

“What is the purpose of the ‘make.names’ function and how can it be used in R? Can you provide some examples?”

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The 'make.names' function in R is used to create valid variable names by converting any non-alphanumeric characters, such as spaces or symbols, into periods. Its purpose is to ensure that the variable names are consistent and can be easily referenced in R code.

This function can be used in various situations, such as when importing data that contains non-standard variable names, or when creating new variables through calculations. It is also useful when working with large datasets, as it can save time and effort in manually correcting variable names.

For example, if we have a dataset with the variable name "Income (in \$)", using 'make.names' will convert it to "Income.in.\$", which is a valid and consistent variable name in R. Another example would be creating a new variable called "Total Sales" by adding together two existing variables, and using 'make.names' to convert it to "Total.Sales" for easy referencing in code.

In summary, the 'make.names' function serves to standardize and simplify variable names in R, making data analysis and manipulation more efficient.

Use make.names Function in R (With Examples)

You can use the make.names function in R to create syntactically valid names out of character vectors.

This function uses the following basic syntax:

```
make.names(names, unique = FALSE)
```

where:

names: Character vector to be coerced to syntactically valid names.
unique: Whether or not to create unique names. Default is FALSE.

The following examples show how to use this function in different scenarios.

Example 1: Create Valid Names for Vector

Suppose we have the following vector of numeric values:

```
#create vector of numeric values  
numeric_values <- c(1, 1, 4, 7, 8)
```

```
#create syntactically valid names from numeric values  
make.names(numeric_values)
```

```
"X1" "X1" "X4" "X7" "X8"
```

R defines "valid names" as names that start with a character or dot.

Thus, to convert each of the numeric values in the vector to a valid name, R simply adds an "X" in front of each value.

Note that two of the names ("X1") are the exact same.

To force the names to be unique, we can specify `unique=TRUE`:

#create vector of numeric values

```
numeric_values <- c(1, 1, 4, 7, 8)
```

#create syntactically valid names from numeric values

```
make.names(numeric_values, unique=TRUE)
```

```
"X1" "X1.1" "X4" "X7" "X8"
```

Notice that each name is now unique.

Example 2: Create Valid Names for Matrix

Suppose we have the following matrix in R:

#create matrix

```
mat <- matrix(c(1, 2, 3, 7, 2, 4, 4, 6, 0, 1), ncol=2)
```

#view matrix

```
mat
```

```
1 4
```

```
2 4
```

```
3 6
```

```
7 0
```

```
2 1
```

#view column names of matrix

colnames(mat)

NULL

Notice that the matrix currently doesn't have any column names.

However, we can use the `make.names()` function to quickly create column names:

```
#create column names for matrix  
colnames(mat) <- make.names(1:ncol(mat))
```

```
#view updated matrix  
mat
```

```
X1 X2
```

```
1 4
```

```
2 4
```

```
3 6
```

```
7 0
```

```
2 1
```

Notice that the matrix now has "X1" and "X2" as the column names.

If we'd like, we can now extract values from a specific column in the matrix using the column name:

#view values in "X1" column of matrix

mat

1 2 3 7 2

Also note that you can type the following into R to read the complete documentation on how to create syntactically valid names:

?make.names

Additional Resources