# Project Proposal

## Impact of Online vs Offline Learning on Student Performance

## 1. Group Members

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## 2. Introduction

The education sector has seen a major transformation with the rise of online learning. While online learning provides flexibility, traditional offline learning fosters engagement and structured study habits. This project aims to analyze the impact of online vs offline learning on student performance using real-world datasets. By comparing different learning environments, we aim to identify key factors influencing student success and provide data-driven recommendations for improving online education.

## 3. Hypothesis

We hypothesize that students in offline learning environments perform better academically due to structured study schedules and in-person interactions. However, online students may benefit from flexibility but could struggle with engagement and discipline.

## 4. Dataset Selection

The following datasets will be used:  
- UCI Student Performance Dataset  
- xAPI-Edu-Data from Kaggle  
These datasets contain information on student demographics, study habits, internet access, attendance, and academic performance, making them ideal for this study.

## 5. Methodology:Data Analysis Plan

Descriptive Analytics:  
- Compute key statistics (mean, median, standard deviation).  
- Visualize data using correlation heatmaps, histograms, and box plots.  
Predictive Analytics:  
- Define the response variable (G3 - final grade).  
- Choose predictor variables (study time, internet access, attendance, etc.).  
- Apply regression analysis to assess the impact of online vs offline learning.

## 6. Expected Findings

- Online learning may lead to lower engagement but higher flexibility.  
- Offline learning may result in higher attendance and structured study habits.  
- Internet access could significantly impact student grades.

7. GitHub Repository

## <https://github.com/Sanjida-49/Offline-vs-Online-Learning.git>

## 8. Conclusion

This project will help understand the benefits and challenges of online vs offline learning. We anticipate that hybrid learning models may be more effective in balancing flexibility and engagement. Schools should focus on improving internet access for online students and consider strategies to enhance student engagement in virtual settings.