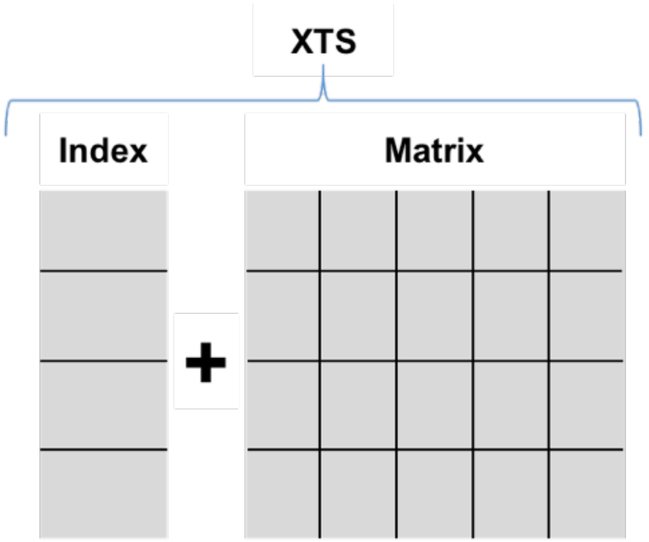
VISUALIZING TIME SERIES DATA IN R

Refresher on `xts` and the `plot()` function

Arnaud Amsellem
The R Trader

Refresher on `xts`

- A special class of object to handle time series
- eXtensible Time Series
- xts = Time Index + Matrix
- The index is a time object: Date, POSIX Time, timeDate, chron

