

# How can I convert categorical variables to numeric in R?

Authored by  
**stats writer**

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## RECOMMENDED CITATION

stats writer (2024). *How can I convert categorical variables to numeric in R?*.

PSYCHOLOGICAL SCALES. Retrieved from <https://scales.arabpsychology.com/?p=144113>

To convert categorical variables to numeric in R, you can use the "as.numeric" function which converts the categories into numerical values. This function assigns a unique number to each category, starting from 1. Alternatively, you can use the "factor" function to first convert the categorical variable into a factor and then use the "as.numeric" function to convert it to numeric values. It is important to note that the order in which the categories are assigned numerical values may impact the results of your analysis. Therefore, it is recommended to carefully consider the order of the categories before converting them to numeric values.

## Convert Categorical Variables to Numeric in R

You can use one of the following methods to convert a categorical variable to a numeric variable in R:

### Method 1: Convert One Categorical Variable to Numeric

```
df$var1 <- unclass(df$var1)
```

### Method 2: Convert Multiple Categorical Variables to Numeric

```
df <- sapply(df, unclass)
```

### Method 3: Convert All Categorical Variables to Numeric

```
df <- data.matrix(df)
```

The following examples show how to use each method with the following data frame:

```
#create data frame with some categorical variables  
df <- data.frame(team=as.factor(c('A', 'B', 'C', 'D')),  
conf=as.factor(c('AL', 'AL', 'NL', 'NL')),  
win=as.factor(c('Yes', 'No', 'No', 'Yes')),  
points=c(122, 98, 106, 115))
```

```
#view data frame
```

```
df
```

```
team conf win points
```

```
1 A AL Yes 122
```

```
2 B AL No 98
```

```
3 C NL No 106
```

```
4 D NL Yes 115
```

**Method 1: Convert One Categorical Variable to Numeric**

**The following code shows how to convert one categorical variable in a data frame to a numeric variable:**

```
#convert 'team' variable to numeric
```

```
df$team <- unclass(df$team)
```

```
#view updated data frame
```

**df**

**team conf win points**

**1 1 AL Yes 122**

**2 2 AL No 98**

**3 3 NL No 106**

**4 4 NL Yes 115**

**Notice that the values for the 'team' variable have been converted to numeric values.**

**Method 2: Convert Multiple Categorical Variables to Numeric**

**The following code shows how to convert multiple categorical variables in a data frame to numeric variables:**

```
#convert 'team' and 'win' variables to numeric
```

```
df <- sapply(df, unclass)
```

```
#view updated data frame
```

```
df
```

**team conf win points**

**1 1 AL 2 122**

**2 2 AL 1 98**

**3 3 NL 1 106**

**4 4 NL 2 115**

**Notice that the values for the 'team' and 'win' variables have been converted to numeric values.**

**Method 3: Convert All Categorical Variables to Numeric**

**The following code shows how to convert all categorical variables in a data frame to numeric variables:**

```
#convert all categorical variables to numeric
```

```
df <- data.matrix(df)
```

```
#view updated data frame
```

```
df
```

```
team conf win points
```

```
1 1 1 2 122
```

```
2 2 1 1 98
```

```
3 3 2 1 106
```

```
4 4 2 2 115
```

**Notice that the values for each of the categorical variables in the data frame have been converted to**

**numeric values.**

**The following tutorials explain how to perform other common conversions in R:**

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