

GEAMANU_Elena_Anexa.R

```
NETFLIX<-read.csv("NETFLIX.csv")
#View(NETFLIX)

options(scipen=999)

#Rentabilitate preturi actiune Netflix

rentab_act<-c()
rentab_act[1]=0
for(x in 1:nrow(NETFLIX))
{
  rentab_act[length(rentab_act)+1]<-(NETFLIX[x+1, 2]/NETFLIX[x, 2])-1
}
rentab_act<-na.omit(rentab_act)
#View(as.matrix(rentab_act))

#Rentabilitate preturi actiune S&P500
rentab_indice<-c()
rentab_indice[1]=0
for(x in 1:nrow(NETFLIX))
{
  rentab_indice[length(rentab_indice)+1]<-(NETFLIX[x+1, 4]/NETFLIX[x, 4])-1
}
rentab_indice<-na.omit(rentab_indice)
#View(as.matrix(rentab_indice))

#creez un data frame cu cele 2 rentabilitati
date_netflix<-data.frame(rentab_act,
                          rentab_indice)

#View(as.matrix(date_netflix))

#creez un data frame cu datele despre Netflix impreuna cu cele 2 rentabilitati
date_NFLX<-data.frame(NETFLIX$date,
                      NETFLIX$pret_act_NFLX,
                      NETFLIX$vol_act_NFLX,
                      NETFLIX$pret_indice,
                      NETFLIX$vol_indice,
                      date_netflix$rentab_act,
                      date_netflix$rentab_indice)

#View(date_NFLX)

#modific numele coloanelor
colnames(date_NFLX)<-c("Date",
                      "Pret_act_NFLX",
                      "Vol_act_NFLX",
                      "Pret_indice",
                      "Vol_indice",
                      "Rentab_act",
                      "Rentab_indice")

summary(date_NFLX)
```

```