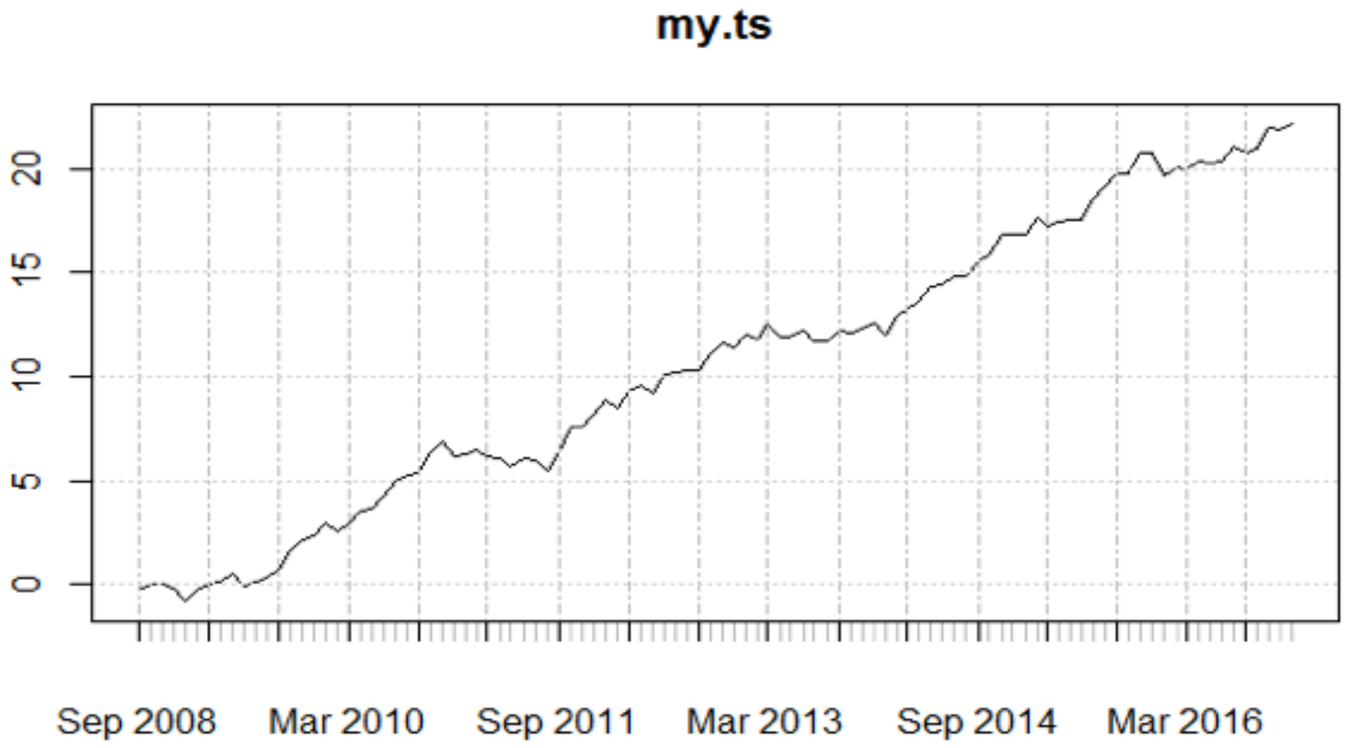


`plot()` and `plot.xts()`

- `plot()`
- `plot.xts()`
- `plot()` can be used instead of `plot.xts()` when the object to be plotted is an xts object

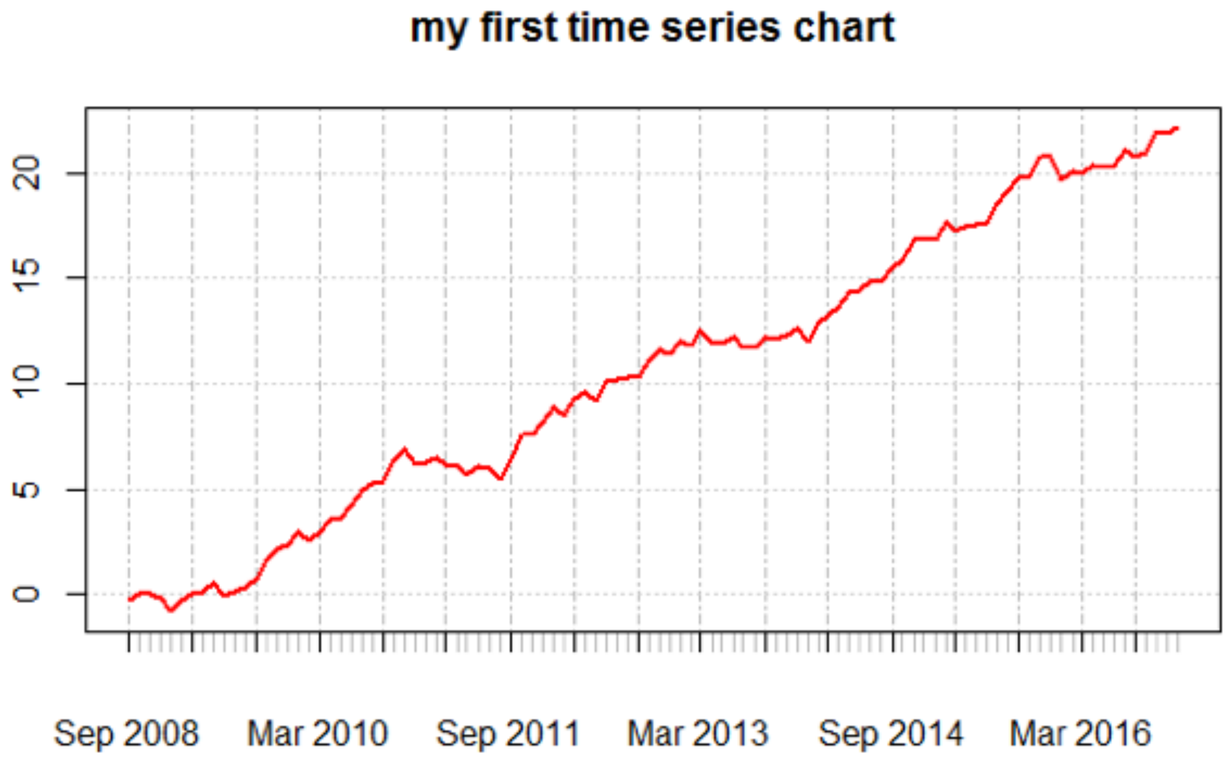
Using the `plot()` function

```
> plot(my_ts)
```



