Lab requirement for labs in Week 5

**Question 1: This project provides trading content for a particular stock, including: Date, Closing Price, Highest Price, Lowest Price, Opening Price, Previous Close Amount, Up/Down Range, Amount up/down, Change Rate, Turnover volume, Turnover amount, Total Market, Market capitalisation, and Number of Transactions. Please use the R language to implement the following functions.**

**1、Find the highest trading price of this stock**

**2、Find the lowest closing price of this stock**

**3、Please use the closing price to find the time period with the biggest increase in a consecutive week**

**4、Please use the closing price to find the period of time with the greatest decline in a consecutive week**

**5. Please predict the closing price for each day of the coming week**

Sample Solution:

trade\_data <- read\_csv("Desktop/trade data.csv")

View(trade\_data)

## 1

highest\_price <- trade\_data[,3]

h\_p <- max(highest\_price, na.rm = TRUE)

h\_p

## 2

lowest\_price <- trade\_data[,2]

l\_p <- min(lowest\_price, na.rm = TRUE)

l\_p

## 3

closing\_price <- trade\_data[,c("Date", "Closing Price")]

names(closing\_price)[names(closing\_price) == "Closing Price"] <- "Price"

week\_price <- c()

Weeks\_date <- c()

Weeks\_diff <- c()

start <- as.Date("1997/5/22")

end <- as.Date("2020/8/28")

tmp\_end <- start + 7

for (i in nrow(closing\_price):1) {

#print(i)

tmp\_date <- as.Date(as.character(closing\_price[i,1]))

if (tmp\_date <= tmp\_end) {

week\_price <- append(week\_price, as.numeric(closing\_price[i,2]))

} else {

tmp\_end <- tmp\_end + 7

if (length(week\_price)>0) {

tmp\_ini <- week\_price[1]

tmp\_last <- week\_price[length(week\_price)]

tmp\_diff <- tmp\_ini-tmp\_last

} else {

tmp\_diff <- 0

}

Weeks\_date <- append(Weeks\_date, tmp\_end)

Weeks\_diff <- append(Weeks\_diff, tmp\_diff)

week\_price <- c()

week\_price <- append(week\_price, as.numeric(closing\_price[i,2]))

}

}

max\_inc <- max(Weeks\_diff)

max\_inc

## 4

max\_dec <- min(Weeks\_diff)

max\_dec

## 5

closing\_price <- trade\_data[,c("Date", "Closing Price")]

names(closing\_price)[names(closing\_price) == "Closing Price"] <- "Price"

rec <- data.frame(ID = c(1:nrow(closing\_price)))

total <- cbind(rec,closing\_price)

fit<-lm(Price~ID,data=total)

summary(fit)

plot(total$ID,total$Price,

xlab="Rec",

ylab="Price")

abline(fit)

fitted(fit)

predict(fit,newdata=data.frame(ID = c(5137:5143), height=7))