199
                                                          2016721
                                                          2201466
## 155 2023-04-18 233.55 235.25 232.15 234.35
                                                231.2079
## 156 2023-04-19 233.55 235.30 232.15 233.90
                                                230.7639
                                                          1692146
## 157 2023-04-20 234.00 234.50 231.95 232.95
                                                229.8266
                                                           962842
## 158 2023-04-21 234.00 235.50 232.70 233.70
                                                230.5666
                                                          1567888
## 159 2023-04-24 235.25 237.75 232.90 235.90
                                                232.7371
                                                          2427262
## 160 2023-04-25 235.90 238.80 235.00 236.90
                                                233.7237
                                                          1868738
## 161 2023-04-26 235.15 237.35 234.05 235.55
                                                232.3918
                                                          1531840
## 162 2023-04-27 235.60 237.95 235.00 235.90
                                                232.7371
                                                          1539144
## 163 2023-04-28 237.60 238.15 234.25 236.90
                                                233.7237
                                                          4070505
## 164 2023-05-02 237.70 239.45 236.30 237.00
                                                233.8223
                                                          3560897
## 165 2023-05-03 237.00 242.40 235.45 236.70
                                                233.5264
                                                          3447131
## 166 2023-05-04 230.00 230.65 224.20 226.80
                                                223.7591
                                                          6728668
## 167 2023-05-05 225.50 227.80 225.15 226.20
                                                223.1671
                                                          4722518
## 168 2023-05-08 226.00 226.00 221.60 223.90
                                                220.8980
                                                          3028181
## 169 2023-05-09 224.30 226.75 223.55 226.20
                                                223.1671
                                                          2677850
## 170 2023-05-10 226.95 230.15 226.00 228.20
                                                225.1403
                                                          2577626
## 171 2023-05-11 228.20 233.00 228.20 232.65 229.5307
                                                          1975639
```

```
## 172 2023-05-12 232.85 232.85 227.45 229.25
                                                226.1763
                                                          1844641
## 173 2023-05-15 229.25 230.40 227.70 229.55
                                                226.4722
                                                           664038
## 174 2023-05-16 229.65 232.30 228.25 229.45
                                                226.3736
                                                          1148185
## 175 2023-05-17 230.00 231.10 228.10 229.65
                                                226.5709
                                                           874826
## 176 2023-05-18 230.90 232.25 225.90 226.85
                                                223.8084
                                                          1475714
## 177 2023-05-19 226.85 227.40 224.00 224.45
                                                221.4406
                                                          1349963
## 178 2023-05-22 224.10 226.55 223.70 226.05
                                                223.0192
                                                           855395
## 179 2023-05-23 226.95 226.95 224.35 224.90
                                                221.8846
                                                          1125927
## 180 2023-05-24 225.00 226.10 224.40 225.15
                                                222.1312
                                                          1198122
## 181 2023-05-25 225.15 225.95 224.50 225.50
                                                222.4765
                                                          1655067
## 182 2023-05-26 225.30 225.60 223.70 224.90
                                                221.8846
                                                           871344
## 183 2023-05-29 225.50 225.50 223.20 223.70
                                                220.7007
                                                           622678
## 184 2023-05-30 223.70 225.40 223.50 224.30
                                                221.2926
                                                           878194
## 185 2023-05-31 223.80 228.70 222.15 225.85
                                                222.8219
                                                          6984817
## 186 2023-06-01 226.40 226.45 222.70 223.25
                                                220.2567
                                                           988792
## 187 2023-06-02 223.25 224.35 222.15 222.70
                                                219.7141
                                                           941008
## 188 2023-06-05 223.00 224.60 222.05 224.05
                                                221.0460
                                                          1672398
## 189 2023-06-06 224.05 225.00 222.85 223.45
                                                220.4540
                                                          1168437
## 190 2023-06-07 224.00 224.45 223.00 223.45
                                                220.4540
                                                          2099481
## 191 2023-06-08 224.10 225.60 222.35 222.70
                                                219.7141
                                                          1973569
## 192 2023-06-09 222.70 223.10 221.05 222.80
                                                219.8127
                                                          1457734
## 193 2023-06-12 223.50 225.10 221.80 224.10
                                                221.0953
                                                          2066522
## 194 2023-06-13 224.25 224.85 222.95 223.25
                                                220.2567
                                                          1657978
## 195 2023-06-14 223.25 231.00 222.75 230.05
                                                226.9655
                                                          3227498
## 196 2023-06-15 231.00 231.00 226.25 227.75
                                                224.6964
                                                          2070529
## 197 2023-06-16 228.00 228.35 225.55 226.10
                                                223.0685
                                                          2978816
## 198 2023-06-19 227.35 227.35 225.10 226.00
                                                222.9698
                                                          1010996
## 199 2023-06-20 225.15 226.10 222.80 224.05
                                                221.0460
                                                          1882038
## 200 2023-06-21 224.45 226.50 224.00 225.90
                                                222.8712
                                                           985611
## 201 2023-06-22 226.00 226.50 222.10 222.85
                                                219.8621
                                                          1625405
## 202 2023-06-23 222.85 223.00 218.50 218.80
                                                215.8664
                                                          1206748
## 203 2023-06-26 218.80 220.90 216.65 220.35
                                                217.3956
                                                          1083389
## 204 2023-06-27 220.35 221.10 219.10 220.10
                                                217.1489
                                                          1043449
## 205 2023-06-28 220.10 220.10 220.10 220.10
                                                217.1489
## 206 2023-06-30 220.35 223.05 220.00 222.70
                                                219.7141
                                                          1469093
## 207 2023-07-03 223.50 225.45 222.55 223.35
                                                220.3554
                                                          1460718
## 208 2023-07-04 223.95 224.95 223.10 224.10
                                                221.0953
                                                           459277
## 209 2023-07-05 224.90 227.00 223.65 226.10
                                                223.0685
                                                          1572523
## 210 2023-07-06 225.25 228.80 225.25 228.40
                                                225.3376
                                                           967651
## 211 2023-07-07 228.35 231.45 227.15 229.80
                                                226.7189
                                                          2077311
## 212 2023-07-10 230.45 231.15 227.75 228.55
                                                225.4856
                                                          1474766
## 213 2023-07-11 229.20 233.20 229.20 230.30
                                                227.2122
                                                          1788722
## 214 2023-07-12 230.25 231.90 228.50 229.60
                                                226.5216
                                                          1338596
  215 2023-07-13 230.90 231.25 223.90 224.50
                                                221.4899
                                                          2158135
## 216 2023-07-14 225.70 230.90 224.55 229.55
                                                226.4722
                                                          1373650
## 217 2023-07-17 230.75 230.75 227.35 228.05
                                                224.9924
                                                           651894
## 218 2023-07-18 228.05 228.65 223.85 224.20
                                                221.1940
                                                          1694667
## 219 2023-07-19 224.95 225.90 223.65 224.85
                                                221.8353
                                                           925552
## 220 2023-07-20 225.60 225.65 223.85 224.55
                                                221.5393
                                                          1528466
## 221 2023-07-21 222.85 225.65 222.85 223.55 220.5527
                                                          1037570
```

```
## 222 2023-07-24 224.60 224.60 222.60 223.85
                                                220.8487
                                                          4307489
## 223 2023-07-25 224.30 226.10 224.00 225.70
                                                222.6738
                                                           943106
## 224 2023-07-26 225.50 227.45 224.60 224.95
                                                221.9339
                                                          1840385
## 225 2023-07-27 225.90 225.90 224.15 225.00
                                                221.9832
                                                          3017672
                                                          7031824
  226 2023-07-28 225.70 230.10 223.30 229.20
                                                226.1269
## 227 2023-07-31 230.00 234.75 228.50 233.55
                                                230.4186
                                                          3558719
## 228 2023-08-01 236.85 237.00 232.05 233.55
                                                230.4186
                                                          4373224
                                                222.3779
## 229 2023-08-02 232.85 232.95 224.25 225.40
                                                          2626562
## 230 2023-08-03 225.40 226.50 223.75 224.60
                                                221.5886
                                                          1375131
  231 2023-08-04 225.80 226.40 223.75 224.10
                                                221.0953
                                                          2188122
## 232 2023-08-07 224.25 227.00 224.15 226.50
                                                223.4631
                                                          1164287
## 233 2023-08-08 227.00 228.75 224.60 225.35
                                                222.3286
                                                          1777172
## 234 2023-08-09 225.05 233.75 224.70 231.55
                                                228.4454
                                                          6378139
## 235 2023-08-10 231.80 231.80 225.65 226.45
                                                223.4138
                                                          3377686
## 236 2023-08-11 226.70 227.30 225.15 225.50
                                                222.4765
                                                           981640
## 237 2023-08-14 225.50 225.50 222.50 224.05
                                                221.0460
                                                          1028024
## 238 2023-08-16 225.00 225.50 221.50 225.10
                                                222.0819
                                                          1628114
## 239 2023-08-17 225.00 225.20 223.05 223.75
                                                220.7500
                                                          1638821
## 240 2023-08-18 220.10 222.80 218.55 219.25
                                                219.2500
                                                          1856127
## 241 2023-08-21 219.20 222.15 218.80 221.65
                                                221.6500
                                                          1109009
## 242 2023-08-22 221.65 222.00 220.45 220.95
                                                220.9500
                                                           780003
## 243 2023-08-23 221.35 222.75 220.60 221.05
                                                221.0500
                                                           702136
## 244 2023-08-24 221.55 222.15 220.50 220.75
                                                220.7500
                                                           459567
## 245 2023-08-25 220.75 221.30 218.50 219.00
                                                219.0000
                                                           678463
  246 2023-08-28 219.05 219.90 217.85 218.10
                                                218.1000
                                                          1364231
  247 2023-08-29 218.60 220.60 218.20 219.95
                                                219.9500
                                                           662137
## 248 2023-08-30 220.50 220.60 218.00 218.35
                                                218.3500
                                                          1341451
## 249 2023-08-31 218.50 219.05 215.00 215.30
                                                215.3000
                                                          3110680
## 250 2023-09-01 216.00 219.90 214.70 219.55
                                                219.5500
                                                          4266629
## 251 2023-09-04 220.10 221.35 218.05 219.00
                                                219.0000
                                                          3082382
## 252 2023-09-05 219.50 229.80 219.50 229.15
                                                229.1500
                                                          7264631
## 253 2023-09-06 228.95 246.40 228.65 244.90
                                                244.9000 18548210
## 254 2023-09-07 247.00 248.45 240.35 246.50
                                                246.5000
                                                          8324350
## 255 2023-09-08 246.00 253.95 245.95 250.20
                                                250.2000
                                                          5426714
## 256 2023-09-11 251.95 254.40 247.30 249.10
                                                249.1000
                                                          2210804
## 257 2023-09-12 250.40 250.85 233.90 234.70
                                                234.7000
                                                          4382796
## 258 2023-09-13 235.50 238.65 233.10 236.30
                                                236.3000
                                                          1995236
## 259 2023-09-14 236.35 244.50 236.35 244.00
                                                244.0000
                                                          2887182
## 260 2023-09-15 245.65 246.20 240.35 241.00
                                                241.0000
                                                          4141983
## 261 2023-09-18 241.00 241.00 235.75 238.30
                                                238.3000
                                                          1756179
## 262 2023-09-20 236.90 240.95 233.65 239.60
                                                239.6000
                                                          3509711
## 263 2023-09-21 239.30 239.95 234.25 237.85
                                                237.8500
                                                          3466030
                                                240.2500
## 264 2023-09-22 237.95 242.85 237.65 240.25
                                                          1975015
## 265 2023-09-25 240.25 240.80 236.40 239.40
                                                239.4000
                                                          1306855
## 266 2023-09-26 239.35 242.20 239.00 240.25
                                                240.2500
                                                          1266590
## 267 2023-09-27 240.40 241.00 237.25 238.50
                                                238.5000
                                                          1511381
## 268 2023-09-28 238.50 240.90 234.20 235.35
                                                235.3500
                                                          1717282
## 269 2023-09-29 236.05 242.35 236.05 239.95
                                                239.9500
                                                          1975952
```

