#DAY1

#1

me=c(200,450,300,1500,700,44)

ty=c(3,10,17.5,35,65,95)

mm<-weighted.mean(ty,me)

print(mm)

#2

age <- c(13,15,16,16,19,20,20,21,22,22,25,25,25,25,30,33,33,35,35,35,35,36,40,45,46,52,70)

mean(age)

median(age)

mo=as.numeric(names(sort(table(age)))[1])

mi=(min(age)+max(age))/2

q11=quantile(age,0.25)

q33=quantile(age,0.75)

q11

q33

#3

data <- c(200, 300, 400, 600, 1000)

min\_max\_norm <- (data - min(data)) / (max(data) - min(data))

z\_norm <- scale(data)

print(c(min\_max\_norm,z\_norm))

#4

prices <- c(1, 1, 5, 5, 5, 5, 5, 8, 8, 10, 10, 10, 10, 12, 14, 14, 14,

15, 15, 15, 15, 15, 15, 18, 18, 18, 18, 18, 18, 18, 18, 20,

20, 20, 20, 20, 20, 20, 21, 21, 21, 21, 25, 25, 25, 25, 25,

28, 28, 30, 30, 30)

n=length(prices)

num=3

bin\_size=n/num

bins=split(prices,ceiling(seq\_along(prices)/bin\_size))

bin\_mean=lapply(bins,mean)

sm=lapply(seq\_along(bins),function(i) rep(bin\_mean[[i]],length(bins[[i]])))

sm

bin\_median=lapply(bins,median)

sv=lapply(seq\_along(bins), function(i) rep(bin\_median[[i]],length(bins[[i]])))

sv

sb <- lapply(bins, function(x) ifelse(abs(x - min(x)) <= abs(x - max(x)), min(x), max(x)))

sb

#5

age <- c(23,34,45,25,36,28,29,31,44,27,32,37,33,30,35,39,42,40)

fat <- c(22,18,24,26,20,19,23,27,25,21,29,30,28,32,31,22,33,34)

mean(age);median(age);sd(age);

mean(fat);median(fat);sd(fat);

boxplot(age,fat);

plot(age,fat);

qqnorm(age);qqline(age);

#6

age <- c(23,34,45,25,36,28,29,31,44,27,32,37,33,30,35,39,42,40)

# Min-Max Normalization

age\_norm <- (35 - min(age)) / (max(age) - min(age))

# Z-Score Normalization

age\_z <- (35 - mean(age)) / sd(age)

# Decimal Scaling

age\_dec <- 35 / 100

#7

pencils <- c(9,25,23,12,11,6,7,8,9,10)

mean(pencils)

median(pencils)

mode\_pencils <- as.numeric(names(sort(-table(pencils)))[1])

#8

x <- c(4,1,5,7,10,2,50,25,90,36)

y <- c(12,5,13,19,31,7,153,72,275,110)

plot(x, y, main="Scatter Plot of Mobiles Sold vs Money")

#9

marks <- c(55,60,71,63,55,65,50,55,58,59,61,63,65,67,71,72,75)

# Equal Frequency

freq\_bins <- split(marks, cut(marks, quantile(marks), include.lowest=TRUE))

# Equal Width

width\_bins <- split(marks, cut(marks, 3))

hist(marks, breaks=3)

#10

speed <- c(78.3,81.8,82,74.2,83.4,84.5,82.9,77.5,80.9,70.6)

IQR(speed)

sd(speed)

#11

age <- c(13,15,16,16,19,20,20,21,22,22,25,25,25,25,30,33,33,35,35,35,35,36,40,45,46,52,70)

Q1 <- quantile(age, 0.25)

Q3 <- quantile(age, 0.75)

#DAY2

#1

a=c(18,2,20);b=c(22,28,10);C=c(20,40,40);

cobc=cov(b,C)

corbc=cor(b,C)

corm=cor(data.frame(a,b,C))

covm=cov(data.frame(a,b,C))

print(c(cobc,corbc,covm,corm))

#2

data <- c(1,1,5,5,5,5,5,8,8,10,10,10,10,12,14,14,14,15,15,15,15,15,15,18,18,18,18,18,18,18,18,20,20,20,20,20,20,20,21,21,21,21,25,25,25,25,25,28,28,30,30,30)

n=length(data)

no=3

bin\_s=n/no

binss=split(data,ceiling(seq\_along(data)/bin\_s))

bin\_m=lapply(binss,mean)

sbm=lapply(seq\_along(binss), function(i) rep(bin\_m[[i]],length(binss[[i]])))

sbm

sbmm=lapply(binss,function(x) ifelse(abs(x-min(x))<=abs(x-max(x)),min(x),max(x)))

sbmm

hist(data,col="pink",xlab="hi",ylab="bye",main=("histogram"))

#3

A <- c(76,35,47,64,95,66,89,36,84)

B <- c(51,56,84,60,59,70,63,66,50)

boxplot(A,B,col="yellow")

#4

data <- c(200, 300, 400, 600, 1000)

# Min-Max Normalization

min\_max <- (data - min(data)) / (max(data) - min(data))

# Z-Score Normalization

z\_score <- scale(data)

#5

hist(AirPassengers, breaks=seq(100, 700, 150), col="lightgreen")

#6

plot(mtcars$mpg, type="l", col="red")

lines(mtcars$qsec, col="blue")

#7

# Create water dataset manually

water <- data.frame(

hardness = c(88, 90, 75, 84, 76, 72, 95, 80, 78, 85),

mortality = c(120, 150, 130, 160, 125, 140, 155, 135, 145, 150)

)

# Plot hardness vs mortality

plot(water$hardness, water$mortality, col="blue",type = "l", main="Hardness vs Mortality", xlab="Hardness", ylab="Mortality")

# Create linear regression model

model <- lm(mortality ~ hardness, data=water)

# Add regression line to plot

abline(model, col="red")

# Predict mortality for hardness = 88

predict(model, data.frame(hardness=88))

#8

boxplot(mtcars$mpg,mtcars$cyl)

#9

scores <- c(45,50,55,70,80,85,90,95,100,110,150)

boxplot(scores, main="Player Scores", col="orange")

#10

#its importing csv file