install.packages("ISLR")

library(ISLR)

data(College)

names(College)

dim(College)

library(leaps)

subset.full**<-regsubs**ets(Apps~.,College)

summary(subset.full)

subset.full<-regsubsets(Apps~.,College,nvmax=17)

full.summary<-summary(subset.full)

names(full.summary)

full.summary$rsq

par(mfrow=c(1,3)

which.min(full.summary$cp)

plot(full.summary$cp,xlab="NumberofVariables",ylab="CP",type= "b")

points(12,full.summary$cp[12],col="red",cex=2,pch=20)

which.min(full.summary$bic)

plot(full.summary$bic,xlab="NumberofVariables",ylab="BIC",type ="b")

points(10,full.summary$bic[10],col="red",cex=2,pch=20)

which.max(full.summary$adjr2)

plot(full.summary$adjr2,xlab="NumberofVariables",ylab="Adjusted RSq",type="b")

points(13,full.summary$adjr2[13],col="red",cex=2,pch=20)

coef(subset.full,10)

subset.fwd<-regsubsets(Apps~.,College,nvmax=17,method="forward")

summary(subset.fwd)

subset.bwd<-regsubsets(Apps~.,College,nvmax=17,method= "backward")

summary(subset.bwd)