Introduction to R

Worksheet

DAY 1

1. You are monitoring the growth stages of a plant. Create a vector with the stages: "Seedling", "Vegetative", "Flowering", and "Harvest". Then, check the second stage in the vector.
2. You recorded the heights (in cm) of three plants: 45, 60, and 72. Create a vector with these values and increase each height by 10 cm to simulate growth over time.
3. The yields (in tons per hectare) for wheat and corn are:
   - Wheat: 3.2 (Field A), 3.5 (Field B)
   - Corn: 4.1 (Field A), 4.4 (Field B)

   Create a matrix with this data, and retrieve the yield of corn in Field A.

DAY 1

4. The average rainfall (in mm) for three regions is recorded: 45, 75, and 30. Create a vector for these values and check:
   - Which regions had rainfall above 50 mm?
   - Did any region have exactly 30 mm?
5. A soil sample is tested for pH levels in three locations: 6.8, 7.2, and 5.9. Create a vector for the pH values and check:
   - Is the pH of all locations greater than 6?
   - Is the pH of any location less than 6?
6. Using the matrix from Question 3, calculate the average yield of wheat across all fields.
7. Generate a vector of 20 numbers ranging from -10 to 10 (inclusive), ensuring it contains 0. Split the vector into two new vectors: negatives: all values strictly negative (< 0); and non_negatives: all values ≥ 0 (including zero). Transform the negatives: Multiply negatives by -2. Identify positions where values in either transformed negatives or non_negatives are > 8.

Thank you!