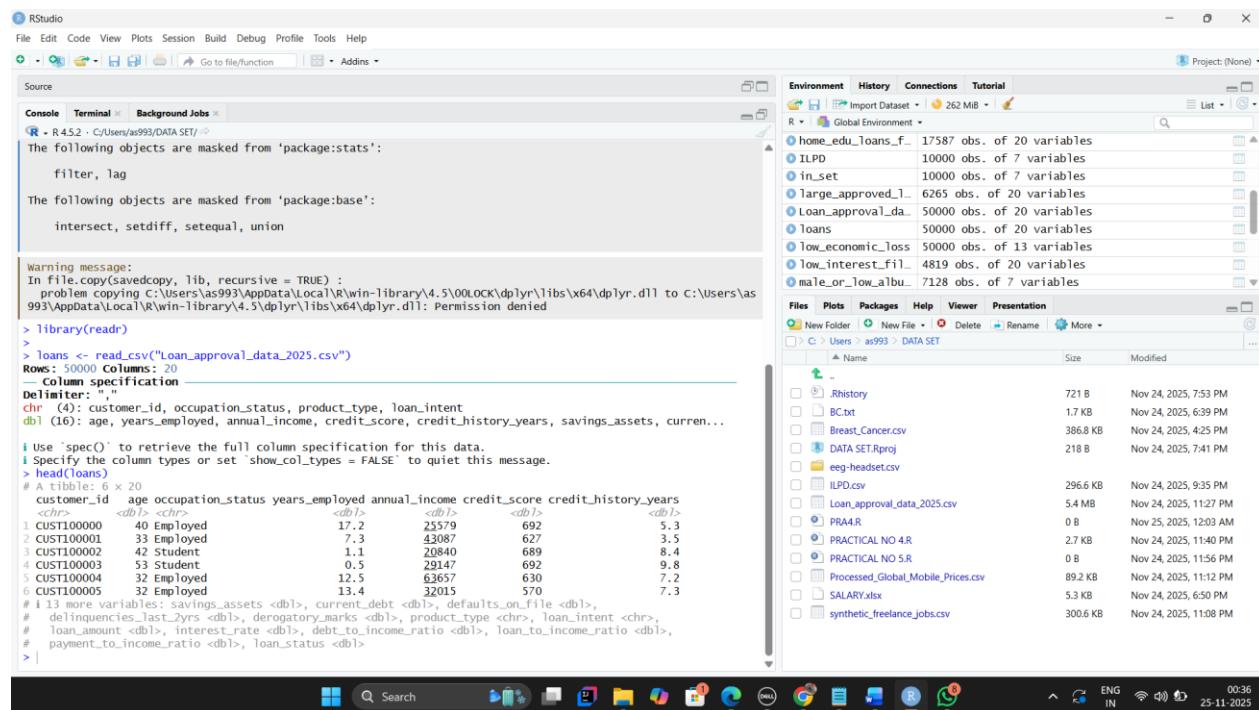


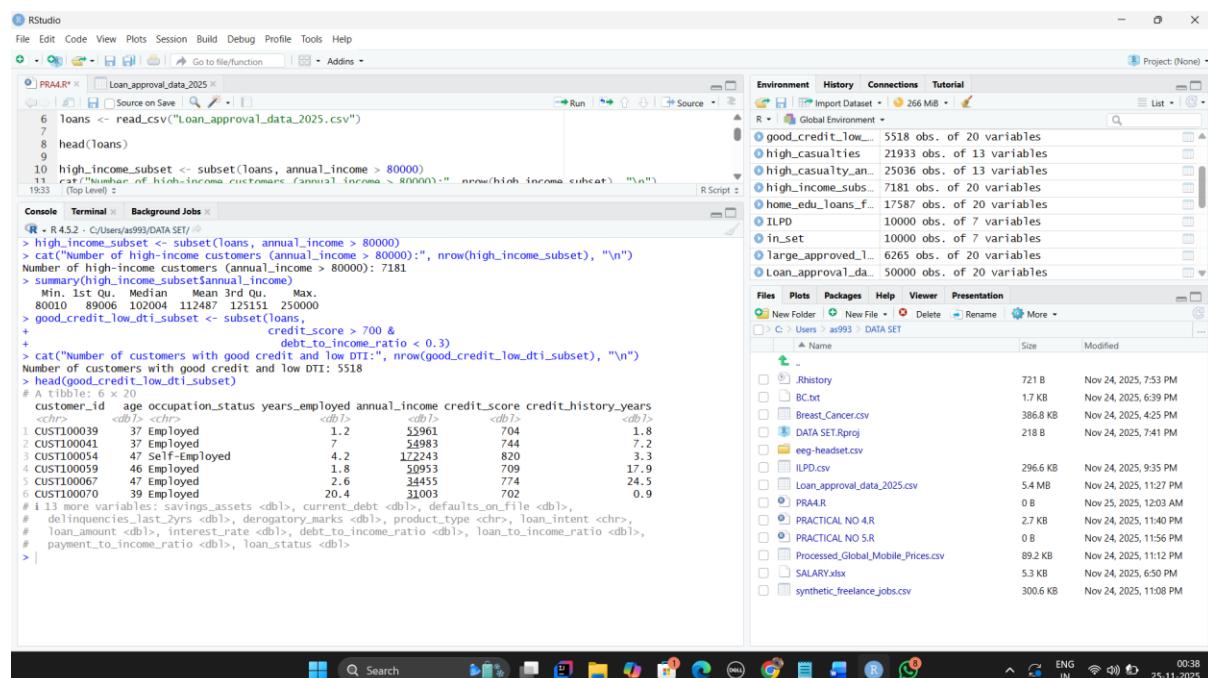
PRACTICAL NO 4

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

OUTPUT:-



RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Go to file/function Addins
Source Terminal Background Jobs
R 4.5.2 - C:/Users/as993/DATA SET/
The following objects are masked from 'package:stats':
filter, lag
The following objects are masked from 'package:base':
intersect, setdiff, setequal, union
Warning message:
In file.copy(Savedcopy, lib, recursive = TRUE) :
problem copying C:/Users/as993/AppData/Local/R/win-library/4.5/00LOCK/dplyr/libs/x64/dplyr.dll to C:/users/as993/AppData/Local/R/win-library/4.5/dplyr/libs/x64/dplyr.dll: Permission denied
> loans <- read_csv("Loan_approval_data_2025.csv")
Row: 30000 Colmn: 20
Column specification
Delimiter: ","
chr(4): customer_id, occupation_status, product_type, loan_intent
dbl(16): age, years_employed, annual_income, credit_score, credit_history_years, savings_assets, curren...
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.
> head(loans)
A tibble: 6 × 20
customer_id age occupation_status years_employed annual_income credit_score credit_history_years
<dbl> <dbl> <chr> <dbl> <dbl> <dbl> <dbl>
1 CUST100000 40 Employed 17.2 25579 692 5.3
2 CUST100001 33 Employed 7.3 43087 627 3.5
3 CUST100002 42 Student 1.1 20810 669 8.4
4 CUST100003 51 Student 0.5 29147 692 9.8
5 CUST100004 32 Employed 12.5 63657 630 7.2
6 CUST100005 32 Employed 13.4 32015 570 7.3
ℹ 13 more variables: savings_assets <dbl>, current_debt <dbl>, defaults_on_file <dbl>,...