##      Date      Pret_act_NFLX      Vol_act_NFLX      Pret_indice
## Length:252      Min.       :298.8      Min.       :1144000      Min.       :.2237
## Class :character      1st Qu.:380.9      1st Qu.: 4485700      1st Qu.:.3035
## Mode  :character      Median :469.0      Median : 5846900      Median :.3275
##                               Mean :446.5      Mean   : 6940018      Mean   :.3216
##                               3rd Qu.:495.7      3rd Qu.: 7898025      3rd Qu.:.3403
##                               Max.   :556.5      Max.    :24991400      Max.    :.3735
##
##      Vol_indice      Rentab_act      Rentab_indice
## Min.       :1885090000      Min.       :-0.111389      Min.       :-0.1198405
## 1st Qu.:13920765000      1st Qu.: -0.013407      1st Qu.: -0.0062195
## Median :4665490000      Median :  0.001056      Median :  0.0023285
## Mean   :4928536340      Mean   :  0.002265      Mean   :  0.0007767
## 3rd Qu.:5477307500      3rd Qu.:  0.017607      3rd Qu.:  0.0109452
## Max.    :9044690000      Max.     : 0.116087      Max.     : 0.0938277
```

```
#calculez amplitudinea pentru preturile actiunii Netflix
ampl_NFLX<-max(date_NFLX$Pret_act_NFLX)-min(date_NFLX$Pret_act_NFLX)

#calculez abaterea standard
sd_Pret_act_NFLX<-sd(date_NFLX$Pret_act_NFLX)
sd_Vol_act_NFLX<-sd(date_NFLX$Vol_act_NFLX)
sd_Pret_indice<-sd(date_NFLX$Pret_indice)
sd_Vol_indice<-sd(date_NFLX$Vol_indice)
sd_Rentab_act<-sd(date_NFLX$Rentab_act)
sd_Rentab_indice<-sd(date_NFLX$Rentab_indice)

#calculez media
mean_Pret_act_NFLX<-mean(date_NFLX$Pret_act_NFLX)
mean_Vol_act_NFLX<-mean(date_NFLX$Vol_act_NFLX)
mean_Pret_indice<-mean(date_NFLX$Pret_indice)
mean_Vol_indice<-mean(date_NFLX$Vol_indice)
mean_Rentab_act<-mean(date_NFLX$Rentab_act)
