

# R Training: Practice Exercises and Quiz

## Practice Exercises

1. Load the 'detailed\_sample\_data.csv' file into R and display the first few rows.
2. Check for missing values in each column and report the count.
3. Convert the 'Join Date' column to Date format and extract the year.
4. Use dplyr to select only the columns: Name, Age, Gender, Department, and Salary.
5. Filter the dataset to include only employees with more than 5 years of experience.
6. Create a new column 'Salary Category' based on Salary: Low (<50000), Medium (50000-80000), High (>80000).
7. Group the data by Department and calculate the average Salary and Satisfaction Level.
8. Arrange the dataset by descending Performance Score.
9. Create a summary table showing the count of employees by Region and Gender.
10. Use dplyr joins to merge this dataset with another dummy dataset containing training scores.

## Visualization Tasks

1. Create a bar chart showing the number of employees in each Department.
2. Plot a boxplot of Salary by Gender.
3. Create a histogram of Satisfaction Level.
4. Generate a violin plot of Performance Score by Education level.
5. Create a pie chart showing the distribution of Regions.
6. Plot a scatter plot of Experience vs Salary, colored by Gender.
7. Create a line chart showing average Salary over Join Year.
8. Use faceting to show Satisfaction Level distribution by Department and Gender.
9. Create a density plot of Age.
10. Combine multiple plots into a grid layout using ggplot2.

## Quiz

1. What function is used to read a CSV file in R?
2. How do you check the structure of a dataframe in R?
3. What does the dplyr function 'mutate()' do?
4. How do you filter rows in a dataframe using dplyr?
5. What is the purpose of 'group\_by()' in dplyr?
6. Which ggplot2 function is used to create a bar chart?
7. How do you change the theme of a ggplot2 plot?
8. What function is used to combine multiple ggplot2 plots?
9. How do you convert a character column to Date format in R?
10. What is the difference between 'summarise()' and 'mutate()'?