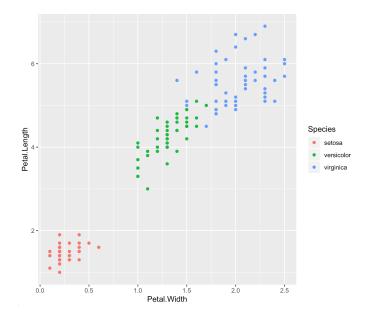**Instructions:**

Please answer the questions below. Show all your work. Calculators are allowed, please simplify all answers to three significant figures.

   Suppose we are interested in studying the relationship between species, petal width(in cm), and petal length(in cm) for three different species of irises. In this case our explanatory variable will be the petal width of each species, and the the response variable will be the petal length.

Problem 1. (3 points) Describe the above scatterplot in terms of Form, Strength, Direction, and Outliers.

Problem 2. (2 points) Based on the above cursory information, is a linear model appropriate for this data?

Problem 3. (5 points) Based on the summary statistics below, calculate the line of the regression equation for this data. State the regression equation and interpret the slope and intercept of the regression equation in context.

$$\hat{y} = b_o + b_1 * x \qquad b_o = \bar{y} - b_1 * \bar{x} \qquad b_1 = r\frac{s_y}{s_x}$$

Summary Statistic	Estimate
Mean of Petal Width	1.199
Standard Deviation Petal Width	0.75
Mean Petal Length	3.758
Standard Deviation Petal Length	1.765
Correlation	0.9628