1. **Problem Statement: Creating and Utilizing a Student Class in Java**

**Objective**

The objective of this case study is to illustrate how to create a Student class in Java, initialize it with essential attributes, and print the details of the student.

**Scenario**

You are tasked with developing a Java application that manages student records for a college. Each student has an ID, name, branch, college name, and CGPA. Your task is to create a Student class that encapsulates these details and provides a method to print the student's information.

1. **Creating and Utilizing a Faculty Class in Java**

### Problem Statement: Reading Faculty Details from the Keyboard Using the Scanner Class

#### Objective

The objective of this case study is to demonstrate how to read user input from the keyboard using the Scanner class in Java to initialize the attributes of a Student class and then print the details.

#### Scenario

In a Java application for managing student records, it is necessary to read the Faculty details from user input at runtime. This can be achieved using the Scanner class. The task is to create a faculty class, read its attributes from the keyboard, and print the faculty information.(At least 2 instances)

### Problem Statement: Creating a Java Program to Print Default Values of a all datatypes

#### Objective

The goal of this case study is identification of default values of all primitive data types, and prints these default values.

1. **Problem Statement: Quadratic equations of the form ax2**+bx+c=0 ax^2 + bx + c = 0ax2+bx+c=0 are fundamental in algebra and appear in various real-world applications, from physics to engineering and finance. The solutions to these equations are crucial for problem-solving in these fields. Traditionally, quadratic solvers handle cases with real roots but often fall short when dealing with complex roots, which arise when the discriminant is negative.

Write a java program to read a,b,c values and find the roots based on discriminator values