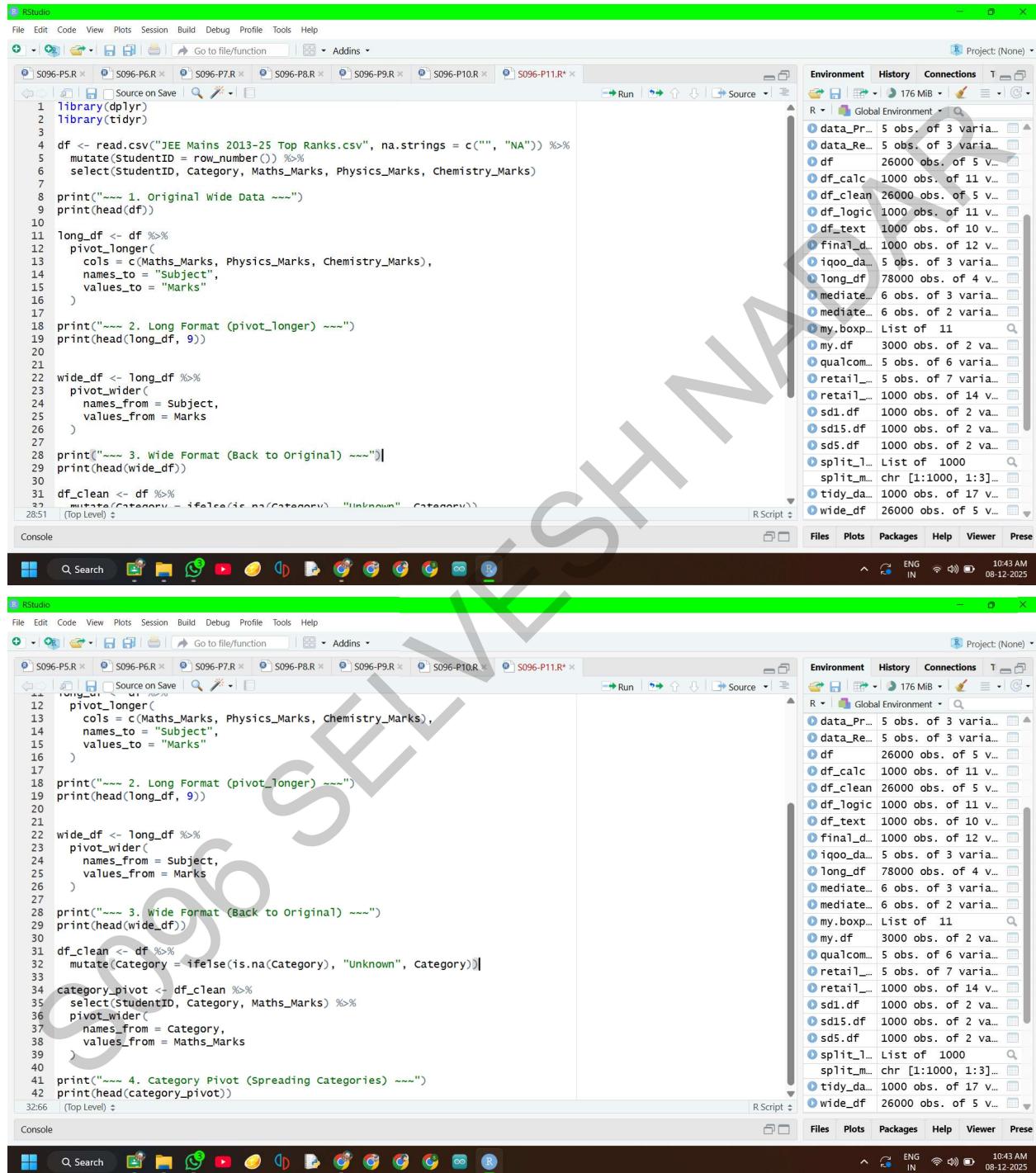


SHETH L.U.J. AND SIR M.V. COLLEGE
DATA ANALYSIS WITH SAS/SPSS/RR

PRACTICAL NO: 11

AIM:Reshaping data using pivot_longer()/pivot_wider() (R).

