

# MVLU COLLEGE

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

### Practical 5

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

**library(dplyr)**

The screenshot shows an RStudio interface with the following details:

- File Menu:** File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help.
- Project:** Project: (None) is selected.
- Code Editor:** An R script window titled "sales\_data.R" 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(Sales_Amount, desc(Unit_Price))
    
```
- Console:** The console shows the execution of the 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
    
```
- Environment:** The global environment pane lists various datasets:
  - dep\_anx\_subs\_18 obs. or 11 variables
  - female\_dep\_f\_29 obs. of 11 variables
  - high\_age\_sub\_36 obs. of 11 variables
  - high\_cgpa\_f\_91 obs. of 11 variables
  - mental\_101 obs. of 11 variables
  - my\_data\_2500 obs. of 10 variables
  - panic\_or\_tr\_35 obs. of 11 variables
  - sales\_data\_1000 obs. of 14 variables
- File Explorer:** The file tree shows the project structure:
  - .RData
  - .Rhistory
  - car\_price\_prediction.csv
  - Custom Office Templates
  - Database.txt
  - desktop.ini
  - FlashIntegro
  - My Music
  - My Pictures
  - My Videos
  - S098 P3.R
  - S098 P4.R
  - S098 P5.R
  - sales data.csv
- System Tray:** Shows system information like battery level, network, and date/time (06:07 PM, 24-11-2025).

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

The screenshot shows an RStudio interface with the following details:

- File Menu:** File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help.
- Project:** Project: (None) is selected.
- Code Editor:** An R script window titled "sales\_data.R" contains the following code:

```

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9
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12
13 head(sales_sorted_price_desc, 5)
14
15 sales_multi_sort <- sales |>
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```
- Console:** The console shows the execution of the 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
    
```
- Environment:** The global environment pane lists various datasets:
  - Temale\_oep\_T\_29 obs. or 11 variables
  - high\_age\_sub\_36 obs. of 11 variables
  - high\_cgpa\_f\_91 obs. of 11 variables
  - mental\_101 obs. of 11 variables
  - my\_data\_2500 obs. of 10 variables
  - panic\_or\_tr\_35 obs. of 11 variables
  - sales\_1000 obs. of 14 variables
  - sales\_data\_1000 obs. of 14 variables
- File Explorer:** The file tree shows the project structure:
  - .RData
  - .Rhistory
  - car\_price\_prediction.csv
  - Custom Office Templates
  - Database.txt
  - desktop.ini
  - FlashIntegro
  - My Music
  - My Pictures
  - My Videos
  - S098 P3.R
  - S098 P4.R
  - S098 P5.R
  - sales data.csv
- System Tray:** Shows system information like battery level, network, and date/time (06:08 PM, 24-11-2025).

**MVLU COLLEGE**  
**Subject:-Data Analysis with SAS / SPSS /R**

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

The screenshot shows the RStudio interface with the following details:

- File Menu:** File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help.
- Addins:** A dropdown menu showing "Source on Save" and other options.
- Code Editor:** An R script window titled "S098 P4.R" containing R code for data manipulation and sorting. The code includes `library(dplyr)` and various `arrange` and `read.csv` commands.
- Console:** Shows the output of running the code, including the loading of the dplyr package and the masking of objects from stats and base packages.
- Environment:** A sidebar showing the global environment with various datasets like `high\_gpa\_fi...`, `mental`, and `sales`.
- Files:** A sidebar showing the project files: RData, .Rhistory, car\_price\_prediction.csv, Custom Office Templates, Database.txt, desktop.ini, My Music, FlashIntegro, My Pictures, My Videos, S098 P3.R, S098 P4.R, S098 P5.R, sales data.csv, and sales.sorted..
- Taskbar:** Includes a search bar, pinned icons for File Explorer, Task View, Start, and Edge, and system status indicators.

