Student Performance Predictive Models using Multiple Linear Regression

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Introduction to the Case Study

The Student Performance Dataset is a comprehensive collection of student records designed to analyze the factors influencing academic performance. It contains 10,000 records, each representing a student, with various predictor variables and an academic performance index.

The academic performance index is a numerical value that reflects the overall academic achievement of each student, ranging from 10 to 100, with higher values indicating better performance. This index has been rounded to the nearest integer for easier interpretation and comparison. The dataset aims to uncover patterns and correlations between a variety of factors and student performance.

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Objectives And Questions

Case Study Objectives

A measure of the overall performance of each student. The performance index represents the student's academic performance and has been rounded to the nearest integer. The index ranges from 10 to 100, with higher values indicating better performance.

Questions

1. Perform Data Cleaning and Transformation

2. Prepare the Data by Normalising (converting Text value to numeric)

3. Perform Exploratory data Analysis

4. Perform Correlation analysis to find out the relation between variables

5. Train the Multiple Linear Regression Model and Predict the Performance of Students

Dataset Description

Column	Description
Hours Studied	The total number of hours spent studying during a specific period.
Previous Scores	The academic scores or grades achieved by the individual in past exams or assessments.
Extracurricular Activities	The number or type of extracurricular activities (e.g., sports, clubs, volunteer work) participated in.
Sleep Hours	The total number of hours spent sleeping during a specific period, typically a night or week.
Sample Question Papers Practiced	The number of sample or practice question papers solved in preparation for exams.
Performance Index	A calculated value that represents the overall academic performance of the individual, based on various factors.

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Thank you

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