

PRACTICAL NO :5

AIM: Sorting data using arrange() in R.

OUTPUT:

The first screenshot shows the RStudio interface with the following code in the Source pane:

```
R - R4.5.2 - ~/
> # Load library
> library(dplyr)
>
> # Load your Heart dataset
> heart <- read.csv("heart.csv") # Make sure the filename is correct
>
> # 1 Sorting by a single variable (Ascending)
> # Example: Sort by Age from lowest to highest
> heart_sorted_age <- heart |>
+   arrange(Age)
>
> head(heart_sorted_age, 5)
  Age Sex ChestPainType RestingBP Cholesterol FastingBS RestingECG MaxHR ExerciseAngina Oldpeak
1  28  M      ATA        130       132         0      LVH      185         N         0
2  29  M      ATA        120       243         0      Normal  160         N         0
3  29  M      ATA        140       263         0      Normal  170         N         0
4  29  M      ATA        130       204         0      LVH      202         N         0
5  30  F      TA         170       237         0      ST       170         N         0
  ST_Slope HeartDisease
1      Up             0
2      Up             0
3      Up             0
4      Up             0
5      Up             0
>
> # 2 Sorting by a single variable (Descending)
> # Example: Sort by Cholesterol highest first
> heart_sorted_chol_desc <- heart |>
+   arrange(desc(Cholesterol))
>
> head(heart_sorted_chol_desc, 5)
  Age Sex ChestPainType RestingBP Cholesterol FastingBS RestingECG MaxHR ExerciseAngina Oldpeak
1  34  M      ASY        130       603         1      Normal  125         N         1.0
2  67  F      NAP        115       564         0      LVH      160         N         1.6
3  32  M      ASY        118       529         0      Normal  130         N         0.0
4  53  M      NAP        145       518         0      Normal  130         N         0.0
5  44  M      ASY        135       491         0      Normal  135         N         0.0
  ST_Slope HeartDisease
1      Flat             1
2      Flat             0
3      Flat             1
4      Flat             1
5      Flat             1
>
> # 3 Sorting by multiple variables
> # Example: Sort first by Sex, then MaxHR highest first
> heart_multi_sort <- heart |>
+   arrange(Sex, desc(MaxHR))
>
> head(heart_multi_sort, 10)
  Age Sex ChestPainType RestingBP Cholesterol FastingBS RestingECG MaxHR ExerciseAngina
1  34  F      ATA        118       210         0      Normal  192         N
2  34  F      ATA        130       161         0      Normal  190         N
3  35  F      TA         120       160         0      ST       185         N
4  37  F      ASY        130       173         0      ST       184         N
5  35  F      ASY        138       183         0      Normal  182         N
6  39  F      NAP        110       182         0      ST       180         N
7  41  F      ATA        125       184         0      Normal  180         N
8  45  F      ATA        180       295         0      Normal  180         N
9  63  F      ATA        140       195         0      Normal  179         N
10 39  F      NAP         94       199         0      Normal  179         N
  Oldpeak ST_Slope HeartDisease
1      0.7      Up             0
2      0.0      Up             0
3      0.0      Up             0
4      0.0      Up             0
5      1.4      Up             0
6      0.0      Up             0
7      0.0      Up             0
8      0.0      Up             0
9      0.0      Up             0
10     0.0      Up             0
>
> # 4 Filter + Sort together
> # Example: People with high Heart Rate (MaxHR > 160), sort by Age
> high_hr_sorted <- heart |>
+   filter(MaxHR > 160) |>
+   arrange(Age)
>
> cat("People with high MaxHR:\n")
People with high MaxHR:
> print(high_hr_sorted |> select(Age, Sex, MaxHR, HeartDisease) |> head(5))
  Age Sex MaxHR HeartDisease
1  28  M    185             0
2  29  M    170             0
3  29  M    202             0
4  30  F    170             0
5  32  M    184             0
```

The second screenshot shows the RStudio Environment pane with the following objects:

- heart: 918 obs. of 12 variables
- heart_multi_sort: 918 obs. of 12 variables
- heart_sorted_age: 918 obs. of 12 variables
- heart_sorted_chol_desc: 918 obs. of 12 variables
- high_hr_sorted: 176 obs. of 12 variables
- normal_or_overweight: 166 obs. of 5 variables
- obese_class1: 20 obs. of 5 variables
- obese_people: 137 obs. of 5 variables
- older_unhealthy: 44 obs. of 5 variables
- short_height: 72 obs. of 5 variables