



**FACULTY OF INFORMATION TECHNOLOGY**

**CITY UNIVERSITY MALAYSIA**

**CYBERJAYA CAMPUS**

**Final Project**

**Project Report: Student Performance Analysis at City University Malaysia**

**Subject Name and ID: BIT2053 Fundamentals of Modern Data.**

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## **Project proposal & Business Scenario**

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## Project proposal & Business Scenario

### Business Scenario: Education (City University Malaysia)

In the education sector, data plays an important part in helping us to understanding student performance, resource allocation, and boost teaching quality. Modern data techniques and Business Intelligence (BI) tools can be used by higher institutions like City University Malaysia to analyse student data for improving the decision-making and more effective learning for students. By identifying the issues, the current educational institutions face challenges like

### Problem Identification

Current educational institutions face challenges such as:

1. Need more time to track the student performance trends across semesters to identify suffering or struggling students early.
2. Evaluating course effectiveness to ensure programs meet learning outcomes.
3. Resource allocation like faculty, facilities, and the learning tools based on demand and performance.

These problems are relevant, and will give a massive impact in the student's success and institutional efficiency. By solving these problems will not only lead to boost student results and quality of learning but also boost the name or reputation of the institution.

### Three Business Questions

1. How do student's performance patterns change between semesters and programs?
2. Which courses or subjects have the highest failure rates, and why?
3. How can the university optimize resource allocation to improve student outcomes?

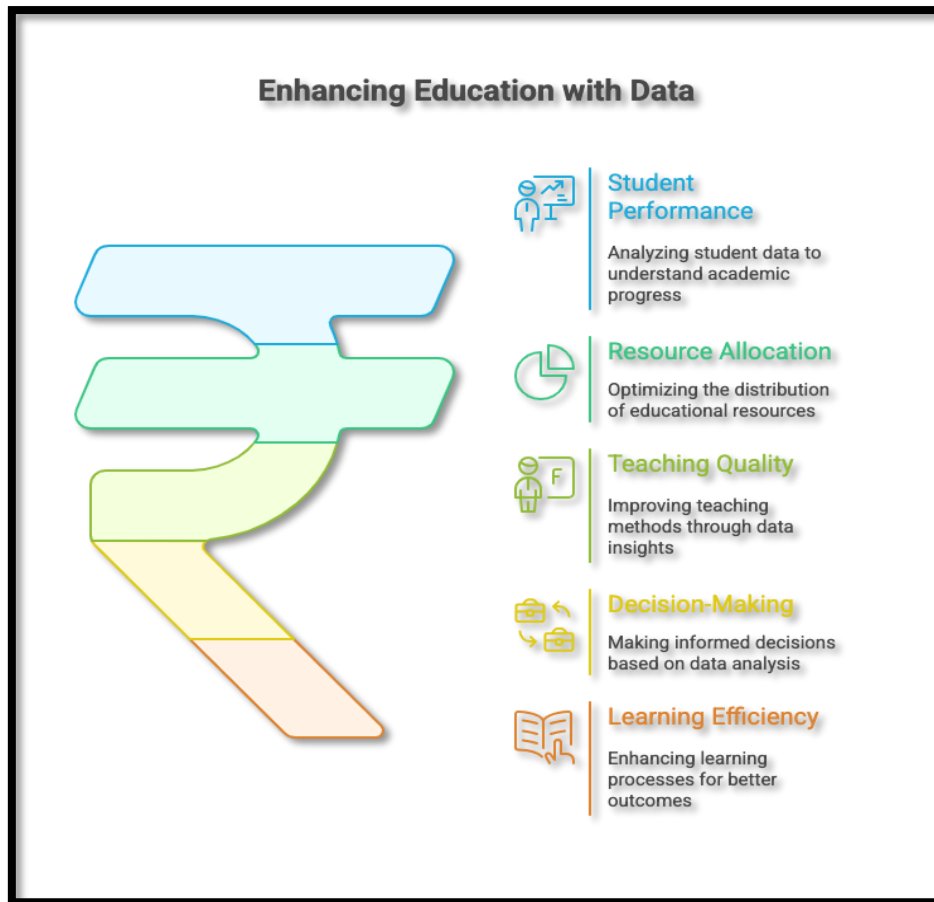
## Computational Thinking Concepts

1. **Decomposition:** It is the process of separating or breaking down the problem into smaller or manageable parts like performance analysis, course evaluation, and also resource management.
2. **Abstraction:** It is the process of representing student data like grades, attendance, course enrolment and many more in simplified dashboards.
3. **Algorithmic Thinking:** It is the process of using Python scripts to clean datasets, calculate averages, detect patterns, and prepare data for BI dashboards.

## Feasibility of Proposed Solution

The solution is feasible because:

1. Publicly available datasets on student performance like the data from Kaggle.com can be used.
2. Python will be used for pre-processing, cleaning, and basic analysis that will surely save time.
3. Interactive dashboards for stakeholders can be generated using a BI tool like Power BI.
4. The scope aligns with the requirements of the course and fits within the project's timeline.



*Figure 1 shows the benefits of enhancing education with modern data*