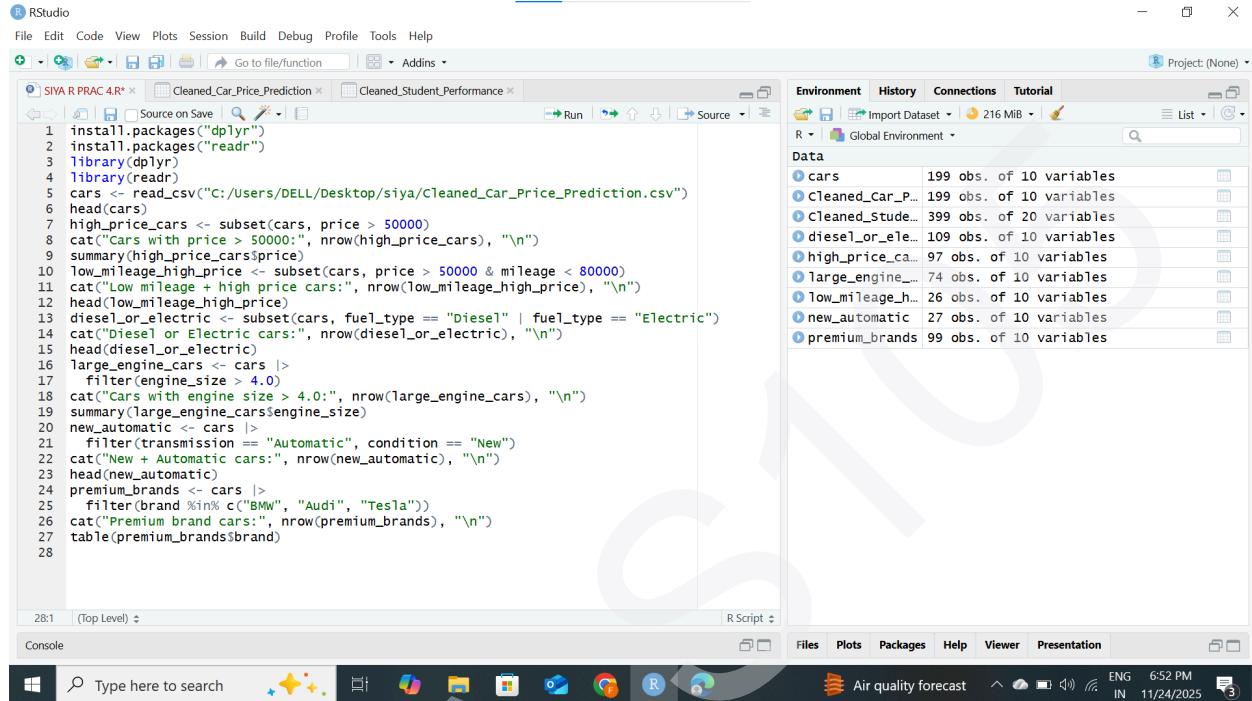


MVLU COLLEGE

PRACTICAL NO. 4

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

#CODE:



The screenshot shows the RStudio interface with the following details:

