

Problem 1. Plot the prices for GSPC in the past year (2019-2020)

	GSPC.Open	GSPC.High	GSPC.Low	GSPC.Close	GSPC.Volume	GSPC.Adjusted
2019-01-02	2476.96	2519.49	2467.47	2510.03	3733160000	2510.03
2019-01-03	2491.92	2493.14	2443.96	2447.89	3822860000	2447.89
2019-01-04	2474.33	2538.07	2474.33	2531.94	4213410000	2531.94
2019-01-07	2535.61	2566.16	2524.56	2549.69	4104710000	2549.69
2019-01-08	2568.11	2579.82	2547.56	2574.41	4083030000	2574.41
2019-01-09	2580.00	2595.32	2568.89	2584.96	4052480000	2584.96
2019-01-10	2573.51	2597.82	2562.02	2596.64	3704500000	2596.64
2019-01-11	2588.11	2596.27	2577.40	2596.26	3434490000	2596.26
2019-01-14	2580.31	2589.32	2570.41	2582.61	3664450000	2582.61
2019-01-15	2585.10	2613.08	2585.10	2610.30	3572330000	2610.30
2019-01-16	2614.75	2625.76	2612.68	2616.10	3863770000	2616.10
2019-01-17	2609.28	2645.06	2606.36	2635.96	3772270000	2635.96
2019-01-18	2651.27	2675.47	2647.58	2670.71	3986730000	2670.71
2019-01-22	2657.88	2657.88	2617.27	2632.90	3908030000	2632.90
2019-01-23	2643.48	2653.19	2612.86	2638.70	3335610000	2638.70

Showing 1 to 15 of 504 entries, 6 total columns

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R 4.2.1 - ~/
Loading required package: xts
Loading required package: zoo

Attaching package: 'zoo'

The following objects are masked from 'package:base':

    as.Date, as.Date.numeric

Loading required package: TTR
Registered S3 method overwritten by 'quantmod':
  method from
as.zoo.data.frame zoo
> getSymbols("^GSPC")
[1] "^GSPC"
> barChart(GSPC)
Error: unexpected '^' in "barChart(^"
> barChart(GSPC)
> getSymbols("^GSPC", from="2019-01-01", to="2020-12-31")
[1] "^GSPC"
> barChart(GSPC)
> |

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The chart above shows the S&P fell off a cliff in early 2020. This also corresponds to several circuit breakers in the U.S. stock market. The reason may be that the epidemic in the United States was more severe at that time and the decline in global crude oil prices.

Problem 2. What happened to USD/JPY after the subprime market crash in 2008?

JPY=X	JPY=X.Open	JPY=X.High	JPY=X.Low	JPY=X.Close	JPY=X.Volume	JPY=X.Adjusted
2008-01-01	111.200	111.968	111.200	111.820	0	111.820
2008-01-02	111.820	111.880	109.230	109.263	0	109.263
2008-01-03	109.264	109.726	108.250	109.510	0	109.510
2008-01-04	109.500	109.530	107.990	108.630	0	108.630
2008-01-07	108.580	109.700	108.580	109.230	0	109.230
2008-01-08	107.818	107.900	107.270	107.660	0	107.660
2008-01-09	108.990	110.090	108.840	109.880	0	109.880
2008-01-10	109.877	110.054	109.130	109.620	0	109.620
2008-01-11	109.640	109.686	108.680	108.960	0	108.960
2008-01-14	108.885	108.920	107.370	108.250	0	108.250
2008-01-15	108.241	108.241	106.600	106.770	0	106.770
2008-01-16	106.745	107.900	105.930	107.345	0	107.345
2008-01-17	107.330	107.800	106.390	106.400	0	106.400
2008-01-18	106.400	107.520	106.400	106.830	0	106.830
2008-01-21	106.892	106.930	105.630	105.620	0	105.620

Showing 1 to 15 of 262 entries, 6 total columns

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R 4.2.1 ~ /
> plot(JPY.X)
Error in as.double(y) :
  cannot coerce type 'environment' to vector of type 'double'
> getSymbols("JPY=X", src = "yahoo", from = as.Date("2007-05-01"), to = as.Date("2008-12-31"))
[1] "JPY=X"
Warning message:
JPY=X contains missing values. Some functions will not work if objects contain missing values in the middle of the series. Consider using na.omit(), na.approx(), na.fill(), etc to remove or replace them.
> barChart("JPY=X")
> getSymbols("JPY=X", src = "yahoo", from = as.Date("2008-01-01"), to = as.Date("2008-12-31"))
[1] "JPY=X"
Warning message:
JPY=X contains missing values. Some functions will not work if objects contain missing values in the middle of the series. Consider using na.omit(), na.approx(), na.fill(), etc to remove or replace them.
> barChart("JPY=X")
> plot("JPY=X")
> candleChart("JPY=X")
> barChart("JPY=X")
> View("JPY=X")

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We can see that between July and October, the JPY appreciated by more than 10%. One reason is that the Bank of Japan and the public hold a lot of foreign bonds, which are often sold in exchange for JPY during financial crises. Another reason is that during the subprime mortgage crisis, many carry trades using the JPY were closed, causing a large amount of money to flow back to Japan.

Problem 3. Did the stock price of Apple go up after the launch of the original iPhone?

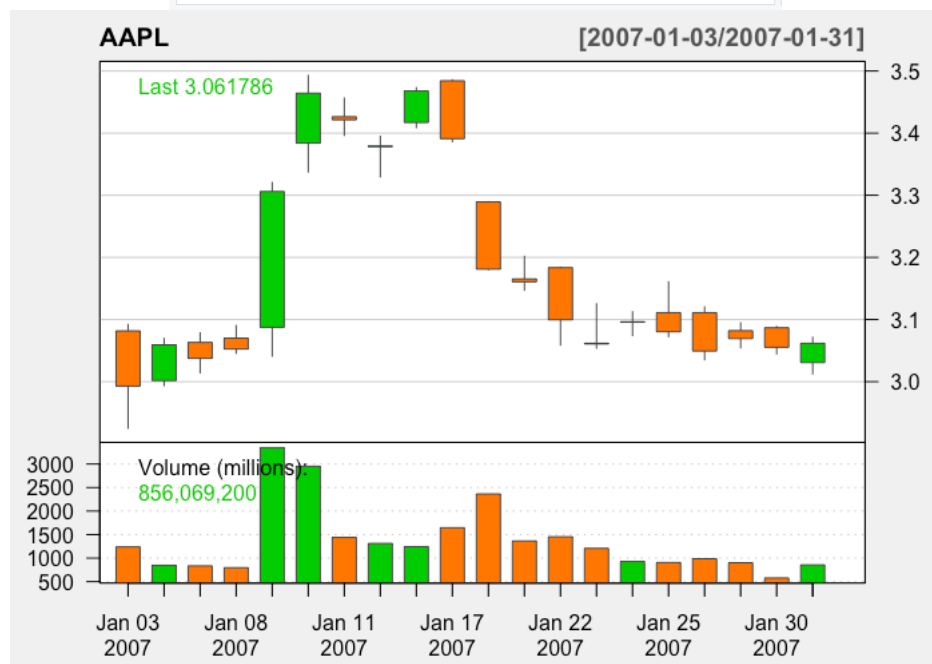
	AAPLOpen	AAPLHigh	AAPLLow	AAPLClose	AAPLVolume	AAPLAdjusted
2007-01-03	3.081786	3.092143	2.925000	2.992857	1238319600	2.555397
2007-01-04	3.001786	3.069643	2.993571	3.059286	847260400	2.612117
2007-01-05	3.063214	3.078571	3.014286	3.037500	834741600	2.593514
2007-01-08	3.070000	3.090357	3.045714	3.052500	797106800	2.606322
2007-01-09	3.087500	3.320714	3.041071	3.306071	3349298400	2.822829
2007-01-10	3.383929	3.492857	3.337500	3.464286	2952880000	2.957918
2007-01-11	3.426429	3.456429	3.396429	3.421429	1440252800	2.921325
2007-01-12	3.378214	3.395000	3.329643	3.379286	1312690400	2.885342
2007-01-16	3.417143	3.473214	3.408929	3.467857	1244076400	2.960968
2007-01-17	3.484286	3.485714	3.386429	3.391071	1646260000	2.895405
2007-01-18	3.289286	3.289643	3.180357	3.181071	2364605600	2.716101
2007-01-19	3.165357	3.201786	3.147143	3.160714	1364473600	2.698720
2007-01-22	3.183571	3.184286	3.058929	3.099643	1454026000	2.646575
2007-01-23	3.061786	3.125357	3.053929	3.060714	1207424400	2.613335
2007-01-24	3.095714	3.112500	3.074286	3.096429	927813600	2.643830

Showing 1 to 15 of 20 entries, 6 total columns

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R 4.2.1 ~ /
Unable to import 'AAPL'.
AAPL download failed after two attempts. Error message:
HTTP error 404.
> getSymbols("AAPL", from="2005-1-1", to="2007-1-1")
[1] "AAPL"
> barChart(AAPL)
> getSymbols("AAPL", from="2006-5-1", to="2007-5-1")
[1] "AAPL"
> barChart(AAPL)
> getSymbols("AAPL", from="2007-1-1", to="2007-5-1")
[1] "AAPL"
> barChart(AAPL)
> getSymbols("AAPL", from="2007-1-1", to="2007-3-1")
[1] "AAPL"
> candleChart(AAPL)
> getSymbols("AAPL", from="2007-1-1", to="2007-2-1")
[1] "AAPL"
> candleChart(AAPL)
> View(AAPL)
> candleChart(AAPL, multi.col = TRUE, theme="white")
> candleChart(AAPL, theme="white")
> |

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According to records, the original iPhone was officially announced on January 9, 2007. Clearly the stock price of Apple went up on this day.