

# SHETH L.U.J AND SIR M.V COLLEGE

## PRACTICAL NO 5

### SUBJECT - Data Analysis with SAS / SPSS / R

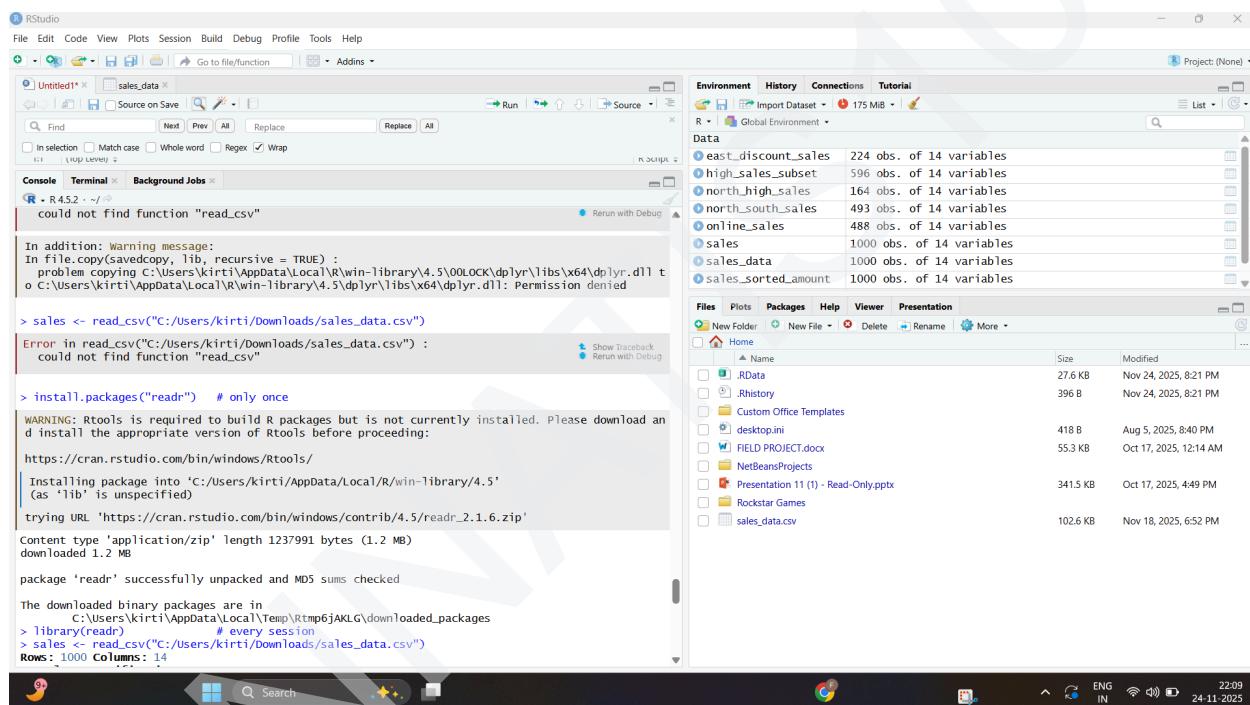
AIM - Sorting data using `arrange()` in R.

# Load packages

```
install.packages("dplyr", dependencies = FALSE) # optional (you can remove if already installed)
library(dplyr)
library(readr)
```

# Load the CSV (change path if your file is in a different folder)

```
sales <- read_csv("C:/Users/kirti/Downloads/sales_data.csv")
```



#### INPUT

```
# Example 1: Sort by a single variable (Sales_Amount ascending)
```

```
# -----
```

```
# Sort sales by Sales_Amount from smallest to largest
```

```
sales_sorted_amount <- sales |>
  arrange(Sales_Amount)
```