ℹ delinquencies_last_2yrs <dbl>, derogatory_marks <dbl>, product_type <chr>, loan_intent <chr>,...
ℹ loan_amount <dbl>, interest_rate <dbl>, debt_to_income_ratio <dbl>, loan_to_income_ratio <dbl>,...
ℹ payment_to_income_ratio <dbl>, loan_status <dbl>
> |



RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Go to file/function Addins
PRALR* Loan_approval_data_2025
Source On Source or Save Run Source
6 loans <- read_csv("Loan_approval_data_2025.csv")
7
8 head(loans)
9
high_income_subset <- subset(loans, annual_income > 80000)
10 cat("Number of high-income customers (annual_income > 80000):", nrow(high_income_subset), "\n")
11 cat("Number of high-income customers (annual_income <= 80000):", nrow(subset(loans, annual_income <= 80000)), "\n")
12
A tibble: 6 × 20
customer_id age occupation_status years_employed annual_income credit_score credit_history_years
<dbl> <dbl> <chr> <dbl> <dbl> <dbl> <dbl>
1 CUST100039 37 Employed 1.2 55961 704 1.8
2 CUST100041 37 Employed 7 54983 744 7.2
3 CUST100054 47 Self-Employed 4.2 172243 820 3.3
4 CUST100059 46 Employed 1.8 50953 709 17.9
5 CUST100067 47 Employed 2.6 34455 774 24.5
6 CUST100070 39 Employed 20.4 31003 702 0.9
ℹ 13 more variables: savings_assets <dbl>, current_debt <dbl>, defaults_on_file <dbl>,...
ℹ delinquencies_last_2yrs <dbl>, derogatory_marks <dbl>, product_type <chr>, loan_intent <chr>,...
ℹ loan_amount <dbl>, interest_rate <dbl>, debt_to_income_ratio <dbl>, loan_to_income_ratio <dbl>,...
ℹ payment_to_income_ratio <dbl>, loan_status <dbl>
> |

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Data Analysis with SAS / SPSS /R

The screenshot shows an RStudio interface with several windows open:

