

**MVLU COLLEGE**  
**Data analysis with SAS/SSPR/R**  
**PRACTICAL NO.11**

**Aim:**11. Reshaping data using pivot\_longer()/pivot\_wider() (R).

**INPUT:**

```
library(dplyr)
library(tidyr)

df <- read.csv("D:/S119/DATA ANAN/Amazon.csv", na.strings = c("", "NA")) %>%
  mutate(ProductID = row_number()) %>%
  select(ProductID, Category, UnitPrice, Discount)

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

long_df <- df %>%
  pivot_longer(
    cols = c(UnitPrice, Discount),
    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(Category = ifelse(is.na(Category), "Unknown", Category))

category_pivot <- df_clean %>%
  select(ProductID, Category, UnitPrice) %>%
  pivot_wider(
    names_from = Category,
    values_from = UnitPrice
```

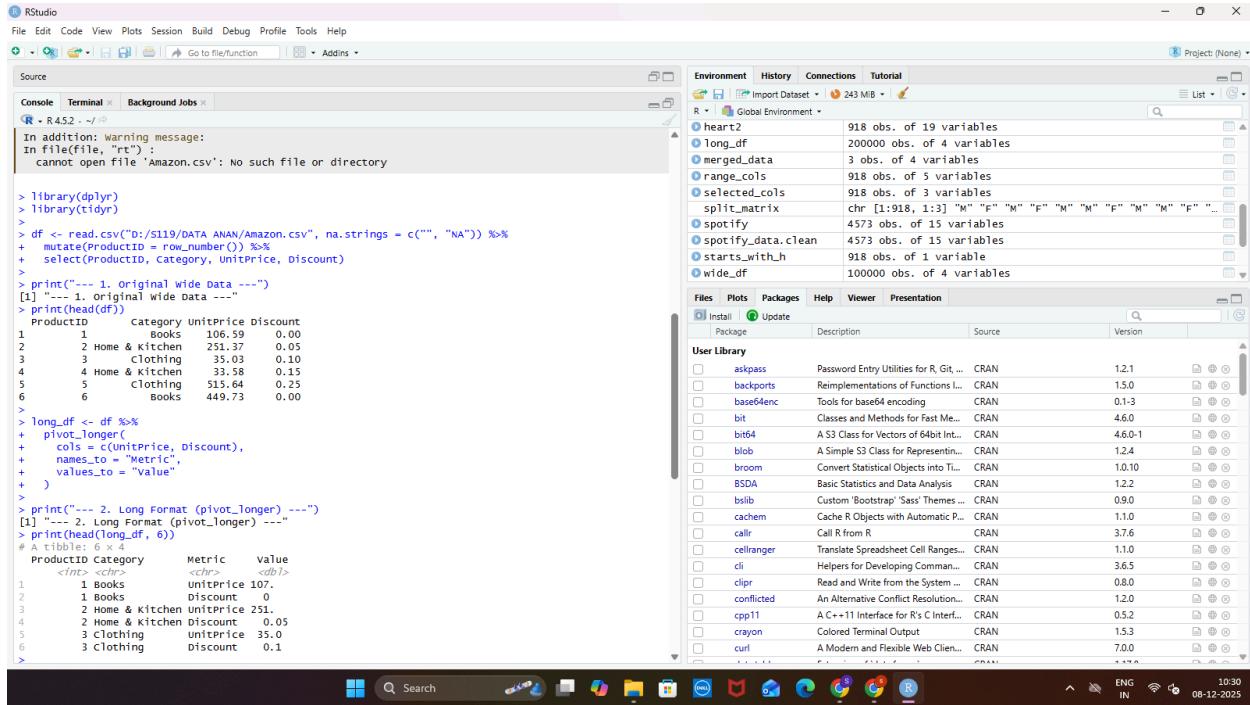
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)

```
print("--- 4. Category Pivot (Spreading Categories) ---")
print(head(category_pivot))
```

## OUTPUT:



The screenshot shows the RStudio interface with the following sections visible:

- Console:** Displays R code and its output. The output shows an error message about a missing file, followed by the creation of a long-format data frame from a wide-format CSV file.
- Environment:** Shows a list of objects in the global environment, including `heart2`, `long_df`, `merged_data`, `range_cols`, `selected_cols`, `split_matrix`, `spotify`, `spotify_data_clean`, `starts_with_h`, and `wide_df`.
- Packages:** Shows the CRAN User Library with various packages listed by name, version, and source.