CODE:



The image displays two side-by-side screenshots of the RStudio interface. Both screenshots show the same R code for reshaping data, with minor differences in line numbers and the presence of a 'category' column.

```

library(dplyr)
library(tidyr)

df <- read.csv("JEE Mains 2013-25 Top Ranks.csv", na.strings = c("", "NA")) %>%
  mutate(StudentID = row_number()) %>%
  select(-StudentID, category, Maths_Marks, Physics_Marks, Chemistry_Marks)

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

long_df <- df %>%
  pivot_longer(
    cols = c(Maths_Marks, Physics_Marks, Chemistry_Marks),
    names_to = "Subject",
    values_to = "Marks"
  )

print("~~~ 2. Long Format (pivot_longer) ~~~")
print(head(long_df, 9))

wide_df <- long_df %>%
  pivot_wider(
    names_from = Subject,
    values_from = Marks
  )

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

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

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

```

The top screenshot shows the code from line 1 to 28, while the bottom screenshot shows it from line 11 to 42. Both screenshots include the 'category' column in the original wide data frame, which is then removed in the final 'df_clean' step of the bottom screenshot.

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OUTPUT:

RStudio

```

File Edit Code View Plots Session Build Debug Profile Tools Help
Go to file/function Addins
Source
R - R 4.4.1 - ~
package 'tidyverse' was built under R version 4.4.3

> df <- read.csv("JEE Mains 2013-25 Top Marks.csv", na.strings = c("", "NA")) %>%
+   mutate(StudentID = row_number()) %>%
+   select(StudentID, Category, Maths_Marks, Physics_Marks, Chemistry_Marks)
>
> print("~~~ 1. Original Wide Data ~~")
[1] "~~~ 1. Original Wide Data ~~"
> print(head(df))
#> # A tibble: 6 × 4
#>   StudentID Category Maths_Marks Physics_Marks Chemistry_Marks
#>       <int> <chr>      <int>        <int>        <int>
#> 1         1 General        75          83          48
#> 2         2 General        71          85          62
#> 3         3 General        67          94          73
#> 4 Reserved        52          71          66
#> 5         5 General        40          65          65
#> 6         6 General        99          75          50
>
> long_df <- df %>%
+   pivot_longer(
+     cols = c(Maths_Marks, Physics_Marks, Chemistry_Marks),
+     names_to = "Subject",
+     values_to = "Marks"
+   )
>
> print("~~~ 2. Long Format (pivot_longer) ~~")
[1] "~~~ 2. Long Format (pivot_longer) ~~"
> print(head(long_df, 9))
#> # A tibble: 9 × 4
#>   StudentID Category Subject     Marks
#>       <int> <chr>   <chr>    <int>
#> 1         1 General Maths_Marks      75
#> 2         1 General Physics_Marks     83
#> 3         1 General Chemistry_Marks  48

```

Environment History Connections T

data_Pr... 5 obs. of 3 varia...
data_Re... 5 obs. of 3 varia...
df 26000 obs. of 5 v...
df_calc 1000 obs. of 11 v...
df_clean 26000 obs. of 5 v...
df_logic 1000 obs. of 11 v...
df_text 1000 obs. of 10 v...
final_d... 1000 obs. of 12 v...
igoo_da... 5 obs. of 3 Varia...
long_df 78000 obs. of 4 v...
mediate... 6 obs. of 3 varia...
mediate... 6 obs. of 2 varia...
my.boxp... List of 11
my.df 3000 obs. of 2 va...
qualcom... 5 obs. of 6 varia...
retail_... 5 obs. of 7 varia...
retail_... 1000 obs. of 14 v...
sd1.df 1000 obs. of 2 va...
sd15.df 1000 obs. of 2 va...
sds.df 1000 obs. of 2 va...
split_l... List of 1000
split_m... chr [1:1000, 1:3]...
tidy_da... 1000 obs. of 17 v...
wide_df 26000 obs. of 5 v...