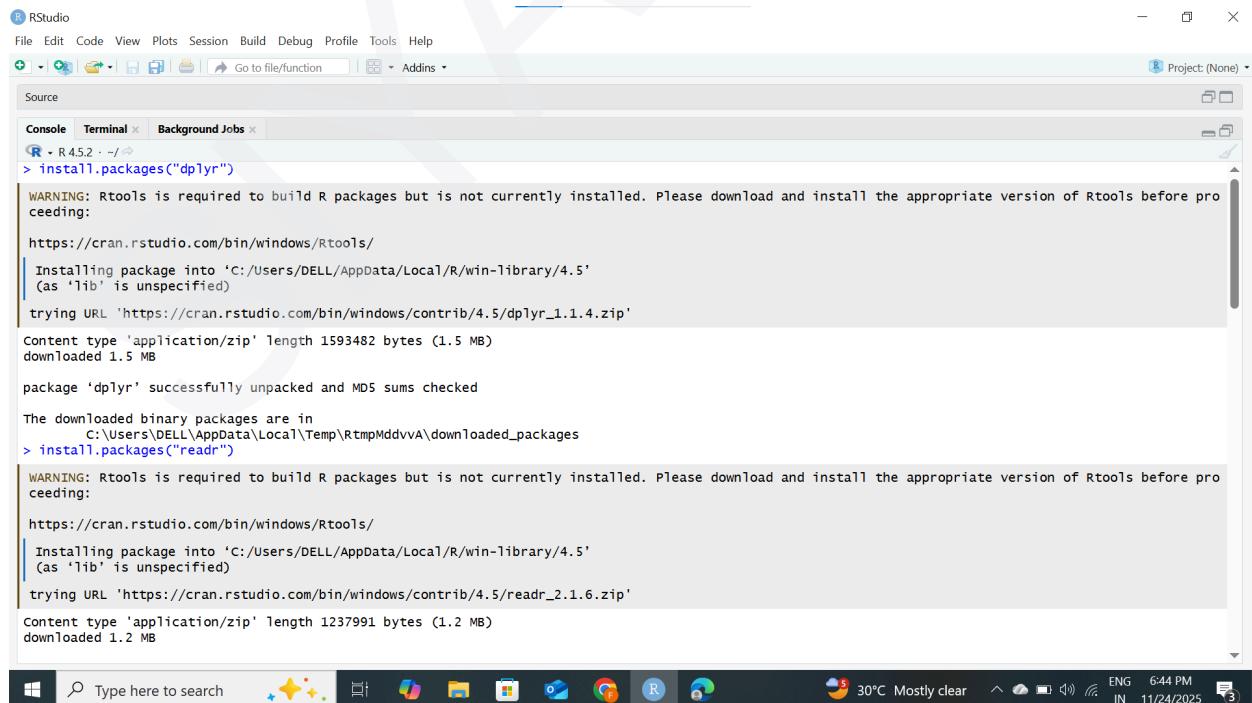
- File Bar:** File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help.
- Project Bar:** Project: (None).
- Source Editor:** SIYA R PRAC 4.R* (Top Level) containing R code for data manipulation and filtering.
- Environment View:** Shows the global environment with various objects and their characteristics.
- Console View:** Shows the command history and output of the R session.
- System Taskbar:** Shows system icons, a search bar, and the date/time (11/24/2025, 6:52 PM).

```

1 install.packages("dplyr")
2 install.packages("readr")
3 library(dplyr)
4 library(readr)
5 cars <- read_csv("C:/Users/DELL/Desktop/siya/Cleaned_Car_Price_Prediction.csv")
6 head(cars)
7 high_price_cars <- subset(cars, price > 50000)
8 cat("Cars with price > 50000:", nrow(high_price_cars), "\n")
9 summary(high_price_cars$price)
10 low_mileage_high_price <- subset(cars, price > 50000 & mileage < 80000)
11 cat("Low mileage + high price cars:", nrow(low_mileage_high_price), "\n")
12 head(low_mileage_high_price)
13 diesel_or_electric <- subset(cars, fuel_type == "Diesel" | fuel_type == "Electric")
14 cat("Diesel or Electric cars:", nrow(diesel_or_electric), "\n")
15 head(diesel_or_electric)
16 large_engine_cars <- cars |>
17   filter(engine_size > 4.0)
18 cat("Cars with engine size > 4.0:", nrow(large_engine_cars), "\n")
19 summary(large_engine_cars$engine_size)
20 new_automatic <- cars |>
21   filter(transmission == "Automatic", condition == "New")
22 cat("New + Automatic cars:", nrow(new_automatic), "\n")
23 head(new_automatic)
24 premium_brands <- cars |>
25   filter(brand %in% c("BMW", "Audi", "Tesla"))
26 cat("Premium brand cars:", nrow(premium_brands), "\n")
27 table(premium_brands$brand)
28

```

#OUTPUT:



The screenshot shows the RStudio interface with the following details:

