

Sheth I.u.j. And sir m.v. college of arts science and commerce

Practical 4

Applying conditional filters subset() or filter() in R.

output

The screenshot shows the RStudio interface with the following details:

- File Menu:** File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help.
- Project Bar:** student_scores, temp, 1st.R, 2nd.R, 4th.R, College_Marks_Dataset.
- Console:** Shows the R script code.
- Environment Tab:** Lists objects in the global environment:
 - College_Marks_Da... 1000 obs. of 8 variables
 - df 1000 obs. of 8 variables
 - high_attendance 249 obs. of 8 variables
 - high_hsc_college 1000 obs. of 8 variables
 - high_ssc 1000 obs. of 8 variables
 - special_students 488 obs. of 8 variables
 - top_grades 386 obs. of 8 variables
- Files Tab:** Shows a file tree:
 - C > Users > Lenovo > Downloads > attachments
 - .History 0 B Nov 24, 2025, 1:09 PM
 - 2nd.R 219 B Nov 24, 2025, 1:04 PM
 - 3rd.R 397 B Nov 24, 2025, 12:17 PM
 - 4th.R 1.1 KB Nov 24, 2025, 1:29 PM
 - 5th.R 499 B Nov 24, 2025, 12:17 PM
 - pract3.R 798 B Nov 24, 2025, 12:17 PM
- Help Tab:** Available options include New Folder, New File, Delete, Rename, More.
- Bottom Status Bar:** Shows "R Script" and "8:25 (Top Level) \$".

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RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Source

Console Terminal Background Jobs

R - R 4.5.2 - C:/Users/Lenovo/Downloads/attachments/

```
> library(dplyr)
> library(readr)
>
> df <- read_csv("C:/Users/Lenovo/Documents/College_Marks_Dataset.csv")
Rows: 1000 Columns: 8
-- Column specification --
Delimiter: ","
chr(4): Student_ID, Name, Class, Grade
dbl(4): SSC_Marks, HSC_Marks, College_Marks, Attendance_Percentage

i Use `spec()` to retrieve the full column specification for this data.
i Specify the column types or set `show_col_types = FALSE` to quiet this message.
>
>
> # Students with SSC > 90
> high_ssc <- subset(df, SSC_Marks > 90)
> cat("SSC > 90: ", nrow(high_ssc), "\n")
SSC > 90: 1000
> head(high_ssc)
# A tibble: 6 x 8
  Student_ID Name    Class  SSC_Marks HSC_Marks College_Marks
  <chr>        <chr>   <chr>     <dbl>      <dbl>        <dbl>
1 S1000       Student_0 Commerce  535        452        692
2 S1001       Student_1 Commerce  494        535        551
3 S1002       Student_2 Science   542        460        634
4 S1003       Student_3 Science   441        483        686
5 S1004       Student_4 Arts     427        544        569
6 S1005       Student_5 Science   520        539        519
# i 2 more variables: Attendance_Percentage <dbl>, Grade <chr>
>
> # Students with HSC > 85 AND College Marks > 80
> high_hsc_college <- subset(df, HSC_Marks > 85 & College_Marks > 80)
> cat("HSC > 85 and College > 80: ", nrow(high_hsc_college), "\n")
HSC > 85 and College > 80: 1000
> head(high_hsc_college)
```

RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Source

Console Terminal Background Jobs

R - R 4.5.2 - C:/Users/Lenovo/Downloads/attachments/

```
> high_hsc_college <- subset(df, HSC_Marks > 85 & College_Marks > 80)
> cat("HSC > 85 and College > 80: ", nrow(high_hsc_college), "\n")
HSC > 85 and College > 80: 1000
> head(high_hsc_college)
# A tibble: 6 x 8
  Student_ID Name    Class  SSC_Marks HSC_Marks College_Marks
  <chr>        <chr>   <chr>     <dbl>      <dbl>        <dbl>
1 S1000       Student_0 Commerce  535        452        692
2 S1001       Student_1 Commerce  494        535        551
3 S1002       Student_2 Science   542        460        634
4 S1003       Student_3 Science   441        483        686
5 S1004       Student_4 Arts     427        544        569
6 S1005       Student_5 Science   520        539        519
# i 2 more variables: Attendance_Percentage <dbl>, Grade <chr>
>
> # Students with Attendance < 75 OR Grade A
> special_students <- subset(df, Attendance_Percentage < 75 | Grade == "A")
> cat("Low attendance or Grade A: ", nrow(special_students), "\n")
Low attendance or Grade A: 488
> head(special_students)
# A tibble: 6 x 8
  Student_ID Name    Class  SSC_Marks HSC_Marks College_Marks
  <chr>        <chr>   <chr>     <dbl>      <dbl>        <dbl>
1 S1007       Student_7 Science   509        481        504
2 S1010       Student_10 Science  506        560        606
3 S1011       Student_11 Science  495        591        649
4 S1013       Student_13 Math     434        547        542
5 S1019       Student_19 Science  542        560        652
6 S1020       Student_20 Math     501        517        619
# i 2 more variables: Attendance_Percentage <dbl>, Grade <chr>
>
>
> # Students with Attendance > 90
> high_attendance <- df |> filter(Attendance_Percentage > 90)
> cat("Attendance > 90: ", nrow(high_attendance), "\n")
```

Environment History Connections Tutorial

Global Environment

- College_Marks... 1000 obs. of 8 variables
- df 1000 obs. of 8 variables
- high_attenda... 249 obs. of 8 variables
- high_hsc_col... 1000 obs. of 8 variables
- high_ssc 1000 obs. of 8 variables
- special_stud... 488 obs. of 8 variables
- top_grades 386 obs. of 8 variables
- top_students 1000 obs. of 8 variables

Files Plots Packages Help Viewer Presentation

C:/Users/Lenovo/Downloads/attachments

Name	Size	Modified
.Rhistory	0 B	Nov 24, 2025, 1:0
2nd.R	219 B	Nov 24, 2025, 1:0
3rd.R	397 B	Nov 24, 2025, 12:1
4th.R	1.1 KB	Nov 24, 2025, 1:2
5th.R	499 B	Nov 24, 2025, 12:1
pract3.R	798 B	Nov 24, 2025, 12:1

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The screenshot shows the RStudio interface. The top menu bar includes File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help, and Addins. The title bar says "RStudio". The left pane contains a "Source" tab with R code and its output. The right pane has tabs for Environment, History, Connections, and Tutorial, with "Environment" selected. A file browser window titled "Project: (None)" is open, showing files in the "attachments" folder. The code in the source tab is as follows:

```
# i 2 more variables: Attendance_Percentage <dbl>, Grade <chr>
>
> # Students with Attendance > 90
> high_attendance <- df |> filter(Attendance_Percentage > 90)
> cat("Attendance > 90: ", nrow(high_attendance), "\n")
Attendance > 90: 249
> summary(high_attendance$Attendance_Percentage)
  Min. 1st Qu. Median Mean 3rd Qu. Max.
90.05   92.74  95.11  95.12  97.58  99.95
>
> # Students with Grade A or B
> top_grades <- df |> filter(Grade %in% c("A", "B"))
> cat("Grade A or B: ", nrow(top_grades), "\n")
Grade A or B: 386
> table(top_grades$Grade)

  A     B 
193 193 

>
> # Sorting by College_Marks descending, then HSC_Marks descending
> top_students <- df |> arrange(desc(College_Marks), desc(HSC_Marks))
> head(top_students, 10)
# A tibble: 10 × 8
  Student_ID Name Class SSC_Marks HSC_Marks College_Marks
<chr>        <chr> <chr>    <dbl>    <dbl>      <dbl>
1 S1798       Student_798 Science     476      569      700
2 S1924       Student_924 Math        410      533      700
3 S1216       Student_216 Science     411      506      700
4 S1046       Student_46 Math         444      498      700
5 S1203       Student_203 Arts        430      480      700
6 S1490       Student_490 Science     403      480      700
7 S1281       Student_281 Commerce   526      479      700
8 S1260       Student_260 Arts        512      574      699
9 S1310       Student_310 Arts        506      521      699
```

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