```
##
                     0pen
                             High
                                             Close Adi.Close
                                   Low
                                                               Volume
       2022-09-01 2582.65 2604.95 2550.70 2560.40
                                                              9188434
## 1
                                                    2551.387
                                                              5999196
## 2
       2022-09-02 2560.40 2575.35 2525.70 2530.50
                                                    2521.593
                                                   2560.754
## 3
       2022-09-05 2531.00 2581.50 2531.00 2569.80
                                                              5227785
## 4
       2022-09-06 2573.00 2606.00 2572.00 2596.85
                                                    2587.709
                                                              5030172
## 5
       2022-09-07 2575.00 2594.90 2570.00 2581.75
                                                    2572.662
                                                              3455942
## 6
       2022-09-08 2588.25 2598.00 2571.00 2585.40
                                                    2576.299
                                                              3256840
                                                    2560.256
##
  7
       2022-09-09 2610.00 2610.00 2564.00 2569.30
                                                              3837302
## 8
       2022-09-12 2570.55 2612.00 2570.55 2598.05
                                                    2588.905
                                                              3431445
## 9
       2022-09-13 2618.00 2629.70 2601.00 2619.75
                                                    2610.529
                                                              4102114
## 10
       2022-09-14 2575.00 2610.00 2572.75 2588.35
                                                    2579.239
                                                              4004997
       2022-09-15 2583.00 2603.55 2556.75 2562.70
                                                    2553.679
                                                              4783723
## 11
## 12
       2022-09-16 2543.75 2553.00 2491.00 2499.20
                                                    2490.403
                                                              9330469
## 13
       2022-09-19 2499.20 2522.70 2481.35 2502.45
                                                    2493.641
                                                              3498286
## 14
       2022-09-20 2522.45 2537.70 2494.70 2502.85
                                                    2494.040
                                                              3881882
## 15
       2022-09-21 2496.75 2533.00 2495.00 2509.75
                                                    2500.916
                                                              4249172
## 16
       2022-09-22 2486.00 2503.00 2472.10 2486.10
                                                    2477.349
                                                              4757219
## 17
       2022-09-23 2485.00 2495.95 2436.10 2439.50
                                                    2430.913
                                                              4397194
## 18
       2022-09-26 2394.05 2417.80 2375.15 2377.35
                                                    2368.982
                                                              5759298
##
  19
       2022-09-27 2394.00 2426.00 2360.10 2396.25
                                                    2387.815
                                                              7455448
##
  20
       2022-09-28 2360.35 2378.00 2327.10 2332.45
                                                    2324.240
                                                              7844140
                                                    2317.115
## 21
       2022-09-29 2360.00 2367.50 2313.00 2325.30
                                                              6771046
##
  22
       2022-09-30 2311.00 2402.00 2311.00 2377.75
                                                    2369.380
                                                              8589908
##
  23
       2022-10-03 2391.50 2416.95 2363.00 2369.50
                                                    2361.159
                                                              5470030
  24
       2022-10-04 2397.80 2418.00 2390.15 2413.20
                                                    2404.706
##
                                                              4129893
##
  25
       2022-10-06 2429.00 2450.00 2418.15 2422.10
                                                    2413.574
                                                              6162021
  26
       2022-10-07 2414.65 2443.90 2414.65 2432.35
                                                    2423.788
##
                                                              3560167
## 27
       2022-10-10 2405.00 2417.60 2388.00 2405.80
                                                    2397.332
                                                              2921076
## 28
       2022-10-11 2414.00 2414.00 2351.10 2357.90
                                                    2349.600
                                                              4252803
##
  29
       2022-10-12 2352.00 2381.70 2343.10 2375.25
                                                    2366.889
                                                              3422992
##
  30
       2022-10-13 2371.40 2394.00 2360.10 2382.80
                                                    2374.413
                                                              3382098
##
  31
       2022-10-14 2415.00 2416.35 2369.10 2370.70
                                                    2362.355
                                                              4202459
##
  32
       2022-10-17 2355.00 2414.00 2343.60 2408.75
                                                    2400.271
                                                              7720595
##
  33
       2022-10-18 2422.00 2463.00 2420.15 2451.25
                                                    2442.622
                                                              5729899
                                                    2485.121
##
  34
       2022-10-19 2454.50 2527.85 2441.70 2493.90
                                                              8882553
##
  35
       2022-10-20 2485.00 2519.00 2485.00 2500.60
                                                    2491.798
                                                              4022919
  36
       2022-10-21 2507.70 2516.80 2467.00 2471.60
                                                    2462.900
                                                              3804352
##
## 37
       2022-10-24 2460.00 2502.50 2455.30 2479.85
                                                    2471.121
                                                              1555270
       2022-10-25 2499.00 2499.00 2438.00 2441.55
                                                    2432.956
##
  38
                                                              5645639
##
   39
       2022-10-27 2458.00 2468.45 2432.80 2451.15
                                                    2442.522
                                                              5774775
## 40
       2022-10-28 2465.00 2535.00 2459.45 2526.15
                                                    2517.258
                                                              8126824
## 41
       2022-10-31 2541.00 2560.95 2532.20 2549.60
                                                    2540.625
                                                              5731802
## 42
                                                    2520.945
       2022-11-01 2600.00 2600.00 2508.00 2529.85
                                                              6443999
## 43
       2022-11-02 2532.30 2550.20 2515.00 2545.65
                                                    2536.689
                                                              4145144
## 44
       2022-11-03 2529.85 2559.55 2525.05 2555.15
                                                    2546.156
                                                              3089026
## 45
       2022-11-04 2553.90 2600.00 2551.10 2592.75
                                                    2583.624
                                                              5803737
## 46
       2022-11-07 2591.00 2610.30 2574.00 2606.60
                                                    2597.425
                                                              5440967
## 47
       2022-11-09 2610.30 2621.95 2590.05 2604.00
                                                    2594.834
                                                              5193814
## 48
       2022-11-10 2590.00 2596.55 2563.00 2572.50
                                                    2563.445
                                                              2753420
## 49
       2022-11-11 2600.00 2636.00 2588.00 2631.80 2622.536
                                                              5681124
```

