**ABSTRACT**

This project, Student Exam Performance Analysis, aims to explore and understand the various factors that influence students' academic performance through data analysis and visualization techniques. A custom-built dataset of 1000 student records are used, capturing a wide range of academic and personal attributes such as gender, age, parental education and occupation, family income, attendance percentage, study habits, sleep duration, assignment submission rate, health condition, stress levels, and exam scores. The dataset also includes indicators like test preparation, tuition support, extracurricular involvement, and the mode of study (online/offline).

By leveraging Python and its data science libraries including Pandas, NumPy, Matplotlib, and Seaborn, the project performs comprehensive data cleaning, exploratory data analysis (EDA), and visualization. The objective is to uncover patterns, correlations, and trends that reveal which factors most strongly impact student performance. Additionally, insights derived from this analysis can assist educators, parents, and students in making informed decisions to improve academic outcomes.

Through this study, we aim to support a data-driven educational approach by identifying high-impact factors, promoting effective study habits, and recognizing areas that require intervention for academic improvement.