

R cheat sheet and checklist- vectors

QUICK START

1. Create or open an existing project in Rstudio
2. Set working directory
3. Check working directory

```
getwd()
```

SAVE VARIABLES INTO MEMORY

Use assignment: "<-" or "="

```
a <- c(9.1, 2)
```

CHECK TYPE OF VARIABLE

Use `str()` function

```
str(a)
```

VECTORS

1.2	3.4	2.1	0.8
1	2	3	4

values

index

Create vector with `c()`

```
v = c(1.2, 3.4, 2.1, 0.8)
```

How to get values from a vector?

Use the square brackets `[]`

```
v[2] → 3.4
```

What are the elements larger than 2?

- Using logical operators

```
v[v > 2] → 3.4 2.1
```

- Using index

```
v[which(v > 2)] → 3.4 2.1
```

What are the 1st and 3rd elements?

- Access values of vector using index

```
v[c(1, 3)] → 1.2 2.1
```

- Access values of vector with TRUE/FALSE

```
v[c(TRUE, FALSE, TRUE, FALSE)] → 1.2 2.1
```

How to re-order the values from a vector?

Use another vector with the new order (index)

1.2	3.4	2.1	0.8
2nd	4th	3rd	1st

New order

Index to re-order

```
index = c(4, 1, 3, 2)  
v[index] → 0.8 1.2 2.1 3.4
```

R cheat sheet and checklist - matrices

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MATRIX

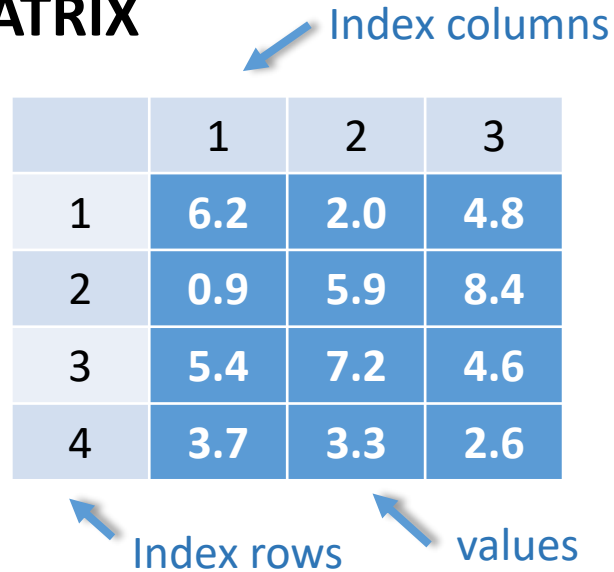


Diagram illustrating a matrix structure. The matrix has 4 rows and 3 columns. The columns are labeled 1, 2, and 3. The rows are labeled 1, 2, 3, and 4. The values are shown in the cells of the matrix.

	1	2	3
1	6.2	2.0	4.8
2	0.9	5.9	8.4
3	5.4	7.2	4.6
4	3.7	3.3	2.6

What rows have 2nd column larger than 5?

- 1st Use logical operators

```
m[,2]>5
```

- 2nd Get index of rows with which()

```
which(m[,2]>5)
```

```
2 3
```

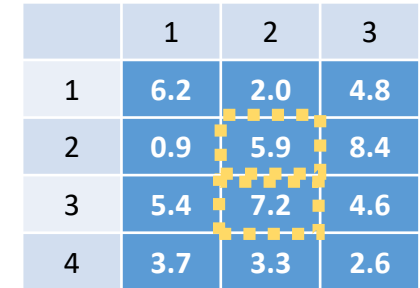


Diagram illustrating the result of the logical operation. The matrix has 4 rows and 3 columns. The values are shown in the cells of the matrix. A dashed box highlights the cells in the 2nd column that are greater than 5, which are 5.9 and 7.2.

	1	2	3
1	6.2	2.0	4.8
2	0.9	5.9	8.4
3	5.4	7.2	4.6
4	3.7	3.3	2.6

How to get the values from a matrix?

Use the square brackets with comma [,]

```
v[ROWS , COLUMNS]
```

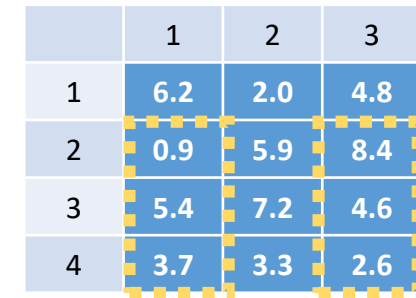


Diagram illustrating the result of the logical operation. The matrix has 4 rows and 3 columns. The values are shown in the cells of the matrix. A dashed box highlights the cells in the 2nd column that are greater than 5, which are 5.9 and 7.2.

	1	2	3
1	6.2	2.0	4.8
2	0.9	5.9	8.4
3	5.4	7.2	4.6
4	3.7	3.3	2.6

- Using index of rows and columns

```
row_i <- c(2,3,4)  
col_i <- c(1,3)  
mat[row_i, col_i]
```

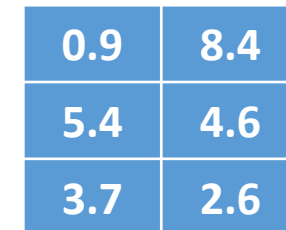


Diagram illustrating the result of the indexing operation. The matrix has 3 rows and 2 columns. The values are shown in the cells of the matrix.

0.9	8.4
5.4	4.6
3.7	2.6