# MVLU COLLEGE

## Data analysis with SAS/SSPR/R

### PRACTICAL NO.11

The screenshot shows the RStudio interface with the following details:

- File Menu:** File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help.
- Source Tab:** Contains R code for data manipulation and analysis.
- Environment Tab:** Shows the Global Environment with various objects and their descriptions.
- Files Tab:** Shows the User Library with a list of packages, their descriptions, sources, and versions.
- System Status:** Shows system information like ENG IN, 10:31, and 08-12-2025.

```

R - R.4.5.2 - ~/
+ cols = c(UnitPrice, Discount),
+ 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
  ProductID Category     Metric   value
<int> <chr>       <chr>    <dbl>
1     1 Books        UnitPrice 107.
2     1 Books        Discount    0
3     2 Home & Kitchen UnitPrice 251.
4     2 Home & Kitchen Discount   0.05
5     3 Clothing     UnitPrice 35.0
6     3 Clothing     Discount    0.1
>
> 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
  ProductID Category     UnitPrice Discount
<int> <chr>       <dbl>    <dbl>
1     1 Books        107.      0
2     2 Home & Kitchen 251.     0.05
3     3 Clothing     35.0     0.1
4     4 Home & Kitchen 33.6     0.15
5     5 Clothing     516.     0.25
6     6 Books        450.      0
>
> df_clean <- df %>%
+   mutate(Category = ifelse(is.na(category), "Unknown", category))
>
> category_pivot <- df_clean %>%
+   select(-ProductID, -category, -UnitPrice) %>%
+   pivot_wider(
+     names_from = category,
+     values_from = UnitPrice
+   )
>
> print("--- 4. Category Pivot (Spreading categories) ---")
[1] "--- 4. Category Pivot (Spreading Categories) ---"
> print(head(category_pivot))
# A tibble: 6 × 4
  ProductID Books `Home & Kitchen` Clothing `Toys & Games` `Sports & Outdoors`
<int> <dbl> <dbl> <dbl> <dbl> <dbl>
1     1 107.    NA     NA     NA     NA
2     2 NA      251.    NA     NA     NA
3     3 NA      NA     35.0    NA     NA
4     4 NA      NA     33.6    NA     NA
5     5 NA      NA     516.    NA     NA
6     6 450.    NA     NA     NA     NA
# i 1 more variable: Electronics <dbl>
> |

```

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```

R - R.4.5.2 - ~/
+ 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
  ProductID Category     UnitPrice Discount
<int> <chr>       <dbl>    <dbl>
1     1 Books        107.      0
2     2 Home & Kitchen 251.     0.05
3     3 Clothing     35.0     0.1
4     4 Home & Kitchen 33.6     0.15
5     5 Clothing     516.     0.25
6     6 Books        450.      0
>
> df_clean <- df %>%
+   mutate(Category = ifelse(is.na(category), "Unknown", category))
>
> category_pivot <- df_clean %>%
+   select(-ProductID, -category, -UnitPrice) %>%
+   pivot_wider(
+     names_from = category,
+     values_from = UnitPrice
+   )
>
> print("--- 4. Category Pivot (Spreading categories) ---")
[1] "--- 4. Category Pivot (Spreading Categories) ---"
> print(head(category_pivot))
# A tibble: 6 × 4
  ProductID Books `Home & Kitchen` Clothing `Toys & Games` `Sports & Outdoors`
<int> <dbl> <dbl> <dbl> <dbl> <dbl>
1     1 107.    NA     NA     NA     NA
2     2 NA      251.    NA     NA     NA
3     3 NA      NA     35.0    NA     NA
4     4 NA      NA     33.6    NA     NA
5     5 NA      NA     516.    NA     NA
6     6 450.    NA     NA     NA     NA
# i 1 more variable: Electronics <dbl>
> |

```