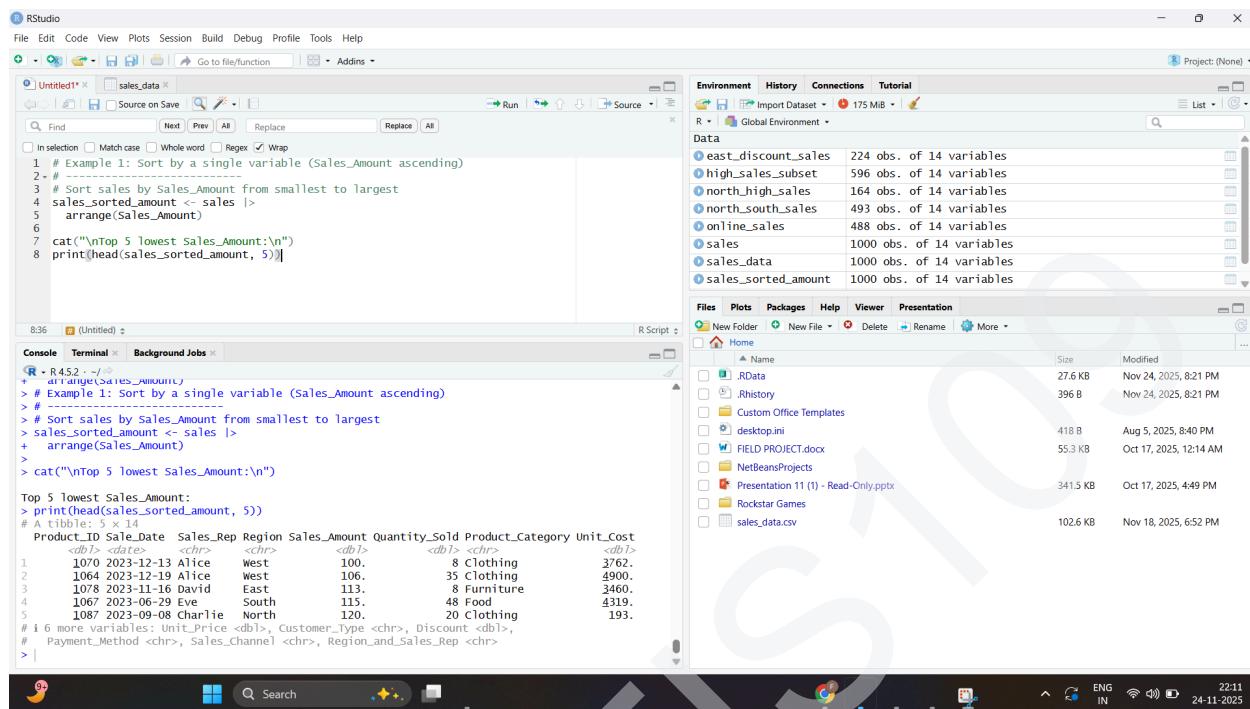
```
cat("\nTop 5 lowest Sales_Amount:\n")
print(head(sales_sorted_amount, 5))
```

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## OUTPUT



The screenshot shows the RStudio interface. The left pane contains an R script with the following code:

```

# Example 1: Sort by a single variable (Sales_Amount ascending)
# -----
# Sort sales by Sales_Amount from smallest to largest
sales_sorted_amount <- sales |>
  arrange(Sales_Amount)
cat("\nTop 5 lowest Sales_Amount:\n")
print(head(sales_sorted_amount, 5))

```

The right pane shows the Environment pane with various objects listed:

- east\_discount\_sales: 224 obs. of 14 variables
- high\_sales\_subset: 596 obs. of 14 variables
- north\_high\_sales: 164 obs. of 14 variables
- north\_south\_sales: 493 obs. of 14 variables
- online\_sales: 488 obs. of 14 variables
- sales: 1000 obs. of 14 variables
- sales\_data: 1000 obs. of 14 variables
- sales\_sorted\_amount: 1000 obs. of 14 variables

Below the Environment pane is the Files pane, which lists files in the current directory:

