**6304 Module 9**

**R Script File**

**rm(list=ls())**

**library(rio)**

**library(car)**

**cats1=import("6304 Module 9 Data Set.xlsx",sheet="One Way Cats")**

**# Equality of variances test.**

**leveneTest(Eaten~Flavor,data=cats1)**

**# Conducting and interpreting the ANOVA -- cats1.**

**cats1.out=aov(Eaten~Flavor,data=cats1)**

**summary(cats1.out)**

**names(cats1.out)**

**cats1.out$coefficients**

**gilligan=TukeyHSD(cats1.out)**

**gilligan**

**plot(gilligan)**

**# par(mar sets the margins on the upcoming plot.**

**# Order of values is: bottom, left, top, right.**

**# Default values are 5.1,4.1,4.1,2.1**

**# Set, plot, reset.**

**par(mar=c(5.1,8,4.1,2.1))**

**plot(gilligan,las=2)**

**par(mar=c(5.1,4.1,4.1,2.1))**

**cats2=import("6304 Module 9 Data Set.xlsx",**

**sheet="Randomized Block Cats")**

**leveneTest(Eaten~Flavor,data=cats2)**

**leveneTest(Eaten~Cat,data=cats2)**

**cats2.out=aov(Eaten~Flavor+Cat,data=cats2)**

**summary(cats2.out)**

**ginger=TukeyHSD(cats2.out)**

**ginger**

**par(mfrow=c(1,2))**

**par(mar=c(5.1,6,4.1,2.1))**

**plot(ginger,las=2,cex.axis=.6)**

**par(mfrow=c(1,1))**

**par(mar=c(5.1,4.1,4.1,2.1))**

**# Reading in cats3 data.**

**cats3=import("6304 Module 9 Data Set.xlsx",**

**sheet="Randomized Block Extra Cats")**

**# Equality of variances test on cats3.**

**leveneTest(Eaten~Flavor,data=cats3)**

**leveneTest(Eaten~Cat,data=cats3)**

**# Conducting the ANOVA on cats3.**

**cats3.out=aov(Eaten~Flavor+Cat,data=cats3)**

**summary(cats3.out)**

**maryann=TukeyHSD((cats3.out))**

**maryann**

**par(mfrow=c(1,2))**

**par(mar=c(5.1,6,4.1,2.1))**

**plot(maryann,las=2,cex.axis=.7)**

**par(mar=c(5.1,4.1,4.1,2.1))**

**par(mfrow=c(1,1))**

**# Changing to the Heart Disease Data**

**heart.disease=import("Heart Disease.xlsx")**

**names(heart.disease)**

**str(heart.disease)**

**heart.disease$age\_cat=as.factor(heart.disease$age\_cat)**

**heart.disease$chest\_pain=as.factor(heart.disease$chest\_pain)**

**heart.disease$heart=as.factor(heart.disease$heart)**

**str(heart.disease)**

**leveneTest(max\_heart\_rate~heart,data=heart.disease)**

**aggregate(max\_heart\_rate~heart,heart,var)**

**boxplot(max\_heart\_rate~heart,data=heart.disease)**

**leveneTest(max\_heart\_rate~chest\_pain,data=heart.disease)**

**aggregate(max\_heart\_rate~chest\_pain,heart,var)**

**boxplot(max\_heart\_rate~chest\_pain,data=heart.disease)**

**leveneTest(max\_heart\_rate~age\_cat,data=heart.disease)**

**aggregate(max\_heart\_rate~age\_cat,heart,var)**

**boxplot(max\_heart\_rate~age\_cat,data=heart.disease)**

**heart.out=aov(max\_heart\_rate~heart,data=heart.disease)**

**heart.out=aov(max\_heart\_rate~chest\_pain,data=heart.disease)**

**summary(heart.out)**

**maryann=TukeyHSD(heart.out)**

**maryann**

**par(mar=c(5.1,6,4.1,2.1))**

**plot(maryann,las=2,cex.axis=.7)**

**par(mar=c(5.1,4.1,4.1,2.1))**

**plot(TukeyHSD(heart.out))**

**heart.out=aov(max\_heart\_rate~age\_cat,data=heart.disease)**

**summary(heart.out)**

**maryann=TukeyHSD(heart.out)**

**maryann**

**par(mar=c(5.1,8,4.1,2.1))**

**plot(maryann,las=2,cex.axis=.7)**

**par(mar=c(5.1,4.1,4.1,2.1))**