ACADGILD

SESSION 4: FOUNDATIONAL R PROGRAMMING-II

Assignment 3

PROBLEM STATEMENT

1. states=rownames(USArrests)

    - Get states names with ‘w’.
    - Get states names with ‘W’.

2. Prepare a histogram of the number of characters in each US state.

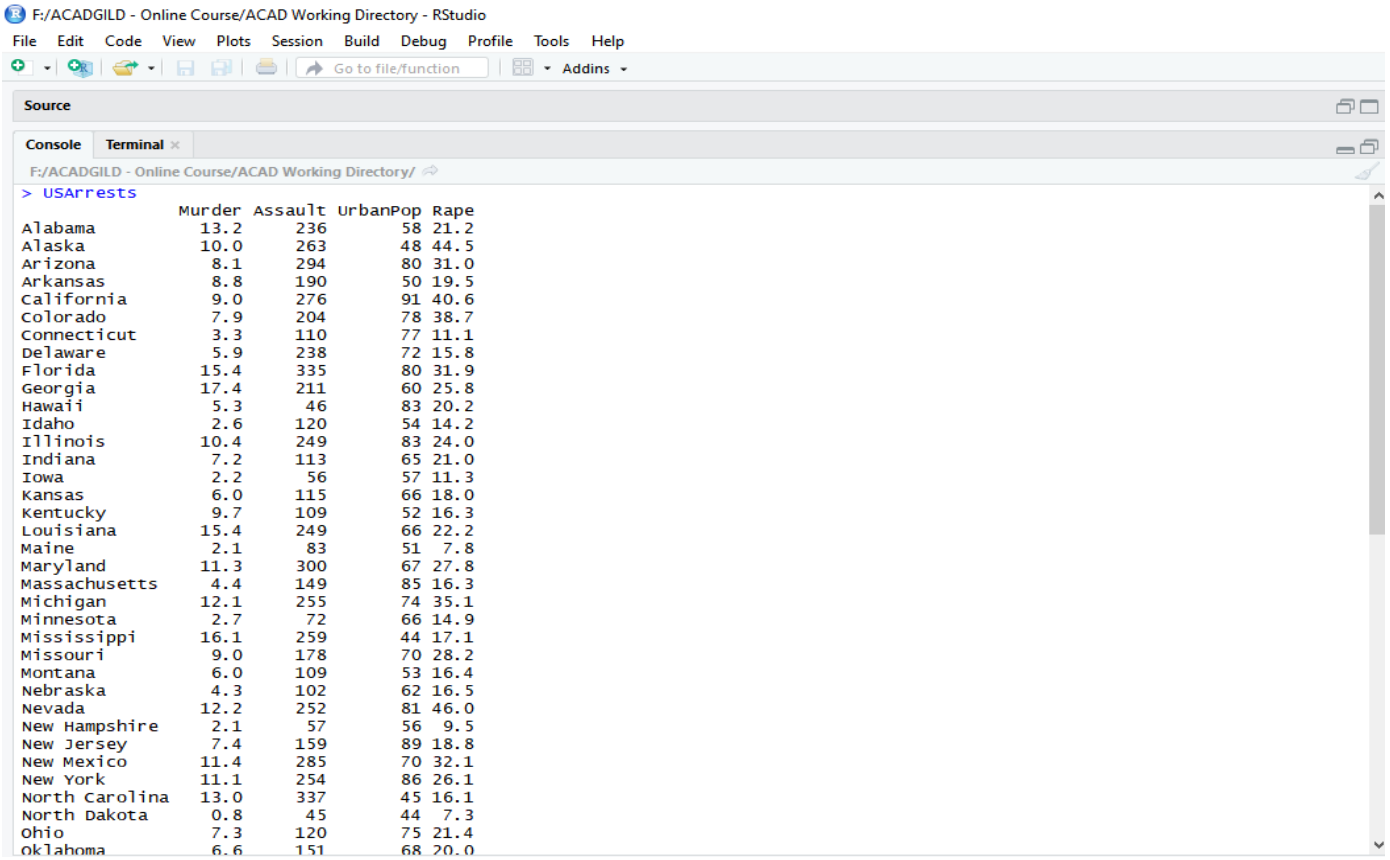
SOLUTION :

