**Experiment 5**

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AIM: Write a program to perform weather forecasting using R

**Code:**

df<-read.csv('weather.csv')

apply(apply(df,2,is.na),2,sum)

df<-na.omit(df)

binca<-df$RainTomorrow

df$RainTomorrow[df$RainTomorrow =='Yes']<-1

df$RainTomorrow[df$RainTomorrow =='No']<-0

set.seed(123)

split = sample.split(df$RainTomorrow, SplitRatio = 0.8)

training\_set = subset(df, split == TRUE)

test\_set = subset(df, split == FALSE)

training\_set<-training\_set[-c(1,2,8,10,11,23)]

mytrainset2<-training\_set[-18]

training\_set<-lapply(training\_set,as.numeric)

model1<-glm(training\_set$RainTomorrow~.,data=mytrainset2,family=binomial())

summary(model1)

test\_set<-test\_set[-c(1,2,8,10,11,23)]

mytestset2<-test\_set[-18]

test\_set<-lapply(test\_set,as.numeric)

predi1<-predict(model1,mytestset2,type="response")

y\_pred = ifelse(predi1 > 0.5, 1, 0)

tab1 <- table(Predicted = predi1, Actual = test\_set$RainTomorrow)

missing\_classerr <- mean(y\_pred != test\_set$RainTomorrow)

print(paste('Accuracy =', 1 - missing\_classerr))

exp(coef(model1))

anova(model1,test="Chisq")

model2<-glm(training\_set$RainTomorrow~MinTemp+MaxTemp+Sunshine+WindGustSpeed+Humidity9am+Humidity3pm+Pressure3pm,data=mytrainset2,family=binomial())

summary(model2)

1-pchisq(deviance(model2)-deviance(model1),df.residual(model2)-df.residual(model1))

predi2<-predict(model2,mytestset2,type="response")

binca<-ifelse(binca=="Yes",c(1),c(0))

summ=0

for(i in 1:length(predi1)){summ=summ+(binca[i]-predi1[i])^2}

summ

summ=0

for(i in 1:length(predi2)){summ=summ+(binca[i]-predi2[i])^2}

summ

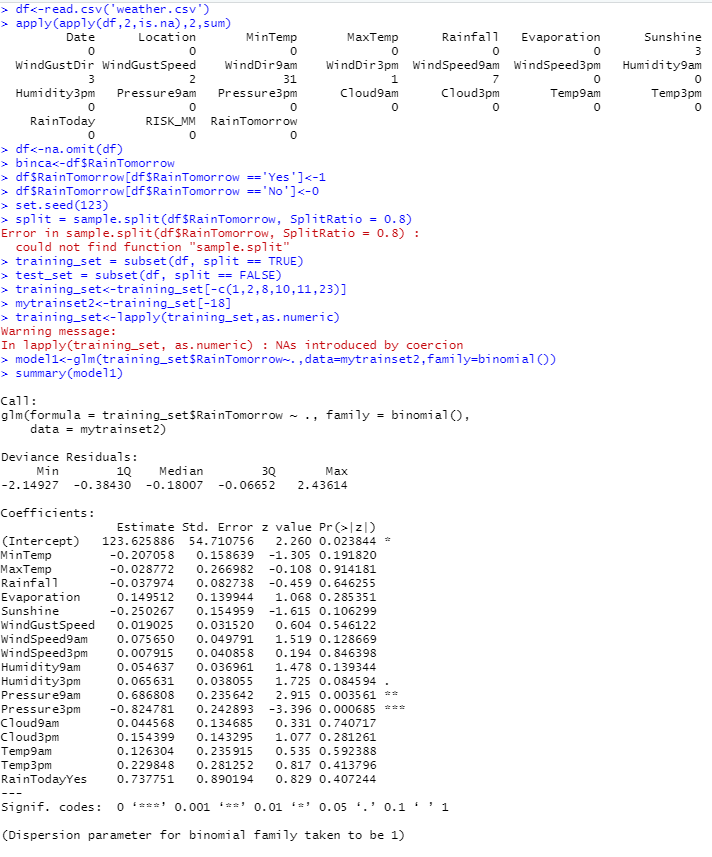
mean(binca)

