

EYouth X DEPI Tech Challenge



Submitted by:
EYouth

Student Performance Insights Challenge

Challenge Description:

The goal of this competition is to analyze student performance data and uncover insights that can help improve academic outcomes. Students are required to clean the data, analyze trends, visualize findings, and derive actionable insights.

Implementation in Steps:

- Step 1: Load the dataset and explore its structure.
- Step 2: Handle missing values and perform basic data cleaning.
- Step 3: Conduct exploratory data analysis (EDA) using visualizations.
- Step 4: Identify correlations and patterns in student performance.
- Step 5: Present findings in a well-structured report.

Supporting Material:

(Dataset): <https://www.kaggle.com/datasets/mahmoudelhemy/students-grading-dataset>

Time Frame:

- Duration: 1 Week
- Deadline: 28/2/2025.

Student Deliverables:

- Jupyter Notebook
- Presentation to Present your Thoughts

Evaluation Criteria:

1. Data Cleaning and Preprocessing (20%)

- Handling Missing Values: Missing values are handled appropriately (e.g., imputation, removal, etc.).
- Data Quality: The dataset is cleaned of errors, inconsistencies, and irrelevant data.
- Documentation: The cleaning process is well-documented in the Jupyter Notebook, with clear explanations **of the steps taken**.

2. Exploratory Data Analysis (EDA) (30%)

- Visualizations: Effective use of visualizations (e.g., histograms, scatter plots, box plots) to explore trends and patterns.
- Insightfulness: The EDA uncovers meaningful trends and patterns in student performance.
- Depth: The analysis goes beyond surface-level observations to explore correlations, outliers, and potential relationships.
- Clarity: Visualizations are clear, well-labeled, and easy to interpret.

3. Identifying Correlations and Patterns (20%)

- Statistical Analysis: Use of statistical methods (e.g., correlation matrices, hypothesis testing) to identify relationships between variables.
- Relevance: The identified correlations and patterns are relevant to improving student performance.
- Interpretation: Clear interpretation of the findings and their implications for academic outcomes.

4. Report and Presentation (20%)

- Structure: The report is well-organized, with a logical flow (e.g., introduction, methodology, findings, conclusions).
- Clarity: The report and presentation are clear, concise, and easy to follow.

5. Kaggle Feedback (10%)

- Community Recognition: Upvotes, comments from your colleagues in **DEPI** or other forms of engagement on Kaggle.