**Dataset: Iris Dataset**

**Question 1:**

The Iris dataset is a classic dataset in statistics and is included in the **datasets** package in R. It contains measurements of sepal length, sepal width, petal length, and petal width for 150 iris flowers, representing three species: setosa, versicolor, and virginica.

1. **Load the Iris dataset:**
   * Load the Iris dataset into R from the **datasets** package.
   * Display the first few rows of the dataset to get an overview of its structure.
2. **Data Exploration:**
   * Provide summary statistics for each variable (mean, median, standard deviation, etc.).
   * Explore the distribution of sepal length, sepal width, petal length, and petal width for each species using appropriate visualizations (histograms, boxplots, etc.).
3. **Species Comparison:**
   * Compare the average values of sepal length, sepal width, petal length, and petal width for each species.
   * Create a side-by-side boxplot to visually compare the distribution of these variables across different species.
4. **Correlation Analysis:**
   * Calculate the correlation matrix for the numeric variables in the dataset.
   * Create a heatmap to visualize the correlation matrix.
   * Additionally, perform a simple linear regression analysis for the relationship between sepal length and sepal width. Include the regression line in the scatter plot and display the regression equation along with the R-squared value.
5. **Scatter Plots:**
   * Generate scatter plots to explore the relationships between pairs of variables (e.g., sepal length vs. sepal width, petal length vs. petal width).
   * Use different colors or shapes to distinguish points from different species.
6. **Conclusion:**
   * Summarize your findings from the analysis.
   * Discuss any insights you gained about the Iris dataset and its different species.

**Submission Guidelines:**

* Submit an R script or R Markdown document containing your code and explanations.
* Include visualizations with clear labels and titles.
* Provide comments in your code to explain your thought process.