How can an empty matrix be created in R and what are some examples of creating an empty matrix in R?

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An empty matrix in R is a data structure with a specific number of rows and columns, but without any values assigned to its elements. This allows for the matrix to be filled with data at a later point in time. To create an empty matrix in R, the "matrix()" function can be used, specifying the number of rows and columns desired. For example, the code "my_matrix <- matrix(nrow = 3, ncol = 4)" creates an empty matrix with 3 rows and 4 columns and assigns it to the variable "my_matrix". Other ways to create an empty matrix include using the "array()" function or simply assigning an empty vector to a matrix variable. Empty matrices are commonly used in R for data manipulation and analysis, as they allow for the creation of data structures with specific dimensions before the actual data is available.

Create an Empty Matrix in R (With Examples)

You can use the following syntax to create an empty matrix of a specific size in R:

#create empty matrix with 10 rows and 3 columns
empty_matrix <- matrix(, nrow=10, ncol=3)

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

Example 1: Create Empty Matrix of Specific Size

The following code shows how to create an empty matrix of a specific size in R:

#create empty matrix with 10 rows and 3 columns
empty_matrix <- matrix(, nrow=10, ncol=3)

#view empty matrix

```
empty_matrix

NA NA NA
NA NA NA
NA NA NA
NA NA NA
NA NA NA
NA NA NA
NA NA NA
NA NA NA
NA NA NA
NA NA NA

#view class
class(empty_matrix)

"matrix" "array"
```

The result is a matrix with 10 rows and 3 columns in which every element in the matrix is blank.

Example 2: Create Matrix of Unknown Size

If you don't know what the final size of the matrix will be ahead of time, you can use the following code to generate the data for the columns of the matrix and

bind each column together using the function:

```
#create empty list
my_list <- list()

#add data using for loop
for(i in 1:4) {
my_list] <- rnorm(10)
}

#column bind values into a matrix
my_matrix = do.call(cbind, my_list)

#view final matrix
my_matrix
```

```
1.3064332 1.18175760 2.1603867 1.2378847
0.8618439 0.66663694 0.1113606 0.2062029
-0.4689356 -0.03200797 -1.3872632 1.6531437
-0.4664767 -0.79285400 0.3972758 0.1632975
0.5880580 1.05795303 -0.5655543 -0.3557376
0.5412100 -0.32070294 -0.3687303 -1.1778959
0.5073627 -0.24925226 1.0031305 0.6336998
0.8047177 0.10968558 0.3225197 1.6776955
1.5755134 1.40435730 1.8360239 0.5612274
```

-0.6430913 0.01173386 0.3181037 -0.8414270

The result is a matrix with 10 rows and 4 columns.

The following examples show how to create other empty objects in R: