**R Data Frames**

Data Frames are data displayed in a format as a table.Data Frames can have different types of data inside it. While the first column can be character, the second and third can be numeric or logical. However, each column should have the same type of data.

Use the data.frame() function to create a data frame

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Example

**# Create a data frame**

Data\_Frame <- data.frame (

Training = c("Strength", "Stamina", "Other"),

Pulse = c(100, 150, 120),

Duration = c(60, 30, 45)

)

# Print the data frame

Data\_Frame

**Summarize the Data**

Use the summary() function to summarize the data from a Data Frame:

**Example**

Data\_Frame <- data.frame (

Training = c("Strength", "Stamina", "Other"),

Pulse = c(100, 150, 120),

Duration = c(60, 30, 45)

)

Data\_Frame

summary(Data\_Frame)

Access Items

We can use single brackets [ ], double brackets [[ ]] or $ to access columns from a data frame:

**Example**

Data\_Frame <- data.frame (

Training = c("Strength", "Stamina", "Other"),

Pulse = c(100, 150, 120),

Duration = c(60, 30, 45)

)

Data\_Frame[1]

Data\_Frame[["Training"]]

Data\_Frame$Training

**Add Rows**

Use the rbind() function to add new rows in a Data Frame:

Example

Data\_Frame <- data.frame (

Training = c("Strength", "Stamina", "Other"),

Pulse = c(100, 150, 120),

Duration = c(60, 30, 45)

)

# Add a new row

New\_row\_DF <- rbind(Data\_Frame, c("Strength", 110, 110))

# Print the new row

New\_row\_DF

Add Columns

Use the cbind() function to add new columns in a Data Frame:

Data\_Frame <- data.frame (

Training = c("Strength", "Stamina", "Other"),

Pulse = c(100, 150, 120),

Duration = c(60, 30, 45)

)

# Add a new column

New\_col\_DF <- cbind(Data\_Frame, Steps = c(1000, 6000, 2000))

# Print the new column

New\_col\_DF

Remove Rows and Columns

Use the c() function to remove rows and columns in a Data Frame:

Data\_Frame <- data.frame (

Training = c("Strength", "Stamina", "Other"),

Pulse = c(100, 150, 120),

Duration = c(60, 30, 45)

)

# Remove the first row and column

Data\_Frame\_New <- Data\_Frame[-c(1), -c(1)]

# Print the new data frame

Data\_Frame\_New

Amount of Rows and Columns

Use the dim() function to find the amount of rows and columns in a Data Frame:

Data\_Frame <- data.frame (

Training = c("Strength", "Stamina", "Other"),

Pulse = c(100, 150, 120),

Duration = c(60, 30, 45)

)

dim(Data\_Frame)

You can also use the ncol() function to find the number of columns and nrow() to find the number of rows:

Data\_Frame <- data.frame (

Training = c("Strength", "Stamina", "Other"),

Pulse = c(100, 150, 120),

Duration = c(60, 30, 45)

)

ncol(Data\_Frame)

nrow(Data\_Frame)

Data Frame Length

Use the length() function to find the number of columns in a Data Frame (similar to ncol()):

Example

Data\_Frame <- data.frame (

Training = c("Strength", "Stamina", "Other"),

Pulse = c(100, 150, 120),

Duration = c(60, 30, 45)

)

length(Data\_Frame)

Combining Data Frames

Use the rbind() function to combine two or more data frames in R verticalExample

Data\_Frame1 <- data.frame (

Training = c("Strength", "Stamina", "Other"),

Pulse = c(100, 150, 120),

Duration = c(60, 30, 45)

)

Data\_Frame2 <- data.frame (

Training = c("Stamina", "Stamina", "Strength"),

Pulse = c(140, 150, 160),

Duration = c(30, 30, 20)

)

New\_Data\_Frame <- rbind(Data\_Frame1, Data\_Frame2)

New\_Data\_Frame ly:

And use the cbind() function to combine two or more data frames in R horizontally:

Data\_Frame3 <- data.frame (

Training = c("Strength", "Stamina", "Other"),

Pulse = c(100, 150, 120),

Duration = c(60, 30, 45)

)

Data\_Frame4 <- data.frame (

Steps = c(3000, 6000, 2000),

Calories = c(300, 400, 300)

)

New\_Data\_Frame1 <- cbind(Data\_Frame3, Data\_Frame4)

New\_Data\_Frame1