

What is the purpose and how is the c() function used in R?

Authored by
stats writer

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The c() function in R is an essential tool for creating and manipulating data structures. Its primary purpose is to combine multiple values or objects into a single vector, list, or matrix. This function allows for easy and efficient creation of complex data structures, such as data frames, which are commonly used in statistical analysis. Additionally, the c() function can be used for appending, extracting, and modifying elements within existing data structures. It is a versatile function that is widely used in data manipulation and analysis tasks in R programming.

An Introduction to the c() Function in R

You can use the c() function in R to perform three common tasks:

1. Create a vector.
2. Concatenate multiple vectors.
3. Create columns in a data frame.

This function uses the following basic syntax:

```
my_vector <- c(value1, value2, value3, ...)
```

Note that c() stands for "combine" because it is used to *combine* several values or objects into one.

The following examples show how to use this function in practice.

Example 1: Use c() to Create a Vector

The following code shows how to use c() to create a numeric vector:

```
#create numeric vector
numeric_vector <- c(4, 7565, 15, 93.22, 100, 50, 0)

#display numeric vector
numeric_vector

4.00 7565.00 15.00 93.22 100.00 50.00 0.00
```

We can also use c() to create a character vector:

```
#create character vector
char_vector <- c('A', 'C', 'L', 'M', 'O')

#display character vector
char_vector

"A" "C" "L" "M" "O"
```

Example 2: Use c() to Concatenate Multiple Vectors

The following code shows how to use c() to concatenate multiple vectors into one:

```
#define two vectors
```

```
vec1 <- c(4, 15, 19, 18)
```

```
vec2 <- c(10, 100, 40, 20, 80, 85)
```

```
#concatenate vectors into one
```

```
vec3 <- c(vec1, vec2)
```

```
#view concatenated vector
```

```
vec3
```

```
4 15 19 18 10 100 40 20 80 85
```

Example 3: Use c() to Create Columns in a Data Frame

```
#create data frame with three columns
```

```
df <- data.frame(team=c('A', 'B', 'C', 'D', 'E'),
```

```
points=c(99, 90, 86, 88, 95),
```

```
assists=c(33, 28, 31, 39, 34))
```

```
#view data frame
```

```
df
```

```
team points assists
```

```
1 A 99 33
```

```
2 B 90 28
```

```
3 C 86 31
```

4 D 88 39

5 E 95 34

The result is a data frame with three columns, each created by using the c() function.

Additional Resources

[How to Use paste & paste0 Functions in R](#)

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