```
setwd("C:\Users\DELL\Desktop\DS\DataScience_2019501097\Data Mining\Exam Solutions\Final exam") getwd() stock = read.csv("BSE_Sensex_Index.csv",header = FALSE) str(stock)

summary(stock)

stock$diffV2 <- c(0, diff(stock$V2)) stock$diffV3 <- c(0, diff(stock$V3)) stock$diffV4 <- c(0, diff(stock$V4)) stock$diffV5 <- c(0, diff(stock$V5)) stock$diffV6 <- c(0, diff(stock$V6)) stock$diffV7 <- c(0, diff(stock$V7))

summary(stock) str(stock)

sample1 = sample(seq(1,length(stock$V2)),1000,replace = T) sample2 = sample(seq(1,length(stock$V2)),3000,replace = T)

sampleV2_1 = stock[sample1,8] mean(sampleV2_1) max(sampleV2_1) var(sampleV2_1) quantile(sampleV2_1,.25)

sampleV2_2 = stock[sample2,8] mean(sampleV2_2) max(sampleV2_2) var(sampleV2_2) quantile(sampleV2_2,.25)

sampleV3_1 = stock[sample1,9] mean(sampleV3_1) max(sampleV3_1) var(sampleV3_1) quantile(sampleV3_1,.25)

sampleV3_2 = stock[sample2,9] mean(sampleV3_2) max(sampleV3_2) var(sampleV3_2) quantile(sampleV3_2,.25)

sampleV4_1 = stock[sample1,10] mean(sampleV4_1) max(sampleV4_1) var(sampleV4_1) quantile(sampleV4_1,.25)

sampleV4_2 = stock[sample2,10] mean(sampleV4_2) max(sampleV4_2) var(sampleV4_2) quantile(sampleV4_2,.25)

sampleV5_1 = stock[sample1,11] mean(sampleV5_1) max(sampleV5_1) var(sampleV5_1) quantile(sampleV5_1,.25)

sampleV5_2 = stock[sample2,11] mean(sampleV5_2) max(sampleV5_2) var(sampleV5_2) quantile(sampleV5_2,.25)

sampleV6_1 = stock[sample1,12] mean(sampleV6_1) max(sampleV6_1) var(sampleV6_1) quantile(sampleV6_1,.25)

sampleV6_2 = stock[sample2,12] mean(sampleV6_2) max(sampleV6_2) var(sampleV6_2) quantile(sampleV6_2,.25)

sampleV7_1 = stock[sample1,13] mean(sampleV7_1) max(sampleV7_1) var(sampleV7_1) quantile(sampleV7_1,.25)

sampleV7_2 = stock[sample2,13] mean(sampleV7_2) max(sampleV7_2) var(sampleV7_2) quantile(sampleV7_2,.25)

mean(stock$diffV2) max(stock$diffV2) var(stock$diffV2) quantile(stock$diffV2,.25) abs(mean(sampleV2_1)-mean(stock$diffV2)) abs(max(sampleV2_1)-max(stock$diffV2)) abs(var(sampleV2_1)-var(stock$diffV2)) abs(quantile(sampleV2_1,.25)-quantile(stock$diffV2,.25))

abs(mean(sampleV2_2)-mean(stock$diffV2)) abs(max(sampleV2_2)-max(stock$diffV2)) abs(var(sampleV2_2)-var(stock$diffV2)) abs(quantile(sampleV2_2,.25)-quantile(stock$diffV2,.25))

mean(stock$diffV3) max(stock$diffV3) var(stock$diffV3) quantile(stock$diffV3,.25) abs(mean(sampleV3_1)-mean(stock$diffV3)) abs(max(sampleV3_1)-max(stock$diffV3)) abs(var(sampleV3_1)-var(stock$diffV3)) abs(quantile(sampleV3_1,.25)-quantile(stock$diffV3,.25))

abs(mean(sampleV3_2)-mean(stock$diffV3)) abs(max(sampleV3_2)-max(stock$diffV3)) abs(var(sampleV3_2)-var(stock$diffV3)) abs(quantile(sampleV3_2,.25)-quantile(stock$diffV3,.25))

mean(stock$diffV4) max(stock$diffV4) var(stock$diffV4) quantile(stock$diffV4,.25) abs(mean(sampleV4_1)-mean(stock$diffV4)) abs(max(sampleV4_1)-max(stock$diffV4)) abs(var(sampleV4_1)-var(stock$diffV4)) abs(quantile(sampleV4_1,.25)-quantile(stock$diffV4,.25))

abs(mean(sampleV4_2)-mean(stock$diffV4)) abs(max(sampleV4_2)-max(stock$diffV4)) abs(var(sampleV4_2)-var(stock$diffV4)) abs(quantile(sampleV4_2,.25)-quantile(stock$diffV4,.25))

mean(stock$diffV5) max(stock$diffV5) var(stock$diffV5) quantile(stock$diffV5,.25) abs(mean(sampleV5_1)-mean(stock$diffV5)) abs(max(sampleV5_1)-max(stock$diffV5)) abs(var(sampleV5_1)-var(stock$diffV5)) abs(quantile(sampleV5_1,.25)-quantile(stock$diffV5,.25))

abs(mean(sampleV5_2)-mean(stock$diffV5)) abs(max(sampleV5_2)-max(stock$diffV5)) abs(var(sampleV5_2)-var(stock$diffV5)) abs(quantile(sampleV5_2,.25)-quantile(stock$diffV5,.25)) mean(stock$diffV6) max(stock$diffV6) var(stock$diffV6) quantile(stock$diffV6,.25) abs(mean(sampleV6_1)-mean(stock$diffV6)) abs(max(sampleV6_1)-max(stock$diffV6)) abs(var(sampleV6_1)-var(stock$diffV6)) abs(quantile(sampleV6_1,.25)-quantile(stock$diffV6,.25))

abs(mean(sampleV6_2)-mean(stock$diffV6)) abs(max(sampleV6_2)-max(stock$diffV6)) abs(var(sampleV6_2)-var(stock$diffV6)) abs(quantile(sampleV6_2,.25)-quantile(stock$diffV6,.25)) mean(stock$diffV7) max(stock$diffV7) var(stock$diffV7) quantile(stock$diffV7,.25) abs(mean(sampleV7_1)-mean(stock$diffV7)) abs(max(sampleV7_1)-max(stock$diffV7)) abs(var(sampleV7_1)-var(stock$diffV7)) abs(quantile(sampleV7_1,.25)-quantile(stock$diffV7,.25))

abs(mean(sampleV7_2)-mean(stock$diffV7)) abs(max(sampleV7_2)-max(stock$diffV7)) abs(var(sampleV7_2)-var(stock$diffV7)) abs(quantile(sampleV7_2,.25)-quantile(stock$diffV7,.25))

boxplot(stock$diffV2, stock$diffV3, stock$diffV4, stock$diffV5, stock$diffV6, stock$diffV7 ,col = 'blue', main = 'Boxplot', names=c("Open","High", "Low", "Close", "volume", "adj")) stock$c = as.numeric(stock$V4)

hist(stock$c,breaks=seq(0,20000,by=2000),col='blue',xlab = "Close",ylab = "Frequency",main = "Histogram Plot")
```