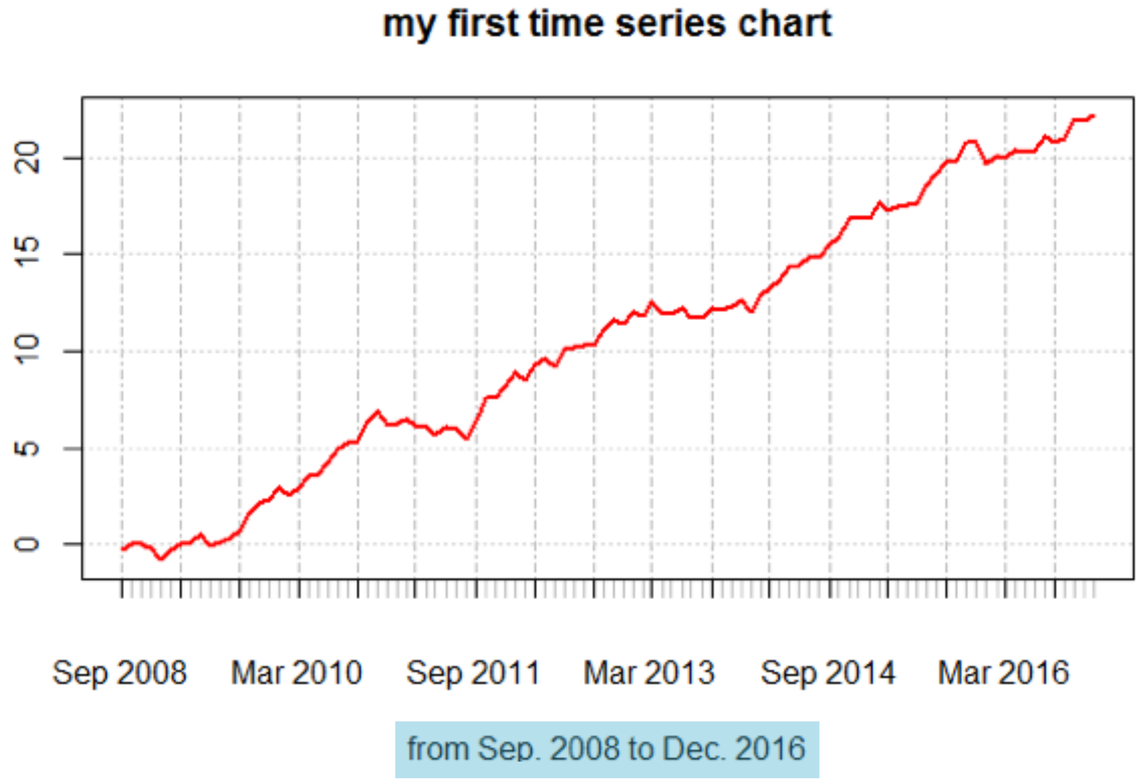
Using the `plot()` function

```
> plot(my_ts, main = "my first time series")
> lines(my_ts, col = "red", lwd = 2)
```



Using the `plot()` function

```
> plot(my_ts, main = "my first time series",
               sub = "from Sep. 2008 to Dec. 2016")
> lines(my_ts, col = "red", lwd = 2)
```



