PROBLEM STATEMENT DATA ANALYTICS

**The educational institute aims to conduct a comprehensive analysis of its alumni to gain insights into their academic performance, career outcomes, and factors influencing their success. The institute has collected a dataset containing various attributes for each alumni. These attributes include:**

* **Order date (date of joining the institute):** This attribute represents the date when each alumni enrolled in the institute.
* **First name and last name:** These attributes identify the alumni individually.
* **Quantity (number of courses completed):** This attribute indicates the number of courses each alumni has completed during their time at the institute.
* **College name:** This attribute specifies the college from which each alumni graduated.
* **Year of graduation:** This attribute denotes the year in which each alumni completed their graduation.
* **City:** This attribute captures the city of residence or hometown for each alumni.
* **GPA (Grade Point Average):** This attribute represents the academic performance of each alumni based on their GPA.
* **Experience with Python programming:** This attribute indicates the level of experience each alumni has with Python programming.
* **Family income:** This attribute denotes the income level of each alumni's family.
* **Employment Status:** This attribute indicates whether each alumni is currently employed or unemployed.
* **Expected Salary:** This attribute represents the annual salary of each alumni.

# OBJECTIVES –

The objective of this data analysis project is to gain comprehensive insights into the academic performance, career outcomes, and factors influencing the success of the educational institute's alumni. By analyzing the provided dataset, our aim is to understand the relationship between various factors and alumni performance, identify trends in academic and career outcomes, explore the impact of different attributes on alumni success, and derive actionable insights that can inform strategic decision-making, curriculum development, and student support initiatives. The analysis will enable the institute to make informed decisions, improve educational programs, and enhance support services for future students, ultimately enhancing overall student success and satisfaction.

# THE RESULTS FOR THE FOLLOWING QUESTIONS ARE EXPECTED:-

BASIC QUESTIONS:

1. How many alumni are included in the dataset?
2. What is the average GPA of the alumni?
3. What is the distribution of alumni across different graduation years?
4. How many alumni have experience with Python programming?
5. What is the average family income of the alumni?
6. How does the GPA vary among different colleges?
7. Are there any outliers in the quantity (number of courses completed) attribute?
8. What is the average GPA for alumni from each city?
9. Can we identify any relationship between family income and GPA?
10. What is the overall trend in the number of alumni joining the institute over time?

MODERATE QUESTIONS:

1. What percentage of alumni are employed versus unemployed?
2. How does the employment status vary based on factors like GPA, family income, years of experience, and field of study?
3. Are there any industry-specific trends in alumni employment? Which industries tend to attract more alumni from specific fields of study?
4. What is the average salary of alumni? How does it vary based on factors like GPA, family income, years of experience, and field of study?
5. Are there any notable differences in salary based on the industry in which alumni are employed?
6. Can any insights be drawn regarding the impact of further education or leadership roles on alumni salaries?
7. Do alumni who held leadership positions during their college years or professional careers tend to have higher GPAs or better career outcomes?
8. Is there a correlation between participation in extracurricular activities and academic or career success among alumni?
9. Can any specific extracurricular activities or leadership experiences be identified as predictors of alumni success in specific fields of study or industries?