- File Bar:** File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help.
- Project Bar:** Project: (None).
- Console View:** Shows the command history and output of the R session, including package installations for dplyr and readr.
- System Taskbar:** Shows system icons, a search bar, and the date/time (11/24/2025, 6:44 PM).

```

> install.packages("dplyr")
WARNING: Rtools is required to build R packages but is not currently installed. Please download and install the appropriate version of Rtools before proceeding:
https://cran.rstudio.com/bin/windows/Rtools/
Installing package into 'C:/Users/DELL/AppData/Local/R/win-library/4.5'
(as 'lib' is unspecified)
trying URL 'https://cran.rstudio.com/bin/windows/contrib/4.5/dplyr_1.1.4.zip'
Content type 'application/zip' length 1593482 bytes (1.5 MB)
downloaded 1.5 MB

package 'dplyr' successfully unpacked and MD5 sums checked

The downloaded binary packages are in
  C:/Users/DELL/AppData/Local/Temp/RtmpMddvvA/downloaded_packages
> install.packages("readr")
WARNING: Rtools is required to build R packages but is not currently installed. Please download and install the appropriate version of Rtools before proceeding:
https://cran.rstudio.com/bin/windows/Rtools/
Installing package into 'C:/Users/DELL/AppData/Local/R/win-library/4.5'
(as 'lib' is unspecified)
trying URL 'https://cran.rstudio.com/bin/windows/contrib/4.5/readr_2.1.6.zip'
Content type 'application/zip' length 1237991 bytes (1.2 MB)
downloaded 1.2 MB

```

MVLU COLLEGE

PRACTICAL NO. 4



RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Console Terminal Background Jobs

```
R - R 4.5.2 - /~>
  starting package: rsrc  C:/Users/DELL/AppData/Local/R/win-library/4.5
  (as 'lib' is unspecified)
trying URL 'https://cran.rstudio.com/bin/windows/contrib/4.5/readr_2.1.6.zip'
Content type 'application/zip' length 1237991 bytes (1.2 MB)
downloaded 1.2 MB

package 'readr' successfully unpacked and MD5 sums checked

The downloaded binary packages are in
  C:/Users/DELL/AppData/Local/Temp/RtmpMddvvA/downloaded_packages
> library(dplyr)

Attaching package: 'dplyr'

The following objects are masked from 'package:stats':
  filter, lag

The following objects are masked from 'package:base':
  intersect, setdiff, setequal, union

> library(readr)
> cars <- read_csv("C:/Users/DELL/Desktop/siya/cleaned_Car_Price_Prediction.csv")
Rows: 199 Columns: 10
  Column specification:
  Delimiter: ","
  chr (5): brand, fuel_type, transmission, condition, model
  dbl (5): car_id, year, engine_size, mileage, price
  Use `spec()` to retrieve the full column specification for this data
```

Type here to search

Windows Taskbar icons: File Explorer, Edge, File Manager, Mail, Google Chrome, R, FileZilla, Task View, Taskbar settings.

System tray: 30°C, Mostly clear, ENG 645 PM IN 11/24/2025, Battery icon.

MVLU COLLEGE

PRACTICAL NO. 4

RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Console Terminal Background Jobs

```
R - R 4.5.2 · ~/R
Cars with price > 50000:
Column specification
Delimiter: ","
chr (5): brand, fuel_type, transmission, condition, model
dbl (5): car_id, year, engine_size, mileage, price

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(cars)
# A tibble: 6 × 10
  car_id brand   year engine_size fuel_type transmission mileage condition  price model
  <dbl> <chr> <dbl> <chr> <chr> <dbl> <chr> <dbl> <chr>
1 1 Tesla 2016     2.3 Petrol Manual    114832 New      26614. Model X
2 2 BMW   2018     4.4 Electric Manual   143190 Used     14680. 5 Series
3 3 Audi   2013     4.5 Electric Manual   181601 New      44403. A4
4 4 Tesla 2011     4.1 Diesel  Automatic  68682 New       86374. Model Y
5 5 Ford   2009     2.6 Diesel  Manual    223009 Like New  23577. Mustang
6 6 Audi   2019     2.4 Diesel  Automatic  246553 Like New  88970. Q7

> high_price_cars <- subset(cars, price > 50000)
> cat("Cars with price > 50000:", nrow(high_price_cars), "\n")
Cars with price > 50000: 97
> summary(high_price_cars$price)
  Min. 1st Qu. Median  Mean 3rd Qu. Max.
50288   66045  73779  75105  85267  99372
> low_mileage_high_price <- subset(cars, price > 50000 & mileage < 80000)
> cat("Low mileage + high price cars:", nrow(low_mileage_high_price), "\n")
Low mileage + high price cars: 26
> head(low_mileage_high_price)
# A tibble: 6 × 10
  car_id brand   year engine_size fuel_type transmission mileage condition  price model
  <dbl> <chr> <dbl> <chr> <chr> <dbl> <chr> <dbl> <chr>
1 4 Tesla 2011     4.1 Diesel  Automatic  68682 New      86374. Model Y
2 22 Mercedes 2022    2.3 Electric Manual   12150 Used     61393. E-Class

Windows Type here to search 30°C Mostly clear ENG 6:45 PM IN 11/24/2025
```

RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Console Terminal Background Jobs

```
R - R 4.5.2 · ~/R
> head(low_mileage_high_price)
# A tibble: 6 × 10
  car_id brand   year engine_size fuel_type transmission mileage condition  price model
  <dbl> <chr> <dbl> <chr> <chr> <dbl> <chr> <dbl> <chr>
1 4 Tesla 2011     4.1 Diesel  Automatic  68682 New      86374. Model Y
2 22 Mercedes 2022    2.3 Electric Manual   12150 Used     61393. E-Class
3 26 Toyota 2017     5.2 Electric Automatic  18325 Used      70177. Camry
4 29 Mercedes 2007     5.9 Diesel  Manual    17669 Used      78308. GLC
5 33 Toyota 2022     1.5 Hybrid  Automatic  50812 Used     92010. Corolla
6 37 Honda   2014     2.3 Diesel  Manual    25395 New       76380. Fit

> diesel_or_electric <- subset(cars, fuel_type == "Diesel" | fuel_type == "Electric")
> cat("Diesel or Electric cars:", nrow(diesel_or_electric), "\n")
Diesel or Electric cars: 109
> head(diesel_or_electric)
# A tibble: 6 × 10
  car_id brand   year engine_size fuel_type transmission mileage condition  price model
  <dbl> <chr> <dbl> <chr> <chr> <dbl> <chr> <dbl> <chr>
1 2 BMW   2018     4.4 Electric Manual   143190 Used     14680. 5 Series
2 3 Audi   2013     4.5 Electric Manual   181601 New      44403. A4
3 4 Tesla 2011     4.1 Diesel  Automatic  68682 New       86374. Model Y
4 5 Ford   2009     2.6 Diesel  Manual    223009 Like New  23577. Mustang
5 6 Audi   2019     2.4 Diesel  Automatic  246553 Like New  88970. Q7
6 7 Audi   2020     4.0 Electric Automatic  135486 Used     63499. Q5

> large_engine_cars <- cars |>
+ large_engine_cars <- cars |>
+ filter(engine_size > 4.0)

Error in large_engine_cars :
  The pipe operator requires a function call as RHS (<input>:2:1)

> cat("Cars with engine size > 4.0:", nrow(large_engine_cars), "\n")

Windows Type here to search 30°C Mostly clear ENG 6:45 PM IN 11/24/2025
```

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PRACTICAL NO. 4

RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Console Terminal Background Jobs

R 4.5.2 - /

```
> large_engine_cars <- cars |>
+ filter(engine_size > 4.0)
> cat("Cars with engine size > 4.0:", nrow(large_engine_cars), "\n")
Cars with engine size > 4.0: 74
> summary(large_engine_cars$engine_size)
   Min. 1st Qu. Median 3rd Qu. Max.
4.100 4.425 4.750 4.918 5.400 5.900
> new_automatic <- cars |>
+ filter(transmission == "Automatic", condition == "New")
> cat("New + Automatic cars:", nrow(new_automatic), "\n")
New + Automatic cars: 27
> head(new_automatic)
# A tibble: 6 × 10
  car_id brand year engine_size fuel_type transmission mileage condition price model
  <dbl> <chr> <dbl> <chr> <dbl> <chr> <dbl> <chr> <dbl> <chr>
1     4 Tesla  2011      4.1 Diesel Automatic  68682 New    86374. Model Y
2     8 Tesla  2017      5.3 Hybrid Automatic  83030 New    17381. Model Y
3    13 Ford   2006      4.7 Petrol Automatic 114360 New    74766. Fiesta
4    15 BMW    2014      2   Electric Automatic  65018 New    35221. X3
5    17 Mercedes 2017      4.5 Electric Automatic 136817 New    14728. GLA
6    19 Honda   2011      3   Electric Automatic  86984 New    47792. Civic
> premium_brands <- cars |>
+ filter(brand %in% c("BMW", "Audi", "Tesla"))
> cat("Premium brand cars:", nrow(premium_brands), "\n")
Premium brand cars: 99
> table(premium_brands$brand)

Audi  BMW  Tesla
 28   34   37
> |
```

Type here to search

Air quality forecast

ENG 6:55 PM
IN 11/24/2025