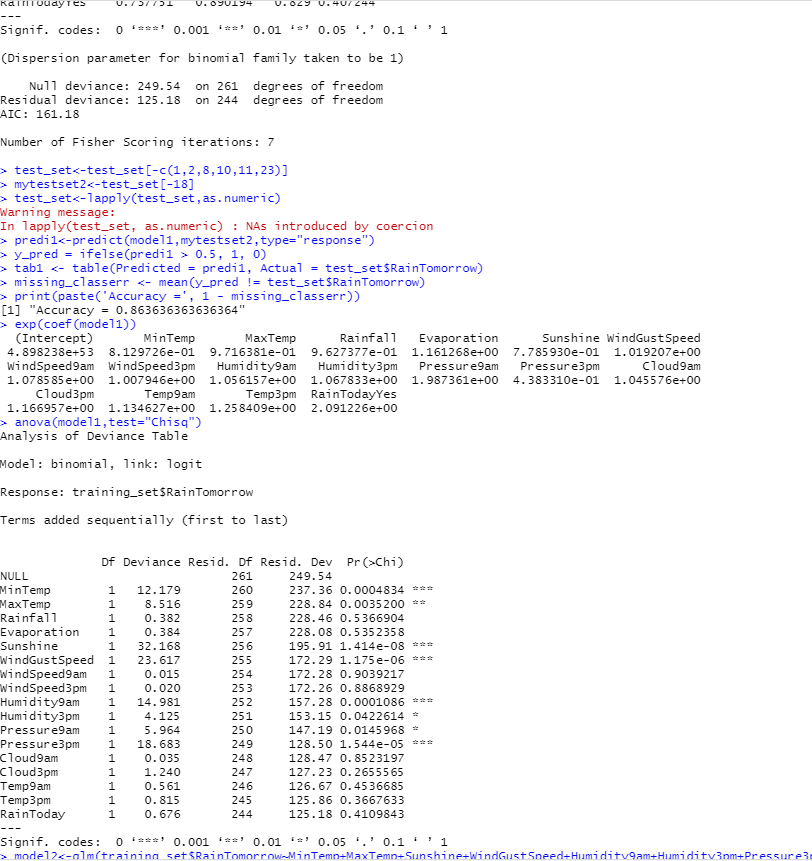
sum=0

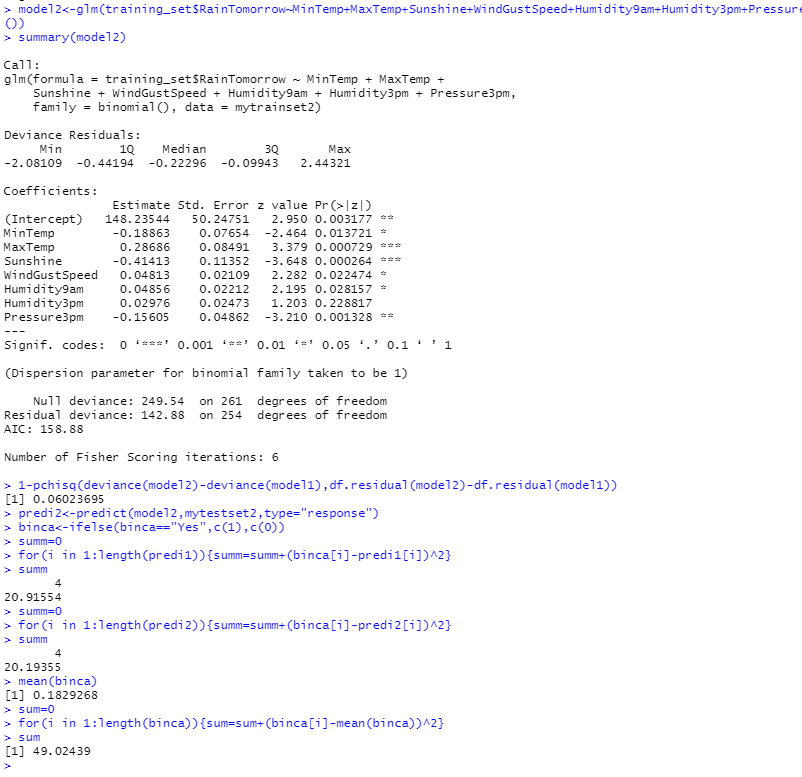
for(i in 1:length(binca)){sum=sum+(binca[i]-mean(binca))^2}

sum

**Output:**

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