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

The screenshot shows the RStudio interface with the following details:

- File Menu:** File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help.
- Source Editor:** Contains R code for reading a CSV file, sorting sales data by amount and price, and displaying the top 5 rows.
- Console:** Displays the execution of the R code and the resulting data frames.
- Environment Tab:** Shows the global environment with various datasets like sales, sales\_data, and sales\_sorted.
- Files Tab:** Lists local files including RData, .Rhistory, car\_price\_prediction.csv, and various configuration files.

```
library(dplyr)
sales <- read.csv("sales_data.csv")
sales_sorted_amount <- sales |>
  arrange(Sales_Amount)
head(sales_sorted_amount, 5)
sales_sorted_price_desc <- sales |>
  arrange(desc(Unit_Price))
head(sales_sorted_price_desc, 5)
sales_multi_sort <- sales |>
  arrange(Sales_Amount, Unit_Price)
head(sales_sorted_amount, 5)
```

```
R > sales <- read.csv("sales_data.csv")
> sales_sorted_amount <- sales |>
+   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
4166.95	Returning	0.16	Bank Transfer	online	West-Alice
5118.83	Returning	0.07	Credit Card	Retail	West-Alice
3657.23	Returning	0.03	Bank Transfer	online	East-David
4625.56	Returning	0.10	Bank Transfer	online	South-Eve
297.69	New	0.22	Cash	online	North-charlie

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

**sales\_sorted\_price\_desc <- sales |>  
arrange(desc(Unit\_Price))**

```

RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
+ Source on Save Go to file/function Addins
S098 P4.R S098 P3.R sales_data S098 P5.R
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(sales_Amount) |>
17 arrange(sales_Amount, 5)
18
19 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
> sales_sorted_price_desc <- sales |>
+ arrange(desc(Unit_Price))
> |

```

Activate Windows  
Go to Settings to activate Windows  
Nov 24, 2025, 8:02 PM

**head(sales\_sorted\_price\_desc, 5)**

```

RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
+ Source on Save Go to file/function Addins
S098 P4.R S098 P3.R sales_data S098 P5.R
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))
13:33 (Top Level) R Script
Console Terminal Background Jobs
R + R4.5.2 - ~
5 297.69 New 0.22 Cash Online North-Charlie
> sales_sorted_price_desc <- sales |>
+ arrange(desc(Unit_Price))
> 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
> |

```

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Go to Settings to activate Windows  
Nov 24, 2025, 8:02 PM

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

**sales\_multi\_sort <- sales |>  
arrange(Region, desc(Sales\_Amount))**

```
RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
RStudio Project (None)
Source on Save Go to file/function Run Source Environment History Connections Tutorial
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))
1638 (Top Level) R Script
Console Terminal Background Jobs
R > R4.5.2 ~/ ...
+ arrange(desc(Unit_Price))
> head(sales_sorted_price_desc, 5)
Product_ID Sale_Date Sales_Rep Region Sales_Amount Quantity_Sold Product_Cat
1 1010 2023-04-15 Charlie North 4733.88 4 Furn
2 1100 2023-12-01 Alice East 1387.80 34 Furn
3 1001 2023-05-10 David East 3793.91 47 Furn
4 1021 2023-06-24 Alice West 9422.75 24 Electr
5 1026 2023-03-20 Bob East 614.69 19 Electroni
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
> sales_multi_sort <- sales |>
+ arrange(Region, desc(Sales_Amount))
> |
On-Screen Keyboard
Home PgUp Nav
Shift Insert Pause MvUp
Fn Fn Ctr Alt Alt Ctr < > Options Help Fade
Caps a s d f g h j k l ; : , . / ? ^ Shift PrtScn ScrLk Dock
Caps a s d f g h j k l ; : , . / ? ^ Shift PrtScn ScrLk Dock
Files Plots Packages Help Viewer Presentation
My Music My Pictures My Videos S098 P3.R S098 P4.R S098 P5.R sales data.csv
333 B Nov 24, 2025, 6:11 AM
15 KB Nov 24, 2025, 7:25 PM
0 B Nov 24, 2025, 8:02 PM
101.2 KB Nov 18, 2025, 6:33 PM
Activate Windows Go to Settings to activate Windows
Ayodhya Ram Mandir... 10:31 PM 24-11-2025 ENG
Windows Taskbar: Type here to search, File Explorer, Task View, Start, Taskbar icons, On-Screen Keyboard, System tray
Project (None) Modified Nov 24, 2025, 8:02 PM Nov 24, 2025, 8:02 PM Nov 18, 2025, 6:53 PM Oct 30, 2025, 8:34 PM Oct 27, 2025, 3:01 PM
```

**head(sales\_multi\_sort, 10)**

```
RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
RStudio Project (None)
Source on Save Go to file/function Run Source Environment History Connections Tutorial
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 Product_ID Sale_Date Sales_Rep Region Sales_Amount Quantity_Sold Product_Cat Unit_Cost
21 1099 2023-04-14 Alice East 9948.71 27 Food 4929.55
22 1050 2023-05-19 Charlie East 9744.52 35 Clothing 2158.69
23 1046 2023-02-09 Charlie East 9709.70 3 Furniture 1216.16
24 1020 2023-09-06 Charlie East 9705.55 4 Clothing 3730.00
25 1039 2023-06-27 Bob East 9683.85 2 Electronics 4394.58
26 1078 2023-04-04 David East 9631.41 49 Furniture 1833.95
27 1008 2023-12-05 Charlie East 9583.55 27 Electronics 68.99
28 1058 2023-07-12 Eve East 9580.05 14 Electronics 2703.97
29 1084 2023-09-30 Alice East 9532.87 30 Food 169.00
30 1065 2023-11-05 Alice East 9519.16 3 Furniture 4173.04
31 Unit_Price Customer_Type Discount Payment_Method Sales_Channel Region_and_Sales_Rep
32 4990.33 Returning 0.29 Credit Card Online East-Alice
33 2384.38 Returning 0.09 Bank Transfer Retail East-charlie
34 1295.37 New 0.14 Cash Retail East-charlie
35 3893.60 New 0.25 Bank Transfer Retail East-charlie
36 4545.78 Returning 0.20 Credit Card Retail East-Bob
37 2147.14 Returning 0.18 Credit Card Retail East-david
38 429.29 Returning 0.18 Credit Card Retail East-charlie
39 2796.88 New 0.13 Bank Transfer Online East-Eve
40 381.92 Returning 0.26 Cash Retail East-Alice
41 4362.44 New 0.23 Bank Transfer Retail East-Alice
> |
On-Screen Keyboard
Home PgUp Nav
Shift Insert Pause MvUp
Fn Fn Ctr Alt Alt Ctr < > Options Help Fade
Caps a s d f g h j k l ; : , . / ? ^ Shift PrtScn ScrLk Dock
Caps a s d f g h j k l ; : , . / ? ^ Shift PrtScn ScrLk Dock
Files Plots Packages Help Viewer Presentation
RData Rhistory car_price_prediction.csv Custom Office Templates Database.txt desktop.ini FlashIntegro My Music My Pictures My Videos S098 P3.R S098 P4.R S098 P5.R sales data.csv
51.7 KB Nov 24, 2025, 8:02 PM
2.1 KB Nov 24, 2025, 8:02 PM
156.3 KB Nov 18, 2025, 6:53 PM
102 B Oct 30, 2025, 8:34 PM
402 B Oct 27, 2025, 3:01 PM
333 B Nov 24, 2025, 6:11 AM
15 KB Nov 24, 2025, 7:25 PM
0 B Nov 24, 2025, 8:02 PM
101.2 KB Nov 18, 2025, 6:33 PM
Activate Windows Go to Settings to activate Windows
Ayodhya Ram Mandir... 10:37 PM 4-11-2025 ENG
Windows Taskbar: Type here to search, File Explorer, Task View, Start, Taskbar icons, On-Screen Keyboard, System tray
```

# MVLU COLLEGE

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

large\_sales\_by\_discount <- sales |>  
filter(Quantity\_Sold > 30) |>  
arrange(Discount)

RStudio interface showing R code in the script pane and its output in the console pane.

