**Citadel High School Exam Score Insights**

Citadel High School intends to increase exam scores across all the final year students. It also wants to set a standard pass across depending on the number of hours each student puts in.

The school tasked us with analyzing their final year’s exam score dataset and deriving insights that will help them make data-driven decisions as well as a model that would predict a student’s exam score based on the number of hours they invested.

**Solutions**.

* We derived a correlation between the two variables, Hours spent and Exam scores.
* We deduced a descriptive analysis of the dataset encompassing all central measures of tendency such as mean, and median.
* We plotted a chart showing the correlation between the two key variables to visualize the relationship
* A linear regression that predicts scores based on hours invested.

**Data Insights**

* There is a significant positive relationship between exam scores and hours of study with a correlation of 0.98. The more hours the higher the exam scores with the opposite being true.
* The linear regression model, which is 95% reliable, predicts if a student for example puts in 8 hours of study, they are likely to score 80% with a variance of only four points, that is, the student will have a 100% chance to score between 76-84%.
* There is a significant pattern that a student will reap \*10 of the number of hours they invested in studying.
* The mean study hours and scores across the students are 5 hours and 51% respectively.
* The median study hours and scores across the students are 4.8 hours and 47% respectively.
* The maximum exam score and number of hours a student spent studying are 95% and 9.2 hours respectively.
* The minimum hours a student spent studying and scores result in the dataset are 1 hour and 17% respectively.
* Study hours deviate from the mean by 2.5 hours while exam scores deviate by 25% from the mean.

With the above insights, Citadel will be able to help the students study for a set number of hours and allocate enough resources towards this.

Having standardized the number of hours across the class, Citadel can then coach the students on their abilities. With consistent class coaching and time management guided by the insights, Citadel will surely meet its targets!