Iris & PlantGrowth – Python Assignment Report

This report includes code, outputs, and answers for the Iris and PlantGrowth datasets.

Tasks:
1. Iris dataset
   a) Histogram of Sepal.Width
   b) Predict mean vs median based on histogram
   c) Compute mean and median of Sepal.Width
   d) Find threshold where only 27% are higher
   e) Scatterplots of all pairs of numerical variables
   f) Strongest and weakest relationships

2. PlantGrowth dataset
   a) Histogram of weight with 0.3 bins
   b) Boxplots by group
   c) Approximate % of trt1 below min(trt2)
   d) Exact % below min(trt2)
   e) Barplot of groups with weight > 5.5

Key Numeric Answers

1b) Expectation: Mean > Median (right-skewed)

1c) Mean(Sepal.Width) = 3.057, Median = 3.000

1d) 27% threshold Sepal.Width > 3.300 cm

1f) Strongest: Petal.Length vs Petal.Width (r=0.963)

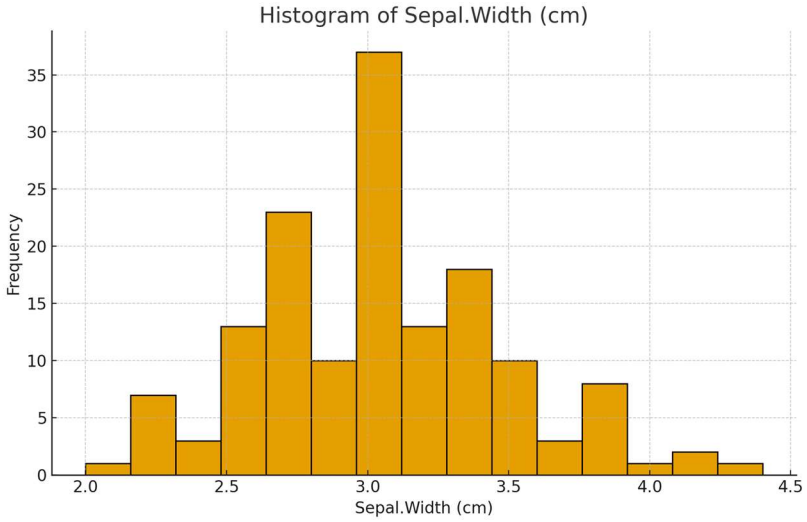
Weakest: Sepal.Length vs Sepal.Width (r=-0.118)

2c) Approximate % of trt1 below min(trt2): ~80%

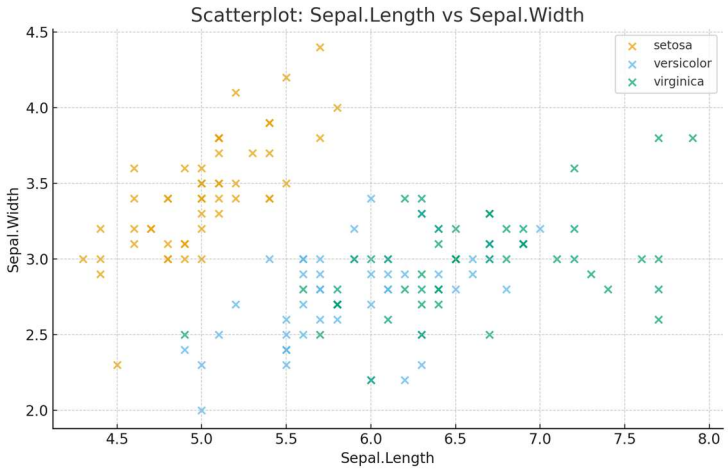
2d) Exact %: 80.0% (min trt2=4.92)

Figures

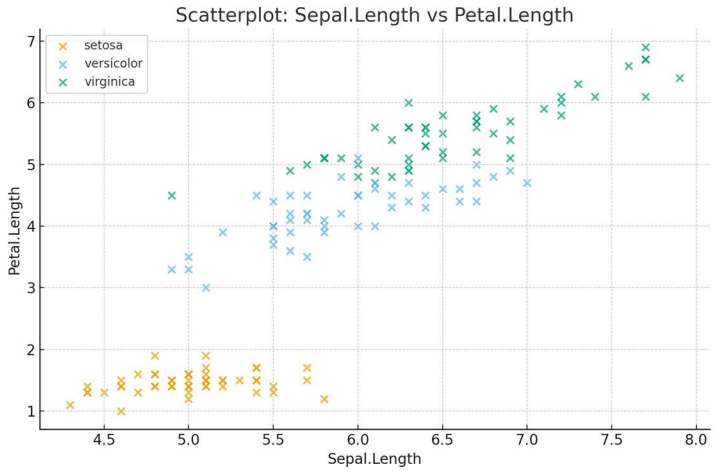
Figure 1. Histogram of Sepal.Width



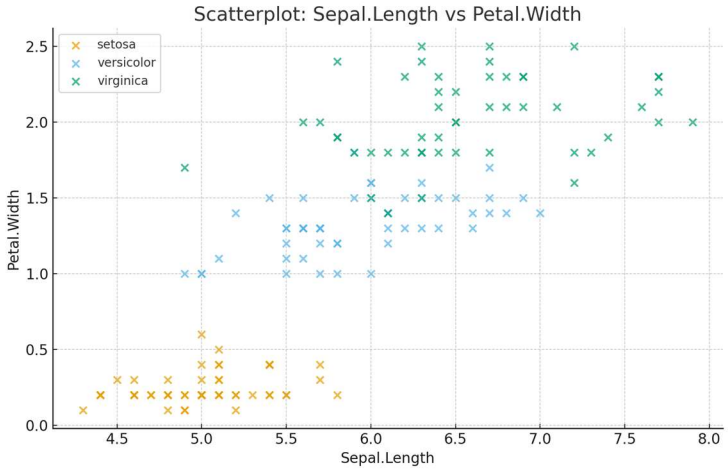
Scatterplot: Sepal.Length vs Sepal.Width