Name	Size	Modified
JData	27.6 KB	Nov 24, 2025, 8:21 PM
Rhistory	396 B	Nov 24, 2025, 8:21 PM
Custom Office Templates	418 B	Aug 5, 2025, 8:40 PM
desktop.ini	553 KB	Oct 17, 2025, 12:14 AM
FIELD PROJECT.docx	341.5 KB	Oct 17, 2025, 4:49 PM
NetBeansProjects		
Presentation 11 (1) - Read-Only.pptx		
Rockstar Game		
sales_data.csv	102.6 KB	Nov 18, 2025, 6:52 PM

## INPUT

```

# Example 2: Sort by a single variable (Quantity_Sold descending)
# -----
# Find the largest quantity orders first
sales_sorted_qty_desc <- sales |>
  arrange(desc(Quantity_Sold))

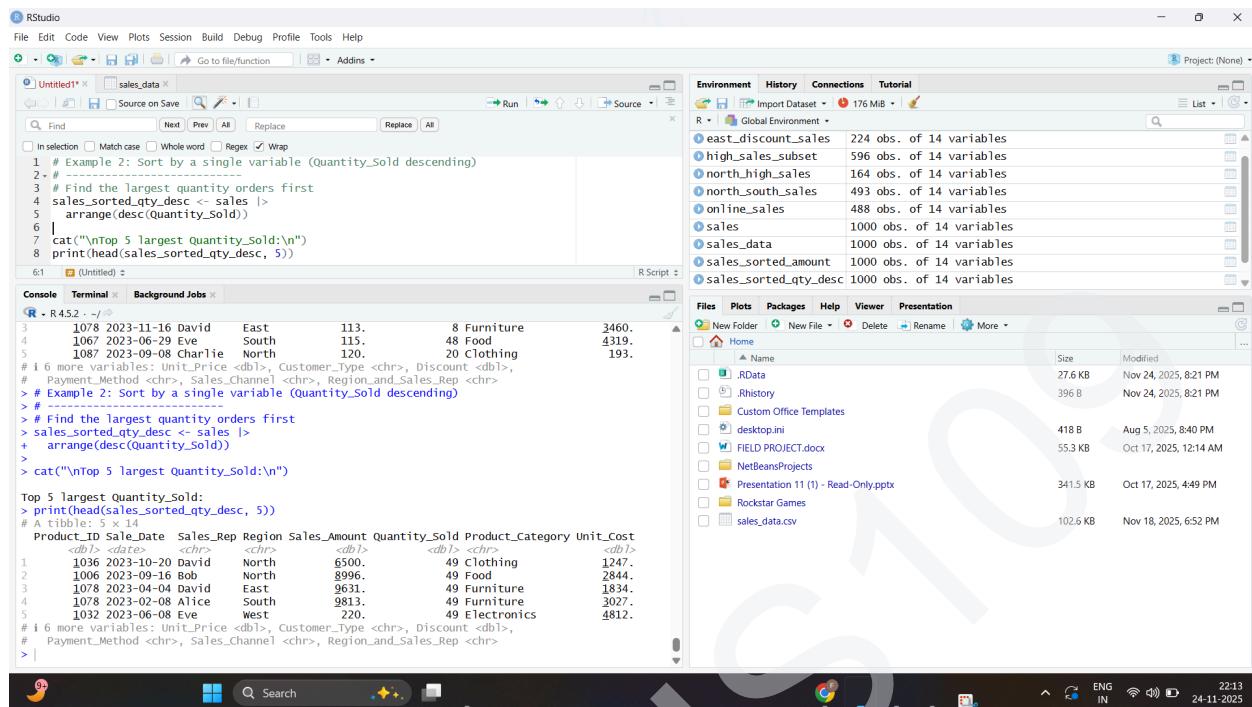
cat("\nTop 5 largest Quantity_Sold:\n")
print(head(sales_sorted_qty_desc, 5))

