1. How many vowels are there in the names of USA States?

States = rownames(USArrests)

View(States)

vowel=0

isVowel <- function(char) char %in% c('a', 'e', 'i', 'o', 'u', 'A', 'E', 'I', 'O', 'U')

for(i in 1:50)

{

v=0

a <- States[i]

split <- strsplit(a, '')[[1]]

for(a in split)

{

if(isVowel(a) == TRUE)

{

v <- v+1

}

}

vowel <- vowel+v

print(paste0(States[i], ", number of vowel is ", v))

}

paste("Total number of vowels in USA States is", vowel)

1. Visualize the vowels distribution.

|  |
| --- |
|  |
| States = rownames(USArrests) |
|  |  |
|  | vowel=0 |
|  | isVowel <- function(char) char %in% c('a', 'e', 'i', 'o', 'u', 'A', 'E', 'I', 'O', 'U') |
|  | isA <- function(ch) ch %in% c('a', 'A') |
|  | isE <- function(ch) ch %in% c('e', 'E') |
|  | isI <- function(ch) ch %in% c('i', 'I') |
|  | isO <- function(ch) ch %in% c('o', 'O') |
|  | isU <- function(ch) ch %in% c('u', 'U') |
|  | va=0 |
|  | ve=0 |
|  | vi=0 |
|  | vo=0 |
|  | vu=0 |
|  | for(i in 1:50) |
|  | { |
|  | a <- States[i] |
|  | splitted <- strsplit(a, '')[[1]] |
|  | for(a in splitted) |
|  | { |
|  |  |
|  | if(isVowel(a) == TRUE) |
|  | { |
|  | if(isA(a) == TRUE) |
|  | va <- va+1 |
|  |  |
|  | else if(isE(a) == TRUE) |
|  | ve <- ve+1 |
|  |  |
|  | else if(isI(a) == TRUE) |
|  | vi <- vi+1 |
|  |  |
|  | else if(isO(a) == TRUE) |
|  | vo <- vo+1 |
|  |  |
|  | else if(isU(a) == TRUE) |
|  | vu = vu+1 |
|  | } |
|  | } |
|  |  |
|  | } |
|  | vowel <- c(va,ve,vi,vo,vu) |
|  | library(plotrix) |
|  | percent<- round(100\*vowel/sum(vowel), 1) |
|  | colors <- c("green","pink","red","blue","orsnge") |
|  | vowel <- c(va,ve,vi,vo,vu) |
|  | pie3D(vowel, labels= percent, col = c("yellow","green","red","blue","purple"), explode = 0.05, main = "VOWEL pie chart") |
|  | legend(x=-0.94, y=1.09, c('A / a','E / e','I / i','O / o','U / u'), fill =c("yellow","green","red","blue","purple"), bty = "n") |
|  |  |