

SHETH L.U.J. & SIR M.V. COLLEGE OF SCIENCE
SUBJECT - Data Analysis with R/SAS/SPSS

Aim - Creating cross-tabulations and two-way tables using table() (R).

Output :

The image displays two screenshots of the RStudio interface. The top screenshot shows the R script editor with code for loading a dataset and creating two-way tables. The bottom screenshot shows the console output of the same code.

Top Screenshot: R Script Editor

```
// Source on Save
table(data$volatile.acidity, data$citric.acid)
28
29 # Volatile Acidity vs Residual Sugar
30 table(data$volatile.acidity, data$residual.sugar)
31
32 # Citric Acid vs Residual Sugar
33 table(data$citric.acid, data$residual.sugar)
34
35 # -----
36 # Optional: Add margins (row & column totals)
37 # -----
38
39 addmargins(table(data$fixed.acidity, data$volatile.acidity))
40
41
```

Bottom Screenshot: Console Output

```
> # Clear workspace
> rm(list = ls())
> # Load the dataset
> data <- read.csv("winequality.csv")
> # View first few rows
> head(data)
  fixed.acidity volatile.acidity citric.acid residual.sugar chlorides free.sulfur.dioxide total.sulfur.dioxide density pH
1          7.0             0.27         0.36          20.7      45.00             45          170  1.001 3.00
2           6.3             0.30         0.34           1.6      49.00             14          132  0.994 3.30
3           8.1             0.28         0.40           6.9       0.05             30           97  0.951 3.26
4           7.2             0.23         0.32           8.5      58.00             47          186  0.956 3.19
5           7.2             0.23         0.32           8.5      58.00             47          186  0.956 3.19
6           8.1             0.28         0.40           6.9       0.05             30           97  0.951 3.26

  sulphates quality alcohol
1    0.45      6 R$ 45.512,00
2    0.49      6 R$ 45.421,00
3    0.44      6 R$ 45.301,00
4    0.40      6 R$ 45.544,00
5    0.40      6 R$ 45.544,00
6    0.44      6 R$ 45.301,00

> # Check structure
> str(data)
'data.frame': 4898 obs. of 12 variables:
 $ fixed.acidity : num 7 6 8 1 7 2 7 8 7 8 7 2 7 6 3 8 1 ...
 $ volatile.acidity : num 0.27 0.30 0.28 0.23 0.28 0.32 0.27 0.3 0.22 ...
 $ citric.acid : num 0.36 0.34 0.40 0.32 0.32 0.4 0.16 0.36 0.34 0.43 ...
 $ residual.sugar : num 20.7 1.6 6.9 8.5 8.5 6.9 7 20.7 1.6 1.5 ...
 $ chlorides : num 45 49 0.05 58 0.05 45 45 49 44 ...
 $ free.sulfur.dioxide : num 14 30 47 4 30 30 45 14 28 ...
 $ total.sulfur.dioxide : num 132 97 186 96 97 136 170 132 129 ...
 $ density : num 1.001 0.995 0.95 0.96 0.96 ...
 $ pH : num 3.00 3.30 3.26 3.19 3.26 3.18 3 3.3 3.22 ...
 $ sulphates : num 0.45 0.49 0.44 0.4 0.4 0.44 0.47 0.45 0.49 0.45 ...
 $ quality : int 6 6 6 6 6 6 6 6 6 6 ...
 $ alcohol : int "R$ 45.512,00" "R$ 45.421,00" "R$ 45.301,00" "R$ 45.544,00" ...
```

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