```

## OUTPUT

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The screenshot shows the RStudio interface. The top menu bar includes File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help, and Addins. The main area has tabs for 'Untitled1' and 'sales\_data'. The 'Code' tab contains R code for sorting data frames. The 'Console' tab shows the output of the R code, displaying sorted data frames and their sizes. The 'Environment' tab lists various objects in the global environment. The bottom status bar shows the date and time as 24-11-2025 22:13.

```

# Example 2: Sort by a single variable (Quantity_Sold descending)
# Find the largest quantity orders first
sales_sorted_qty_desc <- sales |>
  arrange(desc(Quantity_Sold))
|> cat("\nTop 5 largest Quantity_Sold:\n")
print(head(sales_sorted_qty_desc, 5))

# Example 2: Sort by a single variable (Quantity_Sold descending)
# Find the largest quantity orders first
sales_sorted_qty_desc <- sales |>
  arrange(desc(Quantity_Sold))
|> cat("\nTop 5 largest Quantity_Sold:\n")

Top 5 largest Quantity_Sold:
> print(head(sales_sorted_qty_desc, 5))
# A tibble: 5 × 14
  Product_ID Sales_Date Sales_Rep Region Sales_Amount Quantity_Sold Product_Category Unit_Cost
  <dbl>     <date>    <chr>   <chr>      <dbl>        <dbl>           <chr>       <dbl>
1     1036 2023-10-20 David    North     6500.        49 Clothing        1247.
2     1006 2023-09-16 Rob      North     8096.        49 Food           2844.
3     1078 2023-04-04 David    East      9631.        49 Furniture       1834.
4     1078 2023-02-08 Alice    South     9813.        49 Furniture       3027.
5     1032 2023-06-08 Eve      West      220.         49 Electronics     4812.

# i 6 more variables: Unit_Price <dbl>, Customer_Type <chr>, Discount <dbl>,
# Payment_Method <chr>, Sales_Channel <chr>, Region_and_Sales_Rep <chr>
|>

```

### INPUT

```

# Example 3: Sort by multiple columns (Region then Sales_Amount descending)
# -----
# Primary sort: Region (alphabetical)
# Secondary sort: Sales_Amount (highest first)
sales_multi_sort <- sales |>
  arrange(Region, desc(Sales_Amount))

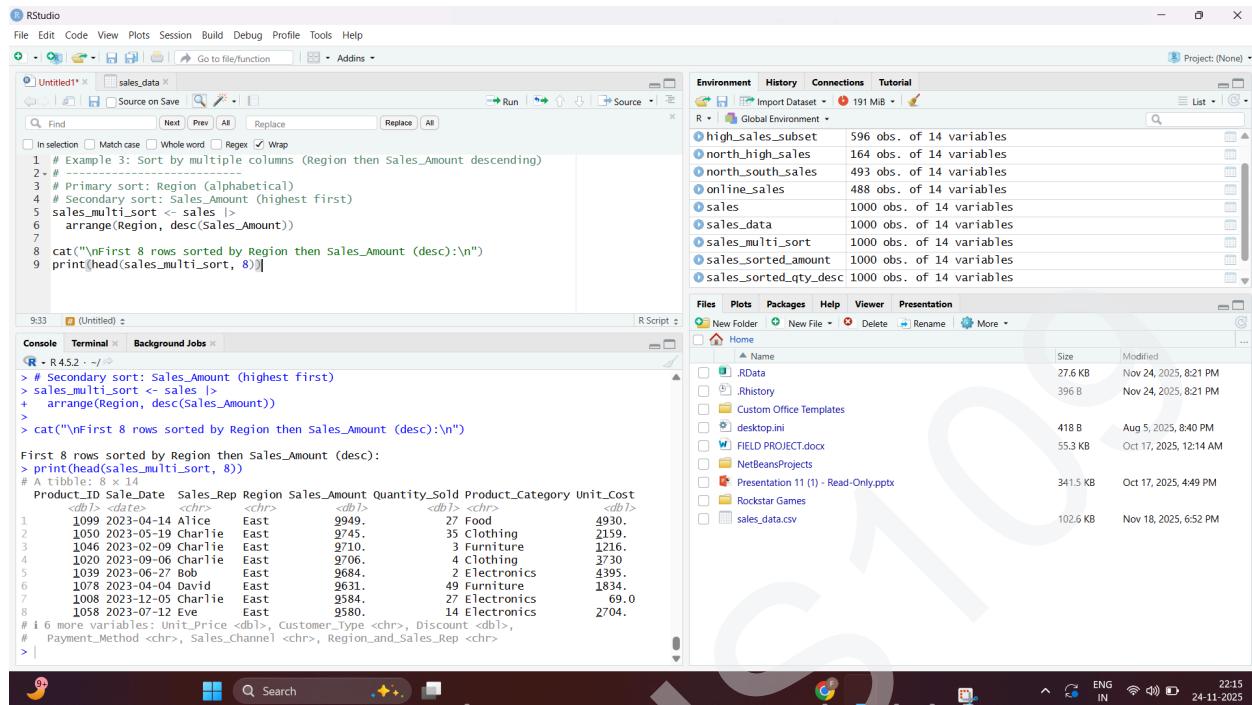
cat("\nFirst 8 rows sorted by Region then Sales_Amount (desc):\n")
print(head(sales_multi_sort, 8))

