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## Project Overview

**Key user attributes :** gender, race/ethnicity, parental level of education, lunch, test preparation course, math score, reading score, writing score.

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## Libraries and Data Handling

**Libraries used :** Pandas, NumPy, Matplotlib, Seaborn.

**Data Loading and preprocessing :** Loading from CSV, data cleaning, handling dates and categorical data.

03

## Data Analysis Technique

**Descriptive statistics :** mean, median, standard deviation, etc., **Visualization methods :** histograms, box plots, bar plots, scatter plots and heatmaps

04

## Key Findings

Gender Distribution, Ethnicity Representation, Parental Level of Education, Meal Preferences, Test Preparation, Academic Performance, Difficulty Level of Subjects, Relationship Between Scores, Impact of Gender on Academic Performance, Impact of Parental Education and Test Preparation on Academic Performance

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## Advance Analysis

Predictive Modeling, Cluster Analysis, Factor Analysis, Predictive Analytics for Interventions, Time Series Analysis, Data Visualization Techniques.



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## Machine Learning

**Linear Regression Model** : powerful statistical method for predicting a continuous variable. In the context of our Netflix user data analysis.

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## Visual Insights

Boxplot of Exam scores, Difficulty level (Percentage of Students Scoring Below 70), Correlation Matrix, Gender Distribution, Average Score by Gender, Average Score by Parental Level of Education, Average score by Test Preparation Course, Scatter Plot of Reading vs Writing Scores.

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## Conclusion

Summary of insights along with the process of Data Analysis and Machine Learning Implementation

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## Appendix

Code Snippets : Provided Python code used for the process of Data Manipulation and Machine Learning Implementation.

**Google Colab Link :**

<https://colab.research.google.com/drive/1ruFfPKMvRwWdlflz5dgQuWbdX2Ga3ELH?usp=sharing>

**Datasets** : Sample dataset of Student Performance in Exam Analysis.

**Github Repository Link** : <https://github.com/NIEGS/CSST104-Finals-CSB05>

**Github Website Link** : [niegs.github.io/CSST104-Finals-CSB05/](https://niegs.github.io/CSST104-Finals-CSB05/)