```
2022-11-14 2630.75 2642.00 2605.15 2619.05
                                                    2609.831
                                                              4173395
##
  51
       2022-11-15 2622.30 2626.40 2590.00 2607.30 2598.122
                                                              3270388
                                                    2583.225
## 52
       2022-11-16 2610.00 2615.95 2581.35 2592.35
                                                              4484007
## 53
       2022-11-17 2584.95 2613.00 2580.00 2599.05
                                                   2589.901
                                                              3074259
## 54
       2022-11-18 2606.75 2609.00 2571.10 2597.65
                                                   2588.506
                                                              2447425
                                                    2541.921
## 55
       2022-11-21 2588.00 2588.00 2543.10 2550.90
                                                              2949108
  56
       2022-11-22 2545.00 2568.50 2536.50 2565.05
                                                    2556.021
                                                              3051201
##
   57
       2022-11-23 2575.00 2577.90 2552.25 2557.05
                                                    2548.049
                                                              2959787
  58
       2022-11-24 2566.00 2594.00 2548.20 2579.10
                                                   2570.022
                                                              4333225
##
## 59
       2022-11-25 2589.00 2624.90 2582.10 2617.60
                                                    2608.386
                                                              3391988
## 60
       2022-11-28 2608.90 2721.05 2502.00 2707.55
                                                    2698.020 14549929
       2022-11-29 2703.95 2731.65 2694.00 2712.20
                                                    2702.653
## 61
                                                              5103687
##
  62
       2022-11-30 2712.50 2745.45 2698.20 2731.35
                                                    2721.736 12075137
## 63
       2022-12-01 2741.80 2755.00 2716.00 2723.30
                                                   2713.714
                                                              4377696
## 64
       2022-12-02 2730.00 2748.00 2700.60 2722.15
                                                    2712.568
                                                              5348595
## 65
       2022-12-05 2712.00 2716.75 2678.00 2682.45
                                                    2673.008
                                                              6843367
## 66
       2022-12-06 2665.10 2697.00 2661.00 2690.20
                                                    2680.730
                                                              3966243
## 67
       2022-12-07 2685.00 2695.00 2642.15 2650.50
                                                   2641.170
                                                              3905263
## 68
       2022-12-08 2660.00 2665.00 2640.10 2649.25
                                                  2639.925
                                                              3579858
##
  69
       2022-12-09 2646.00 2660.00 2601.85 2609.10
                                                    2599.916
                                                              5840633
##
  70
       2022-12-12 2585.50 2623.00 2585.00 2613.10
                                                    2603.902
                                                              4374946
##
  71
       2022-12-13 2613.10 2633.00 2606.70 2625.00
                                                    2615.760
                                                              3845839
##
  72
       2022-12-14 2637.65 2638.95 2611.00 2615.50
                                                   2606.293
                                                              3354618
##
  73
       2022-12-15 2602.50 2615.00 2571.00 2578.35
                                                    2569.274
                                                              4009765
##
  74
       2022-12-16 2571.00 2618.80 2558.15 2565.60
                                                    2556.569
                                                              7308934
##
  75
       2022-12-19 2581.00 2604.00 2566.70 2599.30
                                                    2590.150
                                                              3567363
                                                              3446291
  76
       2022-12-20 2583.90 2626.00 2566.00 2621.80
                                                   2612.571
##
## 77
       2022-12-21 2621.00 2633.00 2576.10 2584.50
                                                    2575.403
                                                              3935463
##
  78
       2022-12-22 2598.00 2604.65 2566.75 2577.80
                                                    2568.726
                                                              3438692
##
  79
       2022-12-23 2563.30 2590.50 2492.25 2502.20
                                                    2493.392
                                                              4733657
## 80
       2022-12-26 2514.75 2542.00 2492.40 2524.05
                                                    2515.165
                                                              2764496
##
  81
       2022-12-27 2530.00 2548.80 2515.25 2544.70
                                                   2535.743
                                                              2659749
##
  82
       2022-12-28 2538.00 2549.80 2521.50 2544.45
                                                    2535.493
                                                              3442509
##
  83
       2022-12-29 2527.00 2548.90 2525.50 2543.30
                                                   2534.348
                                                              3198493
##
  84
       2022-12-30 2545.10 2577.00 2541.10 2547.20
                                                    2538.234
                                                              3364092
##
  85
       2023-01-02 2550.00 2579.00 2548.20 2575.90
                                                   2566.833
                                                              2453414
## 86
       2023-01-03 2565.05 2573.00 2547.80 2557.05
                                                    2548.049
                                                              3534596
## 87
       2023-01-04 2557.00 2561.05 2514.00 2518.55
                                                    2509.685
                                                              4275746
       2023-01-05 2523.50 2536.40 2504.00 2514.05
##
  88
                                                    2505.201
                                                              6293519
##
  89
       2023-01-06 2526.65 2547.95 2518.30 2536.90
                                                    2527.970
                                                              2930338
  90
       2023-01-09 2545.30 2602.00 2543.35 2596.80
                                                    2587.659
                                                              4948549
##
  91
       2023-01-10 2606.00 2606.00 2546.00 2558.40
                                                    2549.394
                                                              3713755
                                                    2517.258
##
  92
       2023-01-11 2552.50 2558.00 2521.10 2526.15
                                                              5311657
## 93
       2023-01-12 2524.85 2532.50 2465.00 2471.60
                                                    2462.900
                                                              8163366
## 94
       2023-01-13 2458.40 2472.90 2434.60 2467.60
                                                    2458.914
                                                              9515473
## 95
       2023-01-16 2472.70 2479.65 2427.00 2444.10
                                                    2435.497
                                                              6287407
## 96
       2023-01-17 2458.00 2483.00 2450.60 2478.80
                                                    2470.075
                                                              4961585
                                                              6206382
## 97
       2023-01-18 2473.50 2491.10 2460.35 2474.70
                                                    2465.989
## 98
       2023-01-19 2472.90 2481.15 2456.65 2472.05
                                                    2463.348
                                                              5510333
       2023-01-20 2475.00 2475.00 2437.25 2442.65 2434.052
                                                              6890325
```

```
## 100 2023-01-23 2449.00 2466.20 2425.00 2430.30
                                                  2421.745
                                                              5055324
## 101 2023-01-24 2440.00 2443.65 2387.35 2415.95 2407.446
                                                             7609558
## 102 2023-01-25 2412.45 2414.70 2380.00 2382.55 2374.163
                                                              5715684
## 103 2023-01-27 2384.40 2387.35 2311.65 2337.35
                                                   2329.123 11920991
## 104 2023-01-30 2331.70 2371.90 2301.00 2359.75
                                                  2351.444 10047822
## 105 2023-01-31 2382.00 2387.65 2341.00 2353.85
                                                   2345.564 10472167
                                                             8929007
## 106 2023-02-01 2379.95 2379.95 2305.00 2339.90
                                                   2331.663
## 107 2023-02-02 2318.00 2348.00 2311.00 2326.95
                                                   2318.759
                                                             6305317
## 108 2023-02-03 2349.00 2349.00 2293.00 2329.00
                                                   2320.802 11398850
## 109 2023-02-06 2315.00 2321.00 2305.80 2311.45
                                                   2303.314
                                                             6847679
## 110 2023-02-07 2312.00 2327.40 2293.00 2305.90
                                                   2297.783
                                                             6985001
## 111 2023-02-08 2313.00 2359.90 2307.00 2351.95
                                                   2343.671
                                                             9765490
## 112 2023-02-09 2353.45 2370.85 2334.00 2356.05
                                                   2347.757
                                                             6079228
## 113 2023-02-10 2354.90 2354.90 2321.30 2336.65
                                                   2328.425
                                                             4979789
## 114 2023-02-13 2340.20 2350.00 2313.55 2323.35
                                                   2315.172
                                                             4777674
## 115 2023-02-14 2329.95 2381.90 2323.65 2378.10
                                                   2369.729
                                                             6609564
## 116 2023-02-15 2376.00 2437.20 2373.00 2431.95
                                                   2423.389 15461902
## 117 2023-02-16 2449.45 2463.80 2425.05 2430.05
                                                  2421.496
                                                             7967558
## 118 2023-02-17 2420.00 2447.50 2410.60 2440.20
                                                   2431.610
                                                              5450092
## 119 2023-02-20 2445.00 2449.75 2410.10 2414.40
                                                   2405.901
                                                             4078245
## 120 2023-02-21 2424.00 2446.80 2412.35 2434.10
                                                   2425.532
                                                             6143298
## 121 2023-02-22 2425.95 2430.00 2375.05 2378.90
                                                   2370.526
                                                              5087729
## 122 2023-02-23 2378.00 2394.75 2361.35 2367.50
                                                   2359.166
                                                             4546655
## 123 2023-02-24 2372.00 2396.15 2368.00 2383.70
                                                   2375.309
                                                             4353814
## 124 2023-02-27 2382.00 2389.65 2351.70 2367.85
                                                   2359.515
                                                              5168667
## 125 2023-02-28 2356.10 2367.00 2313.65 2322.55
                                                   2314.375 10150245
## 126 2023-03-01 2344.00 2345.50 2323.25 2343.90
                                                  2335.649
                                                              5330852
## 127 2023-03-02 2337.00 2351.65 2321.60 2326.05
                                                   2317.862
                                                             4307425
## 128 2023-03-03 2349.15 2393.45 2341.55 2385.40
                                                   2377.003
                                                             6758115
## 129 2023-03-06 2400.00 2424.60 2400.00 2408.70
                                                   2400.221
                                                             4694338
## 130 2023-03-08 2408.70 2419.00 2385.00 2417.35
                                                   2408.841
                                                             7283694
## 131 2023-03-09 2416.00 2416.90 2355.10 2359.25
                                                  2350.945
                                                             7492509
## 132 2023-03-10 2341.50 2344.00 2315.05 2322.70
                                                   2314.524
                                                              6153681
## 133 2023-03-13 2329.00 2344.00 2275.00 2284.50
                                                   2276.458
                                                              5894088
## 134 2023-03-14 2280.00 2304.95 2269.05 2275.95
                                                   2267.938
                                                             7396699
## 135 2023-03-15 2284.10 2298.30 2227.40 2237.05
                                                   2229.176 10027725
## 136 2023-03-16 2243.00 2254.00 2202.20 2225.90
                                                   2218.065
                                                             8474595
## 137 2023-03-17 2244.75 2251.95 2212.70 2223.10
                                                   2215.275 15697554
## 138 2023-03-20 2215.00 2220.00 2180.00 2201.25
                                                   2193.501
                                                             9010595
## 139 2023-03-21 2218.95 2274.00 2217.00 2269.70
                                                   2261.711
                                                             9876263
## 140 2023-03-22 2285.00 2291.45 2270.00 2276.60
                                                   2268.586
                                                              5039622
## 141 2023-03-23 2268.00 2269.90 2243.05 2247.80
                                                   2239.888
                                                              7499082
## 142 2023-03-24 2245.25 2250.00 2198.00 2203.30
                                                   2195.544
                                                              5711497
## 143 2023-03-27 2217.50 2254.00 2200.20 2237.55
                                                   2229.674
                                                             6486068
## 144 2023-03-28 2245.00 2256.50 2237.00 2248.00
                                                   2240.087
                                                              5804018
## 145 2023-03-29 2239.00 2244.80 2211.10 2234.70
                                                   2226.834
                                                             8678073
## 146 2023-03-31 2255.00 2343.45 2254.70 2331.05
                                                   2322.845 13001005
## 147 2023-04-03 2345.00 2349.00 2315.00 2331.45 2323.243
                                                             4750238
## 148 2023-04-05 2348.00 2348.00 2308.55 2325.85 2317.663
                                                             7505339
## 149 2023-04-06 2318.15 2354.00 2318.15 2341.45 2333.208
                                                             8507771
```