VISUALIZING TIME SERIES DATA IN R

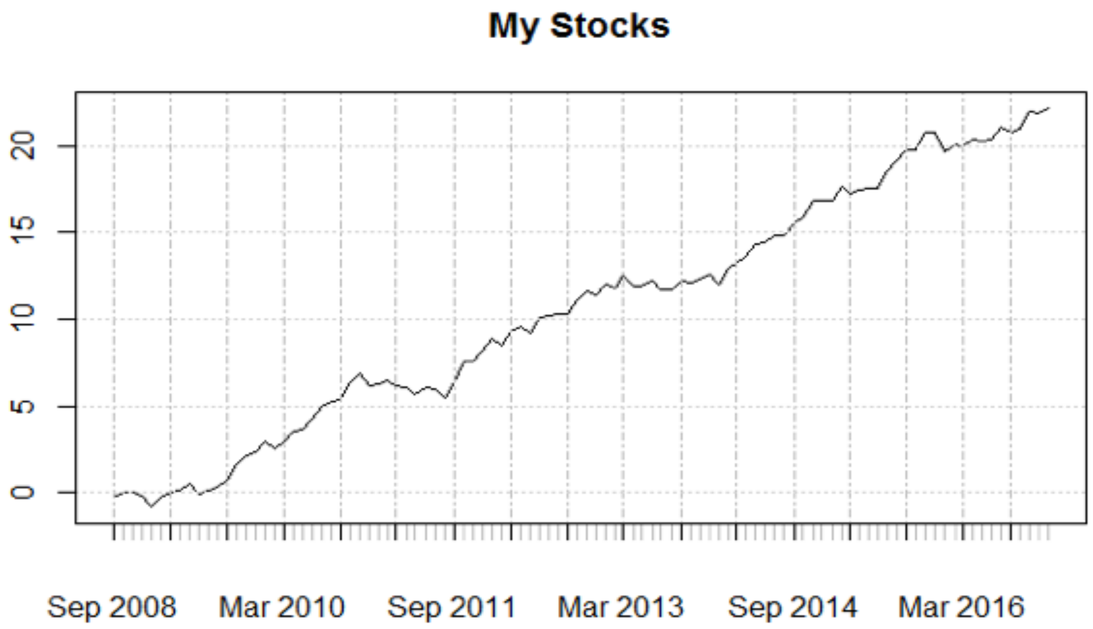
Let’s practice!

VISUALIZING TIME SERIES DATA IN R

Other useful visualization functions

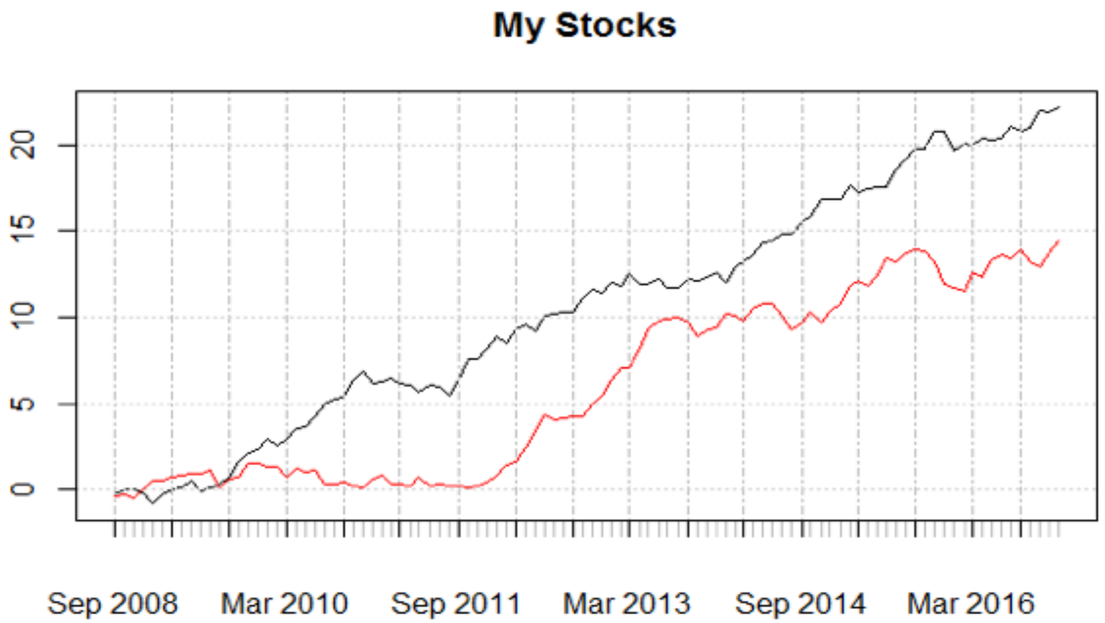
Other useful visualizing functions

```
> plot(my_ts, main = "My Stocks")
```



