

## ITDS 7<sup>th</sup> Practical

The image consists of three vertically stacked screenshots of the RStudio interface, each showing a different step in the execution of an R script.

**Screenshot 1:** The RStudio interface with the following code in the script pane:

```
# Transforming Data in R using tidyverse
library(tidyverse)
library(dplyr)

# Example Dataset
data <- data.frame(
  Name = c("Alice", "Bob"),
  Maths = c(90, 80),
  Science = c(85, 88)
)
print("Original data:")
print(data)
```

The Environment pane shows objects: data (2 obs. of 3 variables), my\_list (List of 3), my\_matrix (num [1:2, 1:3] 1 2 3 4 5 6), students (4 obs. of 5 variables), students\_list (List of 3), and students\_tab (5 obs. of 3 variables).

**Screenshot 2:** The RStudio interface with the following code in the script pane:

```
# a. GATHER() - Convert wide to LONG
long_data <- data %>%
  gather(key = "Subject", value = "Marks", Maths, science)

print("Data after gather():")
print(long_data)
```

The Environment pane shows objects: long\_data (4 obs. of 3 variables), my\_list (List of 3), my\_matrix (num [1:2, 1:3] 1 2 3 4 5 6), students (4 obs. of 5 variables), students\_list (List of 3), and students\_tab (5 obs. of 3 variables).

**Screenshot 3:** The RStudio interface with the following code in the script pane:

```
# b. SPREAD() - Convert Long to Wide
wide_data <- long_data %>%
  spread(key = "Subject", value = "Marks")

print("Data after spread():")
print(wide_data)
```

The Environment pane shows objects: wide\_data (2 obs. of 3 variables), long\_data (4 obs. of 3 variables), my\_list (List of 3), my\_matrix (num [1:2, 1:3] 1 2 3 4 5 6), students (4 obs. of 5 variables), students\_list (List of 3), and students\_tab (5 obs. of 3 variables).

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