Sort a Data Frame by Column in Ascending, Descending Order

R Tutorial – We shall learn to sort a data frame by column in ascending order and descending order with example R scripts using R with function and R order function.

A data frame is a set of equal length objects.

Let us take an example Data frame as shown in the following:

<table>
<thead>
<tr>
<th>Sample Data Frame</th>
</tr>
</thead>
</table>
| df <- data.frame(names = c("Andrew", "Mathew", "Dany", "Philip", "John", "Bing", "Monica"),
| age = c(28, 23, 49, 29, 38, 23, 29),
| income = c(25.2, 10.5, 11, 21.9, 44, 11.5, 45)) |

The data frame has three columns: names, age, salary.

We may sort these three columns in ascending or descending order.

Syntax

dataframe_name[with(dataframe_name, order(column_name)),]

Example R Script

r_dataframe_sort_asc.R - R Script File
# R program to sort data frame by column in ascending order

df <- data.frame(names = c("Andrew", "Mathew", "Dany", "Philip", "John", "Bing", "Monica"),
                 age = c(28, 23, 49, 29, 38, 23, 29),
                 income = c(25.2, 10.5, 11, 21.9, 44, 11.5, 45))

cat("Sort data frame by names in ascending order")
# to sort data frame by names in ascending order
df_sorted_names_asc <- df[with(df, order(names)), ]
print(df_sorted_names_asc)

cat("Sort data frame by age in ascending order")
# to sort data frame by age in ascending order
df_sorted_age_asc <- df[with(df, order(age)), ]
print(df_sorted_age_asc)

cat("Sort data frame by income in ascending order")
# to sort data frame by income in ascending order
df_sorted_asc <- df[with(df, order(income)), ]
print(df_sorted_asc)

Output
$ Rscript r_dataframe_sort_asc.R

Sort data frame by names in ascending order
 names age income
  1 Andrew 28  25.2
  6   Bing 23  11.5
  3  Dany 49  11.0
  5    John 38  44.0
  2 Mathew 23  10.5
  7  Monica 29  45.0
  4   Philip 29  21.9

Sort data frame by age in ascending order
 names age income
  2 Mathew 23  10.5
  6   Bing 23  11.5
  1 Andrew 28  25.2
  4   Philip 29  21.9
  7  Monica 29  45.0
  5    John 38  44.0
  3  Dany 49  11.0

Sort data frame by income in ascending order
 names age income
  2 Mathew 23  10.5
  3  Dany 49  11.0
  6   Bing 23  11.5
  4   Philip 29  21.9
  1 Andrew 28  25.2
  5    John 38  44.0
  7  Monica 29  45.0
Sort in Descending order

Syntax

```
dataframe_name[with(dataframe_name, order(-column_name)),]
```

Please observe the ‘-’ negative sign before the column_name to sort in descending order

Example R Script

```
# R program to sort dataframe by column in descending order
df <- data.frame(names = c("Andrew", "Mathew", "Dany", "Philip", "John", "Bing", "Monica"),
                 age = c(28, 23, 49, 29, 38, 23, 29),
                 income = c(25.2, 10.5, 11, 21.9, 44, 11.5, 45))

cat("\n\nSort data frame by names in descending order\n")
# to sort data frame by names in descending order
df_sorted_names_desc <- df[with(df, order(-names)),]
print(df_sorted_names_desc)

cat("\n\nSort data frame by age in descending order\n")
# to sort data frame by age in descending order
df_sorted_age_desc <- df[with(df, order(-age)),]
print(df_sorted_age_desc)

cat("\n\nSort data frame by income in descending order\n")
# to sort data frame by income in descending order
df_sorted_desc <- df[with(df, order(-income)),]
print(df_sorted_desc)
```
$ Rscript r_dataframe_sort_desc.R

Sort data frame by names in descending order
Warning message:
In Ops.factor(names) : '-' not meaningful for factors

```
1  Andrew 28 25.2
2  Mathew 23 10.5
3   Dany 49 11.0
4  Philip 29 21.9
5   John 38 44.0
6    Bing 23 11.5
7 Monica 29 45.0
```

Sort data frame by age in descending order
```
3    Dany 49 11.0
5   John 38 44.0
4  Philip 29 21.9
7 Monica 29 45.0
1  Andrew 28 25.2
2  Mathew 23 10.5
6    Bing 23 11.5
```

Sort data frame by income in descending order
```
7 Monica 29 45.0
5   John 38 44.0
1  Andrew 28 25.2
4  Philip 29 21.9
6    Bing 23 11.5
3    Dany 49 11.0
2  Mathew 23 10.5
```

Note: Descending order is not applicable for Character Datatypes. Observe lines (5,6) with a warning message.

**Conclusion:**

In this R Tutorial, we have learnt to sort a data frame by column in ascending and descending order.