```

### OUTPUT

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### INPUT

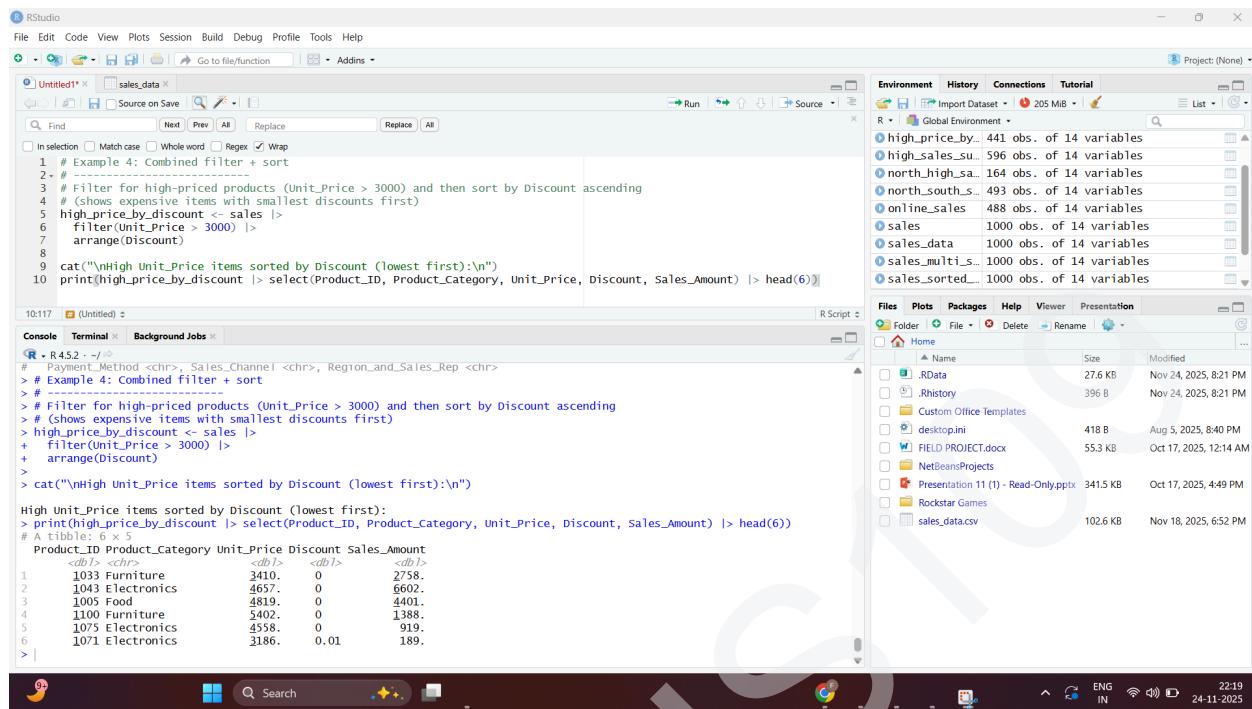
```
# Example 4: Combined filter + sort
# -----
# Filter for high-priced products (Unit_Price > 3000) and then sort by Discount ascending
# (shows expensive items with smallest discounts first)
high_price_by_discount <- sales |>
  filter(Unit_Price > 3000) |>
  arrange(Discount)

cat("\nHigh Unit_Price items sorted by Discount (lowest first):\n")
print(high_price_by_discount |> select(Product_ID, Product_Category, Unit_Price, Discount,
  Sales_Amount) |> head(6))
```

