

## Problem Statement: Student Grading System

**Objective:** Design a system to manage and calculate grades for students based on different types of assessments: exams, assignments, and projects. Use method overloading to handle different types of grade inputs and method overriding to provide specific implementations for calculating final grades based on the type of assessment.

### Requirements:

1. **Calculate Final Grades:** Implement methods to calculate final grades for different types of assessments.
2. **Method Overloading:** Use method overloading to input grades in different formats (e.g., individual scores, arrays of scores).
3. **Method Overriding:** Use inheritance and method overriding to provide specific implementations for calculating final grades for exams, assignments, and projects.

### Define the following classes

#### 1. Student Class (Base Class)

##### Purpose:

- Serves as a base class for different types of students.
- Contains common properties and methods for all student types, e.g., student name, ID, etc.
- Defines the method **calculateFinalGrade()** which will be overridden in subclasses.
- Provides overloaded methods **inputGrades()** to handle different formats of grade inputs, which will be overridden in subclasses.

#### 2. ExamStudent Class (Subclass)

##### Purpose:

- Represents a student whose final grade is based on exam scores.
- Overrides the **calculateFinalGrade()** method to provide specific logic for calculating the average of exam grades.
- Overrides the overloaded **inputGrades()** methods to handle input of exam grades.

#### 3. AssignmentStudent Class (Subclass)

##### Purpose:

- Represents a student whose final grade is based on assignment scores.
- Overrides the **calculateFinalGrade()** method to provide specific logic for calculating the average of assignment grades.
- Overrides the overloaded **inputGrades()** methods to handle input of assignment grades.

#### 4. ProjectStudent Class (Subclass)

**Purpose:**

- Represents a student whose final grade is based on a project score.
- Overrides the **calculateFinalGrade()** method to provide specific logic for returning the project grade.
- Overrides the overloaded **inputGrades()** methods to handle input of the project grade.

#### 5. Main Class

**Purpose:**

- Contains the **main** method to test the implementation of the grading system.
- Demonstrates the creation of instances of **ExamStudent**, **AssignmentStudent**, and **ProjectStudent**.
- Uses the overloaded **inputGrades()** methods to input grades for each student type.
- Calls the **calculateFinalGrade()** method for each student and prints the results, showcasing polymorphism through method overriding.

**Note:** you may use method overloading in each class if you want.