mean_Rentab_indice<-mean(date_NFLX$Rentab_indice)

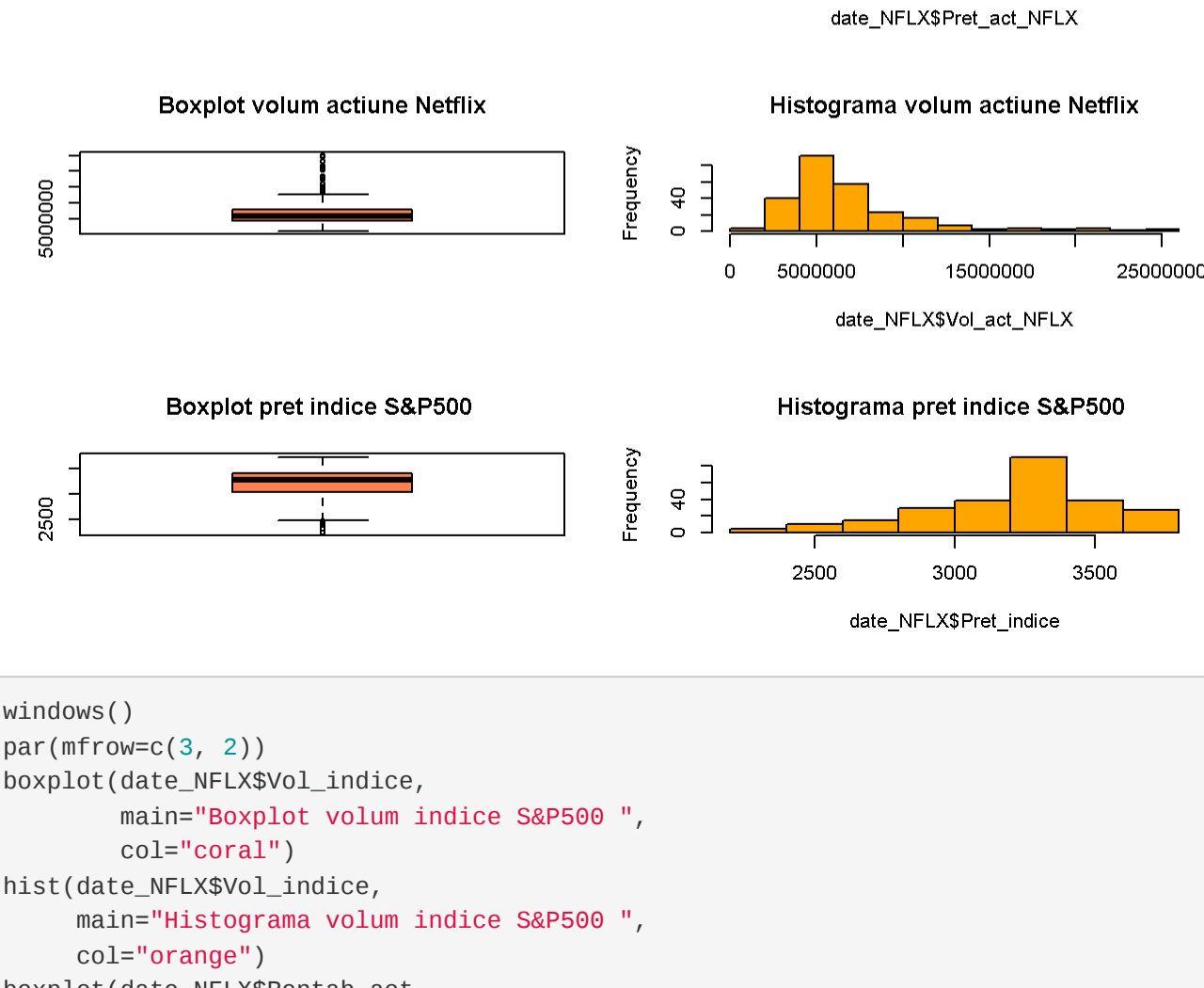
#calculez coeficientul de variatie
cv_Pret_act_NFLX<-sd_Pret_act_NFLX/mean_Pret_act_NFLX
cv_Vol_act_NFLX<-sd_Vol_act_NFLX/mean_Vol_act_NFLX
cv_Pret_indice<-sd_Pret_indice/mean_Pret_indice
cv_Vol_indice<-sd_Vol_indice/mean_Vol_indice
cv_Rentab_act<-sd_Rentab_act/mean_Rentab_act
cv_Rentab_indice<-sd_Rentab_indice/mean_Rentab_indice

#library(moments)

#calculez skewness
#sk_Pret_act_NFLX<-skewness(date_NFLX$Pret_act_NFLX)
#sk_Vol_act_NFLX<-skewness(date_NFLX$Vol_act_NFLX)
#sk_Pret_indice<-skewness(date_NFLX$Pret_indice)
#sk_Vol_indice<-skewness(date_NFLX$Vol_indice)
#sk_Rentab_act<-skewness(date_NFLX$Rentab_act)
#sk_Rentab_indice<-skewness(date_NFLX$Rentab_indice)

#calculez kurtosis
#k_Pret_act_NFLX<-kurtosis(date_NFLX$Pret_act_NFLX)
#k_Vol_act_NFLX<-kurtosis(date_NFLX$Vol_act_NFLX)
#k_Pret_indice<-kurtosis(date_NFLX$Pret_indice)
#k_Vol_indice<-kurtosis(date_NFLX$Vol_indice)
#k_Rentab_act<-kurtosis(date_NFLX$Rentab_act)
#k_Rentab_indice<-kurtosis(date_NFLX$Rentab_indice)

#histogramele impreuna cu boxploturile
windows()
par(mfrow=c(3, 2))
boxplot(date_NFLX$Pret_act_NFLX,
        main="Boxplot pret actiune Netflix",
        col="coral")
hist(date_NFLX$Pret_act_NFLX,
     main="Histograma pret actiune Netflix",
     col="orange")
boxplot(date_NFLX$Vol_act_NFLX,
        main="Boxplot volum actiune Netflix",
        col="coral")
hist(date_NFLX$Vol_act_NFLX,
     main="Histograma volum actiune Netflix",
     col="orange")
boxplot(date_NFLX$Pret_indice,
        main="Boxplot pret indice S&P500 ",
        col="coral")
