

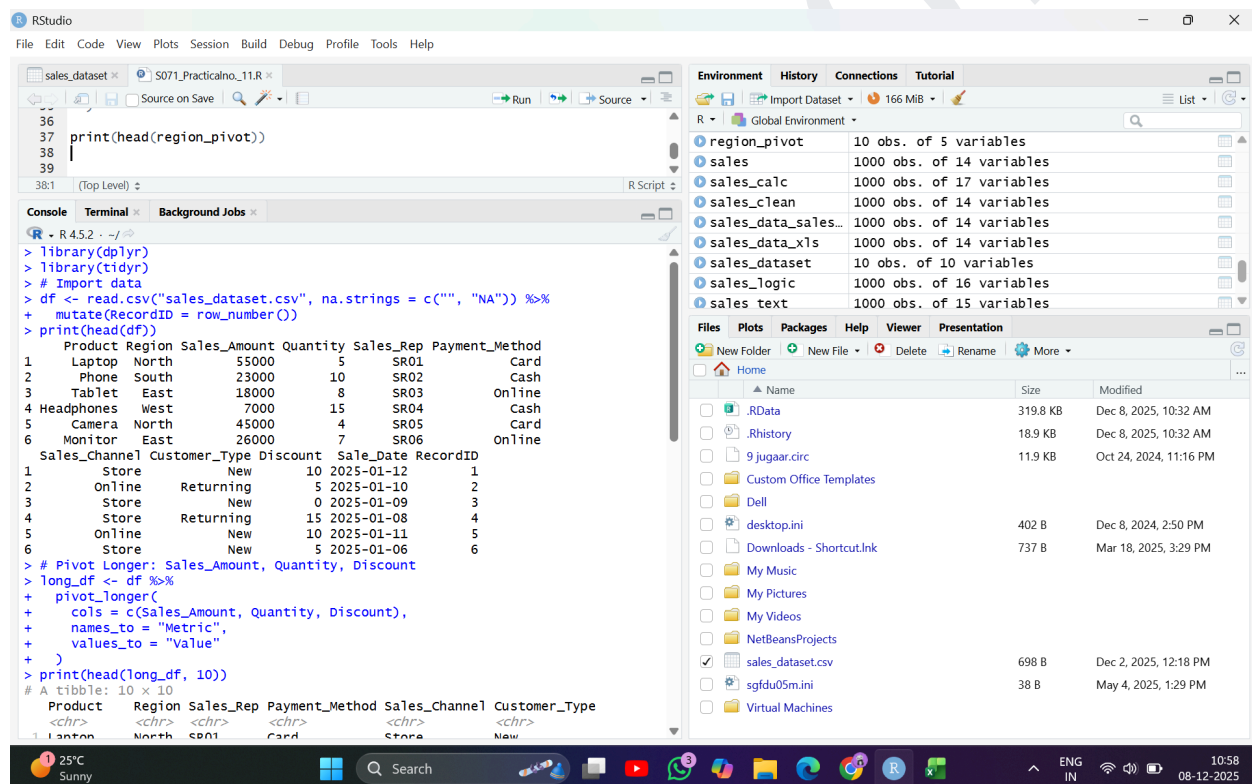
# SHETH L.U.J AND SIR M.V COLLEGE

Subject: Data Analysis with SAS / SPSS /R

## Practical no. 11

Aim: Reshaping data using  
pivot\_longer()/pivot\_wider() (R).

Outputs→



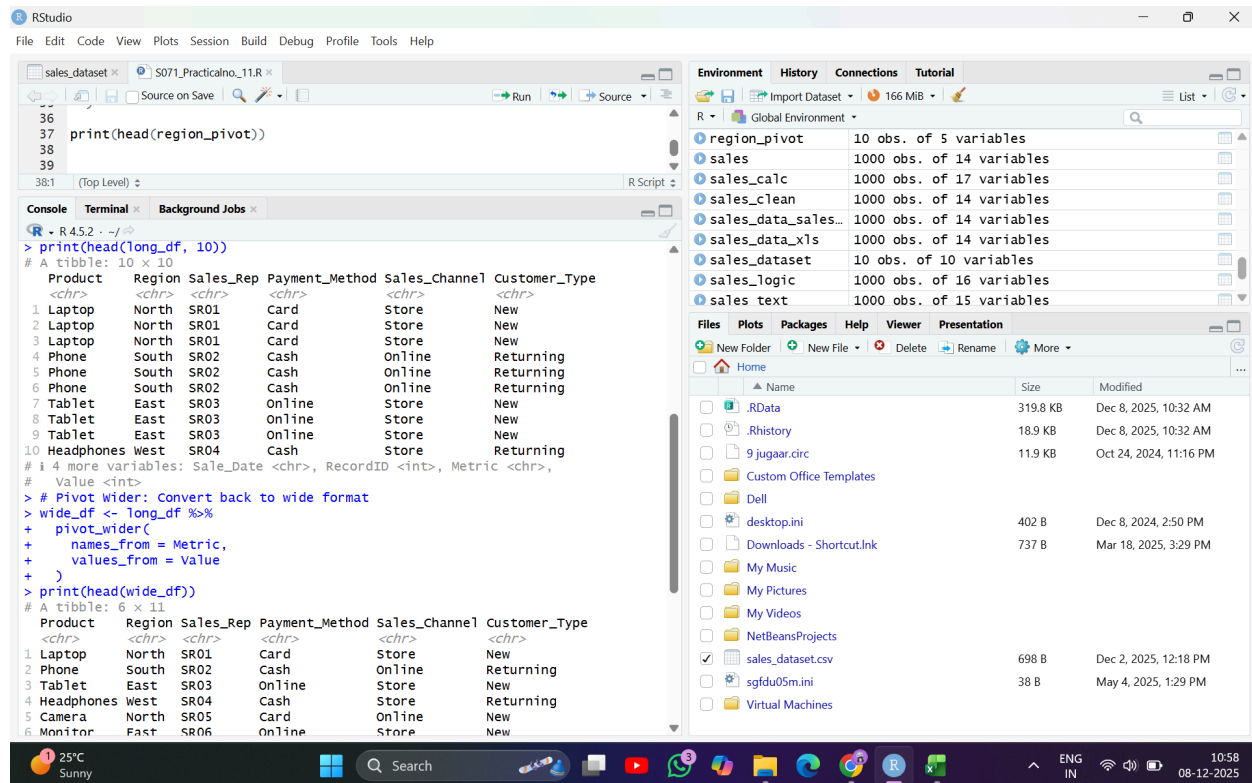
The screenshot shows the RStudio interface with the following components:

