SNP500

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```r
library(tseries)
```

```
## Warning: package 'tseries' was built under R version 3.3.3
```

```r
SNPdata<-get.hist.quote('^gspc',quote = "Close")
SNPret<-log(lag(SNPdata))-log(SNPdata)
length(SNPret)
```

```
## [1] 6604
```

```r
SNPvol<-sd(SNPret)*sqrt(250)*100
SNPvol
```

```
## [1] 17.811
```

```r
Vol<-function(d,logrets){
  var=0
  lam=0
  varlist<- c()
  for(r in logrets){
    lam=lam*(1-1/d)+1
  var = (1-1/lam)*var+(1/lam)*r^2
    varlist<-c(varlist,var)
  }
  sqrt(varlist)
}


volest<-Vol(10,SNPret)
volest2<-Vol(30,SNPret)
volest3<-Vol(100,SNPret)

plot(volest, type="l")
lines(volest2, type="l",col="red")
lines(volest3, type="l",col="blue")
```