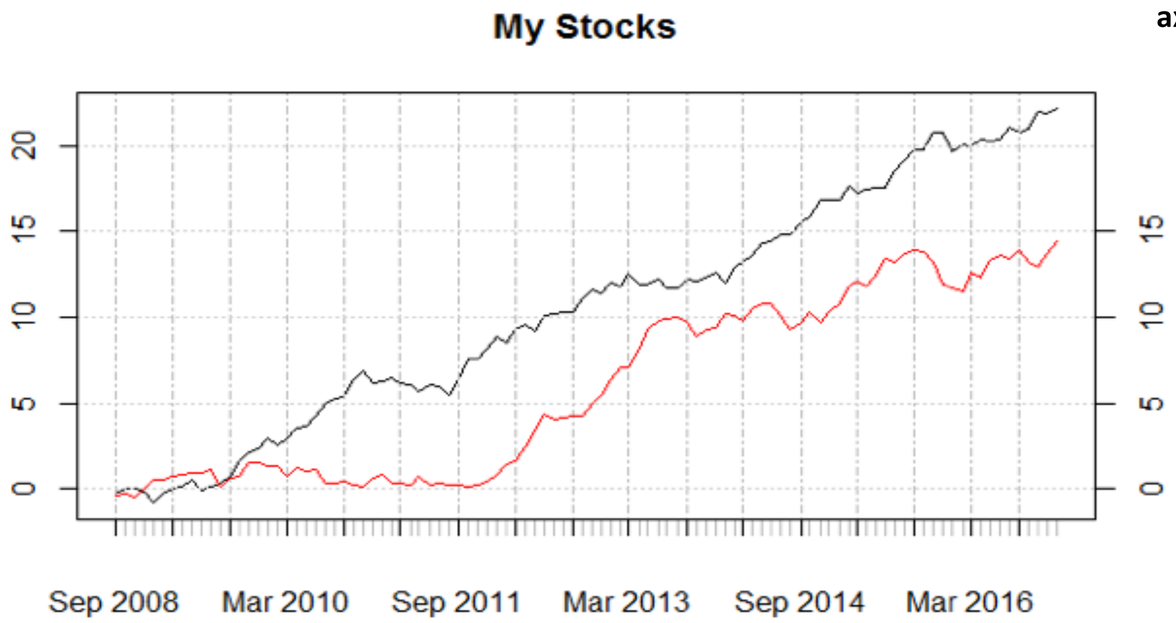
Other useful visualizing functions

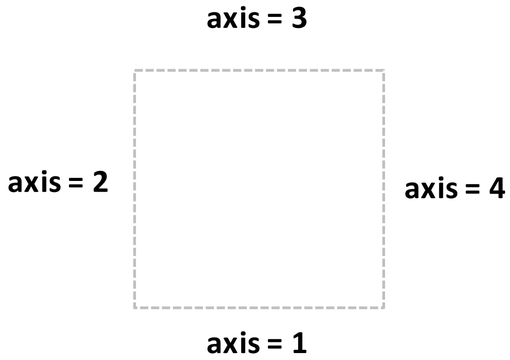
```
> plot(my_ts, main = "My Stocks")
> lines(my_ts2, col = "red")
```



