

Lab Test on Java and Network Programming, Exam Year-2023 (Time: 1 Hour 30 Minutes)

Problem-1: Perform the following Tasks:

Part 1: Create a Class and Constructors

1. Problem Statement:

Create a Java class Student that has the following attributes:

- name (String)
- age (int)
- grade (String)

The class should have:

- A default constructor that initializes the attributes to some default values.
- A parameterized constructor that allows initializing the attributes when creating a Student object.

2. Instructions:

- Define a class named Student.
- Create a default constructor.
- Create a parameterized constructor.
- Implement a method to display the student details.

Part 2: Create Methods and Use Parameters

1. Problem Statement:

Extend the Student class by adding methods to:

- Calculate the final grade based on an array of marks.
- Check if the student has passed or failed based on the final grade.

2. Instructions:

- Add a method calculateFinalGrade(int[] marks) to calculate the final grade as an average of the given marks (Assume four courses in this case).
- Add a method checkPassStatus(double finalGrade) that checks if the student has passed (pass grade is 50 or above).

Problem-2: Perform the following Tasks:

Create a class Calculator that demonstrates method overloading by implementing multiple versions of the basic mathematical operations for two operands:

1. Add/subtract/multiplication/division two integers.
2. Add/subtract/multiplication/division two floating point numbers.

Instructions:

- Define a class named Calculator.
- Implement two overloaded methods, perform operations based on the given operator, and display the result.