

How can columns be renamed with a list in R?

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Columns in R can be easily renamed using a list. This can be done by first creating a list that contains the current column names as well as the desired new column names. Then, the `names()` function can be used to assign the new names to the columns in the desired order. This method allows for a quick and efficient way to rename columns in R, making it easier to organize and analyze data.

How to rename columns based on names from the list in R? You can use the R base functions like `colnames()` and `names()` functions to rename columns from the list. These functions are particularly useful when you want to update column names without modifying the data itself.

Key Points -

1. Quick Examples of Rename Columns from List

Following are quick examples of renaming columns based on names from the list in R.

```
# Rename column names from list
col_names = list('c1','c2','c3','c4','c5')
names(my_dataframe) <- c(col_names)

# Rename columns from list
col_names = list('c1','c2','c3','c4','c5')
colnames(my_dataframe) <- c(col_names)

# Using data.table
library(data.table)

# Column names in list
old_names=list('c1','c2','c3','c4','c5')
new_names=list('id','pages','name','chapters','price')

# Rename columns from list
setnames(my_dataframe, old = c(old_names),
new = c(new_names))
```

Let's create an R DataFrame (`data.frame`) and run the above examples and validate the results.

```
# Create dataframe
my_dataframe=data.frame(id=c(11,22,33,44,55),
pages=c(32,45,33,22,56),
```

```
name=c("spark", "python", "R", "java", "jsp"),
chapters=c(76,86,11,15,7),
price=c(144,553,321,567,890))

# Display the dataframe
print(my_dataframe)
```

Output:

	id	pages	name	chapters	price
1	11	32	spark	76	144
2	22	45	python	86	553
3	33	33	R	11	321
4	44	22	java	15	567
5	55	56	jsp	7	890

2. Rename Columns From List Using names()

In R, the `rename()` function is used to replace the names of the columns in a data frame. It allows to replacement of new names for single/multiple columns, either by providing new names directly or by using a mapping between old and new names.

below is the syntax of the `names()` to use column names from the list.

```
# Syntax using names()
names(my_dataframe) = c(list_col_names)
```

Here, we use the `c()` function to return a one-dimensional vector containing column names from the list. Then, we use `names()` to assign the names to a dataframe. In the example below, we assign a vector of names to the dataframe column names.

```
# Rename column names from list
col_names = list('c1', 'c2', 'c3', 'c4', 'c5')
names(my_dataframe) <- c(col_names)
print("After renaming the columns of data frame:")
print(my_dataframe)
```

Yields below output.

```
[1] "After renaming the columns of data frame:"
```

```
> print(my_dataframe)
  c1 c2   c3 c4  c5
1 11 32 spark 76 144
2 22 45 python 86 553
3 33 33   R 11 321
4 44 22  java 15 567
5 55 56  jsp  7 890
```

3. Rename Columns From List Using `colnames()`

The `colnames()` function in R which is commonly used to get or set the column names of a matrix or a data frame. It allows you to retrieve the names of the columns in a dataframe or assign new names to existing ones.

below is the syntax of the `colnames()` function.

```
# Syntax using names()
colnames(my_dataframe) = c(list_col_names)
```

Here `c()` returns a one-dimensional vector with the column names from the list and `colnames()` is used to set the names to a dataframe. In the below example, we are assigning a vector of names to dataframe column names. Let's see an example.

```
# Rename columns from list
col_names = list('c1', 'c2', 'c3', 'c4', 'c5')
colnames(my_dataframe) <- c(col_names)
print(my_dataframe)
```

Yields below output.

```
# Output
c1 c2 c3 c4 c5
1 11 32 spark 76 144
2 22 45 python 86 553
3 33 33 R 11 321
```

```
4 44 22 java 15 567
5 55 56 jsp 7 890
```

4. Rename All Selected Columns From List

`setnames()` function is a part of `data.table` library that is used to return the names of the column present in the data frame from the list. Using this you can also rename multiple selected columns.

Before going to use the `setnames()` function you need to install the `data.table` library using `install.packages('data.table')`. After completing the installation you can load it using `library("data.table")`.

```
# Using data.table
library(data.table)

# Column names in list
old_names=list('c1','c2','c3','c4','c5')
new_names=list('id','pages','name','chapters','price')

# Rename columns from list
setnames(my_dataframe, old = c(old_names),
new = c(new_names))

#Display column names
print(colnames(my_dataframe))
```

Yields below output.

```
# Output column names
"id" "pages" "name" "chapters" "price"
```

5. Conclusion

In this article, I have explained how to rename the dataframe column names from the list using R base functions like `colnames()` and `names()` functions. Using these functions to replace old column names with new names and also get the names of a dataframe object.

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