

How to Convert Matrix to Data Frame in R (With Examples)

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In R, it is possible to convert a matrix into a data frame by using an apply function and the `as.data.frame()` command. The apply function can be used to apply a given function to the rows or columns of the matrix. The `as.data.frame()` command creates a data frame from the given matrix. This can be done with the help of simple examples. For example, a matrix can be converted to a data frame by using the `apply()` and `as.data.frame()` commands as follows: `dataframe <- as.data.frame(apply(matrix,2,as.numeric))` where matrix is the matrix to be converted. The resulting data frame can then be manipulated as desired.

You can use one of the following two methods to convert a matrix to a data frame in R:

Method 1: Convert Matrix to Data Frame Using Base R

```
#convert matrix to data frame
```

```
df <- as.data.frame(mat)
```

```
#specify column names
```

```
colnames(df) <- c('first', 'second', 'third', ...)
```

Method 2: Convert Matrix to Data Frame Using Tibble Package

```
library(tibble)
```

```
#convert matrix to data frame and specify column names
```

```
df <- mat %>%
```

```
as_tibble() %>%
```

```
setNames(c('first', 'second', 'third', ...))
```

The following examples show how to use each method in practice with the following matrix in R:

```
#create matrix
```

```
mat <- matrix(1:21, nrow=7)
```

```
#view matrix
```

```
mat
```

```
1 8 15
```

```
2 9 16
```

```
3 10 17
```

```
4 11 18
```

```
5 12 19
```

```
6 13 20
```

7 14 21

Example 1: Convert Matrix to Data Frame Using Base R

The following code shows how to convert a matrix to a data frame using base R:

```
#convert matrix to data frame
```

```
df <- as.data.frame(mat)
```

```
#specify columns of data frame
```

```
colnames(df) <- c('first', 'second', 'third')
```

```
#view structure of data frame
```

```
str(df)
```

```
'data.frame': 7 obs. of 3 variables:
```

```
$ first : int 1 2 3 4 5 6 7
```

```
$ second: int 8 9 10 11 12 13 14
```

```
$ third : int 15 16 17 18 19 20 21
```

From the output we can see that the matrix has been converted to a data frame with seven observations (rows) and 3 variables (columns).

Example 2: Convert Matrix to Data Frame Using Tibble Package

The following code shows how to convert a matrix to a in R:

```
library(tibble)
```

```
#convert matrix to tibble
```

```
df <- mat %>%
```

```
as_tibble() %>%
```

```
setNames(c('first', 'second', 'third'))
```

```
#view tibble
```

```
df
```

```
# A tibble: 7 x 3
```

```
first second third
```

```
1 1 8 15
```

```
2 2 9 16
```

```
3 3 10 17
4 4 11 18
5 5 12 19
6 6 13 20
7 7 14 21
```

From the output we can see that the matrix has been converted to a tibble with 7 rows and 3 columns.

Note: There are many benefits to using tibbles instead of data frames, especially with extremely large datasets. Read about some of the benefits .