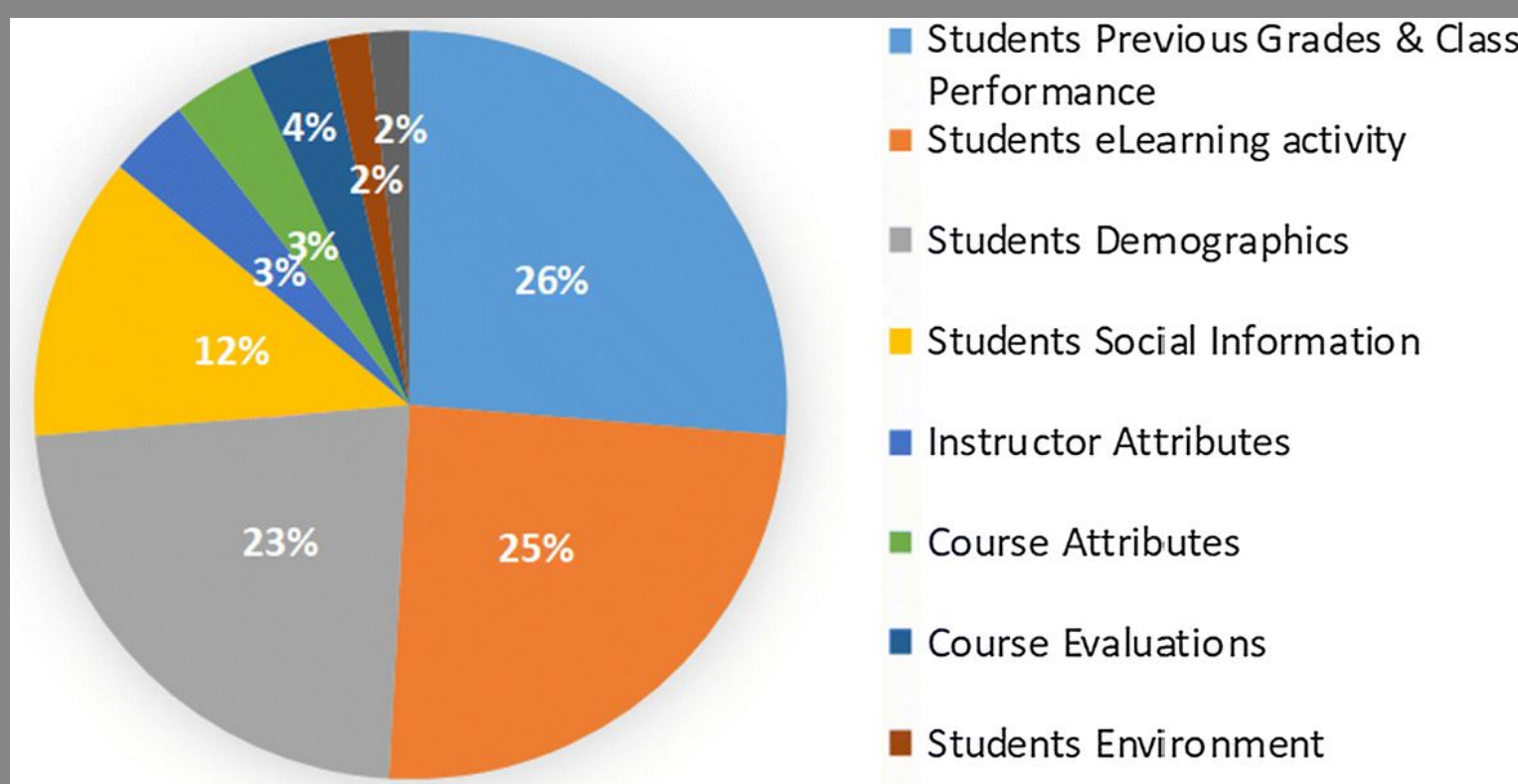


The problem

Students within the education sector have many factors that can influence how well they perform in school and intern in the work force. Factors included attendance, family income, parental involvement, and language proficiency. Teacher’s from the educational sector need to understand how these factors influence the students, especially for students from diverse backgrounds, as these factors hold more weight when it comes to there academic performance. By understanding these influences, it allows educators to provide a tailored support plan for the students so they can have the best chance of performing to their full ability.



Solution

This project will analyse a variety of educational data sources to identify key factors impacting overall student performance. Using statistical analysis and machine learning techniques, the project aims to uncover patterns and trends that can help educators recognise and address specific challenges faced by different student demographics. The final outcome will include an interactive dashboard that allows educators to explore these insights, empowering them to make data-informed decisions to support student success.



Proposed Solution and Approach

Aims and objectives

- Data Analysis:** Analyse educational datasets to pinpoint critical factors (e.g., attendance, socioeconomic background, parental involvement, language proficiency) that influence student performance.
- Predictive Modelling:** Build a machine learning model that can predict student success based on identified factors, offering educators proactive insights.
- Interactive Dashboard:** Develop an interactive dashboard to visualise findings, allowing educators to explore the data and inform their strategies.
- Educational Recommendations:** Provide data-driven recommendations and insights for educators to tailor their teaching approaches and support resources.

Data Collection & Preparation

Gather educational data that includes key variables (e.g., attendance, socioeconomic background, demographic data, language proficiency). Clean and preprocess the data to ensure accuracy and consistency.

Data Analysis

Conduct exploratory data analysis using Python or R to identify primary factors impacting student success and visualise trends.

Machine Learning Modelling

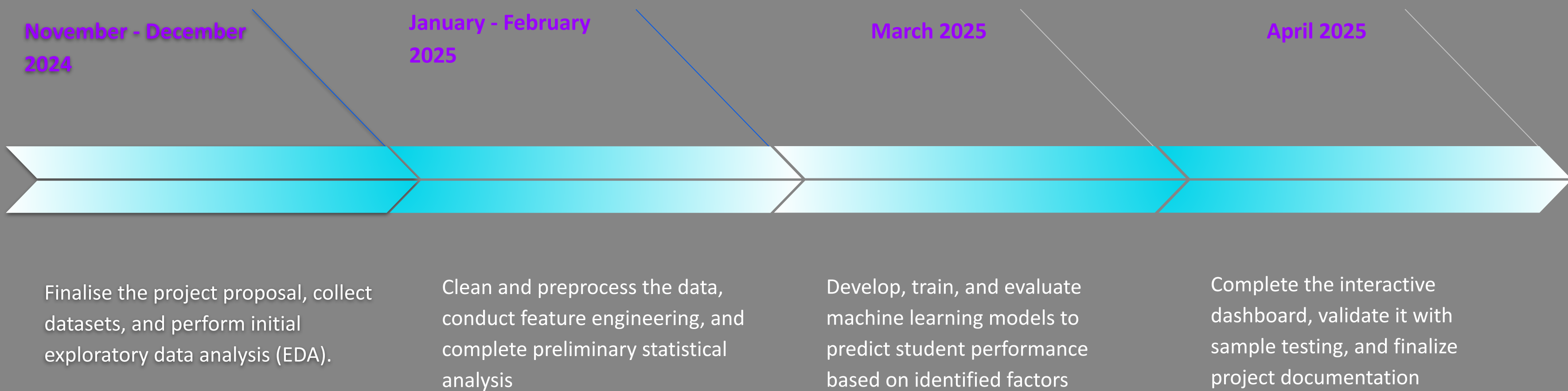
Train and evaluate predictive models (e.g., logistic regression, random forests) to forecast academic performance based on identified factors.

Recommendations for educators

Based on findings, develop practical recommendations to aid educators in supporting student success.

Dashboard Development

Create an interactive dashboard using Power BI, Plotly/Dash, or Tableau, allowing educators to explore insights related to student performance



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