**ASSIGNMENT 2**

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#Q1(a)

v = c(rep("Gold",20),rep("Silver",30),rep("Bronze",50))

sample(v,10,replace = FALSE, prob = NULL)

#Q1(b)

sample(c("Success","Failure"),10,replace=TRUE,prob=c(0.9,0.1))

#Q2

pbirthday(15,classes=365,coincident = 2)

pbirthday(5,classes=365,coincident = 2)

pbirthday(100,classes=365,coincident = 2)

pbirthday(300,classes=365,coincident = 2)

pbirthday(25,classes=365,coincident = 2)

pbirthday(23,classes=365,coincident = 2)

pbirthday(22,classes=365,coincident = 2)

qbirthday(prob = 0.5, classes = 365, coincident = 2)

#Q3

pcloudy = 0.4

prain = 0.2

pcloudyrain = 0.85

bayesTheorem <- function(pA, pB, pBA) {

pAB <- pA \* pBA / pB

return(pAB)

}

bayesTheorem(prain, pcloudy, pcloudyrain)

#Q4

library(datasets)

data(iris)

#4a Print first few rows of this dataset.

head(iris,10)

#4b Find the structure of this dataset.

dim(iris)

str(iris)

#4c Find the range of the data regarding the sepal length of flowers.

vec<-iris$Sepal.Length

print(range(vec))

#4d Find the mean of the sepal length

print(mean(vec))

#4e Find the median of the sepal length.

print(median(vec))

#4f Find the first and the third quartiles and hence the interquartile range.

vec=sort(vec)

firstq=(length(vec))/4

thirdq=(length(vec))\*3/4

print(firstq)

print(vec[firstq])

print(vec[thirdq])

print(summary(iris))

#4g Find the standard deviation and variance.

print(sd(vec))

print(var(vec))

#4i Find the summary

print(summary(iris))

#Q5

getmode <- function(v) {

uniqv <- unique(v)

return(uniqv[which.max(tabulate(match(v, uniqv)))])

}

v4 <- c(2,1,2,3,1,2,3,4,1,5,5,3,2,3)

getmode(v4)