Other useful visualizing functions

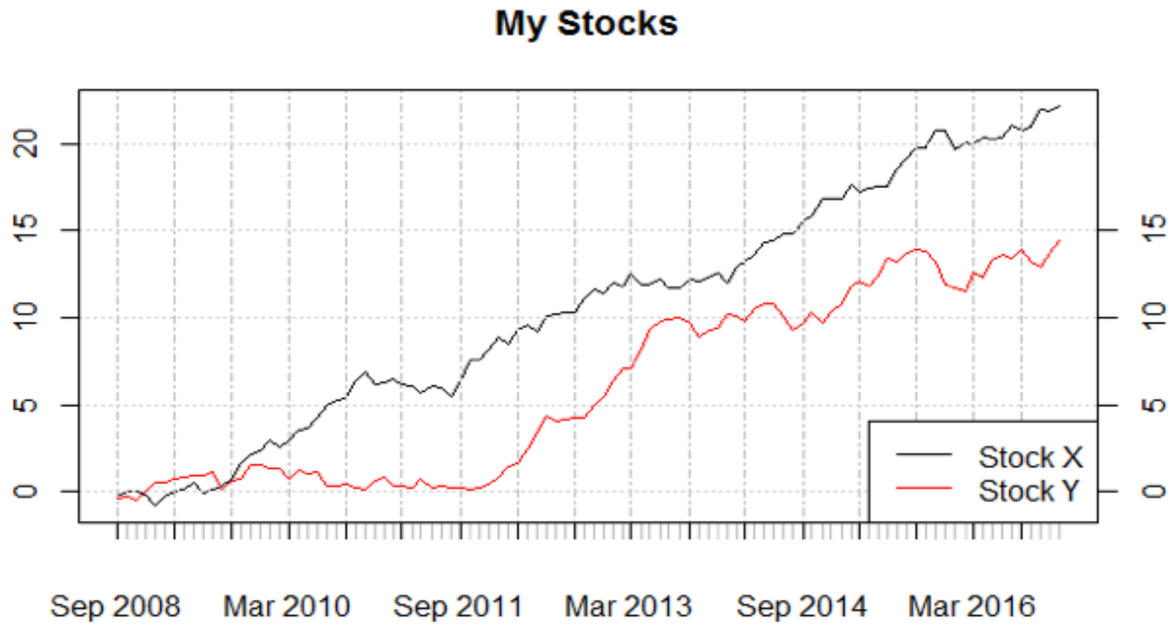
```
> plot(my_ts, main = "My Stocks")
> lines(my_ts2, col = "red")
> axis(side = 4, at = pretty(my_ts2))
```





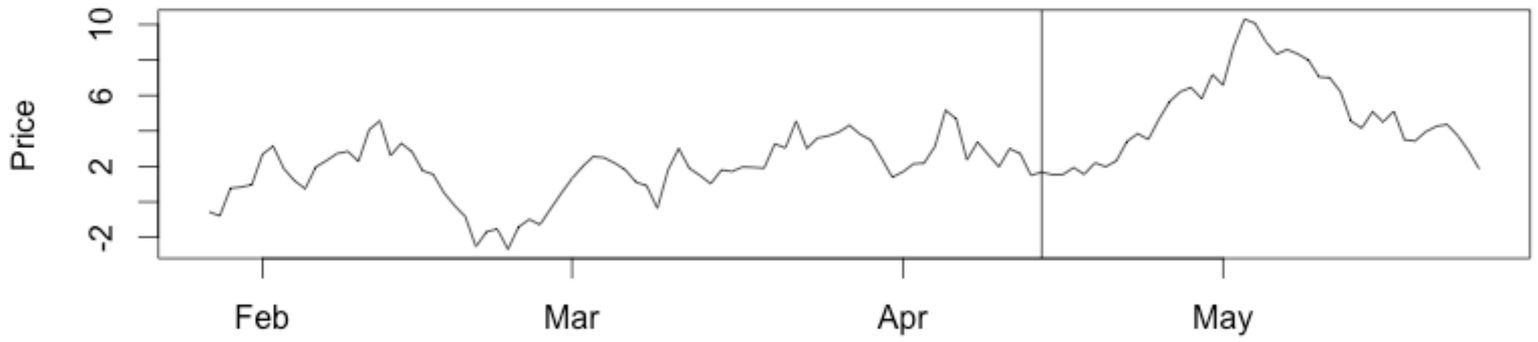
Other useful visualizing functions

```
> plot(my_ts, main = "My Stocks")
> lines(my_ts2, col = "red")
> axis(side = 4, at = pretty(my_ts2))
> legend(x = "bottomright", legend = c("Stock X", "Stock Y"),
         col = c("black", "red"), lty = c(1, 1))
```

