

# MVLU COLLEGE

## Subject:-Data Analysis with SAS / SPSS /R

### Practical 5

Aim:-Sorting data using arrange() in R.

library(dplyr)

The screenshot shows the RStudio interface. The script editor on the left contains the following code:

```
1 library(dplyr)
2
3 sales <- read.csv("sales_data.csv")
4
5 sales_sorted_amount <- sales |>
6   arrange(Sales_Amount)
7
8 head(sales_sorted_amount, 5)
9
10 sales_sorted_price_desc <- sales |>
11   arrange(desc(Unit_Price))
12
13 head(sales_sorted_price_desc, 5)
14
15 sales_multi_sort <- sales |>
16   arrange(desc(Sales_Amount), desc(Unit_Price))
```

The console on the bottom left shows the output of running the first line of code:

```
> library(dplyr)

Attaching package: 'dplyr'

The following objects are masked from 'package:stats':
  filter, lag

The following objects are masked from 'package:base':
  intersect, setdiff, setequal, union
```

The Environment pane on the right shows the global environment with several objects, including 'sales\_data' which has 1000 observations and 14 variables.

sales <- read.csv("sales\_data.csv")

The screenshot shows the RStudio interface. The script editor on the left contains the following code:

```
1 library(dplyr)
2
3 sales <- read.csv("sales_data.csv")
4
5 sales_sorted_amount <- sales |>
6   arrange(Sales_Amount)
7
8 head(sales_sorted_amount, 5)
9
10 sales_sorted_price_desc <- sales |>
11   arrange(desc(Unit_Price))
12
13 head(sales_sorted_price_desc, 5)
14
15 sales_multi_sort <- sales |>
16   arrange(desc(Sales_Amount), desc(Unit_Price))
```

The console on the bottom left shows the output of running the first two lines of code:

```
> library(dplyr)

Attaching package: 'dplyr'

The following objects are masked from 'package:stats':
  filter, lag

The following objects are masked from 'package:base':
  intersect, setdiff, setequal, union

> sales <- read.csv("sales_data.csv")
```

The Environment pane on the right shows the global environment with several objects, including 'sales' which has 1000 observations and 14 variables.

# MVLU COLLEGE

## Subject:-Data Analysis with SAS / SPSS /R

```
sales_sorted_amount <- sales |>
  arrange(Sales_Amount)
```

The screenshot shows the RStudio interface. The script editor contains the following code:

```
1 library(dplyr)
2
3 sales <- read.csv("sales_data.csv")
4
5 sales_sorted_amount <- sales |>
6   arrange(Sales_Amount)
7
8 head(sales_sorted_amount, 5)
9
10 sales_sorted_price_desc <- sales |>
11   arrange(desc(Unit_Price))
12
13 head(sales_sorted_price_desc, 5)
14
15 sales_multi_sort <- sales |>
```

The console shows the output of the first few lines of code:

```
R - R 4.5.2 - ~/
> library(dplyr)

Attaching package: 'dplyr'

The following objects are masked from 'package:stats':
  filter, lag

The following objects are masked from 'package:base':
  intersect, setdiff, setequal, union

> sales <- read.csv("sales_data.csv")
> sales_sorted_amount <- sales |>
+   arrange(Sales_Amount)
+ 
```

The Environment pane on the right shows the following objects:

Object	Size	Modified
RData	51.7 KB	Nov 24, 2025, 8:00
Rhistory	2.1 KB	Nov 24, 2025, 8:00
car_price_prediction.csv	156.3 KB	Nov 18, 2025, 6:50
Custom Office Templates		
Database.txt	102 B	Oct 30, 2025, 8:34
desktop.ini	402 B	Oct 27, 2025, 3:00
FlashIntegro		
My Music		
My Pictures		
My Videos		
S098 P3.R	333 B	Nov 24, 2025, 6:10
S098 P4.R	1.5 KB	Nov 24, 2025, 7:25
S098 P5.R	0 B	Nov 24, 2025, 8:02
sales_data.csv	101.2 KB	Nov 18, 2025, 6:37

```
head(sales_sorted_amount, 5)
```

The screenshot shows the RStudio interface with the same script as before. The console now shows the output of the `head(sales_sorted_amount, 5)` command:

```
R - R 4.5.2 - ~/
> sales <- read.csv("sales_data.csv")
> sales_sorted_amount <- sales |>
+   arrange(Sales_Amount)
+   head(sales_sorted_amount, 5)
+ 
```