```
## 150 2023-04-10 2350.00 2350.40 2321.55 2324.85
                                                   2316.667
                                                              5981688
## 151 2023-04-11 2334.00 2341.00 2324.05 2336.35
                                                  2328.126
                                                              4865301
## 152 2023-04-12 2336.35 2367.80 2330.05 2346.65
                                                    2338.390
                                                              8389646
## 153 2023-04-13 2353.00 2365.80 2342.00 2355.50
                                                   2347.208
                                                              5712541
## 154 2023-04-17 2424.95 2424.95 2349.05 2367.45
                                                   2359.116
                                                              8274452
## 155 2023-04-18 2377.00 2377.00 2326.00 2340.35
                                                    2332.112
                                                              4802172
## 156 2023-04-19 2339.05 2357.90 2332.20 2352.00
                                                    2343.721
                                                              5664207
## 157 2023-04-20 2354.10 2359.00 2332.10 2346.05
                                                    2337.792
                                                              3233882
## 158 2023-04-21 2350.65 2361.00 2336.40 2349.00
                                                              3529236
                                                   2340.731
## 159 2023-04-24 2375.00 2380.90 2348.00 2358.00
                                                    2349.700
                                                              5970048
## 160 2023-04-25 2366.00 2380.60 2350.50 2376.05
                                                    2367.686
                                                              4262471
## 161 2023-04-26 2379.00 2386.10 2354.05 2362.10
                                                              3977129
                                                    2353.785
## 162 2023-04-27 2375.00 2384.00 2364.00 2377.05
                                                    2368.683
                                                              4230627
## 163 2023-04-28 2382.00 2423.90 2381.75 2420.50
                                                    2411.980
                                                              7183342
## 164 2023-05-02 2436.20 2445.80 2428.10 2441.05
                                                    2432.458
                                                              5991101
## 165 2023-05-03 2445.00 2445.00 2413.05 2420.10
                                                    2411.581
                                                              3259053
## 166 2023-05-04 2421.15 2452.85 2414.60 2448.00
                                                    2439.383
                                                              3985159
## 167 2023-05-05 2441.00 2461.35 2436.00 2441.75
                                                   2433.155
                                                              4036548
## 168 2023-05-08 2450.00 2483.65 2444.15 2471.90
                                                    2463.199
                                                              4224469
## 169 2023-05-09 2475.00 2486.80 2463.25 2479.55
                                                    2470.822
                                                              2983468
## 170 2023-05-10 2490.00 2499.85 2481.20 2496.60
                                                    2487.812
                                                              5017544
## 171 2023-05-11 2498.95 2509.50 2476.55 2480.30
                                                    2471.569
                                                              4872451
## 172 2023-05-12 2469.80 2487.40 2456.50 2484.35
                                                    2475.605
                                                              3209889
## 173 2023-05-15 2489.90 2504.55 2473.15 2489.25
                                                    2480.488
                                                              3153587
## 174 2023-05-16 2494.00 2499.60 2450.15 2453.80
                                                    2445.163
                                                              4023000
## 175 2023-05-17 2463.00 2465.00 2429.00 2439.30
                                                    2430.714
                                                              4060722
## 176 2023-05-18 2449.55 2457.00 2427.15 2434.05
                                                   2425.482
                                                              4857531
## 177 2023-05-19 2434.05 2445.95 2418.85 2441.95
                                                    2433.354
                                                              3715280
## 178 2023-05-22 2435.00 2466.00 2432.35 2455.00
                                                    2446.358
                                                              3431208
## 179 2023-05-23 2460.65 2468.00 2451.45 2454.55
                                                    2445.910
                                                              2811473
## 180 2023-05-24 2445.90 2464.00 2433.45 2440.25
                                                    2431.660
                                                              3743804
## 181 2023-05-25 2433.90 2449.00 2416.05 2439.95
                                                    2431.361
                                                              5301647
## 182 2023-05-26 2458.00 2509.00 2450.75 2506.50
                                                    2497.677
                                                              5827017
## 183 2023-05-29 2521.00 2530.00 2507.20 2520.60
                                                    2511.728
                                                              4619754
## 184 2023-05-30 2520.60 2537.70 2514.35 2519.95
                                                    2511.080
                                                              5234564
## 185 2023-05-31 2500.00 2509.85 2461.00 2469.90
                                                    2461.206 12510304
## 186 2023-06-01 2480.15 2484.90 2458.00 2463.25
                                                    2454.579
                                                              6734525
## 187 2023-06-02 2471.00 2482.85 2451.00 2455.20
                                                    2446.558
                                                              7291995
## 188 2023-06-05 2467.20 2483.75 2458.45 2477.25
                                                    2468.530
                                                              5034355
## 189 2023-06-06 2483.45 2487.70 2462.00 2479.35
                                                    2470.623
                                                              3458161
## 190 2023-06-07 2487.00 2500.00 2472.60 2498.15
                                                    2489.356
                                                              4759238
## 191 2023-06-08 2506.00 2516.85 2491.00 2499.65
                                                    2490.851
                                                              5570815
## 192 2023-06-09 2507.00 2508.55 2478.00 2481.95
                                                    2473.213
                                                              2712243
## 193 2023-06-12 2475.50 2489.20 2465.00 2484.15
                                                    2475.406
                                                              2949893
## 194 2023-06-13 2495.00 2523.45 2486.25 2520.85
                                                    2511.977
                                                              5190958
## 195 2023-06-14 2521.00 2555.00 2517.00 2551.85
                                                    2542.868
                                                              6127509
## 196 2023-06-15 2551.80 2562.55 2535.50 2552.55
                                                    2543.565
                                                              5451926
## 197 2023-06-16 2560.20 2582.40 2560.20 2577.40
                                                   2568.327 11155180
## 198 2023-06-19 2584.00 2584.00 2542.65 2551.80
                                                   2542.818
                                                              3137532
## 199 2023-06-20 2547.55 2564.00 2535.00 2557.10 2548.099
                                                              3194085
```

```
## 200 2023-06-21 2557.00 2569.85 2548.00 2564.30 2555.274
                                                             3212779
## 201 2023-06-22 2556.00 2573.30 2532.00 2535.50 2526.575
                                                             3516244
## 202 2023-06-23 2528.90 2533.40 2512.00 2514.75
                                                  2505.898
                                                             3059084
## 203 2023-06-26 2507.00 2515.40 2488.70 2495.55
                                                  2486.766
                                                             5833893
## 204 2023-06-27 2496.55 2509.50 2486.65 2496.45
                                                   2487.662
                                                             4471687
## 205 2023-06-28 2496.45 2496.45 2496.45 2496.45
                                                   2487.662
## 206 2023-06-30 2546.40 2556.65 2533.45 2550.25
                                                  2541.273
                                                             5146441
  207 2023-07-03 2558.05 2622.00 2555.35 2615.70
                                                   2606.493
                                                             5609248
## 208 2023-07-04 2625.00 2625.00 2573.25 2588.75
                                                   2579.637
                                                             3720447
## 209 2023-07-05 2609.00 2609.00 2575.80 2584.50
                                                   2575.403
                                                             4729479
## 210 2023-07-06 2576.05 2644.45 2576.05 2638.75
                                                   2629.462
                                                             8822948
## 211 2023-07-07 2635.00 2664.95 2628.00 2633.60
                                                   2624.330
                                                             6172684
## 212 2023-07-10 2688.90 2756.00 2675.00 2735.05
                                                   2725.423 15340262
## 213 2023-07-11 2752.90 2770.00 2737.60 2764.70
                                                   2754.968
                                                             9262001
## 214 2023-07-12 2766.30 2802.00 2761.65 2767.75
                                                   2758.008
                                                             8645662
## 215 2023-07-13 2783.90 2799.00 2737.25 2743.00
                                                  2733.345
                                                             6776172
## 216 2023-07-14 2750.00 2760.90 2725.10 2740.70
                                                  2731.053
                                                             6979790
## 217 2023-07-17 2747.00 2815.05 2728.00 2796.70
                                                  2786.855 10254545
## 218 2023-07-18 2817.00 2837.45 2793.00 2820.45 2810.522 11937761
## 219 2023-07-19 2830.00 2856.00 2797.00 2841.85
                                                  2831.847 18054869
## 220 2023-07-20 2580.00 2630.95 2580.00 2619.85 2610.628 19358812
## 221 2023-07-21 2609.00 2614.90 2523.60 2538.75
                                                  2529.813 15124619
## 222 2023-07-24 2481.00 2514.95 2469.30 2487.40
                                                  2478.644 11863933
## 223 2023-07-25 2494.00 2505.20 2480.00 2485.80
                                                   2477.050
                                                             6013010
## 224 2023-07-26 2485.00 2547.00 2485.00 2526.20
                                                  2517.308
                                                             6455506
## 225 2023-07-27 2534.05 2537.65 2490.35 2502.70
                                                   2493.890
                                                             8613449
## 226 2023-07-28 2512.05 2542.85 2500.55 2527.85
                                                  2518.952 10413926
## 227 2023-07-31 2527.85 2553.90 2517.95 2549.25
                                                  2540.277
                                                             4275587
## 228 2023-08-01 2555.00 2559.00 2505.30 2513.20
                                                   2504.354
                                                             4768316
## 229 2023-08-02 2509.20 2512.00 2463.60 2486.35
                                                  2477.598
                                                             6374107
## 230 2023-08-03 2475.30 2500.90 2458.05 2475.90
                                                   2467.185
                                                             5084175
## 231 2023-08-04 2498.80 2516.00 2471.60 2509.55
                                                   2500.716 11442805
  232 2023-08-07 2521.00 2528.40 2505.00 2523.85
                                                   2514.966
                                                             2991435
## 233 2023-08-08 2528.00 2534.45 2499.55 2508.65
                                                   2499.819
                                                             4922036
## 234 2023-08-09 2504.85 2529.00 2481.10 2525.20
                                                   2516.311
                                                             5743293
## 235 2023-08-10 2524.95 2550.00 2508.45 2536.45
                                                   2527.522
                                                             7735299
## 236 2023-08-11 2532.45 2558.85 2512.35 2547.15
                                                   2538.184 11089665
## 237 2023-08-14 2539.00 2582.30 2525.00 2577.25
                                                   2568.178
                                                             4787906
## 238 2023-08-16 2551.00 2582.80 2551.00 2575.15
                                                   2566.085
                                                             5101556
## 239 2023-08-17 2567.10 2578.10 2532.85 2538.00
                                                   2529.066
                                                             6836872
## 240 2023-08-18 2531.25 2577.60 2508.55 2556.80
                                                   2547.800
                                                             9319989
## 241 2023-08-21 2539.95 2555.45 2515.65 2520.00
                                                   2520.000
                                                             4610873
## 242 2023-08-22 2516.90 2537.95 2499.00 2519.40
                                                   2519.400
                                                             3856522
## 243 2023-08-23 2524.20 2542.85 2516.95 2522.20
                                                   2522.200
                                                             4758976
## 244 2023-08-24 2539.90 2539.90 2471.00 2479.80
                                                   2479.800
                                                             7070010
## 245 2023-08-25 2456.00 2505.00 2442.60 2468.35
                                                   2468.350 11111200
## 246 2023-08-28 2472.00 2484.00 2431.10 2443.75
                                                   2443.750
                                                             6290413
## 247 2023-08-29 2452.05 2453.45 2408.15 2420.35
                                                  2420.350
                                                             8438322
## 248 2023-08-30 2432.00 2443.00 2415.00 2418.05 2418.050 6084473
## 249 2023-08-31 2423.00 2425.00 2399.90 2407.00 2407.000 10819300
```