### OUTPUT

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The screenshot shows the RStudio interface. The top menu bar includes File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help, and Addins. The main workspace shows an R script named "Untitled1.R" with the following code:

```

1 # Example 4: Combined filter + sort
2 # -----
3 # Filter for high-priced products (Unit_Price > 3000) and then sort by Discount ascending
4 # (Shows expensive items with smallest discounts first)
5 high_price_by_discount <- sales |>
6   filter(Unit_Price > 3000) |>
7   arrange(Discount)
8
9 cat("\nHigh Unit_Price items sorted by Discount (lowest first):\n")
10 print(high_price_by_discount |> select(Product_ID, Product_Category, Unit_Price, Discount, Sales_Amount) |> head(6))

```

The console output shows the results of the R code execution:

```

#> Payment_Method <chr>, Sales_Channel <chr>, Region_and_Sales_Rep <chr>
#> # Example 4: Combined filter + sort
#> -----
#> # Filter for high-priced products (Unit_Price > 3000) and then sort by Discount ascending
#> # (Shows expensive items with smallest discounts first)
#> high_price_by_discount <- sales |>
#>   filter(Unit_Price > 3000) |>
#>   arrange(Discount)
#>
#> cat("\nHigh Unit_Price items sorted by Discount (lowest first):\n")
High Unit_Price items sorted by Discount (lowest first):
#> print(high_price_by_discount |> select(Product_ID, Product_Category, Unit_Price, Discount, Sales_Amount) |> head(6))
#> # A tibble: 6 × 5
#>   Product_ID Product_Category Unit_Price Discount Sales_Amount
#>       <dbl> <chr>        <dbl>     <dbl>      <dbl>
1     1033 Furniture        3410.     0.        2758.
2     1043 Electronics       4657.     0.        6602.
3      1005 Food            4819.     0.        4401.
4     1100 Furniture        5402.     0.        1388.
5     1075 Electronics       4558.     0.        919.
6     1071 Electronics       3186.    0.01       189.

```

The right pane shows the file browser with various R datasets and files listed.