The output of the `head` function is displayed in the console:

Product_ID	Sale_Date	Sales_rep	Region	Sales_Amount	Quantity_sold	Product_Category	Unit_Cost
1070	2023-12-13	Alice	West	100.12	8	Clothing	3762.27
1064	2023-12-19	Alice	West	106.47	35	Clothing	4900.03
1078	2023-11-16	David	East	113.40	8	Furniture	3459.61
1067	2023-06-29	Eve	South	114.59	48	Food	4319.32
1087	2023-09-08	Charlie	North	119.72	20	Clothing	193.27

# MVLU COLLEGE

## Subject:-Data Analysis with SAS / SPSS /R

```
sales_sorted_price_desc <- sales |>
  arrange(desc(Unit_Price))
```

The screenshot shows the RStudio interface with the following code in the script editor:

```
1 library(dplyr)
2
3 sales <- read.csv("sales_data.csv")
4
5 sales_sorted_amount <- sales |>
6   arrange(Sales_Amount)
7
8 head(sales_sorted_amount, 5)
9
10 sales_sorted_price_desc <- sales |>
11   arrange(desc(Unit_Price))
12
13 head(sales_sorted_price_desc, 5)
14
15 sales_multi_sort <- sales |>
```

The console output shows the result of the first head command:

```
R - R 4.5.2 ~ ./
+ arrange(Sales_Amount)
> head(sales_sorted_amount, 5)
  Product_ID Sale_Date Sales_Rep Region Sales_Amount Quantity_Sold Product_Category Unit_Cost
1      1070 2023-12-13    Alice   West      100.12           8      Clothing    3762.27
2      1064 2023-12-19    Alice   West      106.47          35      Clothing    4900.03
3      1078 2023-11-16    David   East      113.40           8      Furniture    3459.61
4      1067 2023-06-29     Eve   South      114.59          48       Food     4319.32
5      1087 2023-09-08   Charlie North      119.72          20      Clothing     193.27

  Unit_Price Customer_Type Discount Payment_Method Sales_Channel Region_and_Sales_Rep
1  4166.95    Returning    0.16   Bank Transfer      online      West-Alice
2  5118.83    Returning    0.07   Credit Card      Retail      West-Alice
3  3657.23    Returning    0.03   Bank Transfer      online      East-David
4  4625.56    Returning    0.10   Bank Transfer      online      South-Eve
5   297.69         New     0.22      Cash          online      North-Charlie
```

```
head(sales_sorted_price_desc, 5)
```

The screenshot shows the RStudio interface with the following code in the script editor:

```
11
12
13 head(sales_sorted_price_desc, 5)
14
15 sales_multi_sort <- sales |>
16   arrange(Region, desc(Sales_Amount))
17
18 head(sales_multi_sort, 10)
19
20 large_sales_by_discount <- sales |>
21   filter(Quantity_Sold > 30) |>
22   arrange(Discount)
23
24 cat("Top 5 large quantity sales with lowest discount:\n")
25 print(large_sales_by_discount |> select(Quantity_Sold, Discount, Sales_Amount) |> head(5))
```

The console output shows the result of the head command:

```
R - R 4.5.2 ~ ./
> head(sales_sorted_price_desc, 5)
  Product_ID Sale_Date Sales_Rep Region Sales_Amount Quantity_Sold Product_Category Unit_Cost
1      1010 2023-04-15   Charlie North      4733.88           4       Food     4943.03
2      1100 2023-12-01    Alice   East      1387.80          34      Furniture    4991.09
3      1001 2023-05-10    David   East      3793.91          47       Food     4865.33
4      1021 2023-06-24    Alice   West     9422.75          24      Electronics    4916.17
5      1026 2023-03-20     Bob    East      614.69          19      Electronics    4991.68

  Unit_Price Customer_Type Discount Payment_Method Sales_Channel Region_and_Sales_Rep
1  5442.15    Returning    0.29      Cash          online      North-Charlie
2  5402.28    Returning    0.00      Cash          Retail      East-Alice
3  5316.13         New     0.06   Bank Transfer      online      East-David
4  5309.32    Returning    0.19   Credit Card      online      West-Alice
5  5296.65         New     0.12   Bank Transfer      online      East-Bob
```

