

### PRACTICAL NO : 11

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

The screenshot shows the RStudio interface with the following details:

- Console:** Displays R code demonstrating the use of `pivot\_longer()` and its output.
- Data View:** Shows a table titled "category\_pivot" with columns: "InvoiceIndex", "Product.line", "Unit.price", and "Tax.5.".
- Environment View:** Lists various objects including "category\_pivot", "clean\_omit", "clean\_replace", "combined\_data", "data\_feb", and "data\_jan".
- File View:** Shows a file tree with files like "SuperMarket Analysis.csv", "TCN 1.D.pdf", and "train.csv.zip".
- Bottom Status Bar:** Shows system information including battery level (8 25%), language (ENG IN), and date/time (08-12-2025 10:45).

```

R - R 4.5.2 - ~/ ~
> library(dplyr)
> # Read data and add an InvoiceIndex (Essential for tracking rows during pivots)
> df <- read.csv("Downloads/SuperMarket Analysis.csv",
+                 na.strings = c("", "NA")) %>%
+   mutate(InvoiceIndex = row_number()) %>%
+   select(-c(InvoiceIndex, Product.line, unit.price, Tax.5.))
> print("--- 1. original wide Data ---")
[1] "--- 1. original wide Data ---"
> print(head(df))
#>
#> # Combine 'unit.price' and 'Tax.5.' into long format
> long_df <- df %>%
+   pivot_longer(
+     cols = c(unit.price, Tax.5.),
+     names_to = "Metric",
+     values_to = "value"
+   )
> print("--- 2. Long Format (pivot_longer) ---")
[1] "--- 2. Long Format (pivot_longer) ---"
> print(head(long_df, 6))
#> # A tibble: 6 × 4
#>   InvoiceIndex Product.line Metric    value
#>   <int> <chr>        <chr>    <dbl>
#> 1 1       Health and beauty unit.price 74.7
#> 2 1       Health and beauty Tax.5.      26.1
#> 3 2       Electronic accessories unit.price 15.3
#> 4 2       Electronic accessories Tax.5.      3.82
#> 5 3       Home and lifestyle   unit.price 46.3
#> 6 3       Home and lifestyle   Tax.5.      16.2
  
```

The screenshot shows the RStudio interface with the following details:

- Console:** Displays R code demonstrating the use of `pivot\_wider()` and its output.
- Data View:** Shows a table titled "category\_pivot" with columns: "InvoiceIndex", "Product.line", "Metric", and "value".
- Environment View:** Lists various objects including "category\_pivot", "clean\_omit", "clean\_replace", "combined\_data", "data\_feb", and "data\_jan".
- File View:** Shows a file tree with files like "SuperMarket Analysis.csv", "TCN 1.D.pdf", and "train.csv.zip".
- Bottom Status Bar:** Shows system information including battery level (8 25%), language (ENG IN), and date/time (08-12-2025 10:45).

```

R - R 4.5.2 - ~/ ~
> print(head(long_df, 6))
#> # A tibble: 6 × 4
#>   InvoiceIndex Product.line Metric    value
#>   <int> <chr>        <chr>    <dbl>
#> 1 1       Health and beauty unit.price 74.7
#> 2 1       Health and beauty Tax.5.      26.1
#> 3 2       Electronic accessories unit.price 15.3
#> 4 2       Electronic accessories Tax.5.      3.82
#> 5 3       Home and lifestyle   unit.price 46.3
#> 6 3       Home and lifestyle   Tax.5.      16.2
> wide_df <- long_df %>%
+   pivot_wider(
+     names_from = Metric,
+     values_from = value
+   )
> print("--- 3. wide Format (Back to original) ---")
[1] "--- 3. wide Format (Back to original) ---"
> print(head(wide_df))
#> # A tibble: 6 × 4
#>   InvoiceIndex Product.line Unit.price Tax.5.
#>   <int> <chr>        <dbl>    <dbl>
#> 1 1       Health and beauty    74.7    26.1
#> 2 2       Electronic accessories 15.3    3.82
#> 3 3       Home and lifestyle   46.3    16.2
#> 4 4       Health and beauty    58.2    23.3
#> 5 5       Sports and travel    86.3    30.2
#> 6 6       Electronic accessories 85.4    29.9
> df_clean <- df %>%
+   mutate(Product.line = ifelse(is.na(Product.line), "unknown", Product.line))
> category_pivot <- df_clean %>%
+   select(-c(InvoiceIndex, Product.line, unit.price)) %>%
+   pivot_wider(
+     names_from = Product.line,
+     values_from = unit.price
+   )
  
