Roll No.: 40023

Date:

**Aim:** To perform practical of Simple/Multiple Linear Regression.

**Program Code:**

lsfit(iris$Petal.Length,iris$Petal.Width)$coefficients

plot(iris$Petal.Length,iris$Petal.Width,pch=21,bg=c("red","green3","blue")[unclass(iris$Species)],main="Iris Data",xlab="Petal length",ylab="Petal width")

abline(lsfit(iris$Petal.Length,iris$Petal.Width)$coefficients,col="black")

lm(Petal.Width~Petal.Length,data=iris)$coefficients

plot(iris$Petal.Length,iris$Petal.Width,pch=21,bg=c("red","green3","blue")[unclass(iris$Species)],main="Iris Data",xlab="Petal length",ylab="Petal width")

abline(lm(Petal.Width~Petal.Length,data=iris)$coefficients,col="black")

summary(lm(Petal.Width~Petal.Length,data=iris))

plot(iris$Sepal.Width,iris$Sepal.Length,pch=21,bg=c("red","green3","blue")[unclass(iris$Species)],main="Iris Data",xlab="Sepal Width",ylab="Sepal Length")

abline(lm(Sepal.Length~Sepal.Width,data=iris)$coefficients,col="black")

summary(lm(Sepal.Length~Sepal.Width,data=iris))

plot(iris$Sepal.Width,iris$Sepal.Length,pch=21,bg=c("red","green3","blue")[unclass(iris$Species)],main="Iris Data",xlab="Petal length",ylab="Sepal length")

abline(lm(Sepal.Length~Sepal.Width,data=iris)$coefficients,col="black")

abline(lm(Sepal.Length~Sepal.Width,

data=iris[which(iris$Species=="setosa"),])$coefficients,col="red")

abline(lm(Sepal.Length~Sepal.Width

data=iris[which(iris$Species=="versicolor"),])$coefficients,col="green3")

abline(lm(Sepal.Length~Sepal.Width,

data=iris[which(iris$Species=="virginica"),])$coefficients,col="blue")

lm(Sepal.Length~Sepal.Width,data=iris[which(iris$Species=="setosa"),])$coefficients

lm(Sepal.Length~Sepal.Width,data=iris[which(iris$Species=="versicolor"),])$coefficients

lm(Sepal.Length~Sepal.Width,data=iris[which(iris$Species=="virginica"),])$coefficients

lm(Sepal.Length~Sepal.Width:Species+Species-1,data=iris)$coefficients

summary(lm(Sepal.Length~Sepal.Width:Species+Species-1,data=iris))

summary(step(lm(Sepal.Length~Sepal.Width\*species,data=iris)))

lm(Sepal.Length~Sepal.Width:Species+Species-1,data=iris)$coefficients

lm(Sepal.Length~Sepal.Width:Species+Species,data=iris)$coefficients

**Conclusion:** Practical of Simple/Multiple Linear Regression has been executed successfully.