**Problem Statement**

Empowering students through personalised education and early academic interventions is part of the mission that BrightPath Academy strives to uphold. The institution is struggling to identify at-risk students in a timely manner, provide tailored academic support, understand the impact that involvement in extracurricular activities has on academic performance. The lack of actionable insights impedes on the school’s ability to make data-driven decisions, despite the considerable amount of student data that they have access to. The aim of this project is to develop a predictive model using the student performance data provided by BrightPath to identify patterns that influence academic outcomes, particularly students’ grade classes. The goal is to assist students most at risk of underperforming by enabling timely and personalized interventions.

**Hypothesis Generation**

**Academic Risk Identification:**

**Hypothesis 1:** Students with more absences will be more likely to fall into lower GradeClass categories.

**Hypothesis 2:** Students that receive tutoring will be less likely to fall into lower GradeClass categories.

**Influence of Study Habits:**

**Hypothesis 3:** Increased study time will correlate to higher GradeClasses. Positive Correlation.

**Hypothesis 4:** Students with less study hours will be more likely to have lower GPA scores and fall into a lower GradeClass.

**Parental Involvement:**

**Hypothesis 5:** There will be an association with increased parental support and falling into higher GradeClasses.

**Hypothesis 6:** Students with parents who have received higher levels of education will be more likely to perform better academically, placing them in a higher GradeClass.

**Impact of Extracurricular Activities:**

**Hypothesis 7:** Students participating in extracurricular activities are more likely to fall into lower GradeClasses. This may be due to a negative correlation between extracurricular involvement and the amount of time available for studying.

**Hypothesis 8:** Specific extracurriculars may affect academic performance differently.

**Demographic Factors**

**Hypothesis 9:** There will be a perceivable difference across different genders and ethnicities.

**Hypothesis 10:** Age will be a weak predictor for academic performance.