**Code**:

library(readxl) # To read an excel file

Hospital <- read\_excel ("D:/Simplilearn/Project Data Sets/7/Hospital.xlsx")

# Location of excel file

View (Hospital) # To view the inputted dataset

Hospital

library(dplyr)

library(ggplot2)

# Question 1

# To find the category that has the highest frequency of hospital visits and has

the maximum expenditure.

hist (Hospital$AGE, main = 'Frequency of patients', col = 'green',

xlab = ‘Age’, ylab = 'No of visits')

# To get the correct value No of visits.

summary (as. factor (Hospital$AGE))

# Now calculate the Maximum expenditure.

aggregate (TOTCHG~AGE, FUN = sum, data = Hospital)

max (aggregate (TOTCHG~AGE, FUN = sum, data = Hospital))

# Question 2

# To find out the expensive treatments

hist (Hospital$APRDRG, col = ‘green’, main = 'Frequency of Treatments',

xlab = 'Treatment Categories', ylab ='Frequency’)

# The as. factor () is called to make sure that the categories are not treated as numbers.

APRDRG\_fact <- as. factor (Hospital$APRDRG)

summary (APRDRG\_fact)

which.max (summary (APRDRG\_fact))

df <- aggregate (TOTCHG~APRDRG, FUN = sum, data = Hospital)

df

df[which.max(df$TOTCHG),]

# Question 3

# To make sure that there is no malpractice, the agency needs to analyze if the race of the patient is related to the hospitalization costs.

Hospital <- na. omit (Hospital)

Hospital$RACE <-as. factor (Hospital$RACE)

model\_aov<-aov (TOTCHG~RACE, data = Hospital)

model\_aov

summary(model\_aov)

summary (Hospital$RACE)

# Question 4

# To properly utilize the costs

Hospital$FEMALE <- as. factor (Hospital$FEMALE)

model\_lm1 <- lm (TOTCHG~AGE+FEMALE, data = Hospital)

summary(model\_lm1)

summary (Hospital$FEMALE)

# Question 5

# To find the length of stay

Hospital$RACE<-as. factor (Hospital$RACE)

model\_lm2 <- lm (LOS~AGE+FEMALE+RACE, data = Hospital)

summary(model\_lm2)

# Question 6

# To find the variable that effects the hospital costs

model\_lm3 <- lm (TOTCHG~AGE+FEMALE+RACE+LOS+APRDRG, data = Hospital)

summary(model\_lm3)