

PRACTICAL NO 4

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

Output:

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Source
R - R 4.5.2 - C:/Users/PRIVANKA/Downloads/
> library(dplyr)
> library(readr)
> housing_data <- read_csv("Housing.csv")
Rows: 545 Columns: 13
Column specification
Delimiter: ","
chr (7): mainroad, guestroom, basement, hotwaterheating, airconditioning, prefarea, furnishingstatus
dbl (6): price, area, bedrooms, bathrooms, stories, parking

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.
> cat("---- Initial Data Load ----\n")
---- Initial Data Load ----
> print(head(housing_data))
# A tibble: 6 x 13
  price      area bedrooms bathrooms stories mainroad guestroom basement hotwaterheating airconditioning parking prefarea furnishingstatus
  <dbl> <dbl> <dbl> <dbl> <dbl> <chr> <chr> <chr> <chr> <chr> <dbl> <chr> <chr>
1 13300000 7420 4 2 3 yes no no no yes 2 yes furnished
2 12250000 8960 4 4 4 yes no no no yes 3 no furnished
3 12250000 8960 3 2 2 yes no yes no no 2 yes semi-furnished
4 12215000 7500 4 2 2 yes no yes no no 3 yes furnished
5 11410000 7420 4 1 2 yes yes yes no yes 2 no furnished
6 10850000 7500 3 3 1 yes no yes no yes 2 yes semi-furnished
> cat("\n")
> expensive_homes <- subset(housing_data, price > 8000000)
> cat("---- 1. Highly Priced Homes (price > 8,000,000) ----\n")
---- 1. Highly Priced Homes (price > 8,000,000) ----
> cat("Number of homes with price > 8,000,000:", nrow(expensive_homes), "\n")
Number of homes with price > 8,000,000: 37
> cat("Summary of prices:\n")
Summary of prices:
> print(summary(expensive_homes$price))
   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
8043000 8400000 8890000 9390485 9800000 13300000
> furnished_homes <- subset(housing_data, furnishingstatus == "furnished")
> cat("---- 2. Fully Furnished Homes (furnishingstatus == 'furnished') ----\n")

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SHETH L.U.J. AND SIR M.V. COLLEGE OF ARTS SCIENCE AND COMMERCE

Subject : Data Analysis with SAS / SPSS /R

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Source
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> furnished_homes <- subset(housing_data, furnishingstatus == "furnished")
> cat("\n--- 2. Fully Furnished Homes (furnishingstatus == 'furnished') ---\n")

--- 2. Fully Furnished Homes (furnishingstatus == 'furnished') ---
> cat("Number of fully furnished homes:", nrow(furnished_homes), "\n")
Number of fully furnished homes: 140
> print(head(furnished_homes))
# A tibble: 6 x 13
  price area bedrooms bathrooms stories mainroad guestroom basement hotwaterheating airconditioning parking prefarea furnishingstatus
  <dbl> <dbl> <dbl> <dbl> <dbl> <chr> <chr> <chr> <chr> <chr> <dbl> <chr> <chr>
1 13300000 7420 4 2 3 yes no no no yes 2 yes furnished
2 12250000 8960 4 4 4 yes no no no yes 3 no furnished
3 12215000 7500 4 2 2 yes no yes no yes 3 yes furnished
4 11410000 7420 4 1 2 yes yes yes no no 2 no furnished
5 9870000 8100 4 1 2 yes yes yes no yes 2 yes furnished
6 9800000 13200 3 1 2 yes no yes no yes 2 yes furnished

>
> special_homes <- subset(
+ housing_data,
+ area > 10000 | stories == 4
+ )
> cat("\n--- 3. Special Homes (area > 10000 OR stories == 4) ---\n")

--- 3. Special Homes (area > 10000 OR stories == 4) ---
> cat("Special homes (Large Area OR Max Stories):", nrow(special_homes), "\n")
Special homes (Large Area OR Max Stories): 59
> print(head(special_homes))
# A tibble: 6 x 13
  price area bedrooms bathrooms stories mainroad guestroom basement hotwaterheating airconditioning parking prefarea furnishingstatus
  <dbl> <dbl> <dbl> <dbl> <dbl> <chr> <chr> <chr> <chr> <chr> <dbl> <chr> <chr>
1 12250000 8960 4 4 4 yes no no no yes 3 no furnished
2 10150000 8580 4 3 4 yes no no no yes 2 yes semi-furnished
3 10150000 16200 5 3 2 yes no no no no 0 no unfurnished
4 9800000 3750 3 2 4 yes yes no no yes 1 yes unfurnished
5 9800000 13200 3 1 2 yes no yes no yes 2 yes furnished
6 8960000 8500 3 2 4 yes no no no yes 2 no furnished

>
> low_cost_filter <- housing_data %>%
+ filter(price < 3000000)
> cat("\n--- 4. Low-Priced Homes (price < 3,000,000) ---\n")

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Source
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> cat("Number of homes with price < 3,000,000:", nrow(low_cost_filter), "\n")
Number of homes with price < 3,000,000: 71
> cat("Summary of prices:\n")
Summary of prices:
> print(summary(low_cost_filter$price))
Min. 1st Qu. Median Mean 3rd Qu. Max.
1750000 2292500 2590000 2506291 2817500 2975000

>
> pref_area_large <- housing_data %>%
+ filter(prefarea == "yes", bedrooms > 3)
> cat("\n--- 5. Homes in Preferred Area with > 3 Bedrooms ---\n")

--- 5. Homes in Preferred Area with > 3 Bedrooms ---
> cat("Count:", nrow(pref_area_large), "\n")
Count: 24
> print(head(pref_area_large))
# A tibble: 6 x 13
  price area bedrooms bathrooms stories mainroad guestroom basement hotwaterheating airconditioning parking prefarea furnishingstatus
  <dbl> <dbl> <dbl> <dbl> <dbl> <chr> <chr> <chr> <chr> <chr> <dbl> <chr> <chr>
1 13300000 7420 4 2 3 yes no no no yes 2 yes furnished
2 12215000 7500 4 2 2 yes no yes no no yes 3 yes furnished
3 10150000 8580 4 3 4 yes no no no yes 2 yes semi-furnished
4 9870000 8100 4 1 2 yes yes yes no no yes 2 yes furnished
5 9310000 6550 4 2 2 yes no no no yes 1 yes semi-furnished
6 9100000 6600 4 2 2 yes yes yes no yes 1 yes unfurnished

>
> comfort_filter <- housing_data %>%
+ filter(airconditioning == "yes" | hotwaterheating == "yes")
> cat("\n--- 6. Homes with Air Conditioning or Hot Water Heating ---\n")

--- 6. Homes with Air Conditioning or Hot Water Heating ---
> cat("Homes with comfort amenities count:", nrow(comfort_filter), "\n")
Homes with comfort amenities count: 196
> cat("Breakdown by Air Conditioning status:\n")
Breakdown by Air Conditioning status:
> print(table(comfort_filter$airconditioning))

no yes
24 172
> |
```

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