```
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))
22:00 [Top Level] :>
```

Console output:

Date	Customer Type	Customer Name	Region	Product Category	Unit Price	Quantity Sold	Discount	Payment Method	Sales Channel	Region and Sales Rep
2023-09-06	Returning	Charlie	East	Clothing	905.55	4	0.29	Credit Card	online	East-Alice
2023-06-27	Bob	East	Electronics	4394.58	2	9683.85	0.09	Bank Transfer	Retail	East-charlie
2023-04-04	David	East	Furniture	1833.95	49	9631.41	0.14	Cash	Retail	East-charlie
2023-12-05	Charlie	East	Electronics	68.99	27	9583.55	0.25	Bank Transfer	Retail	East-charlie
2023-07-12	Eve	East	Electronics	2703.97	14	9580.05	0.18	Credit Card	Retail	East-David
2023-09-30	Alice	East	Food	169.00	30	9532.87	0.13	Bank Transfer	Online	East-Eve
2023-11-05	Alice	East	Furniture	4173.04	3	9519.16	0.26	Cash	Retail	East-Alice

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

RStudio interface showing R code in the script pane and its output in the console pane.

```
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
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25 print(large_sales_by_discount |> select(Quantity_Sold, Discount, Sales_Amount) |> head(5))
24:58 [Top Level] :>
```

Console output:

Date	Customer Type	Customer Name	Region	Product Category	Unit Price	Quantity Sold	Discount	Payment Method	Sales Channel	Region and Sales Rep
2023-04-04	Returning	David	East	Furniture	1833.95	49	0.29	Credit Card	online	East-Alice
2023-12-05	Charlie	East	Electronics	68.99	27	9583.55	0.14	Bank Transfer	Retail	East-charlie
2023-07-12	Eve	East	Electronics	2703.97	14	9580.05	0.18	Credit Card	Retail	East-David
2023-09-30	Alice	East	Food	169.00	30	9532.87	0.13	Bank Transfer	Online	East-Eve
2023-11-05	Alice	East	Furniture	4173.04	3	9519.16	0.26	Cash	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 shows an RStudio interface with the following details:

- File Menu:** File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help.
- Project:** Project (None).
- Code Editor:** S098 P4.R, S098 P3.R, sales\_data, S098 P5.R. The S098 P5.R file contains the following R code:

```
16 arrange(Region, desc(Sales_Amount))
17 head(sales_multi_sort, 10)
18
19 large_sales_by_discount <- sales |>
20 filter(quantity_sold > 30) |>
21 arrange(Discount)
22
23 cat("Top 5 large quantity sales with lowest discount:\n")
24 print(large_sales_by_discount |> select(Quantity_Sold, Discount, Sales_Amount) |> head(5))
```
- Console Output:** The output shows the top 5 large quantity sales with the lowest discount:

Quantity_Sold	Discount	Sales_Amount
46	0.00	8414.04
38	0.00	7508.72
34	0.00	1387.80
43	0.00	7617.00
38	0.01	9582.12
- Environment View:** Shows various datasets loaded into memory, such as large\_sales, my\_data, panic\_or\_tre, sales, sales\_data, sales\_multi, and sales\_sorted.
- File Explorer:** Shows files in the current directory, including .RData, .Rhistory, car\_price\_prediction.csv, Custom Office Templates, Database.txt, desktop.ini, FlashIntegro, My Music, My Pictures, My Videos, S098 P3.R, S098 P4.R, S098 P5.R, and sales\_data.csv.
- Taskbar:** Shows the Windows taskbar with the date (4-11-2025) and time (10:46 PM).