```
## 250 2023-09-01 2406.55 2425.65 2401.65 2412.65 2412.650
                                                             9056421
## 251 2023-09-04 2412.65 2423.65 2405.30 2410.70 2410.700
                                                             4673813
## 252 2023-09-05 2420.00 2433.95 2412.45 2423.60 2423.600
                                                             4337938
## 253 2023-09-06 2421.10 2436.15 2417.25 2428.70 2428.700
                                                             4100185
## 254 2023-09-07 2421.70 2438.25 2411.00 2432.00 2432.000
                                                             6826286
## 255 2023-09-08 2440.00 2456.00 2422.95 2448.20 2448.200 11554644
## 256 2023-09-11 2452.00 2476.85 2452.00 2474.60 2474.600
                                                             6635537
## 257 2023-09-12 2483.00 2483.00 2435.95 2438.85
                                                   2438.850
                                                             8127833
## 258 2023-09-13 2440.00 2462.65 2426.25 2451.05 2451.050
                                                             6401669
## 259 2023-09-14 2460.00 2465.80 2445.00 2453.30 2453.300
                                                             4604818
## 260 2023-09-15 2468.00 2468.00 2449.50 2457.85 2457.850 12734296
## 261 2023-09-18 2440.05 2451.00 2432.05 2436.45 2436.450
                                                             3758150
## 262 2023-09-20 2423.05 2427.60 2355.00 2382.15 2382.150 28540942
## 263 2023-09-21 2374.95 2390.10 2360.00 2364.80 2364.800
                                                             6113091
## 264 2023-09-22 2376.00 2382.45 2350.00 2354.95 2354.950
                                                             9588393
## 265 2023-09-25 2350.40 2360.70 2335.10 2340.45 2340.450
                                                             7127442
## 266 2023-09-26 2338.55 2350.20 2335.60 2342.50 2342.500
                                                             5043891
## 267 2023-09-27 2343.50 2371.80 2338.50 2368.90 2368.90
                                                             5861389
## 268 2023-09-28 2383.00 2383.00 2325.00 2334.10 2334.100
                                                             7259173
## 269 2023-09-29 2341.80 2369.10 2334.10 2345.00 2345.00
                                                             6171007
Calculating the Daily Return and Portfolio Net Return
religare_n<-length((religare$Adj.Close))</pre>
vakrange n<-length((vakrange$Adj.Close))</pre>
Petronet_n<-length((Petronet$Adj.Close))</pre>
reliance n<-length((reliance$Adj.Close))</pre>
reliance_DailyRet<-(reliance$Adj.Close[-1]/reliance$Adj.Close[-reliance_n])-1
vakrange_DailyRet<-(vakrange$Adj.Close[-1]/vakrange$Adj.Close[-vakrange n])-1</pre>
Petronet_DailyRet<-(Petronet$Adj.Close[-1]/Petronet$Adj.Close[-Petronet_n])-1
religare DailyRet<-(religare$Adj.Close[-1]/religare$Adj.Close[-religare n])-1
Portfolio_DailyRet<-data.frame(reliance_DailyRet,vakrange_DailyRet,religare_D
ailyRet,Petronet DailyRet)
Portfolio_DailyRet
       reliance_DailyRet vakrange_DailyRet religare_DailyRet
Petronet DailyRet
## 1
           -1.167783e-02
                              -0.005415183
                                                0.0072201572
-0.0141167052
## 2
                               0.194192523
                                               -0.0156402349
            1.553061e-02
-0.0025403630
## 3
            1.052613e-02
                               0.001519732
                                               -0.0095994503
0.0006946239
## 4
           -5.814842e-03
                               0.124430862
                                                0.000000000
0.0115686987
## 5
            1.413791e-03
                              -0.032388758
                                                0.0143716171
-0.0016010450
## 6
           -6.227231e-03
                               0.050209286
                                                0.0013179374
-0.0018327665
```

## 7 1.118977e-02	0.070385151	0.0621914918	
0.0041311820	0.404060404	0.0400764047	
## 8 8.352481e-03	0.124069494	0.0498/6104/	
-0.0022856081	0.054003065	0 010070010	
## 9 -1.198591e-02 -0.0135166497	-0.054083865	0.01209/9819	
## 10 -9.909828e-03	-0 086347603	-0 01020/0816	
0.0009289369	-0.000347033	-0.0102040010	
## 11 -2.477851e-02	0.048531160	-0.0506627747	
-0.0252900402	0.0.000==00		
## 12 1.300402e-03	0.018270447	0.0155134973	
-0.0078552639			
## 13 1.598794e-04	-0.021531013	0.0519401180	
0.0129558347			
## 14 2.756865e-03	-0.046454815	-0.0261399951	
-0.0151587174			
## 15 -9.423306e-03	0.033376136	-0.0196837943	
-0.0009620016			
## 16 -1.874425e-02	-0.033540392	-0.0219045079	
-0.0105921368	0.075025454	0.0051044100	
## 17 -2.547650e-02	-0.0/5835451	-0.0251944199	
-0.0197080375 ## 18 7.950039e-03	0 022270601	0 0417006270	
-0.0044675788	-0.05575051	0.041/9903/0	
## 19 -2.662494e-02	-0 018705144	0 0088820643	
-0.0057343375	0.010/03144	0.0000020043	
## 20 -3.065414e-03	-0.029325480	0.0030358228	
0.0027582965	0.02222.00	0.0000000	
## 21 2.255623e-02	0.042296108	0.0124092194	
-0.0002500430			
## 22 -3.469661e-03	0.033333324	0.0188340448	
-0.0062531163			
## 23 1.844269e-02	0.089761475	-0.0023473827	
0.0236596999			
## 24 3.688041e-03	0.009009062	0.0152941529	
0.0046718531	0.040004000	0.0440774004	
## 25 4.231843e-03	-0.010204039	-0.0118//1896	
0.0070973186	0 045103071	0 0100100517	
## 26 -1.091537e-02 -0.0145807449	-0.0451030/1	0.0123130517	
## 27 -1.991024e-02	-0 055330684	0 021/1307103	
-0.0197288395	-0.00004	0.021430/103	
## 28 7.358300e-03	0.00000000	-0.0243833448	
0.0037736125			
## 29 3.178619e-03	-0.002857045	0.0680034687	
-0.0105262886			
## 30 -5.078148e-03	-0.014326730	0.0059864272	
0.0182370246			
## 31 1.605020e-02	-0.036337100	-0.0102786526	
-0.0002487368			

## 32 1.764398e-02	0.021116048	-0.0218638976	
0.0024882271 ## 33 1.739924e-02	_0 011916910	_0 0079233910	
0.0019856056	-0.011010019	-0.00/0233010	
## 34 2.686595e-03	-0.013452993	-0.0053505885	
0.0037156574			
## 35 -1.159713e-02	-0.009090841	-0.0130237991	
-0.0004936277			
## 36 3.337914e-03	0.000000000	0.0071715432	
0.0007406830	0 000174070	0.0053400050	
## 37 -1.544452e-02	-0.0091/42/3	0.0253488859	
-0.0002466288 ## 38 3.931809e-03	0 000250275	0 0226111111	
-0.0012339450	-0.003233373	-0.0236111111	
## 39 3.059792e-02	-0 004672800	0 0068278634	
0.0326167203	0.004072000	0.0000270054	
## 40 9.282988e-03	-0.014084526	-0.0064989772	
-0.0162718554			
## 41 -7.746289e-03	0.000000000	0.0170648461	
0.0245682484			
## 42 6.245333e-03	0.079365094	-0.0288031818	
0.0035612744			
## 43 3.731854e-03	0.000000000	0.0095019237	
-0.0104093642			
## 44 1.471543e-02	-0.008823580	0.0228180259	
0.0074109830 ## 45 5.341827e-03	-0.004451094	0 0227022002	
0.0087802484	-0.004451094	-0.0237032902	
## 46 -9.974576e-04	-0 014903098	-0.0042844901	
-0.0150552270	0.014303030	0.0042044301	
## 47 -1.209679e-02	-0.021180033	-0.0318416690	
0.0155242424			
## 48 2.305152e-02	-0.006182323	0.0041481304	
-0.0018814687			
## 49 -4.844577e-03	0.035769818	0.0194747894	
0.0091893248			
## 50 -4.486398e-03	-0.012011961	0.0222865760	
-0.0011673151	0.015107564	0.0224007004	
## 51 -5.733839e-03 -0.0011687528	-0.01519/564	0.033408/984	
## 52 2.584470e-03	-0 006172875	-0 0257534082	
0.0046804865	0.000172075	0.023/334002	
## 53 -5.387321e-04	-0.034161502	-0.0120922889	
-0.0111809365			
## 54 -1.799704e-02	-0.006430906	-0.0222032117	
0.0148599408			
## 55 5.547121e-03	-0.080906102	-0.0197961805	
-0.0096015635			
## 56 -3.118785e-03	0.042253519	0.0406889858	
0.0087252218			

## 57 8.623229e-03	0.013513456	-0.0273972779	
-0.0048054344			
## 58 1.492770e-02	0.000000000	0.0918427791	
0.0091743210			
## 59 3.436351e-02	-0.001666610	0.0247244876	
0.0100478245			
## 60 1.717387e-03	0.001669392	-0.0369/86951	
0.0035528179	0.00000050	0.0400762054	
## 61 7.060662e-03	0.020000050	-0.0100/62851	
0.0037761958	0.004001024	0.0124800205	
## 62 -2.947195e-03	0.004901924	0.0134800385	
-0.0082294651	0 003353053	0.0103735465	
## 63 -4.223879e-04	0.003252052	-0.0192725465	
0.0052158125	0.00(402020	0 0121702200	
## 64 -1.458399e-02 0.0054244612	-0.006483020	-0.0121782290	
## 65 2.889126e-03	0 012050516	0 0252171481	
0.0075064774	-0.013030310	-0.02321/1481	
## 66 -1.475728e-02	0 000017347	0 0069095160	
0.0020954718	-0.003317347	-0.0008983109	
## 67 -4.716110e-04	0 001660302	0 01/7612330	
0.0051115223	0.001009392	0.0147012330	
## 68 -1.515518e-02	-0 09166668	0 0025670108	
-0.0117891721	0.00100000	0.0023070100	
## 69 1.533065e-03	0 044036771	-0.0036984011	
0.0028070635	0.044030771	0.005050+011	
## 70 4.553995e-03	0.001757409	0 0074242602	
0.0006997436	0.002/3/103	0.007 12 12002	
## 71 -3.619045e-03	0.036842145	0.0116213326	
0.0062937562			
## 72 -1.420381e-02	-0.023688699	-0.0280190534	
-0.0074125805			
## 73 -4.945007e-03	-0.010398605	-0.0023061055	
-0.0147024814			
## 74 1.313530e-02	-0.005253901	-0.0043340074	
0.0094742100			
## 75 8.656215e-03	-0.003521147	0.0055136215	
-0.0002346430			
## 76 -1.422687e-02	-0.026501815	-0.0317460317	
-0.0070406042			
## 77 -2.592416e-03	-0.019963674	-0.0163934426	
0.0044906326			
## 78 -2.932737e-02	-0.050000032	-0.0469696970	
-0.0214117823			
## 79 8.732358e-03	0.064327511	0.0279808839	
0.0091368943			
## 80 8.181328e-03	-0.001831513	0.0519641776	
0.0097687712			
## 81 -9.830177e-05	0.011009165	0.0147015581	
0.0030675427			

## 82 -4.518852e-04	-0.009074391	0.0121703330	
0.0091743275 ## 83 1.533425e-03	0.016493530	0 0057257274	
0.0044288734	0.010403339	-0.005/25/5/4	
## 84 1.126723e-02	0.007207249	-0.0083501126	
0.0053377455	0,007,207,217	0.000000==0	
## 85 -7.317753e-03	0.010733407	0.0421022075	
-0.0023084254			
## 86 -1.505642e-02	-0.015929261	0.0027862915	
0.0020823810	0.004700500	0.0063006300	
## 87 -1.786730e-03 0.0182405664	-0.001/98500	-0.0063906308	
## 88 9.088808e-03	-0 007207249	-0 0137024438	
-0.0117914535	0.007207243	0.013/024430	
## 89 2.361152e-02	-0.010889283	0.0014176353	
0.0064250215			
## 90 -1.478745e-02	-0.003669673	-0.0002831427	
0.0025080137			
## 91 -1.260553e-02	0.000000000	0.0039648654	
0.0029565431	0 007266451	0 0101551650	
## 92 -2.159400e-02 -0.0072562565	-0.00/300431	-0.0101551650	
## 93 -1.618451e-03	0.012986939	-0.0151039843	
0.0098218218	0,022500505	0.000000000	
## 94 -9.523406e-03	-0.005494464	-0.0002893692	
-0.0083691450			
## 95 1.419747e-02	-0.001841631	-0.0382055340	
0.0022810446	0.004045000	0.022500077	
## 96 -1.654077e-03 0.0104688348	-0.001845029	0.03250080//	
## 97 -1.070818e-03	-0 009242124	0 0052462488	
0.0042792492	0.003242124	0.0032402400	
## 98 -1.189301e-02	-0.005597047	-0.0176863036	
0.000000000			
## 99 -5.055931e-03	0.009380842	-0.0271546114	
0.0163714409			
## 100 -5.904651e-03	0.001858822	0.0321602118	
0.0152250162 ## 101 -1.382481e-02	0 016607647	0 0267490970	
-0.0208650230	-0.01009/04/	-0.020/4696/9	
## 102 -1.897122e-02	-0.024528293	-0.0413772629	
0.0013318416			
## 103 9.583457e-03	-0.007736989	0.0047258980	
-0.0268233449			
## 104 -2.500230e-03	0.050682363	-0.0153652998	
-0.0102505726	0.046607647	0.0475450006	