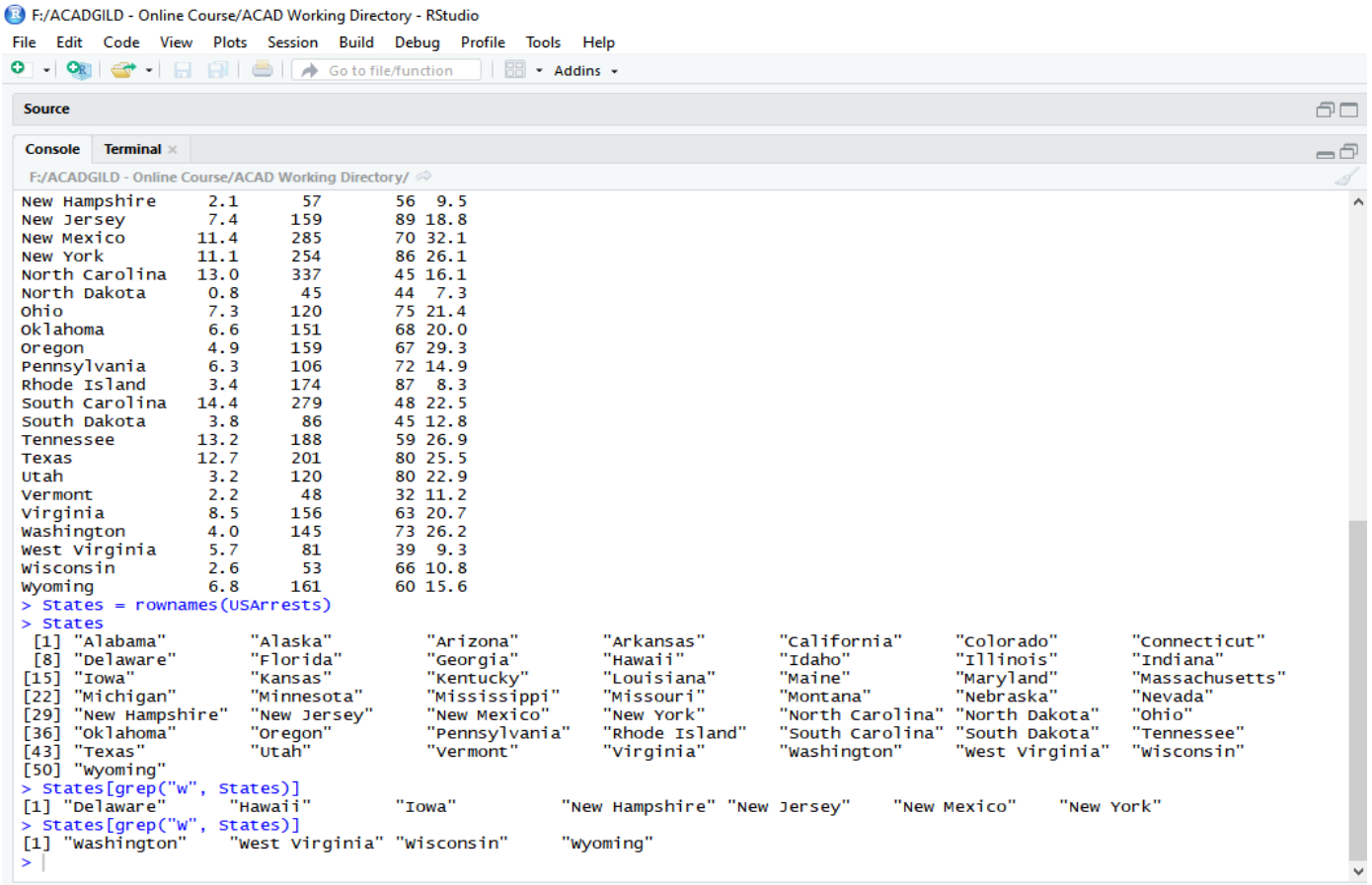
1. **The R-script for the given problem is as follows:**

```
USArrests
States = rownames(USArrests)
States

# Get states names with 'w'.
States[grep("w", States)]

#Get states names with 'W'.
States[grep("W", States)]
```

- grep( ) function searches for matches to argument pattern within each element of a character vector.
- To get the states names with ‘w’, grep("w", States) is used and to get states names with ‘W’ , grep("W", States) is used.

The output of the R-Script (from Console window) is given as follows:





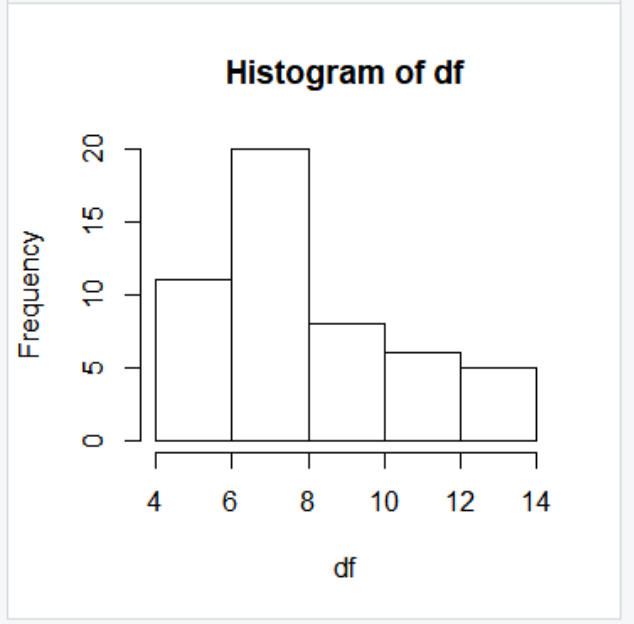
2. **The R-script for the given problem is as follows:**

```
df <- nchar(States)
df
hist(df)

#OR

hist(nchar(States))
```

- nchar( ) takes a character vector as an argument and returns a vector whose elements contain the sizes of the corresponding elements
- hist ( ) computes a histogram of the given data values
- Here, nchar(States) will take States as an argument and returns a vector whose elements contain the sizes of State.
- hist(nchar(States)) plots a histogram of the number of characters in State

The output of the R-Script is given as follows:

```
> df <- nchar(States)
> df
 [1]  7  6  7  8 10  8 11  8  7  7  6  5  8  7  4  6  8  9  5  8 13  8  9 11  8  7  8  6 1
12 14
[41] 12  9  5  4  7  8 10 13  9  7
> hist(df)
```



```
> hist(nchar(States))
```