- Source Editor:** Contains R code for loading data and performing pivot operations.
- Console:** Displays the output of the R code, including the head of the original data frame and the reshaped data frame.
- Environment:** Lists the objects in the R environment, including the reshaped data frame.
- Files:** Shows the file explorer with the source data file.

```
36 print(head(region_pivot))
37
38
39
38.1 (Top Level)
R Script
R - R 4.5.2 - ~/
> library(dplyr)
> library(tidyr)
> # Import data
> df <- read.csv("sales_dataset.csv", na.strings = c("", "NA")) %>%
+   mutate(RecordID = row_number())
> print(head(df))
  Product Region Sales_Amount Quantity Sales_Rep Payment_Method
1  Laptop North      55000         5      SR01      Card
2   Phone South      23000        10      SR02      Cash
3 Tablet East      18000         8      SR03 Online
4 Headphones West       7000        15      SR04      Cash
5   Camera North      45000         4      SR05      Card
6  Monitor East      26000         7      SR06 Online
  Sales_Channel Customer_Type Discount Sale_Date RecordID
1      Store      New      10 2025-01-12         1
2 Online      Returning      5 2025-01-10         2
3      Store      New      0 2025-01-09         3
4      Store      Returning    15 2025-01-08         4
5 Online      New      10 2025-01-11         5
6      Store      New      5 2025-01-06         6
> # Pivot Longer: Sales_Amount, Quantity, Discount
> long_df <- df %>%
+   pivot_longer(
+     cols = c(Sales_Amount, Quantity, Discount),
+     names_to = "Metric",
+     values_to = "Value"
+   )
> print(head(long_df, 10))
# A tibble: 10 x 10
  Product Region Sales_Rep Payment_Method Sales_Channel Customer_Type
  <chr>    <chr>    <chr>    <chr>    <chr>    <chr>
1 Laptop North  SR01      Card      Store      New
```