- File Explorer:** Shows a tree view of files and folders, including "Project (None)" at the top, followed by "Global Environment", "Loans_approval_data_2025", "BC.txt", "Breast_Cancer.csv", "DATA SET.pproj", "eeg-headset.csv", "ILPD.csv", "Loan_approval_data_2025.csv", "PRAAR", "PRACTICAL NO 4.R", "PRACTICAL NO 5.R", "Processed_Global_Mobile_Prices.csv", "SALARY.xlsx", and "synthetic_freelance_jobs.csv".
- Environment:** A table showing the global environment with 268 MB of memory used.
- History:** A table showing the history of operations.
- Connections:** A table showing connections.
- Tutorial:** A table showing the tutorial path.
- Code Editor:** The main workspace showing R code and its output. The code includes:
 - Reading a CSV file: `loan_approval_data_2025 <- read.csv("loan_approval_data_2025.csv")`
 - Filtering data: `risky_customers_subset <- subset(loan_approval_data_2025, credit_score > 700 & debt_to_income_ratio < 0.3)`
 - Displaying the first few rows of the filtered subset: `head(risky_customers_subset)`
- Console:** Displays the R session history, including the commands run and their results.
- Terminal:** Displays the terminal session history.
- Background Jobs:** Displays any background jobs running.
- File:** Standard file menu options.
- Edit:** Standard edit menu options.
- Code:** Standard code menu options.
- View:** Standard view menu options.
- Plots:** Standard plots menu options.
- Sessions:** Standard sessions menu options.
- Build:** Standard build menu options.
- Debug:** Standard debug menu options.
- Profile:** Standard profile menu options.
- Tools:** Standard tools menu options.
- Help:** Standard help menu options.
- Addins:** Standard addins menu options.

RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

PRAR* Loan_approval_data_2025

Source on Save Run Source

25 cat("Number of risky customers (defaults or many delinquencies):", nrow(risky_customers_subset), "\n")
26 head(risky_customers_subset)
27
28 low_interest_filter <- loans |>
29 filter(interest_rate < 10)
30 . (Top Level) 2

Console Terminal Background Jobs

R 4.5.2 : C:/Users/aj933/DATA SET/

> low_interest_filter <- loans |>
+ filter(interest_rate < 10)
> cat("Number of low-interest loans (interest_rate < 10):", nrow(low_interest_filter), "\n")
Number of low-interest loans (interest_rate < 10): 4819
> summary(low_interest_filter\$interest_rate)

Min. 1st Qu. Median Mean 3rd Qu. Max.
6.000 8.280 9.150 8.874 9.600 9.990

> large_approved_loans_filter <- loans |>
+ filter(loan_status == 1,
+ loan_amount > 50000)
> cat("Number of large approved loans (loan_amount > 50000):", nrow(large_approved_loans_filter), "\n")
Number of large approved loans (loan_amount > 50000): 6265
> head(large_approved_loans_filter)

A tibble: 6 x 20

customer_id age occupation_status years_employed annual_income credit_score credit_history_years
<dbl> <dbl> <chr> <dbl> <dbl>

1 CUST100004 32 Employed 12.5 63657 630 72 7.2
2 CUST100007 44 Self-Employed 4.2 80603 625 18.5
3 CUST100009 41 Employed 7 20717 638 21.5
4 CUST100020 52 Employed 31.3 75932 695 2.1
5 CUST100025 36 Employed 6.8 55609 651 16.9
6 CUST100030 27 Employed 6.2 32073 619 8

13 more variables: savings_assets <dbl>, current_debt <dbl>, defaults_on_file <dbl>, delinquent_last_2yrs <dbl>, derogatory_marks <dbl>, product_type <chr>, loan_intent <chr>, loan_amount <dbl>, interest_rate <dbl>, debt_to_income_ratio <dbl>, loan_to_income_ratio <dbl>, payment_to_income_ratio <dbl>, loan_status <dbl>

Environment History Connections Tutorial

Import Dataset 272 MB

R Global Environment

large_approved_loans 6265 obs. of 20 variables
Loan_approval_data_2025 50000 obs. of 20 variables
loans 50000 obs. of 20 variables
low_economic_loss 50000 obs. of 13 variables
low_interest_filter 4819 obs. of 20 variables
male_or_low_albu 7128 obs. of 7 variables
older_high_bili 1188 obs. of 7 variables
patients_subset 6034 obs. of 7 variables
patients_tbl 6034 obs. of 7 variables

Files Plots Packages Help Viewer Presentation

New Folder New File Delete Rename More

C:\Users\aj933\DATA SET

Name Size Modified

Rhistory 721 B Nov 24, 2025, 7:53 PM
CB.txt 1.7 KB Nov 24, 2025, 6:39 PM
Breast_Cancer.csv 386.8 KB Nov 24, 2025, 4:25 PM
DATA_SET.aproj 218 B Nov 24, 2025, 7:41 PM
eeg-headset.csv
ILPD.csv 296.6 KB Nov 24, 2025, 9:35 PM
Loan_approval_data_2025.csv 5.4 MB Nov 25, 2025, 11:27 PM
PRAR 0 B Nov 25, 2025, 12:03 AM
PRACTICAL NO 4.R 2.7 KB Nov 24, 2025, 11:40 PM
PRACTICAL NO 5.R 0 B Nov 24, 2025, 11:56 PM
Processed_Global_Mobile_Prices.csv 89.2 KB Nov 24, 2025, 11:12 PM
SALARY.xlsx 5.3 KB Nov 24, 2025, 6:50 PM
synthetic_freelance_jobs.csv 300.6 KB Nov 24, 2025, 11:08 PM

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