

R Programming Fundamentals for Business Students— Indexing Values, Rows, and Columns in Matrices

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ACTION

- **FIRST**, do R-Programming Tutorial 5, where you create the `foodsurvey.csv` table in Excel, and then import this into R inside the variable `m`.

REACTION



```
R Console
You are welcome to redistribute it under certain conditions.
Type 'license()' or 'licence()' for distribution details.

Natural language support but running in an English locale

R is a collaborative project with many contributors.
Type 'contributors()' for more information and
'citation()' on how to cite R or R packages in publications.

Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

[Previously saved workspace restored]

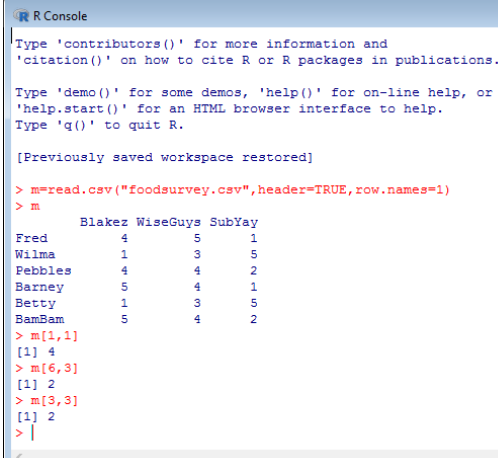
> m=read.csv("foodsurvey.csv",header=TRUE,row.names=1)
> m
      Blakez WiseGuys SubYay
Fred      4         5      1
Wilma     1         3      5
Pebbles   4         4      2
Barney    5         4      1
Betty     1         3      5
BamBam    5         4      2
> |
<
```

ACCESSING INDIVIDUAL VALUES IN THE MATRIX

- Type `m[1,1]`
- Type `m[6,3]`
- Access other values in the matrix to make sure you understanding the indexing. For example, what is Pebbles' SubYay rating? `m[3,3]`

Explanation. You have inputted the table as a matrix (`m`).

Labels are ignored. Matrices are indexed by row, column. The upper left corner is `m[1,1]=4`. The lower-right corner is `m[6,3]=2`.



```
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Fred      4         5      1
Wilma     1         3      5
Pebbles   4         4      2
Barney    5         4      1
Betty     1         3      5
BamBam    5         4      2
> m[1,1]
[1] 4
> m[6,3]
[1] 2
> m[3,3]
[1] 2
> |
<
```

ACCESSING ALL VALUES IN A ROW

- Type `m[1,]`
- Type `m[2,]`
- Type `m[3,]`
- Type `m[4,]`
- Test your understanding by displaying the last two rows (rows 5 and 6—not shown)

Explanation. If you specify a row, but not a column, then R returns all the values in a row.

```
R Console
Fred      4      5      1
Wilma     1      3      5
Pebbles   4      4      2
Barney    5      4      1
Betty     1      3      5
BamBam    5      4      2
> m[1,]
[1] 4
> m[6,3]
[1] 2
> m[3,]
[1] 2
> m[1,]
      Blakez WiseGuys SubYay
Fred      4      5      1
> m[2,]
      Blakez WiseGuys SubYay
Wilma     1      3      5
> m[3,]
      Blakez WiseGuys SubYay
Pebbles   4      4      2
> m[4,]
      Blakez WiseGuys SubYay
Barney    5      4      1
> |
```

ACCESSING ALL VALUES IN A COLUMN

- Type `m[,1]`
- Type `m[,2]`
- Type `m[,3]`

Explanation. If you specify a column, but not a row, then R returns all the values in that column.

```
R Console
Fred      4      5      1
      Blakez WiseGuys SubYay
Wilma     1      3      5
> m[,3]
      Blakez WiseGuys SubYay
Pebbles   4      4      2
> m[,1]
      Blakez WiseGuys SubYay
Barney    5      4      1
> m
      Blakez WiseGuys SubYay
Fred      4      5      1
Wilma     1      3      5
Pebbles   4      4      2
Barney    5      4      1
Betty     1      3      5
BamBam    5      4      2
> m[,1]
[1] 4 1 4 5 1 5
> m[,2]
[1] 5 3 4 4 3 4
> m[,3]
[1] 1 5 2 1 5 2
> |
```