```

Sheth L.U.J. College of Arts & Sir M.V. College Of Science & Commerce  
SUBJECT NAME: Data Analysis with SAS / SPSS/R



RStudio

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Source

Console Terminal Background Jobs

R 4.5.2 ~/

```
[1] "--- 3. wide Format (Back to original) ---"
> print(head(wide_df))
# A tibble: 6 × 4
#>   InvoiceIndex Product.line     unit.price Tax.5.
#>   <int> <chr>           <dbl>    <dbl>
#> 1      1 Health and beauty    74.7    26.1
#> 2      2 Electronic accessories 15.3    3.82
#> 3      3 Home and lifestyle   46.3    16.2
#> 4      4 Health and beauty    58.2    23.3
#> 5      5 Sports and travel    86.3    30.2
#> 6      6 Electronic accessories 85.4    29.9
> df_clean <- df %>%
+   mutate(Product.line = ifelse(is.na(Product.line), "Unknown", Product.line))
> category_pivot <- df_clean %>%
+   select(InvoiceIndex, Product.line, unit.price) %>%
+   pivot_wider(
+     names_from = Product.line,
+     values_from = unit.price
+   )
> print("--- 4. Category Pivot (Spreading categories) ---")
[1] "--- 4. Category Pivot (Spreading categories) ---"
> print(head(category_pivot))
# A tibble: 6 × 7
#>   InvoiceIndex `Health and beauty` `Electronic accessories` `Home and lifestyle` 
#>   <int>          <dbl>            <dbl>            <dbl>      
#> 1      1            74.7             NA              NA
#> 2      2             NA              15.3             NA
#> 3      3             NA              NA              46.3
#> 4      4            58.2             NA              NA
#> 5      5             NA              NA              NA
#> 6      6             NA              85.4             NA
# i 3 more variables: `Sports and travel` <dbl>, `Food and beverages` <dbl>,
# "Fashion accessories" <dbl>
> |
```

Environment History Connections Tutorial

Import Dataset 245 MB

Data

- category\_pivot 1000 obs. of 7 variables
- clear\_omfit 1338 obs. of 7 variables
- clean\_replace 1338 obs. of 7 variables
- combined\_data 35893 obs. of 2 variables
- data\_feb 8190 obs. of 12 variables
- data\_jan 1000 obs. of 17 variables

Files Plots Packages Help Viewer Presentation

New Folder New File Delete Rename More

Home Downloads

Name	Size	Modified
SuperMarket Analysis.csv	137 KB	Dec 1, 2025, 10:50 AM
TCN 1.D.pdf	209.2 KB	Nov 27, 2025, 3:28 PM
train.csv.zip	22 B	Nov 25, 2025, 12:21 PM
Unconfirmed 187290.crdownload	756.9 MB	Dec 5, 2025, 2:02 PM
Unnati prac 1.pdf.odt	5 MB	Nov 13, 2025, 9:30 AM
Unnati prac 1.pdf.pdf	1.7 MB	Nov 13, 2025, 9:30 AM
Untitled document (1).pdf	1.7 MB	Nov 13, 2025, 9:29 AM
Untitled document.pdf	39.6 KB	Nov 12, 2025, 3:35 PM
WhatsApp Unknown 2025-11-18 at 9.41.15 AM		
WhatsApp Unknown 2025-11-18 at 9.41.15 AM.zip	1013.5 KB	Nov 18, 2025, 11:45 AM
Whols		
Whols.zip	585.1 KB	Nov 12, 2025, 2:24 PM
penguins_iter.csv	49.7 KB	Dec 8, 2025, 10:34 AM
surveys.csv	997.7 KB	Dec 8, 2025, 10:36 AM

ENG IN 10:45 08-12-2025