

# **STAT40830 - ADV DATA PROG WITH R (ONLINE)**

HW Assignment 1

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# TABLE OF CONTENTS

- Question Statement
- IRIS Dataset
- Petal Length Vs Petal Width
- Variables' Overview
- Analysis
- Sepal Length vs Sepal Width - plot
- Summary statistics of Sepal Length and Sepal Width

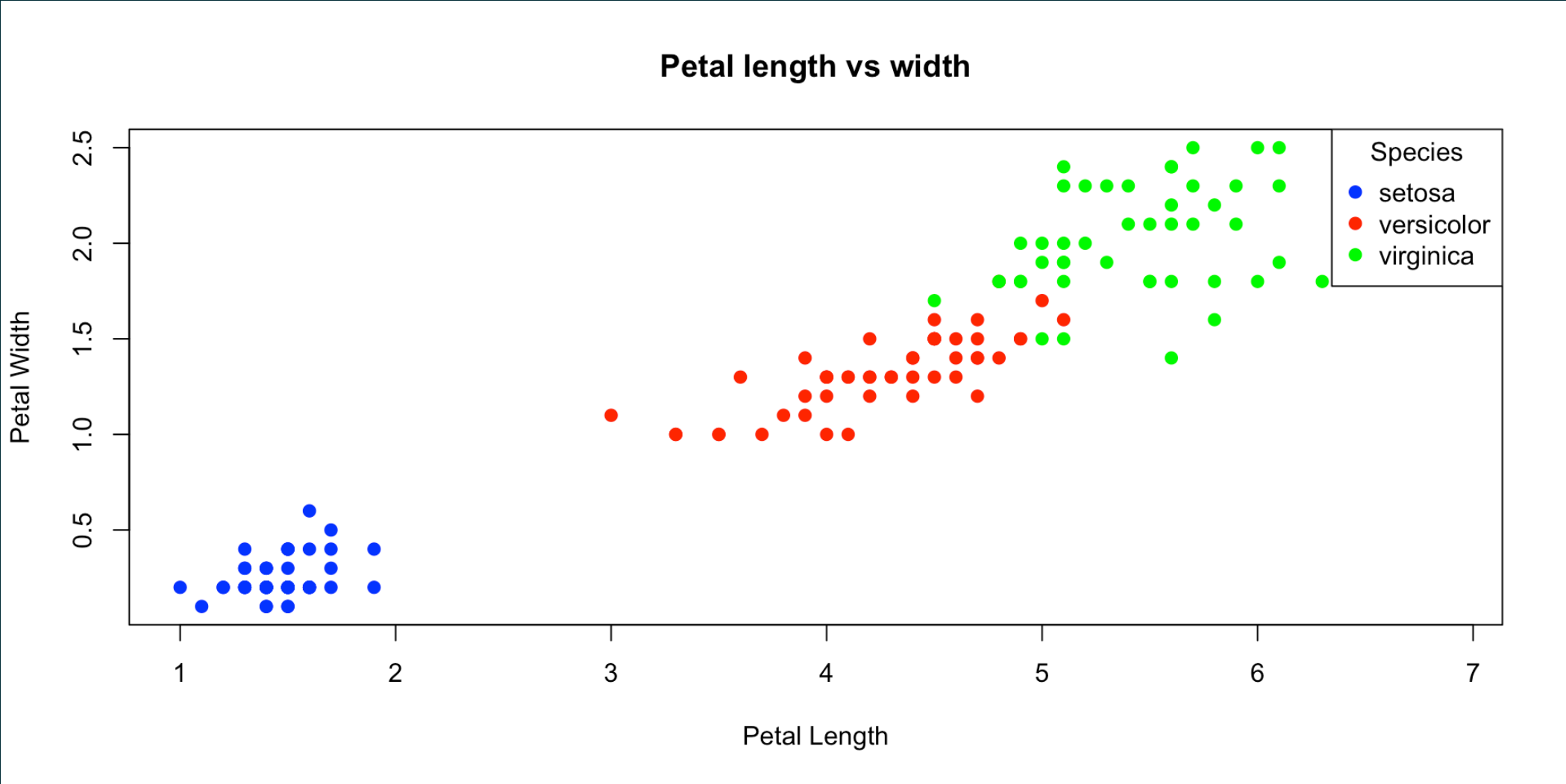
# QUESTION STATEMENT

*Create a neat Quarto document or presentation. In the document/presentation, you must do a plot on a dataset that can be found on any R package and include some text explaining what you plotted. The file does not need to be extensive. If you wish to add some extra text, consider adding an explanation of your approach, some descriptive statistics of the variables used in the graph and a line or two introducing the dataset as part of an introduction.*

# IRIS DATASET

- The famous (Fisher's or Anderson's) iris data set gives the measurements in centimeters of different variables.
- The variables are - sepal length and width and petal length and width, respectively, for 150 flowers from each of 3 species of iris.
- The species are Iris **setosa**, **versicolor**, and **virginica**.