hist(date_NFLX$Pret_indice,
     main="Histograma pret indice S&P500 ",
     col="orange")
```



```
windows()
par(mfrow=c(3, 2))
boxplot(date_NFLX$Vol_indice,
        main="Boxplot volum indice S&P500 ",
        col="coral")
hist(date_NFLX$Vol_indice,
     main="Histograma volum indice S&P500 ",
     col="orange")
boxplot(date_NFLX$Rentab_act,
        main="Boxplot rentabilitate actiuni Netflix",
        col="coral")
hist(date_NFLX$Rentab_act,
     main="Histograma rentabilitate actiuni Netflix",
     col="orange")
boxplot(date_NFLX$Rentab_indice,
        main="Boxplot rentabilitate indice S&P500 ",
        col="coral")
hist(date_NFLX$Rentab_indice,
     main="Histograma rentabilitate indice S&P500 ",
     col="orange")

#Boxplot volum indice S&P500
#Histograma volum indice S&P500

#Boxplot rentabilitate actiuni Netflix
#Histograma rentabilitate actiuni Netflix

#Boxplot rentabilitate indice S&P500
#Histograma rentabilitate indice S&P500
```

```
#supply(date_NFLX, class)

#creez un nou data frame care sa nu contina data pentru a putea face matricea de corelatie
date_NFLX2<-data.frame(date_NFLX$pret_act_NFLX,
                      date_NFLX$vol_act_NFLX,
                      date_NFLX$pret_indice,
                      date_NFLX$vol_indice,
                      date_NFLX$rentab_act,
                      date_NFLX$rentab_indice)

#View(date_NFLX2)

#modific numele coloanelor din noul data frame creat
colnames(date_NFLX2)<-c("Pret_act_NFLX",
                      "Vol_act_NFLX",
                      "Pret_indice",
                      "Vol_indice",
                      "Rentab_act",