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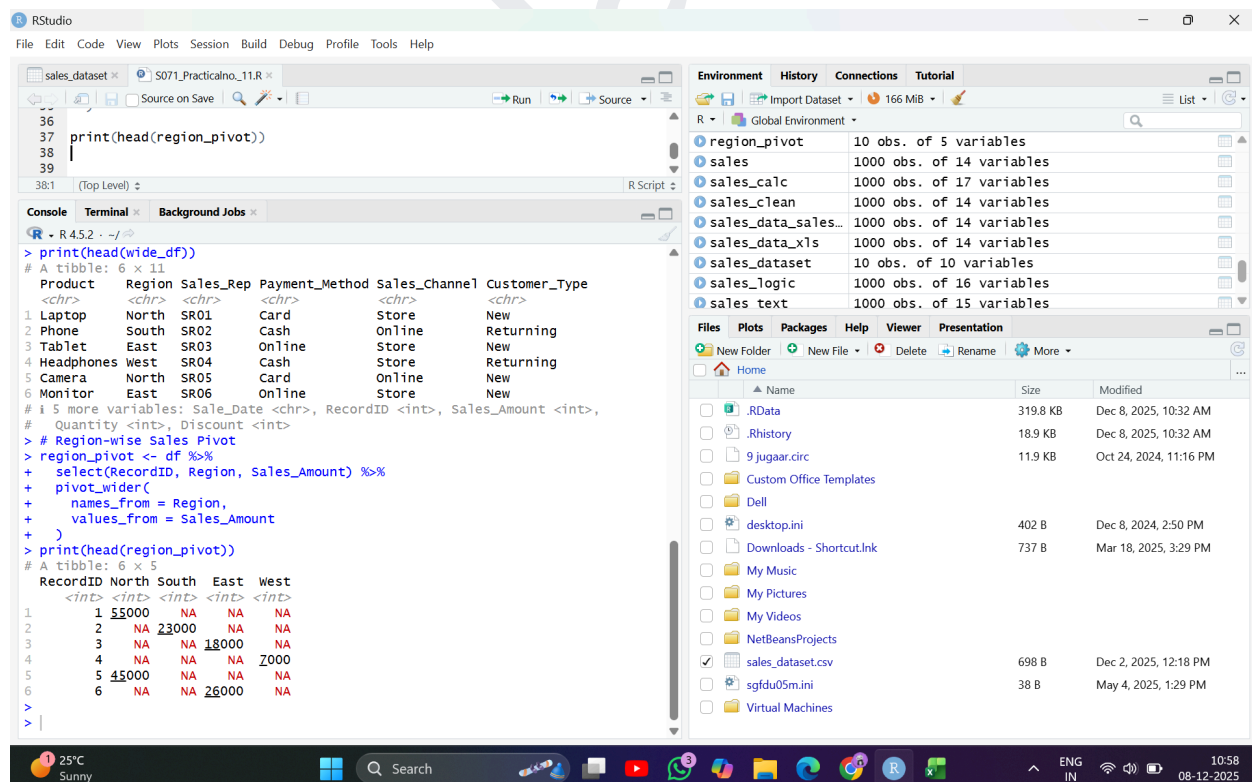
RStudio interface showing the initial data analysis steps. The console displays the following code and output:

```
> print(head(long_df, 10))
# A tibble: 10 x 10
  Product Region Sales_Rep Payment_Method Sales_Channel Customer_Type
  <chr>    <chr>    <chr>    <chr>    <chr>    <chr>
1 Laptop North SR01 Card Store New
2 Laptop North SR01 Card Store New
3 Laptop North SR01 Card Store New
4 Phone South SR02 Cash Online Returning
5 Phone South SR02 Cash Online Returning
6 Phone South SR02 Cash Online Returning
7 Tablet East SR03 Online Store New
8 Tablet East SR03 Online Store New
9 Tablet East SR03 Online Store New
10 Headphones West SR04 Cash Store Returning

# i 4 more variables: Sale_Date <chr>, RecordID <int>, Metric <chr>,
# Value <int>
> # Pivot Wider: Convert back to wide format
> wide_df <- long_df %>%
+   pivot_wider(
+     names_from = Metric,
+     values_from = Value
+   )
> print(head(wide_df))
# A tibble: 6 x 11
  Product Region Sales_Rep Payment_Method Sales_Channel Customer_Type
  <chr>    <chr>    <chr>    <chr>    <chr>    <chr>
1 Laptop North SR01 Card Store New
2 Phone South SR02 Cash Online Returning
3 Tablet East SR03 Online Store New
4 Headphones West SR04 Cash Store Returning
5 Camera North SR05 Card Online New
6 Monitor East SR06 Online Store New
```

The Environment pane shows the following datasets:

Dataset	Obs	Vars
region_pivot	10	5
sales	1000	14
sales_calc	1000	17
sales_clean	1000	14
sales_data_sales...	1000	14
sales_data_xls	1000	14
sales_dataset	10	10
sales_logic	1000	16
sales_text	1000	15



RStudio interface showing the final data analysis steps. The console displays the following code and output:

```
> print(head(wide_df))
# A tibble: 6 x 11
  Product Region Sales_Rep Payment_Method Sales_Channel Customer_Type
  <chr>    <chr>    <chr>    <chr>    <chr>    <chr>
1 Laptop North SR01 Card Store New
2 Phone South SR02 Cash Online Returning
3 Tablet East SR03 Online Store New
4 Headphones West SR04 Cash Store Returning
5 Camera North SR05 Card Online New
6 Monitor East SR06 Online Store New

# i 5 more variables: Sale_Date <chr>, RecordID <int>, Sales_Amount <int>,
# Quantity <int>, Discount <int>
> # Region-wise Sales Pivot
> region_pivot <- df %>%
+   select(RecordID, Region, Sales_Amount) %>%
+   pivot_wider(
+     names_from = Region,
+     values_from = Sales_Amount
+   )
> print(head(region_pivot))
# A tibble: 6 x 5
  RecordID North South East West
  <int>    <int>    <int>    <int>
1 1 5000 NA NA NA
2 2 NA 23000 NA NA
3 3 NA NA 18000 NA
4 4 NA NA NA 2000
5 5 45000 NA NA NA
6 6 NA NA 26000 NA
```

The Environment pane shows the following datasets:

Dataset	Obs	Vars
region_pivot	10	5
sales	1000	14
sales_calc	1000	17
sales_clean	1000	14
sales_data_sales...	1000	14
sales_data_xls	1000	14
sales_dataset	10	10
sales_logic	1000	16
sales_text	1000	15