# MVLU COLLEGE

## Subject:-Data Analysis with SAS / SPSS /R

```
sales_multi_sort <- sales |>
  arrange(Region, desc(Sales_Amount))
```

The screenshot shows the RStudio interface. The script editor contains the following code:

```
11 arrange(desc(Unit_Price))
12
13 head(sales_sorted_price_desc, 5)
14
15 sales_multi_sort <- sales |>
16   arrange(Region, desc(Sales_Amount))
17
18 head(sales_multi_sort, 10)
19
20 large_sales_by_discount <- sales |>
21   filter(Quantity_Sold > 30) |>
22   arrange(Discount)
23
24 cat("Top 5 large quantity sales with lowest discount:\n")
25 print(large_sales_by_discount |> select(Quantity_Sold, Discount, Sales_Amount) |> head(5))
```

The console shows the output of the first two commands:

```
R - R 4.5.2 ~ / ~
+ arrange(desc(Unit_Price))
> head(sales_sorted_price_desc, 5)
  Product_ID Sale_Date Sales_Rep Region Sales_Amount Quantity_Sold Product_Category Unit_Price
1      1010 2023-04-15   Charlie North    4733.88           4      Furniture    5442.15
2      1100 2023-12-01     Alice East    1387.80          34      Furniture    5402.28
3      1001 2023-05-10    David East    3793.91          47      Furniture    5316.13
4      1021 2023-06-24     Alice West    9422.75          24      Electronics 5309.32
5      1026 2023-03-20     Bob East     614.69          19      Electronics 5296.65
```

The Environment pane on the right shows the following objects:

Object	Size	Variables
mental	101 obs.	of 11 variables
my_data	2500 obs.	of 10 variables
panic_or_tre	35 obs.	of 11 variables
sales	1000 obs.	of 14 variables
sales_data	1000 obs.	of 14 variables
sales_multi_	1000 obs.	of 14 variables
sales_sorted_	1000 obs.	of 14 variables

```
head(sales_multi_sort, 10)
```

The screenshot shows the RStudio interface with the console output of the command `head(sales_multi_sort, 10)`:

```
R - R 4.5.2 ~ / ~
+ arrange(Region, desc(Sales_Amount))
> head(sales_multi_sort, 10)
  Product_ID Sale_Date Sales_Rep Region Sales_Amount Quantity_Sold Product_Category Unit_Price
1      1099 2023-04-14     Alice East    9948.71          27      Food    4929.55
2      1050 2023-05-19   Charlie East    9744.52          35      Clothing 2158.69
3      1046 2023-02-09   Charlie East    9709.70           3      Furniture 1216.16
4      1020 2023-09-06   Charlie East    9705.55           4      Clothing 3730.00
5      1039 2023-06-27     Bob East    9683.85           2      Electronics 4394.58
6      1078 2023-04-04    David East    9631.41          49      Furniture 1833.95
7      1008 2023-12-05   Charlie East    9583.55          27      Electronics 68.99
8      1058 2023-07-12     Eve East    9580.05          14      Electronics 2703.97
9      1084 2023-09-30     Alice East    9532.87          30      Food    169.00
10     1065 2023-11-05     Alice East    9519.16           3      Furniture 4173.04
```

The Environment pane on the right shows the same objects as the first screenshot.

Vikas pal  
S098

# MVLU COLLEGE

## Subject:-Data Analysis with SAS / SPSS /R

```
large_sales_by_discount <- sales |>
filter(Quantity_Sold > 30) |>
arrange(Discount)
```

The screenshot shows the RStudio interface. The script editor contains the following code:

```
16 arrange(region, desc(sales_Amount))
17
18 head(sales_multi_sort, 10)
19
20 large_sales_by_discount <- sales |>
21   filter(Quantity_Sold > 30) |>
22   arrange(Discount)
23
24 cat("Top 5 large quantity sales with lowest discount:\n")
25 print(large_sales_by_discount |> select(Quantity_Sold, Discount, Sales_Amount) |> head(5))
```

The console output shows the following data:

