**EXP 5 RESHAPE AMD MERGE**

**#TRANSPOSE**

**mat=matrix(c(1:9), nrow=3,ncol=3, byrow=TRUE)**

**print(mat)**

**new=t(mat)**

**print(new)**

**#COLUMNJOIN**

**city=c("A","B","C")**

**zip=c(12,15,18)**

**state= c("AA","BB","CC")**

**y= cbind(city,state,zip)**

**print(y)**

**#ADDING NEW DATA INTO THE CBIND THROUGH RBIND**

**n=data.frame(**

**city="D",zip=4,state="DD"**

**)**

**print(rbind(y,n))**

**#MERGING**

**a=data.frame(**

**city="KOCHI", zip=123**

**)**

**b=data.frame(**

**city="IDUKI", zip=621**

**)**

**new= merge(b,a,all=TRUE)**

**print(new)**

**#MELT AND CAST**

**library(MASS)**

**library(reshape)**

**a=data.frame(a=c(1,2,3),b=c(11,22,33),c=c(111,222,333),d=c(1111,2222,3333)**

**print(a)**

**m=melt(a,id=c("a","b"))**

**print(m)**

**c=cast(m,a~variable,mean)**

**print(c)**

**EXP=6 (MEAN,MEDIAN MODE)**

**library('psych')**

**rain=c(10,10,10,10,10,560,640,520,320,90,20,10)**

**mean(rain)**

**median(rain)**

**mode=function(x)**

**{**

**a=unique(x)**

**a[which.max(tabulate(match(x,a)))]**

**}**

**mode(rain)**

**geometric.mean(rain)**

**harmonic.mean(rain)**

**y=na.omit(rain)**

**quantile(y,.75) #firstquantile**

**quantile(y,0.56) #56thpercentilequantile**

**(y, 0.3) #3rddecile**

**EXP 7 DATA VISULAISATION**

**library(ggplot2)**

**ggplot(mtcars)+**

**geom\_point(mapping=aes(x=wt,y=mpg, color=disp))**

**ggplot(mtcars)+geom\_histogram(mapping=aes(x=mpg ))**

**boxplot(mpg ~ cyl, data=mtcars ,xlab="cylinder", ylab="miles" )**

**dotchart(mtcars$mpg, labels=row.names(mtcars), main="Milage", xlab="MPG")**

**EXP 8 LINEAR AND LOGISTIC REGRESSION**

**#LINEAR REGRESSION**

**x=c(151,174,138,186,128)**

**y=c(63,81,56,91,47)**

**print(summary(lm(y~x)))**

**plot( y,x,col="blue",main="HEIGHT AND WEIGHT", abline(lm(x~y), xlab="kg", ylab="cm") )**

**#LOGISTIC REGRESSION**

**a=glm(formula=am~hp+wt+cyl,data=mtcars,family=binomial)**

**print(summary(a))**

**EXP 9 KMEANS**

**library(factoextra)**

**library(ggplot2)**

**library(ggfortify)**

**library(dplyr)**

**library(stats)**

**a=iris[1:4]**

**sc=scale(a)**

**fviz\_nbclust(**

**sc, kmeans, method="wss"**

**)**

**km=kmeans(sc,centers = 3)**

**print( km)**

**autoplot(km,sc,frame=TRUE)**