ASSIGNMENT 5.1

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

Answer: Here, we have to find the total vowels present in the 50 states of the USArrests dataset.

Step 1: Installing **stringr** package
Step2: Vowel vector with all the vowels and Vector for storing the vowels as integers.

statenames<- rownames(USArrests)
vowels=c("a","e","i","o","u")
num_vowels<- vector(mode = "integer", length = 5)

Step 3: Calculate the number of vowels in each names.

for(i in seq_along(vowels)){
* num_aux= str_count(tolower(statenames), vowels[i])*
* num_vowels[i]=sum(num_aux)*
}

Step 4: Adding vowel names and sorting

names(num_vowels) = vowels
num_vowels
sort(num_vowels, decreasing = T)

Output:

```
 [1] "Alabama"        "Alaska"         "Arizona"        "Arkansas"
 [5] "California"     "Colorado"       "Connecticut"    "Delaware"
 [9] "Florida"        "Georgia"        "Hawaii"         "Idaho"
[13] "Illinois"       "Indiana"        "Iowa"           "Kansas"
[17] "Kentucky"       "Louisiana"      "Maine"          "Maryland"
[21] "Massachusetts"  "Michigan"       "Minnesota"      "Mississippi"
[25] "Missouri"       "Montana"        "Nebraska"       "Nevada"
[29] "New Hampshire"  "New Jersey"     "New Mexico"     "New York"
[33] "North Carolina" "North Dakota"   "Ohio"           "Oklahoma"
[37] "Oregon"         "Pennsylvania"   "Rhode Island"   "South Carolina"
[41] "South Dakota"   "Tennessee"      "Texas"          "Utah"
[45] "Vermont"        "Virginia"       "Washington"     "West Virginia"
[49] "Wisconsin"      "Wyoming"
> #vowel vector
> vowels=c("a","e","i","o","u")
> #vector for storing results
> num_vowels<- vector(mode = "integer", length = 5)
> #calculate the number of vowels in each names
> for(i in seq_along(vowels)){
+    num_aux= str_count(tolower(statenames), vowels[i])
+    num_vowels[i]=sum(num_aux)
+ }
> #add vowel names
> names(num_vowels) = vowels
>
> #total number of vowels
> num_vowels
 a  e  i  o  u
61 28 44 36  8
>
> #sort in decreasing order
> sort(num_vowels, decreasing = T)
 a  i  o  e  u
61 44 36 28  8
> |
```

2. Visualize the vowels distribution.

Answer: Visualization using bar plot:

barplot(num_vowels, main = "Number of vowels in USA States names",

border = NA, ylim = c(0, 80))

Output:

Number of vowels in USA States names