WP Assignment 3

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**Linear Regression Calculator**

**Objective**

The objective of this project was to create a simple linear regression calculator using JavaScript, HTML, CSS, and jQuery. The calculator takes two sets of numeric input values, x and y, and calculates the slope, y-intercept, and line points of the linear regression line that fits the data.

**Implementation**

The calculator was implemented as a web application using HTML for the user interface, CSS for styling, and JavaScript for the calculations. The jQuery library was used for easier manipulation of the Document Object Model (DOM).

The calculator consists of two input fields for the x and y values, a submit button, and an output section for displaying the results.

The calculation of the slope, y-intercept, and line points were implemented as separate JavaScript functions:

* The **calculateSlope** function calculates the slope of the linear regression line.
* The **calculateIntercept** function calculates the y-intercept of the line.
* The **calculateLine** function calculates the points on the line for each x value.

To calculate the slope and y-intercept, the following functions were used:

* The **calculateAverage** function calculates the average of a set of values.
* The **calculateNumerator** function calculates the numerator of the slope formula.
* The **calculateDenominator** function calculates the denominator of the slope formula.

To handle form submissions, the **onSubmit** function was implemented. This function extracts the x and y values from the input fields, calls the necessary calculation functions, and then displays the results in the output section. The jQuery library was used to simplify DOM manipulation.

**Conclusion**

In conclusion, this project demonstrates the use of JavaScript and jQuery for implementing a simple linear regression calculator. The implementation shows how JavaScript and jQuery can be used to handle form submissions, perform calculations, and manipulate the HTML Document Object Model (DOM) to display the results. This project can be further improved by adding input validation, error handling, and additional regression analysis features.