

AIM - 11. Reshaping data using pivot\_longer() and pivot\_wider() (R).

INPUT -

```
library(dplyr)
```

```
library(tidyr)
```

```
df <- read.csv("Walmart_Sales.csv", na.strings = c("", "NA")) %>%  
  mutate(SaleID = dplyr::row_number()) %>%  
  select(SaleID, Store, Weekly_Sales, Temperature)
```

```
print("--- 1. Original Wide Data ---")  
print(head(df))
```

```
long_df <- df %>%  
  pivot_longer(  
    cols = c(Weekly_Sales, Temperature),  
    names_to = "Metric",  
    values_to = "Value"  
  )
```

```
print("--- 2. Long Format (pivot_longer) ---")  
print(head(long_df, 6))
```

```
wide_df <- long_df %>%  
  pivot_wider(  
    names_from = Metric,  
    values_from = Value  
  )
```

```
print("--- 3. Wide Format (Back to Original) ---")  
print(head(wide_df))
```

```
df_clean <- df %>%  
  mutate(Store = ifelse(is.na(Store), "Unknown", Store))
```

```
category_pivot <- df_clean %>%  
  select(SaleID, Store, Weekly_Sales) %>%  
  pivot_wider(  
    names_from = Store,  
    values_from = Weekly_Sales  
  )
```

```
print("--- 4. Store Pivot (Spreading Stores) ---")
```

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```
print(head(category_pivot))
```

The screenshot shows the RStudio interface with the following code in the script editor:

```
1 library(dplyr)
2 library(tidyverse)
3
4 df <- read.csv("walmart_sales.csv", na.strings = c("", "NA")) %>%
5   mutate(SaleID = dplyr::row_number()) %>%
6   select(SaleID, Store, weekly_Sales, Temperature)
7
8 print("--- 1. Original wide Data ---")
9 print(head(df))
10
11 long_df <- df %>%
12   pivot_longer(
13     cols = c(weekly_Sales, Temperature),
14     names_to = "Metric",
15     values_to = "value"
16   )
17
18 print("--- 2. Long Format (pivot_longer) ---")
19 print(head(long_df, 6))
20
21 wide_df <- long_df %>%
22   pivot_wider(
23     names_from = Metric,
24     values_from = value
25   )
26
27 print("--- 3. Wide Format (back to original) ---")
28 print(head(wide_df))
29
30 df_clean <- df %>%
31   mutate(Store = ifelse(is.na(Store), "Unknown", Store))
32
33 category_pivot <- df_clean %>%
34   select(SaleID, Store, weekly_Sales) %>%
35   pivot_wider(
36     names_from = Store,
37     values_from = weekly_Sales
38   )
39
40 print("--- 4. Store Pivot (Spreading Stores) ---")
41 print(head(category_pivot))
42
```

The Environment pane on the right shows the following objects:

Object	Size
category_pivot	6435 obs. of 46 variables
data_science_	42 obs. of 7 variables
df	6435 obs. of 4 variables
df_clean	6435 obs. of 4 variables
employee_sala_	50 obs. of 9 variables
iris_iris	150 obs. of 5 variables
long_df	12870 obs. of 4 variables
penguins	344 obs. of 9 variables
StudentsPerfo_	1000 obs. of 8 variables
wide_df	6435 obs. of 4 variables

OUTPUT -

The screenshot shows the RStudio interface with the following output in the console:

