 **🧪 Lab**  | Exploring Data Structures in R

**OBJECTIVE:** The objective of this assignment is to deepen your understanding of data structures in R by incorporating indexing, updating, and advanced manipulation techniques for vectors, data frames, lists, and matrices.

INSTRUCTIONS: In your own R script file, please complete the following tasks:

1. **Vectors:**
   * Create a numeric vector named **my\_vector** containing the numbers 1, 3, 5, 7, and 9.
   * Extract the third element from **my\_vector**.
   * Update the second element of **my\_vector** to be twice its original value.
2. **Data Frames:**
   * Create a data frame named **student\_data** with the following columns:
     + **Student\_ID**: Numeric vector with student IDs from 1 to 5.
     + **Name**: Character vector with the names of five students (you pick which names!).
     + **Score**: Numeric vector with scores (between 60 and 100) for each student.
   * Update the score of the student with ID 3 to 95.
3. **Lists:**
   * Create a list named **my\_list** with the following elements:
     + Element 1: A numeric vector containing the numbers 10, 20, 30.
     + Element 2: A character vector containing the names of three countries.
     + Element 3: A data frame with two columns - **City** (character vector) and **Population** (numeric vector) - for three cities of your choice.
   * Access and print the second element of the character vector within **my\_list**.
4. **Matrices:**
   * Create a 3x3 matrix named **my\_matrix** with random numeric values.
   * Extract the last column of **my\_matrix**.

SUBMISSION: Submit your R script file (.R) containing the code for creating and manipulating the required data structures along with any additional comments or explanations.