DA-1

L22+L23

CSE1006 – Foundations for Data Analytics

1. Create a vector of ages. Replace values below 30 with double the age and above 30 with half the age. Remove all values above 60.
2. Create a list with employee IDs, names, and a logical vector indicating if their salary is above ₹50,000.
3. Create a matrix of 4×5 where each row is a student and each column is a subject score.
   - Assign grade based on row-wise average: A (>80), B (60–80), C (<60)
   - Add a new column with grade labels.

4. sales_data <- data.frame(SaleID = 1:8, CustomerID = c(101, 102, 101, 103, 104, 105, 102, 106), ProductID = c("P1", "P2", "P3", "P1", "P2", "P4", "P4", "P3"), Quantity = c(10, 55, 20, 5, 80, 12, 95, 30), UnitPrice = c(100, 200, 150, 100, 200, 180, 180, 150), SaleDate = as.Date(c("2021-03-01", "2021-03-15", "2021-04-10", "2021-03-20", "2021-05-05", "2021-03-25", "2021-04-01", "2021-03-30")))

   - Extract the month from `SaleDate`
   - Calculate the average `TotalSale` (Quantity × Price) for each month
   - Identify the month with the **lowest average sale value**

5. Create a data frame with: Employee_ID, Department, Salary, Years_of_Experience.

   - Group by Department and calculate average Salary
   - Filter employees with above-average salary in each department