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RStudio

```

File Edit Code View Plots Session Build Debug Profile Tools Help
Go to file/function Addins
Source
R - R 4.4.1 - ~
#> # A tibble: 9 × 4
#>   StudentID Category Subject     Marks
#>       <int> <chr>   <chr>    <int>
#> 1         1 General Maths_Marks      75
#> 2         1 General Physics_Marks     83
#> 3         1 General Chemistry_Marks  48
#> 4         2 General Maths_Marks      71
#> 5         2 General Physics_Marks     85
#> 6         2 General Chemistry_Marks  62
#> 7         3 General Maths_Marks      67
#> 8         3 General Physics_Marks     94
#> 9         3 General Chemistry_Marks  73
>
>
> wide_df <- long_df %>%
+   pivot_wider(
+     names_from = Subject,
+     values_from = Marks
+   )
>
> print("~~~ 3. Wide Format (Back to Original) ~~")
[1] "~~~ 3. Wide Format (Back to Original) ~~"
> print(head(wide_df))
#> # A tibble: 6 × 5
#>   StudentID Category Maths_Marks Physics_Marks Chemistry_Marks
#>       <int> <chr>      <int>        <int>        <int>
#> 1         1 General        75          83          48
#> 2         2 General        71          85          62
#> 3         3 General        67          94          73
#> 4 Reserved        52          71          66
#> 5         5 General        40          65          65
#> 6         6 General        99          75          50
>
> df_clean <- df %>%
+   mutate(Category = ifelse(is.na(Category), "Unknown", Category))
>
> category_pivot <- df_clean %>%