                      "Rentab_indice")

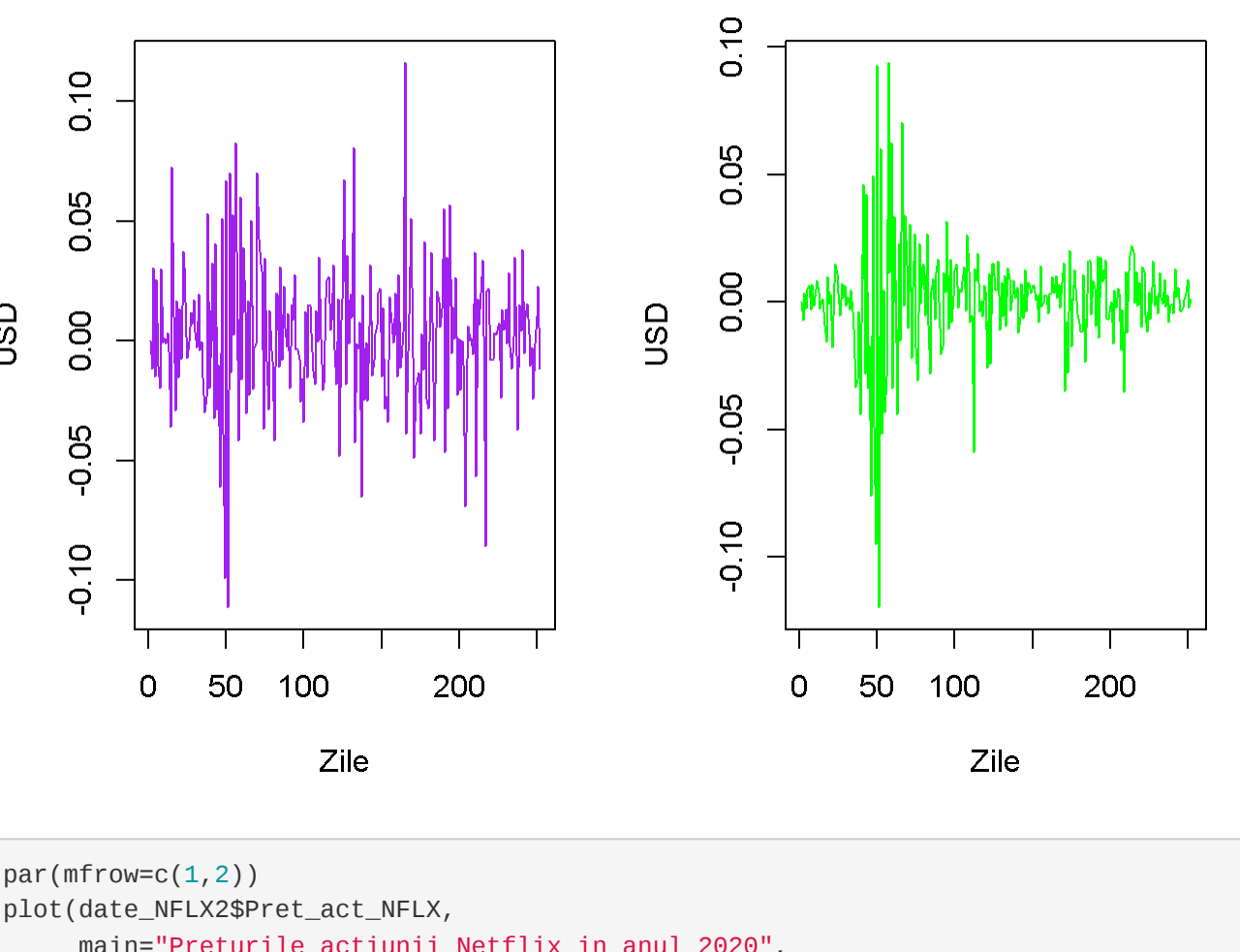
#creez matricea de corelatie
matrice_corelatie<-cor(date_NFLX2)
#View(matrice_corelatie)

#library(corrplot)

#graficul matricei de corelatie
#corrplot(matrice_corelatie)

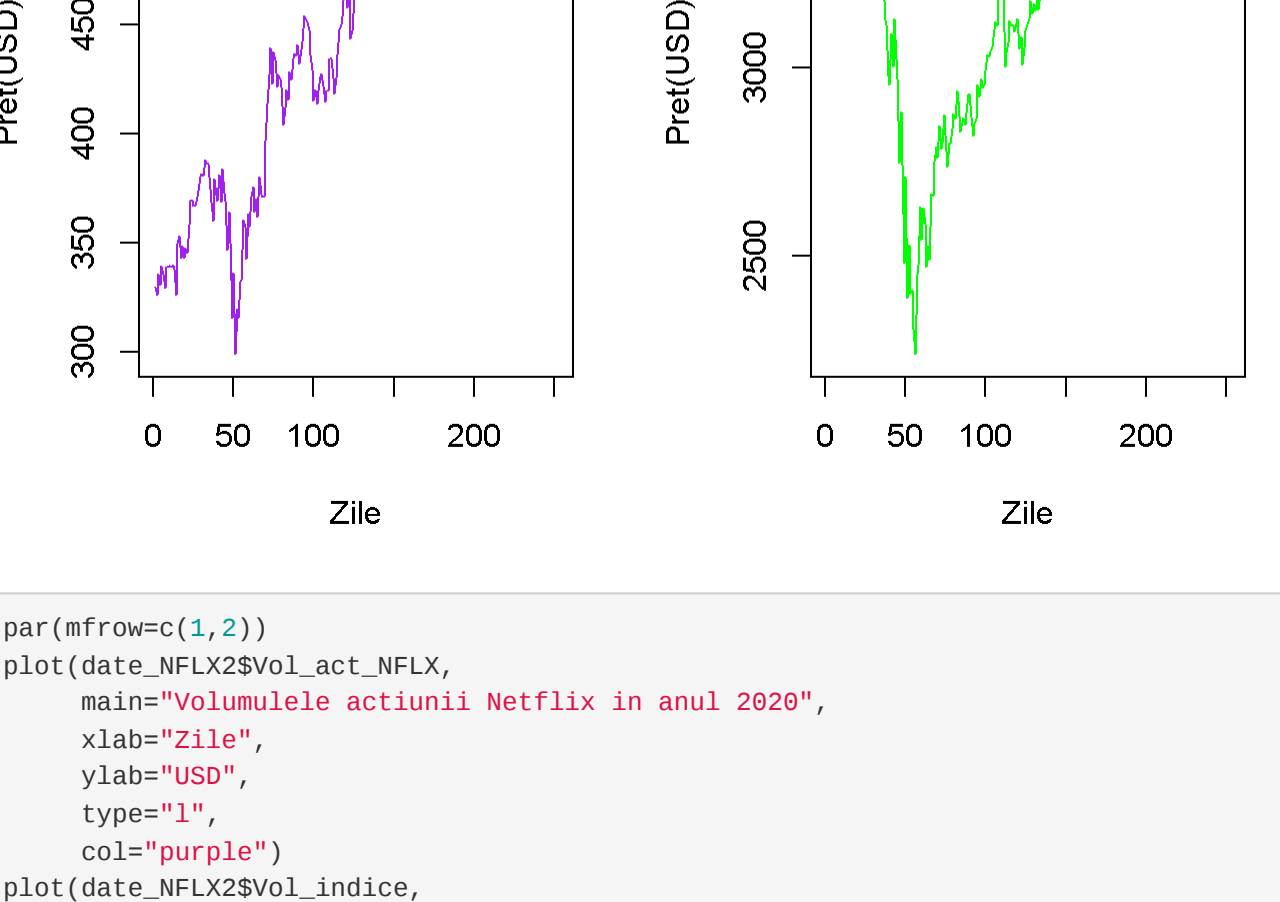
#graficele pentru actiunea Netflix, S&P500 si rentabilitate
par(mfrow=c(1,2))
plot(date_NFLX2$rentab_act,
     main="Rentabilitatea actiunii Netflix in anul 2020",
     xlab="Zile",
     ylab="USD",
     type="l",
     col="purple")
plot(date_NFLX2$rentab_indice,
     main="Rentabilitatea actiunii SP500 in anul 2020",
     xlab="Zile",
     ylab="USD",
     type="l",
     col="green")
```

Rentabilitatea actiunii Netflix in anul 2020 Rentabilitatea actiunii SP500 in anul 2020



```
par(mfrow=c(1,2))
plot(date_NFLX2$pret_act_NFLX,
     main="Preturile actiunii Netflix in anul 2020",
     xlab="Zile",
     ylab="Pret(USD)",
     type="l",
     col="purple")
plot(date_NFLX2$pret_indice,
     main="Preturile actiunii SP500 in anul 2020",
     xlab="Zile",
     ylab="Pret(USD)",
     type="l",
     col="green")
```

Preturile actiunii Netflix in anul 2020 Preturile actiunii SP500 in anul 2020



```
par(mfrow=c(1,2))
plot(date_NFLX2$vol_act_NFLX,
     main="Volumulele actiunii Netflix in anul 2020",
     xlab="Zile",
     ylab="USD",
     type="l",
     col="purple")
plot(date_NFLX2$vol_indice,
     main="Volumulele actiunii SP500 in anul 2020",
     xlab="Zile",
     ylab="USD",
     type="l",
     col="green")
```

Volumulele actiunii Netflix in anul 2020 Volumulele actiunii SP500 in anul 2020