## 105 -5.926558e-03 -0.0039125650	-0.01669/64/	-0.0175159236	
## 106 -5.534374e-03	0 009433979	0 0398703015	
-0.0251848192	0.005455575	0.0550705015	

## 107 8.810614e-04	-0.022429924	-0.0202618461	
-0.0090068108	0.045306300	0.0120004172	
## 108 -7.535447e-03	-0.015296380	0.0120904173	
0.0167423638	0 024250402	0.0460227427	
## 109 -2.401114e-03	-0.021359192	-0.016032/12/	
0.0291695860	0.002060107	0.0127270000	
## 110 1.997053e-02	0.003968197	0.013/3/9808	
0.0278857463	0 001076317	0.0015757050	
## 111 1.743288e-03 -0.0053369065	-0.0019/621/	-0.0015/5/958	
## 112 -8.234256e-03	0 007020020	0 0085336708	
-0.0060361927	-0.00/920030	-0.0083220708	
## 113 -5.691801e-03	0 027044075	-0.0124164085	
-0.0083220893	-0.02/3440/3	-0.0124104083	
## 114 2.356515e-02	-0 016/27035	-0.0003223920	
0.0049897918	-0.010427033	-0.0003223920	
## 115 2.264400e-02	-0 027139989	-0.0170913186	
0.0011283904	-0.02/133303	-0.0170313180	
## 116 -7.811646e-04	0 030012965	-0 0003280053	
-0.0092425246	0.030042303	0.0003200033	
## 117 4.176762e-03	-0 018750067	-0 0141123001	
-0.0052332287	0.0107 30007	0.01 11123001	
## 118 -1.057292e-02	-0.012738843	-0.0069906992	
-0.0128087501	010=27000.0		
## 119 8.159462e-03	0.002150550	-0.0040227357	
-0.0108898080			
## 120 -2.267785e-02	-0.025750965	0.0279366807	
0.0163973139			
## 121 -4.792127e-03	-0.015418502	0.0094957238	
0.0124452834			
## 122 6.842700e-03	-0.002237239	0.0149205520	
0.0093329977			
## 123 -6.649319e-03	-0.026905762	-0.0156599364	
0.0074425217			
## 124 -1.913121e-02	0.002304068	-0.0029220584	
-0.0035818325			
## 125 9.192400e-03	0.055172506	-0.0074894756	
-0.0103347700			
## 126 -7.615488e-03	0.002178574	-0.0065616800	
0.0074915189			
## 127 2.551526e-02	0.000000000	-0.0092469885	
0.0047318485			
## 128 9.767769e-03	0.000000000	0.0423333733	
0.0067279693			
## 129 3.591283e-03	-0.023913009	-0.0147106038	
0.0258409193			
## 130 -2.403469e-02	0.002227184	0.0262901845	
0.0019544129	0.004	0.00404=====	
## 131 -1.549223e-02	-0.026666687	0.0012650031	
0.0052015754			

## 132 -1.644633e-02	-0.047945210	-0.0518003591	
-0.0273824998 ## 133 -3.742664e-03	-0.031175001	0.0196535435	
0.0157393434	0.031173001	0.0130333133	
## 134 -1.709171e-02	0.012376210	-0.0235217637	
0.0331732479			
## 135 -4.984282e-03	-0.022004919	-0.0160588427	
0.0048584792 ## 136 -1.257871e-03	0 007400050	0.0221212460	
-0.0222829704	-0.02/499959	0.0231213460	
## 137 -9.828665e-03	-0.046272606	-0.0056496578	
-0.0043001324			
## 138 3.109605e-02	-0.026954120	-0.0103609822	
0.0133879944			
## 139 3.040059e-03	0.024930782	-0.0033772374	
-0.0093756585	0.004504547	0.0450400670	
## 140 -1.265049e-02	-0.09459454/	0.0152490678	
-0.0135512697 ## 141 -1.979709e-02	-0 005970184	-0 0190254068	
-0.0235499710	0.003370104	0.0170254000	
## 142 1.554484e-02	-0.042042104	-0.0163320452	
-0.0046895132			
## 143 4.670228e-03	-0.034482709	-0.0394327007	
0.0038141730			
## 144 -5.916366e-03	-0.029220818	0.0043211449	
0.0037997529 ## 145	0 070224121	a a207002226	
0.0191494487	0.070234121	0.0597992550	
## 146 1.715298e-04	0.034375012	0.0441378897	
0.0216298464			
## 147 -2.401848e-03	-0.006042271	0.0181638052	
0.0081266119			
## 148 6.707153e-03	0.139817585	-0.0223807793	
0.0004242844	0 002222200	0.0126077006	
## 149 -7.089597e-03 -0.0309584818	-0.093333289	-0.0126077906	
## 150 4.946641e-03	0.00000000	0.0047042808	
0.0205689048			
## 151 4.408450e-03	-0.008823580	-0.0250836120	
-0.0075042697			
## 152 3.771334e-03	0.002967376	-0.0096054477	
-0.0166342192	0.011024270	0.0120160002	
## 153 5.073243e-03 0.0257029681	-0.0118342/0	0.0128160092	
## 154 -1.144683e-02	0 017964055	0 0235977912	
0.0038552458	0.01/207033	0.0233377312	
## 155 4.977842e-03	0.008823462	0.0197127439	
-0.0019202848			
## 156 -2.529719e-03	-0.014577228	0.0026211926	
-0.0040615365			

## 157 1.257363e-03	0.005917194	-0.0094771046	
0.0032195745	0.047647043	0.0050306034	
## 158 3.831393e-03	-0.01/64/043	-0.0059386934	
0.0094137750	0.002004020	0.0560003574	
## 159 7.654839e-03 0.0042390665	-0.002994029	0.0500903574	
## 160 -5.871081e-03	0 006006041	0 0227EE000E	
-0.0056985839	-0.00000041	-0.0232336663	
## 161 6.329150e-03	0 009063497	a a29922839a	
0.0014858787	0.000005407	0.0233220330	
## 162 1.827888e-02	0.005987938	-0.0059356263	
0.0042390665	0,00000	0.0000000000000000000000000000000000000	
## 163 8.490032e-03	0.056547592	0.0402262336	
0.0004221352			
## 164 -8.582358e-03	0.008450754	-0.0193353293	
-0.0012658115			
## 165 1.152843e-02	0.002793312	-0.0150954834	
-0.0418250758			
## 166 -2.553116e-03	-0.011142126	0.0015639662	
-0.0026455415			
## 167 1.234763e-02	-0.011267559	0.0031230480	
-0.0101680066	0.044305064	0.0074740644	
## 168 3.094875e-03	-0.011395964	0.00/4/19611	
0.0102724570 ## 169 6.876250e-03	0 014400100	0 0400256720	
0.0088417585	-0.014409190	0.0488256728	
## 170 -6.528900e-03	0 016783513	-0.0194460993	
0.0195004374	0.040/65545	-0.0154400555	
## 171 1.632926e-03	0.005586625	-0.0114182336	
-0.0146142387		010111111111	
## 172 1.972272e-03	0.000000000	0.0249240486	
0.0013086033			
## 173 -1.424123e-02	-0.013888969	0.0071174197	
-0.0004356516			
## 174 -5.909208e-03	-0.019718313	-0.0017668021	
0.0008716830			
## 175 -2.152226e-03	-0.020114946	-0.0038347729	
-0.0121924356			
## 176 3.245569e-03	0.002932686	0.0020727923	
-0.0105797082	0.00000000	0.0405035643	
## 177 5.344125e-03	0.00000000	0.0195035642	
0.0071285569	0 002024111	-0.0026086783	
## 178 -1.833280e-04 -0.0050874462	-0.002324111	-0.002000703	
## 179 -5.825853e-03	0 011730274	-0.0075559603	
0.0011116546	0.011/302/4	0.0075555005	
## 180 -1.229909e-04	0.000000000	0.0052708287	
0.0015545135			
## 181 2.727512e-02	0.000000000	0.0058258085	
-0.0026607975			

## 182 5.625442e-03	0.008695586	-0.0121632845	
-0.0053356527 ## 183 -2.579695e-04	-0 008620625	-0 0184697094	
0.0026822076	0.000020023	0.0104037034	
## 184 -1.986149e-02	-0.028985443	0.0140382681	
0.0069104018			
## 185 -2.692365e-03	0.00000000	-0.0215021738	
-0.0115121338			
## 186 -3.268067e-03	0.023880495	0.0009030343	
-0.0024635709	0.040=04000	0.040000454	
## 187 8.980950e-03	0.043/31800	-0.0123308451	
0.0060619419 ## 188 8.477815e-04	0 011172127	-0.0018270585	
-0.0026779497	-0.0111/313/	-0.0010270303	
## 189 7.582559e-03	0 005649637	0 0186089269	
0.0000000000	0.003013037	0.0100003203	
## 190 6.004078e-04	0.019662980	0.0032944175	
-0.0033564549			
## 191 -7.080991e-03	0.030303096	-0.0202984716	
0.0004490518			
## 192 8.864512e-04	-0.010695249	-0.0088361484	
0.0058347936	0.040040000	0.0404445434	
## 193 1.477366e-02	-0.018918920	0.0184445134	
-0.0037929661 ## 194 1.229753e-02	0 02/702267	0 0150076402	
0.0304591462	-0.024793307	0.0139970402	
## 195 2.742042e-04	-0.084745743	0.0219845332	
-0.0099978398		0102270.0002	
## 196 9.735333e-03	0.049382691	0.0055232384	
-0.0072447456			
## 197 -9.932443e-03	-0.020588236	-0.0213934493	
-0.0004423036			
## 198 2.077024e-03	0.00000000	0.0115214003	
-0.0086283331 ## 199	0.000000001	0.0014602004	
0.0082570832	-0.009009001	0.0014602804	
## 200 -1.123118e-02	-0 021212184	0 0069991077	
-0.0135014951	0.021212104	0.0003331077	
## 201 -8.183807e-03	0.006191987	-0.0011583956	
-0.0181737209			
## 202 -7.634917e-03	-0.015384582	0.0113076082	
0.0070841051			
## 203 3.606005e-04	0.012500073	0.0289564402	
-0.0011345355			
## 204 0.000000e+00	0.00000000	0.000000000	
0.000000000	0.006473754	0.0016717016	
## 205 2.155069e-02 0.0118128138	0.0001/2/51	-0.0016717916	
## 206 2.566410e-02	0 015337451	-0.0192575893	
0.0029187069	0.013337431	0.0172373033	
0.0027107007			

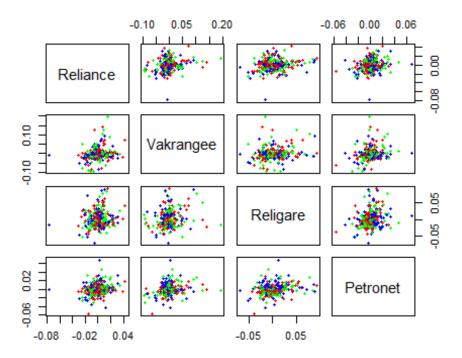
## 207 -1.030320e-02	0.000000000	-0.0042686398	
0.0033579578 ## 208 -1.641650e-03	0 002021166	0 0010505651	
0.0089246173	-0.003021100	0.0046363034	
## 209 2.099054e-02	-0.003030260	-0.0068259214	
0.0101724315			
## 210 -1.951668e-03	0.003039470	-0.0028636883	
0.0061296504			
## 211 3.852137e-02	-0.018181742	0.0020102871	
-0.0054395380	0.00000011	0.0000000000	
## 212 1.084076e-02	0.003086314	0.0020063400	
0.0076569488	0 024615467	-0.0005721167	
## 213 1.103209e-03 -0.0030394366	0.024615467	-0.0005/2116/	
## 214 -8.942267e-03	-0 024024103	-0 0186033203	
-0.0222125949	-0.024024103	-0.0100033203	
## 215 -8.385305e-04	0.027692408	-0.0023330067	
0.0224944072			
## 216 2.043268e-02	-0.020958145	0.0116924874	
-0.0065344612			
## 217 8.492189e-03	-0.012232487	-0.0144466915	
-0.0168822847			
## 218 7.587454e-03	-0.003095869	0.0005862855	
0.0028991794	0.006311316	0.0146400607	
## 219 -7.811811e-02	-0.006211216	-0.0146498687	
-0.0013342109 ## 220 -3.095603e-02	0 000274002	-0.0187332388	
-0.0044533277	-0.003374332	-0.018/332388	
## 221 -2.022647e-02	-0.012618307	0 0254545273	
0.0013419650	0.012010307	0.023 13 13273	
## 222 -6.431895e-04	0.012779563	-0.0132978726	
0.0082643923			
## 223 1.625222e-02	0.000000000	0.0137765980	
-0.0033229947			
## 224 -9.302493e-03	-0.006309122	-0.0091580679	
0.0002223500			
## 225 1.004927e-02	-0.003174622	-0.0205724333	
0.0186666205	0 002104722	0.054105650	
## 226 8.465609e-03 0.0189791067	0.003184/32	0.0541856560	
## 227 -1.414141e-02	0 00000000	0 0207912569	
0.000000000	0.00000000	0.020/312303	
## 228 -1.068354e-02	-0.02222224	0.0031117567	
-0.0348962308			
## 229 -4.202994e-03	0.003246707	-0.0064862323	
-0.0035491886			
## 230 1.359099e-02	-0.016181194	0.0840193216	
-0.0022262065			
## 231 5.698269e-03	-0.016447398	0.0851008131	
0.0107095399			

## 232 -6.022637e-03	-0.020066940	-0.0144787647	
-0.0050772715 ## 233 6.597254e-03	0.102389065	0.0766405937	
0.0275127371			
## 234 4.455113e-03	0.065015553	0.0025016511	
-0.0220255281			
## 235 4.218404e-03 -0.0041951574	0.014534968	0.0190563163	
## 236 1.181717e-02	-0.060171978	-0.0200356183	
-0.0064301479			
## 237 -8.147917e-04	0.006097535	0.0601999075	
0.0046865092			
## 238 -1.442637e-02	-0.018181742	-0.0437112138	
-0.0059973773			
## 239 7.407433e-03	-0.003086561	0.0098588934	
-0.0067950170			
## 240 -1.091139e-02	-0.024767700	-0.0086532591	
0.0109463808	0.002474550	0.0000573400	
## 241 -2.381341e-04	0.003174558	0.00805/3100	
-0.0031581187	0 006220007	0 0011101242	
## 242 1.111395e-03 0.0004526182	0.000529087	-0.0011101245	
## 243 -1.681068e-02	-0 006289282	0 070/601299	
-0.0013571726	-0.000283282	0.0704001299	
## 244 -4.617288e-03	-0 006329087	-0 0274086624	
-0.0079275198	0.000323007	0.027 4000024	
## 245 -9.966211e-03	-0.012738864	-0.0172929251	
-0.0041095616		0101/11/11/11	
## 246 -9.575407e-03	-0.003225825	0.0099934958	
0.0084823060			
## 247 -9.502960e-04	0.016181259	0.0107550012	
-0.0072743397			
## 248 -4.569818e-03	-0.012738864	0.0000000000	
-0.0139684127			
## 249 2.347280e-03	0.006472492	-0.0202170677	
0.0197398975			
## 250 -8.082196e-04	0.019292605	-0.0112944875	
-0.0025051377			
## 251 5.351204e-03	0.012618233	-0.0092267397	
0.0463470046			
## 252 2.104247e-03	0.003115327	0.0119733792	
0.0687322732	0 021720102	0 0015337030	
## 253 1.358772e-03	0.021/39193	-0.0015337029	
0.0065333035	0 00000000	0 0274202262	
## 254 6.661164e-03 0.0150101298	0.00000000	0.02/4303202	
## 255 1.078349e-02	0 001105/05	0 0890611616	
-0.0043964469	0.091103403	0.0090044010	
## 256 -1.444678e-02	-0.064066960	-0.0380466645	
-0.0578081439	0.00 F000000	0.0300 1000-13	
1,03,0001133			