```

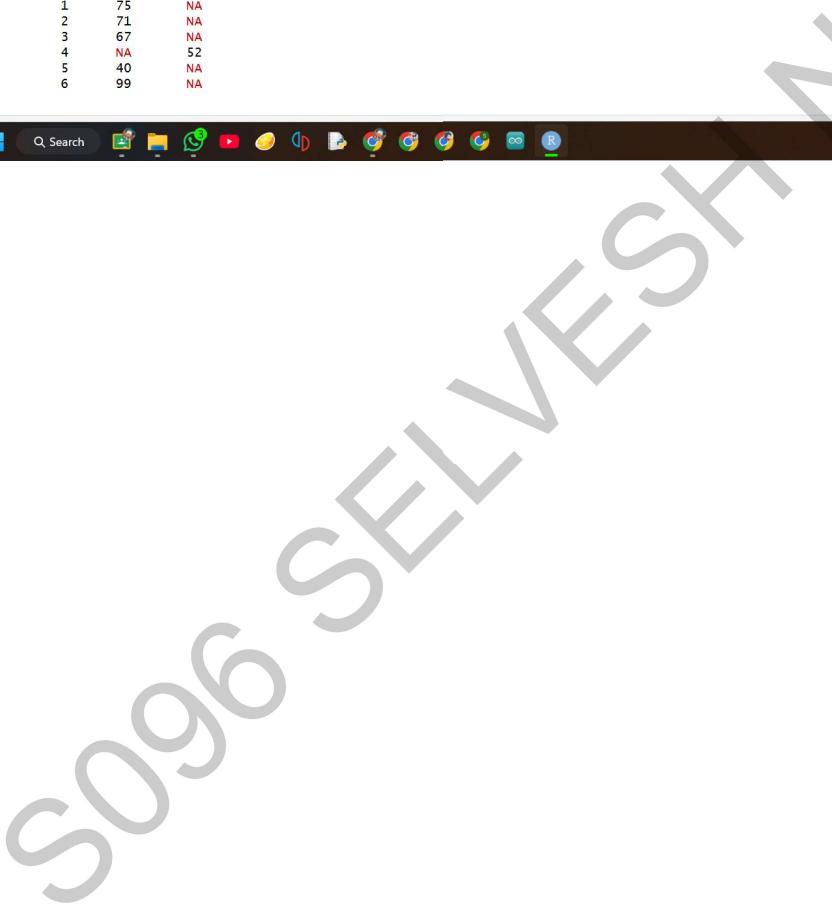
Environment History Connections T

data_Pr... 5 obs. of 3 varia...
data_Re... 5 obs. of 3 varia...
df 26000 obs. of 5 v...
df_calc 1000 obs. of 11 v...
df_clean 26000 obs. of 5 v...
df_logic 1000 obs. of 11 v...
df_text 1000 obs. of 10 v...
final_d... 1000 obs. of 12 v...
igoo_da... 5 obs. of 3 Varia...
long_df 78000 obs. of 4 v...
mediate... 6 obs. of 3 varia...
mediate... 6 obs. of 2 varia...
my.boxp... List of 11
my.df 3000 obs. of 2 va...
qualcom... 5 obs. of 6 varia...
retail_... 5 obs. of 7 varia...
retail_... 1000 obs. of 14 v...
sd1.df 1000 obs. of 2 va...
sd15.df 1000 obs. of 2 va...
sds.df 1000 obs. of 2 va...
split_l... List of 1000
split_m... chr [1:1000, 1:3]...
tidy_da... 1000 obs. of 17 v...
wide_df 26000 obs. of 5 v...

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DATA ANALYSIS WITH SAS/SPSS/RR



RStudio

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Source

```
R - R 4.4.1 - ~/ . . .
# A tibble: 6 × 5
  StudentID Category Maths_Marks Physics_Marks Chemistry_Marks
    <int> <chr>     <int>      <int>        <int>
1       1 General      75          83          48
2       2 General      71          85          62
3       3 General      67          94          73
4       4 Reserved     52          71          66
5       5 General      40          65          65
6       6 General      99          75          50
>
> df_clean <- df %>%
+   mutate(Category = ifelse(is.na(Category), "Unknown", Category))
>
> category_pivot <- df_clean %>%
+   select(StudentID, Category, Maths_Marks) %>%
+   pivot_wider(
+     names_from = Category,
+     values_from = Maths_Marks
+   )
>
> print("~~~ 4. Category Pivot (Spreading Categories) ~~~")
[1] "~~~ 4. Category Pivot (Spreading Categories) ~~~"
> print(head(category_pivot))
# A tibble: 6 × 3
  StudentID General Reserved
    <int> <int>     <int>
1       1      75       NA
2       2      71       NA
3       3      67       NA
4       4       NA      52
5       5      40       NA
6       6      99       NA
```

Environment History Connections

data_Pr... 5 obs. of 3 varia...
data_Re... 5 obs. of 3 varia...
df 26000 obs. of 5 v...
df_calc 1000 obs. of 11 v...
df_clean 26000 obs. of 5 v...
df_logic 1000 obs. of 11 v...
df_text 1000 obs. of 10 v...
final_d... 1000 obs. of 12 v...
iqoo_da... 5 obs. of 3 varia...
long_df 78000 obs. of 4 v...
mediate... 6 obs. of 3 varia...
mediate... 6 obs. of 2 varia...
my.boxp... List of 11
my.df 3000 obs. of 2 va...
qualcom... 5 obs. of 6 varia...
retail_... 5 obs. of 7 varia...
retail_... 1000 obs. of 14 v...
sd1.df 1000 obs. of 2 va...
sd15.df 1000 obs. of 2 va...
sd5.df 1000 obs. of 2 va...
split_l... List of 1000
split_m... chr [1:1000, 1:3]...
tidy_da... 1000 obs. of 17 v...
wide_df 26000 obs. of 5 v...

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