# PETAL LENGTH VS PETAL WIDTH



# VARIABLES' OVERVIEW

Here, we have plotted a scatter plot between Petal length and Petal width, coloured by different species, trying to find some patterns. A quick rundown of the 2 variables in question:-

## Summary of Petal Length:

	Var2	Freq
1	Min.	1.000
2	1st Qu.	1.600
3	Median	4.350
4	Mean	3.758
5	3rd Qu.	5.100
6	Max.	6.900

## Summary of Petal Width:

	Var2	Freq
1	Min.	0.100000
2	1st Qu.	0.300000
3	Median	1.300000
4	Mean	1.199333
5	3rd Qu.	1.800000
6	Max.	2.500000

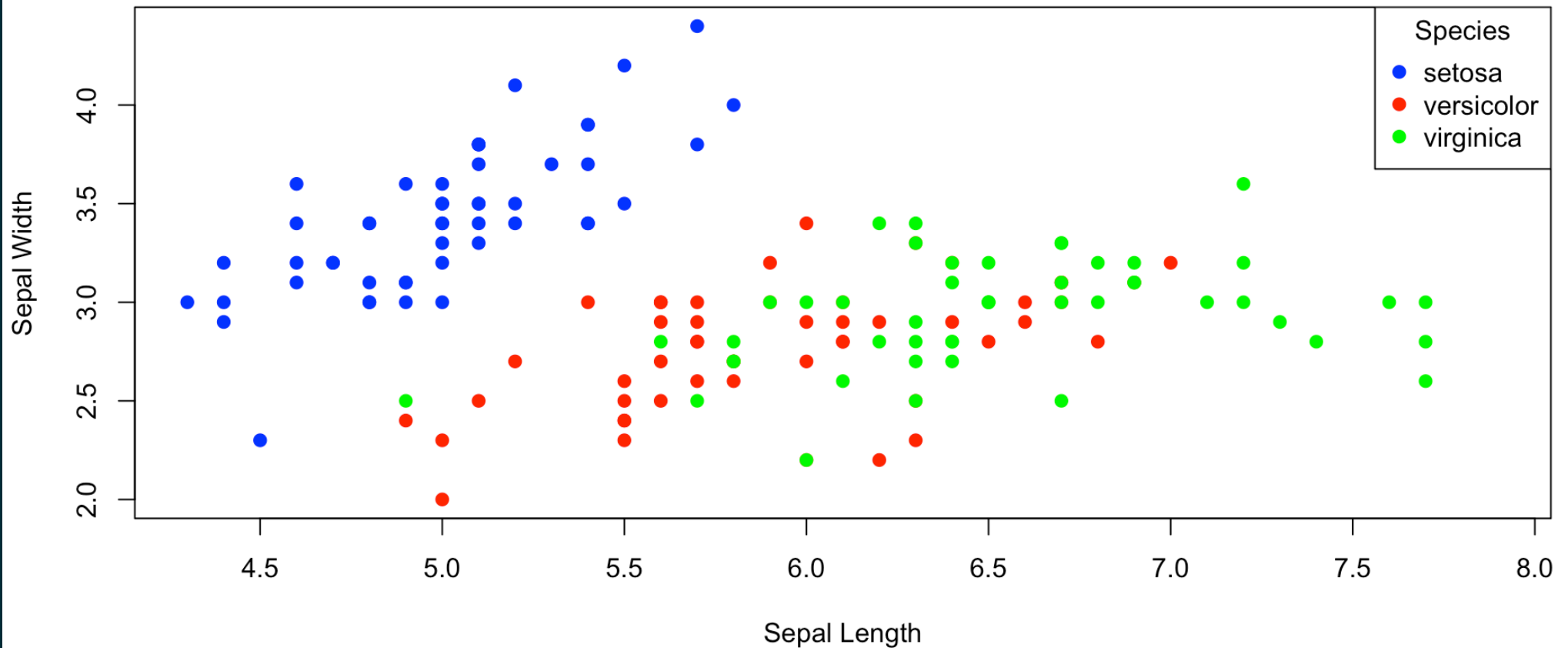
A quick analysis of the graph is as follows:-

# ANALYSIS

1. From the graph, there appears to be a strong positive correlation between petal length and petal width.
2. Different species of flowers displays different characteristics.
3. **Setosa** generally has lower Petal length and Petal width comparatively. **Versicolor** has higher Petal Length and Petal width compared to **Setosa** but generally lesser than **Virginica**. **Virginica** generally tends to have the highest Petal length and width amongst the 3 species considered.
4. More details about the dataset can be found [here](#)

# SEPAL LENGTH VS SEPAL WIDTH - PLOT

Sepal length vs width





# SUMMARY STATISTICS OF SEPAL LENGTH AND SEPAL WIDTH

## Summary of Sepal Length:

	Var2	Freq
1	Min.	4.300000
2	1st Qu.	5.100000
3	Median	5.800000
4	Mean	5.843333
5	3rd Qu.	6.400000
6	Max.	7.900000

## Summary of Sepal Width:

	Var2	Freq
1	Min.	2.000000
2	1st Qu.	2.800000
3	Median	3.000000
4	Mean	3.057333
5	3rd Qu.	3.300000
6	Max.	4.400000