```
## 257 5.002337e-03
                             0.014880953
                                              0.0393475800
0.0068172391
## 258
           9.179739e-04
                             0.041055780
                                              0.0333464111
0.0325856830
## 259
                            -0.005633803
                                            -0.0051253076
           1.854665e-03
-0.0122950820
## 260
          -8.706856e-03
                            -0.016997167
                                             -0.0085861481
-0.0112033071
## 261
          -2.228654e-02
                            -0.020172911
                                              0.0144341808
0.0054553210
## 262
                            -0.008823529
                                              0.0030355456
          -7.283275e-03
-0.0073038395
       -4.165298e-03
                            -0.005934718
                                              0.0272365494
## 263
0.0100903676
## 264
       -6.157243e-03
                            -0.002985015
                                             -0.0684956429
-0.0035380062
## 265
           8.759209e-04
                             0.017964011
                                             -0.0308361458
0.0035505682
                            0.014705882
## 266
           1.126997e-02
                                              0.0089741467
-0.0072840791
## 267
         -1.469028e-02
                            -0.005797101
                                            -0.0127350270
-0.0132075220
## 268
         4.669852e-03
                             0.017492770
                                             -0.0102375104
0.0195453192
```

Plotting the Pairwise Plot of the four stocks.

colnames(Portfolio\_DailyRet)<-c("Reliance","Vakrangee","Religare","Petronet")
pairs(Portfolio\_DailyRet,col=rainbow(3),pch=20)</pre>



Here, Portfolio's Daily Returns are randomly scattered around the zero line. This means that the model is doing a good job of predicting the dependent variable. There is no correlation as such here.

#### Summarizing the Data