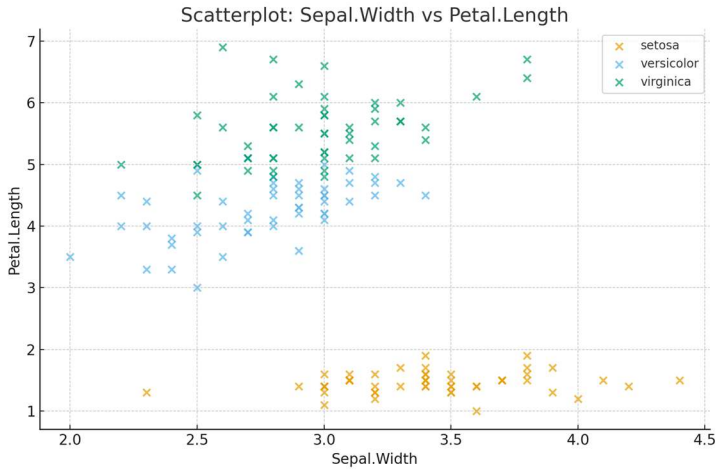
Scatterplot: Sepal.Length vs Petal.Length



Scatterplot: Sepal.Length vs Petal.Width



Scatterplot: Sepal.Width vs Petal.Length



Scatterplot: Sepal.Width vs Petal.Width

Scatterplot: Petal.Length vs Petal.Width

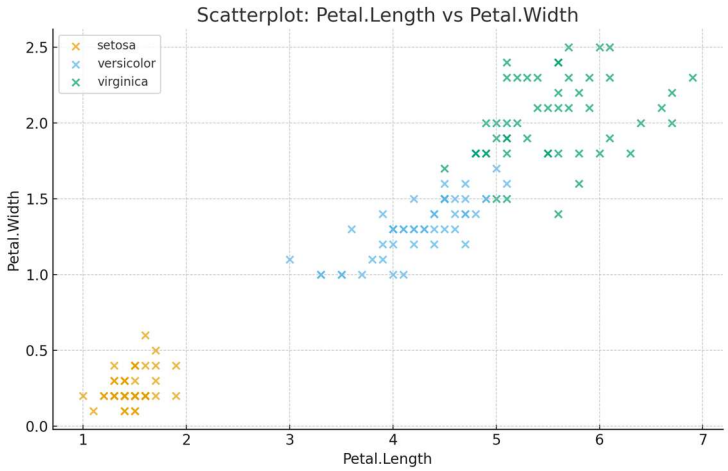


Figure 2. Histogram of PlantGrowth Weights

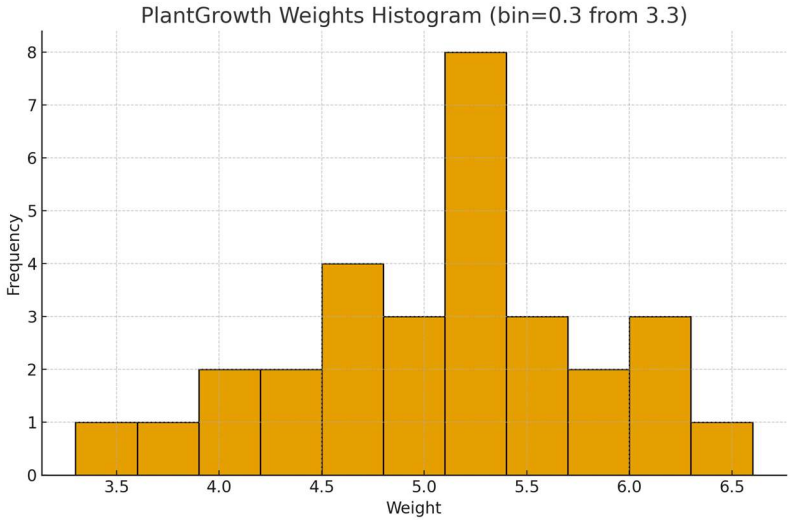


Figure 3. Boxplots of Plant Weights by Group

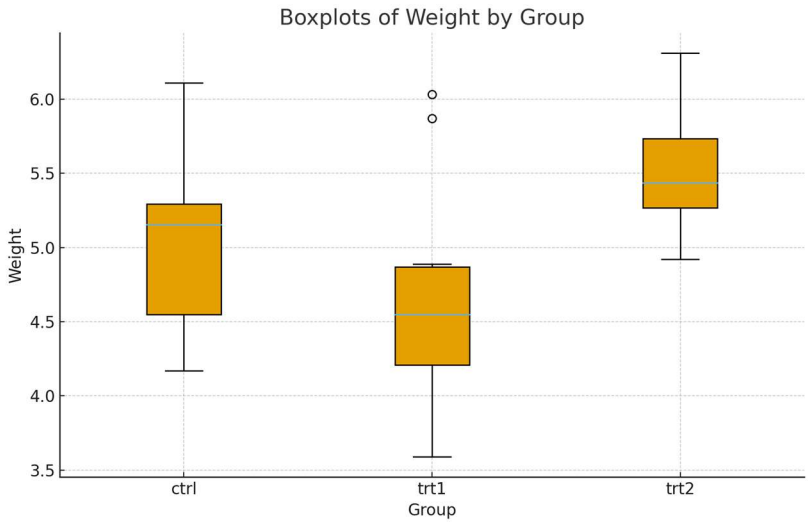


Figure 4. Barplot of Groups with Weight > 5.5