1. Use the given link below and locate the bank marketing dataset. Data Set Link

Perform the below operations:

a. Is there any association between Job and default?

Ans:

>zip.url1<-"http://archive.ics.uci.edu/ml/machine-learning-databases/00222/bank-additional.zip"

>temp1<-tempfile()

>download.file(zip.url1,temp1)

>myfile<-data.frame(read.csv(unz(temp1,"bank-additional.csv"),sep = ";"))

>head(myfile)

>job<-as.numeric(myfile$job)

>default<-as.numeric(myfile$default)

>cor(job,default)

>bartable = table(myfile$job, myfile$default)

>barplot(bartable, beside = TRUE, legend =levels(unique(myfile$job)))

#allthe employes have default no and unknown only one employee is with yes

b. Is there any significant difference in duration of last call between people having housing loan or not?

Ans:

>ordering<-c("yes","no","unknown")

> mydata$housing <- as.numeric(factor(myfile$housing , levels = ordering))

> str(mydata)

> aModel <- aov(housing ~ duration,data=mydata)

> summary(aModel)

>aModel$coefficients

Result:

Df Sum Sq Mean Sq F value Pr(>F)

duration 1 0.1 0.06864 0.228 0.633

Residuals 4117 1239.7 0.30111

Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

c. Is there any association between consumer price index and consumer?

ans:

there is no association between consumer price index and consumer

as there is no customer column in the data set

d. Is the employment variation rate consistent across job types?

Ans:

>bartable = table(myfile$emp.var.rate, myfile$job)

>barplot(bartable, beside = TRUE, legend =levels(unique(myfile$emp.var.rate)))

# by seeing the plot we can say that different jobs all the employees have

different employment variation rates they are not consistent across job types.

e. Is the employment variation rate same across education?

Ans:

>bartable = table(myfile$emp.var.rate , myfile$education)

>barplot(bartable, beside = TRUE, legend =levels(unique(myfile$emp.var.rate)))

# by seeing the plot we can say that different educations the employment variation rates

are different they are not same.

f. Which group is more confident??

Ans:

university.degree holders has more employment variation rates

they are more confident