Unit_Price	Customer_Type	Discount	Payment_Method	Sales_Channel	Region_and_Sales_Rep
4990.33	Returning	0.29	Credit Card	Online	East-Alice
2384.38	Returning	0.09	Bank Transfer	Retail	East-Charlie
1295.37	New	0.14	Cash	Retail	East-Charlie
3893.60	New	0.25	Bank Transfer	Retail	East-Charlie
4545.78	Returning	0.20	Credit Card	Retail	East-Bob
2147.14	Returning	0.18	Credit Card	Retail	East-David
429.29	Returning	0.18	Credit Card	Retail	East-Charlie
2796.88	New	0.13	Bank Transfer	Online	East-Eve
381.92	Returning	0.26	Cash	Retail	East-Alice
4362.44	New	0.23	Bank Transfer	Retail	East-Alice

```
cat("Top 5 large quantity sales with lowest discount:\n")
```

The screenshot shows the RStudio interface. The script editor contains the following code:

```
16 arrange(region, desc(sales_Amount))
17
18 head(sales_multi_sort, 10)
19
20 large_sales_by_discount <- sales |>
21   filter(Quantity_Sold > 30) |>
22   arrange(Discount)
23
24 cat("Top 5 large quantity sales with lowest discount:\n")
25 print(large_sales_by_discount |> select(Quantity_Sold, Discount, Sales_Amount) |> head(5))
```

The console output shows the following data:

Unit_Price	Customer_Type	Discount	Payment_Method	Sales_Channel	Region_and_Sales_Rep
4990.33	Returning	0.29	Credit Card	Online	East-Alice
2384.38	Returning	0.09	Bank Transfer	Retail	East-Charlie
1295.37	New	0.14	Cash	Retail	East-Charlie
3893.60	New	0.25	Bank Transfer	Retail	East-Charlie
4545.78	Returning	0.20	Credit Card	Retail	East-Bob
2147.14	Returning	0.18	Credit Card	Retail	East-David
429.29	Returning	0.18	Credit Card	Retail	East-Charlie
2796.88	New	0.13	Bank Transfer	Online	East-Eve
381.92	Returning	0.26	Cash	Retail	East-Alice
4362.44	New	0.23	Bank Transfer	Retail	East-Alice



# MVLU COLLEGE

## Subject:-Data Analysis with SAS / SPSS /R

```
print(large_sales_by_discount |> select(Quantity_Sold, Discount, Sales_Amount) |> head(5))
```

The screenshot displays the RStudio environment with the following components:

- Source Editor:** Contains R code for data manipulation and printing.
- Environment:** Lists loaded datasets including 'large\_sales\_', 'mental', 'my\_data', 'panic\_or\_tre\_', 'sales', 'sales\_data', 'sales\_multi\_', and 'sales\_sorted'.
- Console:** Shows the execution of R commands and the resulting output table.
- Files:** Displays the file explorer with various project files.

**R Code in Source Editor:**

```
16 arrange(region, desc(Sales_Amount))
17
18 head(sales_multi_sort, 10)
19
20 large_sales_by_discount <- sales |>
21   filter(Quantity_Sold > 30) |>
22   arrange(Discount)
23
24 cat("Top 5 large quantity sales with lowest discount:\n")
25 print(large_sales_by_discount |> select(Quantity_Sold, Discount, Sales_Amount) |> head(5))
```

**Console Output:**

```
2 2384.38 Returning 0.09 Bank Transfer Retail East-Charlie
3 1295.37 New 0.14 Cash Retail East-Charlie
4 3893.60 New 0.25 Bank Transfer Retail East-Charlie
5 4545.78 Returning 0.20 Credit Card Retail East-Bob
6 2147.14 Returning 0.18 Credit Card Retail East-David
7 429.29 Returning 0.18 Credit Card Retail East-Charlie
8 2796.88 New 0.13 Bank Transfer Online East-Eve
9 381.92 Returning 0.26 Cash Retail East-Alice
10 4362.44 New 0.23 Bank Transfer Retail East-Alice
> large_sales_by_discount <- sales |>
+ filter(Quantity_Sold > 30) |>
+ arrange(Discount)
> cat("Top 5 large quantity sales with lowest discount:\n")
Top 5 large quantity sales with lowest discount:
> print(large_sales_by_discount |> select(Quantity_Sold, Discount, Sales_Amount) |> head(5))
  Quantity_Sold Discount Sales_Amount
1           46      0.00      8414.04
2           38      0.00      7508.72
3           34      0.00      1387.80
4           43      0.00      7617.00
5           38      0.01      9582.12
```