Introduction

Description of the project

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Analysis

Exploratory Data Analysis

Does gender affect their performance? race/ethnicity of affect their perfor...

Dashboard

Does gender affect their perfor...

affect their perfor...

Understanding Student Performance: A Data-Driven Analysis

Presenter by: Nurul Jannah Binti Abdul Razak

Introduction

This project focuses on analyzing and presenting the performance of male and female students. The report delves into math, reading, and writing scores to provide insights into gender-based differences in academic performance.

Objective:

The objectives of this project could include:

- -Identify Key Factors Influencing Student Performance
- -Develop interactive dashboard
- -Provide Recommendations for Educational Improvement

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Exploratory Data Analysis Student Perfromance Dashboard Does gender affect their performance?

Does their race/ethnicity affect their perfor...

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Dataset: Student Performance Prediction Data Set (Kaggle)

Problem Statements

Here are three problem statements we can analyze:

- 1. Analyze the impact of socio-economic factors on student performance (such as races/parental education/type of lunch)
- 2. Examine the relationship between exam preparation and student performance
- 3. Investigate the combined impact of multiple factors on student performance (total scores)

Hypothesis

Four common hypothesis will be analyse that can affect student performance:

- Does race/ethnicity affect?
- Does their parents education can affect?
- Does the type of lunch affect their performance?
- -Does their exam preparation affect too?

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Data Preparation and Cleaning Preparation

- 1. Exctract data as xlsx.format using Excel.
- 2. Create a table to analyze any unrecognized data (null, duplicate and ets)
- 3. Check data format type and change to correct format.
- 4. Check duplicate values (As result: There is no duplicate data and null values)
- 5. Change name column if necessary

In excel process:

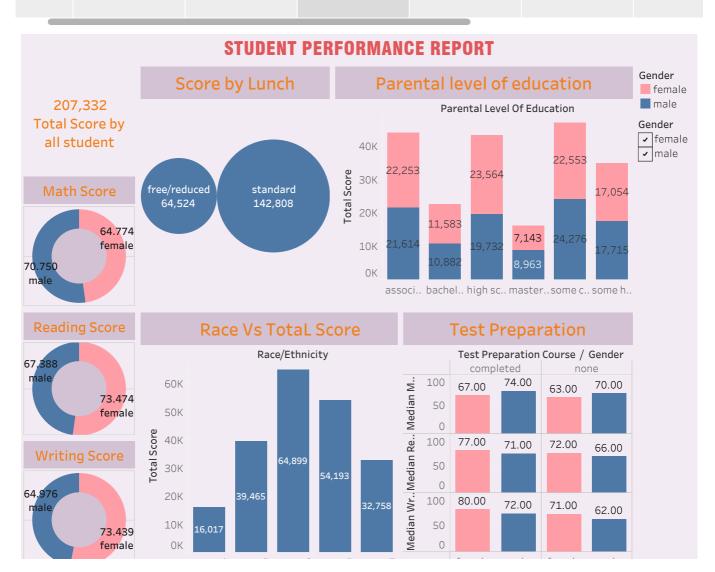
- Do aggreagative function which if SUM for (total score for math, english and writing)
- =SUM(F2,G2,H2)
- Do the IF funtion to describe the level of achievement based on total score. =IF(I2>=270,"High Achiever",IF(I2>=210,"Average","Below Average"))
- -There are 10 columns and 1001 rows.

Introducti on Description of the project

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Does their parents' education ...



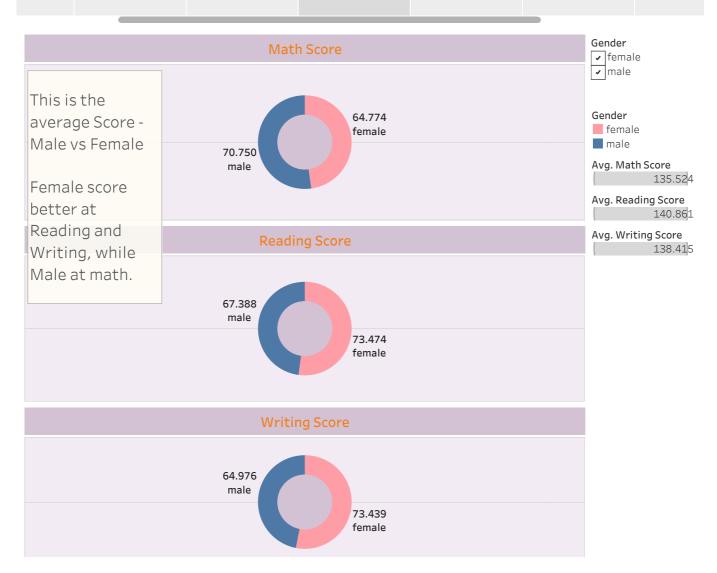
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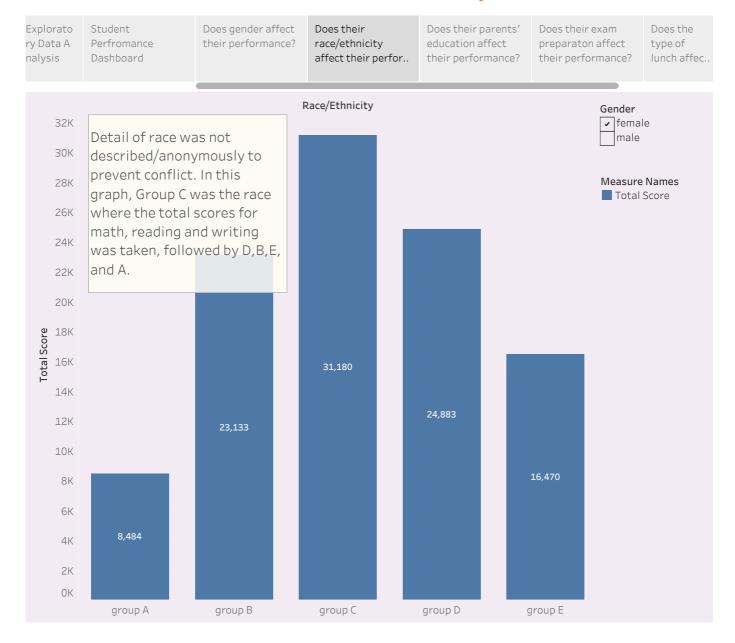
Descriptio Exploratory Data

Student Perfromance Dashboard

Does gender affect their performance?

Does their race/ethnicity affect their perfor.. Does their parents' education affect their performance? Does their exam preparaton..





Student P Does gender affect Does their Does their parents' Does their exam Conclusion a Does the type of erfromanc their performance? race/ethnicity education affect preparaton affect lunch affect their nd Recomme e Dashbo.. affect their perfor.. their performance? their performance? performance? ndation Parental Level Of Education Gender ✓ female male 24K 23,564 22,553 22,253 22K Gender female 20K Parental level 18K 17,054 of education do not give 16K any impact to the scores, 14K because it seems some 11,583 12K college were the highest 10K scores, so the parents do 8K 7,143 not have the higher 6К education can still perform 4К better or not? 2K 0К associate's degr.. bachelor's degr.. high school master's degree some college some high school

Does gender affect Does their Does their parents' Does their exam Does the type of Conclusion and their performance? race/ethnicity education affect preparaton affect lunch affect their Recommendation affect their perfor.. their performance? their performance? performance? Test Preparation Course / Gender Gender completed none ✓ female male 67.000 63.000 Median Math Score 60 Gender female 40 20 Students who Completed the 0 prepare course 77.000 received in higher 80 72.000 Median Reading Score scores for math, reading and 60 writing for both gender. 40 20 0 80.000 80 Median Writing Score 71.000 60 40 20 0 female female

Does gender affect Does their Does their parents' Does their exam Does the type of Conclusion and their performance? race/ethnicity education affect preparaton affect lunch affect their Recommendation affect their perfor.. their performance? their performance? performance? Gender ✓ female male Total score vs lunch. free/reduced standard 33,325 70,825 Let's check if having a meal before an exam can help increase the score. Students that had free/reduces meals before exam scores had much more worse exam scores than who had standard meal for female and male.

Does gender affect their performance?

Does their race/ethnicity affect their perfor... their performance? their performance? performance?

Does their parents' Does their exam education affect

preparaton affect

Does the type of lunch affect their Conclusion and Recommendation

How can we improve their performance?

- 1. Mixed teams of students (gender, race, lunch, parents education) to work on the subjects under examination.
- 2. Attracting a budget for funding a standard lunch for all students.
- 3. Transforming the optional preparation course in compulsory course for admission to the exam.

Recommendation:

- Will conduct statistical analysis in Excel, including correlation and regression analysis, to determine which factors most significantly influence student success.
- -To ensure a precise of this project. I would recommend to use statistical data using Python who were expert at it.