

PRACTICAL NO 4

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

The screenshot shows the RStudio interface with the following content:

Console:

```
R - R4.1.2 ~
> # Load your HR dataset
> hr <- read_csv("Downloads/HR-Employee-Attrition.csv")
rows: 1470 columns: 35
-- Column specification -----
delimiter: ","
chr (9): Attrition, BusinessTravel, Department, EducationField, Gender, Jobrole...
dbl (26): Age, DailyRate, DistanceFromHome, Education, EmployeeCount, EmployeeNu...

1 use 'spec()' to retrieve the full column specification for this data.
1 Specify the column types or set 'show_col_types = FALSE' to quiet this message.
> # quick look
> head(hr)
# A tibble: 6 x 35
  Age Attrition BusinessTravel DailyRate Department DistanceFromHome Education
<dbl> <chr> <chr> <dbl> <chr> <dbl> <dbl>
1 41 Yes Travel_Rarely 1102 Sales 8 1
2 49 No Travel_Frequently 279 Research & 8 1
3 37 Yes Travel_Rarely 1373 Research & 2 2
4 33 No Travel_Frequently 1392 Research & 3 4
5 27 No Travel_Rarely 591 Research & 2 1
6 32 No Travel_Frequently 1005 Research & 2 2
```

Environment:

Object	Class	Attributes
dh	data.frame	1000 obs. of 8 variables
high_income_subset	data.frame	281 obs. of 35 variables
hr	data.frame	1470 obs. of 35 variables
my_data	data.frame	1000 obs. of 8 variables
overtime_or_happy	data.frame	733 obs. of 35 variables
StudentsPerforman...	data.frame	1000 obs. of 8 variables
young_high_income...	data.frame	55 obs. of 35 variables

Files:

Name	Size	Modified
118 DHEERAJ SINGH UNZ.docx	081.4 KB	NOV 18, 2023, 1:08 PM
Saurabh BI PRACTICAL V.pdf	198.9 KB	Nov 24, 2025, 10:00 AM
SetupCrypTool_1_4_42_en.exe	76.7 MB	Nov 12, 2025, 3:26 PM
Student Mental health.csv	7.2 KB	Nov 13, 2025, 8:59 AM
StudentsPerformance - StudentsPerformance.csv	55.7 KB	Nov 18, 2025, 1:53 PM
Unnati prac 1 pdf.odt	5 MB	Nov 13, 2025, 9:30 AM
Unnati prac 1 pdf.pdf	1.7 MB	Nov 13, 2025, 9:30 AM
Untitled document (1).pdf	1.7 MB	Nov 13, 2025, 9:29 AM
Untitled document.pdf	39.6 KB	Nov 12, 2025, 3:35 PM
WhatsApp Unknown 2025-11-18 at 9.41.15 AM		
WhatsApp Unknown 2025-11-18 at 9.41.15 AM.zip	1013.5 KB	Nov 18, 2025, 11:45 AM
Whols		
Whols.zip	585.1 KB	Nov 12, 2025, 2:24 PM
HR-Employee-Attrition.csv	222.6 KB	Nov 24, 2025, 12:54 PM

The screenshot shows the RStudio interface with the following content:

Console:

```
R - R4.1.2 ~
> # Filter employees with MonthlyIncome > 10000
> high_income_subset <- subset(hr, MonthlyIncome > 10000)
> cat("Number of high-income employees (MonthlyIncome > 10000):",
+     nrow(high_income_subset), "\n")
Number of high-income employees (MonthlyIncome > 10000): 281
> summary(high_income_subset$MonthlyIncome)
Min. 1st Qu. Median Mean 3rd Qu. Max.
10008 11245 14118 14826 17875 19999
> # Example 2: Multiple Conditions (AND)
> # Employees with MonthlyIncome > 10000 AND YearsatCompany < 5
> young_high_income_subset <- subset(hr,
+     MonthlyIncome > 10000 & YearsatCompany < 5)
> cat("Employees earning >10000 AND less than 5 years in company:",
+     nrow(young_high_income_subset), "\n")
Employees earning >10000 AND less than 5 years in company: 55
> head(young_high_income_subset)
# A tibble: 6 x 35
  Age Attrition BusinessTravel DailyRate Department DistanceFromHome Education
<dbl> <chr> <chr> <dbl> <chr> <dbl> <dbl>
1 46 No Travel_Rarely 705 Sales 2 4
2 45 No Travel_Rarely 193 Research & 6 4
3 55 No Travel_Rarely 111 Sales 1 2
4 54 No Travel_Rarely 1217 Research & 2 4
5 59 No Non-Travel 1420 Human Reso- 2 4
6 51 Yes Travel_Frequently 1150 Research & 8 4
```

Environment:

Object	Class	Attributes
dh	data.frame	1000 obs. of 8 variables
high_income_subset	data.frame	281 obs. of 35 variables
hr	data.frame	1470 obs. of 35 variables
my_data	data.frame	1000 obs. of 8 variables
overtime_or_happy	data.frame	733 obs. of 35 variables
StudentsPerforman...	data.frame	1000 obs. of 8 variables
young_high_income...	data.frame	55 obs. of 35 variables

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The screenshot displays the RStudio environment with the following components:

- Source Panel:** Contains R code for data manipulation. The code includes comments, variable assignments, and a subset operation. The output shows a tibble with 6 rows and 5 columns: Age, Attrition, BusinessTravel, DailyRate, and Department.
- Environment Panel:** Lists the objects in the R environment, including 'Global Environment', 'dh', 'high_income_subset', 'hr', 'my_data', 'overtime_or_happy...', 'StudentsPerforman...', and 'young_high_income...'. Each object is associated with a specific number of observations and variables.
- Files Panel:** Shows the file explorer with a list of files and folders, including 'Saurabh BI PRACTICAL V.pdf', 'SetupCrypTool_1_4_42_en.exe', 'Student Mental health.csv', 'StudentsPerformance - StudentsPerformance.csv', 'Unnati prac 1 pdf.odt', 'Unnati prac 1 pdf.pdf', 'Untitled document (1).pdf', 'Untitled document.pdf', 'WhatsApp Unknown 2025-11-18 at 9.41.15 AM', 'WhatsApp Unknown 2025-11-18 at 9.41.15 AM.zip', 'Whols', 'Whols.zip', and 'HR-Employee-Attrition.csv'.
- Console Panel:** Displays the output of the R code, including the tibble structure and the result of the subset operation.

The console output shows the following tibble structure:

	Age	Attrition	BusinessTravel	DailyRate	Department
1	41	Yes	Travel_Rarely	1102	Sales
2	37	Yes	Travel_Rarely	1373	Research & Development
3	33	No	Travel_Frequently	1392	Research & Development
4	32	No	Travel_Frequently	1005	Research & Development
5	59	No	Travel_Rarely	1324	Research & Development
6	29	No	Travel_Rarely	153	Research & Development