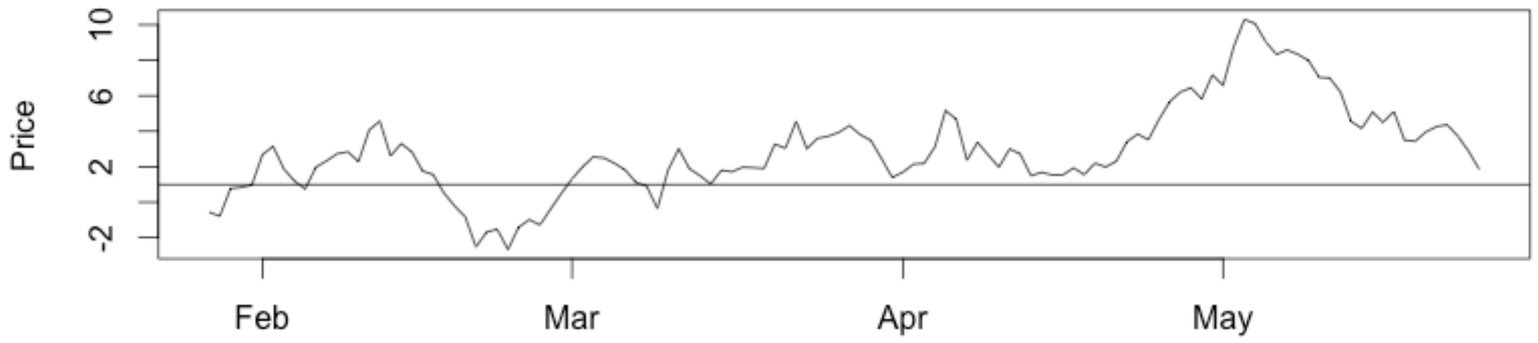


abline()-example

```
> abline(v = as.Date("2016-04-14"))
```

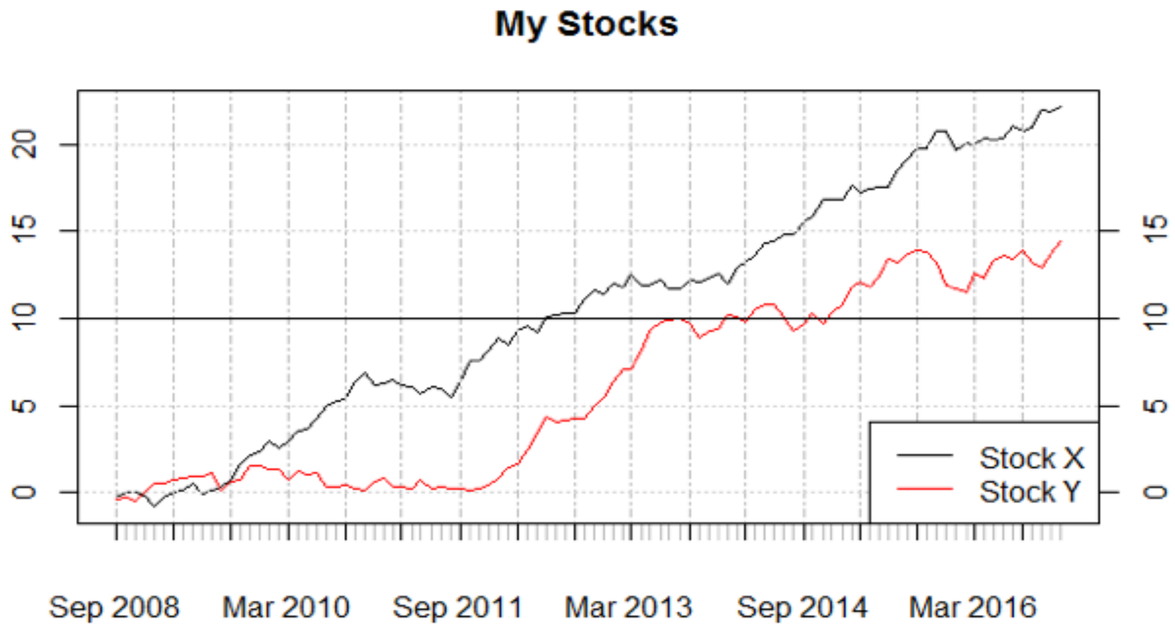



```
> abline(h = 1)
```



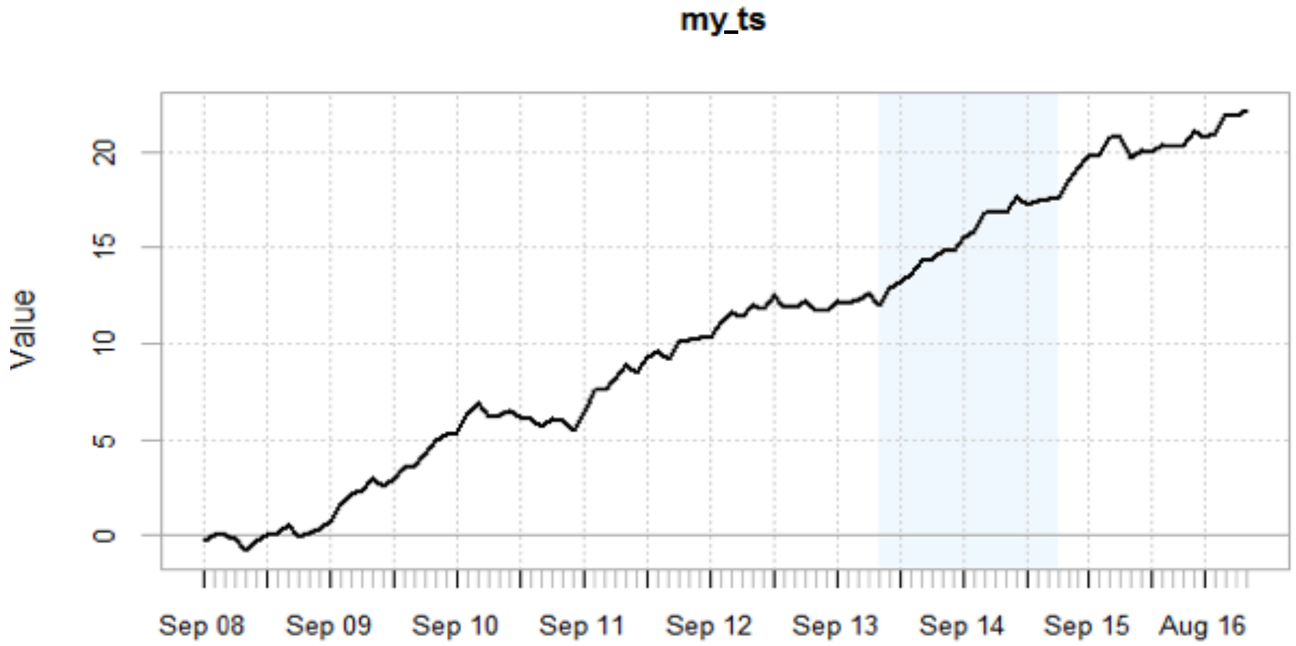
Other useful visualizing functions

```
> plot(my_ts, main = "My Stocks")
> lines(my_ts2, col = "red")
> axis(side = 4, at = pretty(my_ts2))
> legend(x = "bottomright", legend = c("Stock X", "Stock Y"),
         col = c("black", "red"), lty = c(1, 1))
> abline(h = 10)
```



Other useful visualizing functions

```
> library(PerformanceAnalytics)
> period <- c("2014-01/2015-06")
> chart.TimeSeries(my_ts, period.areas = period, main = "my_ts")
```



VISUALIZING TIME SERIES DATA IN R

Let’s practice!