## INPUT

```

# Example 5: Another useful one — top 10 sales by Sales_Amount overall
# -----
top10_sales <- sales |>
  arrange(desc(Sales_Amount)) |>
  slice_head(n = 10)

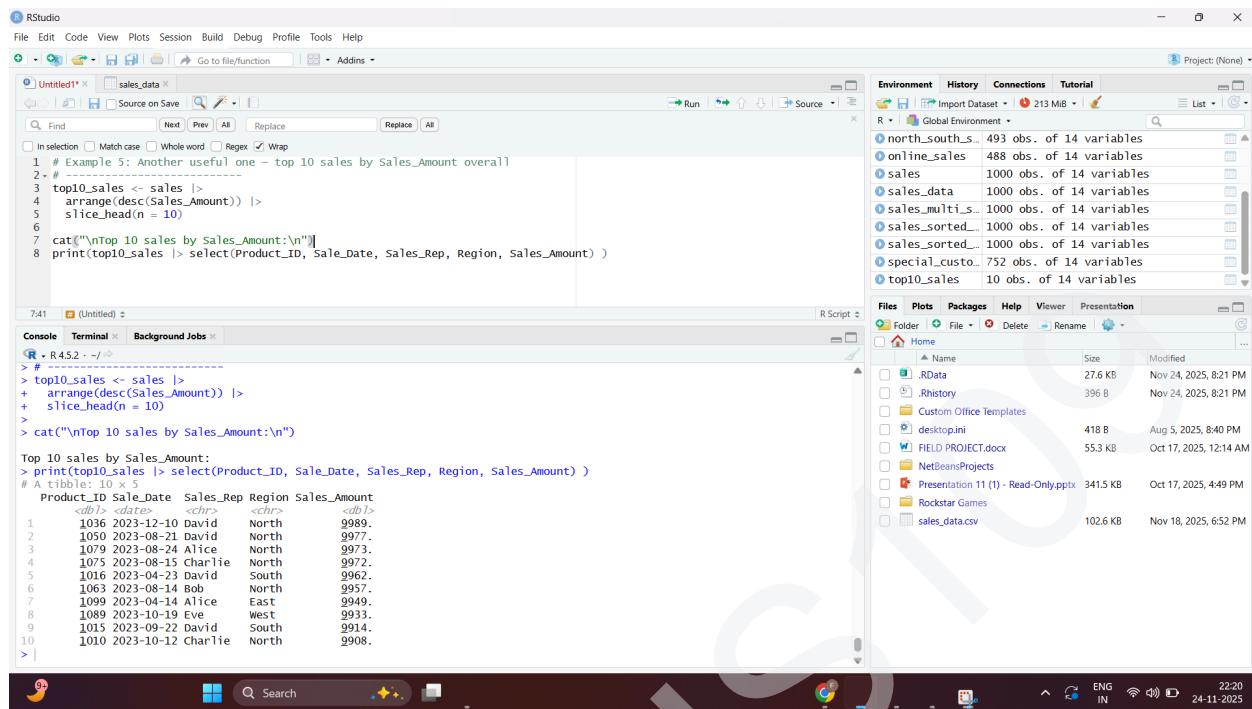
cat("\nTop 10 sales by Sales_Amount:\n")
print(top10_sales |> select(Product_ID, Sale_Date, Sales_Rep, Region, Sales_Amount) )

```

## OUTPUT

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The screenshot shows the RStudio interface. The top menu bar includes File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help, and Addins. The main area has tabs for sales\_data (script editor), Environment, History, Connections, and Tutorial. The Environment tab lists various datasets like north\_south\_s... and sales\_sorted.... The Files tab shows a file browser with files like .RData, .Rhistory, and FIELD PROJECT.docx. The Terminal tab displays R code and its output, which is a table of top 10 sales.

```

# Example 5: Another useful one - top 10 sales by Sales_Amount overall
# -----
top10_sales <- sales |>
  arrange(desc(Sales_Amount)) |>
  slice_head(n = 10)
cat("\nTop 10 sales by Sales_Amount:\n")
print(top10_sales |> select(Product_ID, Sale_Date, Sales_Rep, Region, Sales_Amount))

```

Product_ID	Sale_Date	Sales_Rep	Region	Sales_Amount
1036	2023-12-10	David	North	9989.
1001	2023-10-21	David	North	997.
1079	2023-08-24	Alice	North	9973.
1075	2023-08-15	Charlie	North	9972.
1016	2023-04-23	David	South	9962.
1063	2023-08-14	Bob	North	9957.
1099	2023-04-14	Alice	East	9949.
1089	2023-10-19	Eve	West	9933.
1015	2023-09-22	David	South	9914.
1010	2023-10-12	Charlie	North	9908.

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