

# 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 a script editor on the left and the Environment pane on the right. The script editor contains R code for reading a CSV file, creating data frames, and applying conditional filters using subset() and filter(). The Environment pane shows the objects created in the global environment, including College\_Marks\_Dataset, df, high\_attendance, high\_hsc\_college, high\_ssc, special\_students, and top\_grades.

```
4 df <- read_csv("C:/Users/Lenovo/Documents/College_Marks_Dataset.csv")
5
6
7
8 # Students with SSC > 90
9 high_ssc <- subset(df, SSC_Marks > 90)
10 cat("SSC > 90:", nrow(high_ssc), "\n")
11 head(high_ssc)
12
13 # Students with HSC > 85 AND College Marks > 80
14 high_hsc_college <- subset(df, HSC_Marks > 85 & College_Marks > 80)
15 cat("HSC > 85 and College > 80:", nrow(high_hsc_college), "\n")
16 head(high_hsc_college)
17
18 # Students with Attendance < 75 OR Grade A
19 special_students <- subset(df, Attendance_Percentage < 75 | Grade == "A")
20 cat("Low attendance or Grade A:", nrow(special_students), "\n")
21 head(special_students)
22
23
24 # Students with Attendance > 90
25 high_attendance <- df |> filter(Attendance_Percentage > 90)
26 cat("Attendance > 90:", nrow(high_attendance), "\n")
27 summary(high_attendance$Attendance_Percentage)
28
29 # Students with Grade A or B
30 top_grades <- df |> filter(Grade %in% c("A", "B"))
31 cat("Grade A or B:", nrow(top_grades), "\n")
32 table(top_grades$Grade)
33
34 # Sorting by College_Marks descending, then HSC_Marks descending
35 top_students <- df |> arrange(desc(College_Marks), desc(HSC_Marks))
```

The Environment pane shows the following objects:

Object	Size
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

Name: Simran S113

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

```
RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Go to file/function Addins
Project: (None)

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)
# 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")
```

```
RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Go to file/function Addins
Project: (None)

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")
```

Name: Simran S113

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

Source

Console

```
R - R 4.5.2 - C:/Users/Lenovo/Downloads/attachments/
# 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 x 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 S1210      Student_210 Arts         506        531        600
```

Environment

Global Environment

College_Mark...	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

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:
4th.R	1.1 KB	Nov 24, 2025, 1:2
5th.R	499 B	Nov 24, 2025, 12:
pract3.R	798 B	Nov 24, 2025, 12: