# Import Auto.xlsx #

View(Auto)

with(Auto, plot(horsepower, mpg, pch=19, col="darkblue"))

with(Auto, plot(displacement, mpg, pch=19, col="darkred", main="Plot of MPG versus Displacement for Cars"))

with(Auto, plot(acceleration, mpg, pch=19, col="darkblue", main="Plot of MPG versus Time to Accelerate for Cars"))

with(Auto, cor(displacement, mpg))

with(Auto, cor(acceleration, mpg))

round(cor(Auto),2)

d.fit1 <- lm(mpg ~ displacement, data=Auto)

# Regress mpg on the predictors in the data set

summary(d.fit1)

anova(d.fit1)

newd <- data.frame(displacement=c(300, 500))

predict.lm(d.fit1, newdata=newd)

#library(car)

# Pairwise correlation coefficients

h.fit1 <- lm(mpg ~ horsepower, data=Auto)

# Regress mpg on the predictors in the data set

summary(h.fit1)

anova(h.fit1)

w.fit1 <- lm(mpg ~ weight, data=Auto)

# Regress mpg on the predictors in the data set

summary(w.fit1)

anova(w.fit1)

a.fit1 <- lm(mpg ~ acceleration, data=Auto)

# Regress mpg on the predictors in the data set

summary(a.fit1)

anova(a.fit1)

hw.fit1 <- lm(mpg ~ horsepower+weight, data=Auto)

# Regress mpg on the predictors in the data set

summary(hw.fit1)

anova(hw.fit1)

vif(hw.fit1)

all.fit1 <- lm(mpg ~ ., data=Auto)

# Regress mpg on the predictors in the data set

summary(all.fit1)

anova(all.fit1)

round(vif(all.fit1),2) # variance inflation factor

a.fit2 <- lm(mpg ~ cylinders + displacement + weight + acceleration, data=Auto)

summary(a.fit2)

anova(a.fit2)

round(vif(a.fit2),2)

a.fit3 <- lm(mpg ~ displacement + weight + acceleration, data=Auto)

summary(a.fit3)

round(vif(a.fit3),2)

a.fit4 <- lm(mpg ~ weight + acceleration, data=Auto)

summary(a.fit4)

round(vif(a.fit4),2)

a.fit5 <-

with(German\_Credit, plot(`Credit Amount`, Creditability, pch=19, col="darkblue", main="Scatterplot of Binary Y"))

with(German\_Credit, hist(`Credit Amount`))

b <- seq(0, 80, 10)

with(German\_Credit, hist(`Duration of Credit (month)`, breaks = b))

cutpoint <- c(0, 500, 1000,1500,2000, 2500, 5000, 7500, 10000, 15000, 20000)

Credit\_cat <- cut(German\_Credit$`Credit Amount`, cutpoint, right=T)

table(Credit\_cat)

Table1<-table(Credit\_cat, German\_Credit$Creditability)

Table2 <- prop.table(Table1,1)

Table3 <- cbind(Table2, table(Credit\_cat))

fit.logistic <- glm(German\_Credit$Creditability~German\_Credit$'Credit Amount', family=binomial(link=logit))

summary.glm(fit.logistic)

fit2.logistic <- glm(German\_Credit$Creditability~German\_Credit$`Duration of Credit (month)`, family=binomial(link=logit))

summary.glm(fit2.logistic)

Duration\_cat <- cut(German\_Credit$`Duration of Credit (month)`, b, right=T)

table(Duration\_cat)

Table4<-table(Duration\_cat, German\_Credit$Creditability)

Table5 <- prop.table(Table4,1)

Table6 <- cbind(Table5, table(Duration\_cat))

fit2.logistic <- glm(German\_Credit$Creditability~German\_Credit$`Duration of Credit (month)`, family=binomial(link=logit))

summary.glm(fit2.logistic)

fit3.logistic <- glm(Creditability~., data=German\_Credit, family=binomial(link=logit))

summary.glm(fit3.logistic)