```
> getwd()
[1] "C:/Users/itlab/OneDrive/Documents"
> library(dplyr)
> library(tidyverse)
> df <- read.csv("walmart_sales.csv", na.strings = c("", "NA")) %>%
+   mutate(SaleID = dplyr::row_number()) %>%
+   select(SaleID, Store, weekly_Sales, Temperature)
>
> print("--- 1. Original wide Data ---")
[1] "--- 1. Original wide Data ---"
> print(head(df))
  SaleID Store weekly_Sales Temperature
1      1    1    1643691      42.31
2      2    1    1641957      38.51
3      3    1    1611968      39.93
4      4    1    1409728      46.63
5      5    1    1554807      46.50
6      6    1    1439542      57.79
>
> long_df <- df %>%
+   pivot_longer(
+     cols = c(weekly_Sales, Temperature),
+     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 x 4
  SaleID Store Metric      value
  <int> <int> <chr> <dbl>
1      1    1 weekly_Sales 1643691.
2      1    1 Temperature    42.3
3      2    1 weekly_Sales 1641957.
4      2    1 Temperature    38.5
5      3    1 weekly_Sales 1611968.
6      3    1 Temperature    39.9
>
> wide_df <- long_df %>%
+   pivot_wider(
+     names_from = Metric,
+     values_from = value
+   )
>
```

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```
RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Go to file/function Addins
Project: (None)
Environment History Connections Tutorial
R Global Environment
Data
category_pivot 6435 obs. of 46 variables
data_science_ 42 obs. of 7 variables
df 6435 obs. of 4 variables
df_clean 6435 obs. of 4 variables
employee_sala_ 50 obs. of 9 variables
iris_iris 150 obs. of 5 variables
long_df 12870 obs. of 4 variables
penguins 344 obs. of 9 variables
studentsPerfo_ 1000 obs. of 8 variables
wide_df 6435 obs. of 4 variables
Files Plots Packages Help Viewer Presentation
Folder File Delete Rename
Home
Name Size Modified
.RData 18.7 KB Nov 29, 2025, 1:13 PM
.Rhistory 18.9 KB Dec 8, 2025, 10:43 AM
BookLatex 8.8 KB Oct 11, 2025, 12:54 PM
CLOSE.acddb 392 KB Oct 11, 2025, 10:46 AM
Custom Office Templates
Database1.acddb 420 KB Oct 11, 2025, 10:48 AM
Database2.acddb 192 KB Oct 11, 2025, 11:39 AM
desktop.ini 418 B Jun 6, 2025, 12:47 PM

Source
R - R452 - ~/
+ 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 x 4
  SaleID Store weekly_Sales Temperature
  <int> <int> <dbl> <dbl>
1     1     1  1643691.    42.3
2     2     1  1641957.    38.5
3     3     1  1611968.    39.9
4     4     1  1409728.    46.6
5     5     1  1354807.    46.5
6     6     1  1439542.    57.8
>
> df_clean <- df %>%
+   mutate(Store = ifelse(is.na(Store), "unknown", Store))
>
> category_pivot <- df_clean %>%
+   select(SaleID, Store, weekly_Sales) %>%
+   pivot_wider(
+     names_from = Store,
+     values_from = weekly_Sales
+   )
>
> print("---- 4. Store Pivot (Spreading Stores) ----")
[1] "---- 4. Store Pivot (Spreading Stores) ----"
> print(head(category_pivot))
# A tibble: 6 x 46
  SaleID   '1'   '2'   '3'   '4'   '5'   '6'   '7'   '8'   '9'  '10'  '11'  '12'  '13'  '14'  '15'  '16'  '17'  '18'  '19'  '20'
  <int> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl> <dbl>
1     1  1643691. NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA
2     2  1641957. NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA
3     3  1611968. NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA
4     4  1409728. NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA
5     5  1354807. NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA
6     6  1439542. NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA
# I 25 more variables: '21' <dbl>, '22' <dbl>, '23' <dbl>, '24' <dbl>, '25' <dbl>, '26' <dbl>, '27' <dbl>, '28' <dbl>, '29' <dbl>,
# '30' <dbl>, '31' <dbl>, '32' <dbl>, '33' <dbl>, '34' <dbl>, '35' <dbl>, '36' <dbl>, '37' <dbl>, '38' <dbl>, '39' <dbl>,
# '40' <dbl>, '41' <dbl>, '42' <dbl>, '43' <dbl>, '44' <dbl>, '45' <dbl>
>|
```

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