```
# Summary of data
company <- c("Religare", "Vakrange", "Petronet", "Reliance")

mean <- c(mean(religare_DailyRet), mean(vakrange_DailyRet),
mean(Petronet_DailyRet), mean(reliance_DailyRet))

median <- c(median(religare_DailyRet), median(vakrange_DailyRet),
median(Petronet_DailyRet), median(reliance_DailyRet))

variance <- c(var(religare_DailyRet), var(vakrange_DailyRet),
var(Petronet_DailyRet), var(reliance_DailyRet))

std <- c(sd(religare_DailyRet), sd(vakrange_DailyRet), sd(Petronet_DailyRet),
sd(reliance_DailyRet))

skewness <- c(skewness(religare_DailyRet), skewness(vakrange_DailyRet),
skewness(Petronet_DailyRet), skewness(reliance_DailyRet))</pre>
```

```
kurtosis <- c(kurtosis(religare_DailyRet), kurtosis(vakrange_DailyRet),</pre>
kurtosis(Petronet_DailyRet), kurtosis(reliance_DailyRet))
length(company)
## [1] 4
length(mean)
## [1] 4
length(median)
## [1] 4
length(mode)
## [1] 1
length(variance)
## [1] 4
length(std)
## [1] 4
length(skewness)
## [1] 4
length(kurtosis)
## [1] 4
# Create a list of lists for the companies
company_data <- data.frame(</pre>
  Company = company,
 Mean = mean,
 Median = median,
 Variance = variance,
  Std = std,
  Skewness = skewness,
  Kurtosis = kurtosis
)
company_data
##
      Company
                       Mean
                                    Median
                                               Variance
                                                                Std
                                                                      Skewness
## 1 Religare 0.0020211438 -0.0008411205 0.0006068444 0.02463421
                                                                    0.9060030
## 2 Vakrange -0.0011593721 -0.0033734862 0.0011257755 0.03355258 1.3993590
## 3 Petronet 0.0005950191 0.0004508350 0.0001785301 0.01336152
                                                                    0.2811224
## 4 Reliance -0.0002327066 -0.0001106463 0.0001637552 0.01279669 -0.4984238
##
     Kurtosis
## 1 4.781606
```

```
## 2 9.780666
## 3 6.861599
## 4 8.008918
The mean stock price of Religare is 0.002021, while the mean stock price of
Reliance is -0.000232. This means that the average stock price of Religare is
about 9 times higher than the average stock price of Reliance.
Stock prices of some of the companies in the sample are more volatile than
others. The variance of the stock price of Vakrangee is 0.000607, while the
variance of the stock price of Reliance is 0.000164. This means that the
stock price of Vakrangee is more volatile than the stock price of Reliance.
Distributions are also Skewed. Distribution of the stock price of Religare is
skewed to the right, while the distribution of the stock price of Reliance is
skewed to the left.
Calculating the mean daily return of the four-stock portfolio and annualized
Result.
w=matrix(c(0.25,0.25,0.25,0.25),byrow=FALSE)
meanMatrix<-matrix(mean,byrow = FALSE)</pre>
portfolio_returns=t(w)%*%meanMatrix
portfolio_returns
##
                [,1]
## [1,] 0.0003060211
VCM<-cov(Portfolio DailyRet)</pre>
portfolio risk=sqrt((t(w)%*%VCM)%*%w)
portfolio risk
##
              [,1]
## [1,] 0.01396109
annualize rp=(1+portfolio returns)^267-1
annualize rp
##
              [,1]
## [1,] 0.08512493
annualize_risk=portfolio_risk*sqrt(267)
annualize risk
##
             [,1]
## [1,] 0.2281261
Daily Portfolio return is 0.03% which is good, while Daily portfolio risk is
1.3%.
Annualized Portfolio Return is around 8.5%
```

#### Annualized Portfolio Risk is Around 22%

Results suggest that the portfolio has a moderate risk and a moderate return. The annualized return is higher than the risk-free rate of return, which is typically around 2%. However, the annualized risk is also higher than the risk-free rate of return. Overall, the results suggest that the portfolio is a good investment for investors who are willing to take on some risk in order to achieve a higher return.

### CONCLUSION

Portfolio analysis is an indispensable part of investment management and should be undertaken periodically to identify and improvise any deviation observed against the investment objective. In this analysis the portfolio is well-diversified across different asset classes and sectors. This helps to reduce the overall risk of the portfolio. While stock prices of some of the companies in the sample are more volatile than others, like Vakrangee (variance =0.000607). Some show skewed Distribution and even Daily mean negative returns like Reliance Industries.

While annual Return is 8.5% and annual risk is around 22% which is higher, but still it's a good diverse portfolio to invest into if some risk is taken to achieve a higher return. Overall, this analysis demonstrates the key steps in calculating returns, assessing relationships between assets, and determining portfolio-level statistics. The results provide quantitative evidence to support investment decisions regarding asset selection and weights to align with risk-return preferences. More complex portfolio optimization techniques could be applied to this foundation. Additional research on optimal diversification strategies is warranted, particularly with a larger basket of assets