

Question 01

"Green Mart" is a store that sells a variety of electronic appliances. Each appliance has properties such as appliance code and price. Use a parameterized constructor to set the appliance code and price. Some appliances are on sale and have an additional property called sale discount rate. Create a parameterized constructor to set the sale discount rate. A method called "calculateSaleDiscount" should calculate and display the sale discount amount for the appliances on sale. Write an object-oriented program to:

1. Set the appliance code, price, and sale discount rate for a sale appliance.
2. Calculate and display the sale discount amount along with the appliance code.

Question 02

ELCARDO is among the world's largest furniture manufacturers offering a diverse range of modern and traditional furniture. More than 5000 employees work at ELCARDO company. All employees has employee id, name and basic salary. But only for Managers are given fuel allowance and incentive monthly in addition to basic salary. Write an object-oriented program to set details (employee id, name, basic Salary, fuel allowance and monthly incentive) of a manager and find and display total monthly income. You are required to identify super class/s and sub class/s. Use appropriate methods to set data of an employee and a manager and calculate total monthly income of a manager in the program.

Question 03

"Tech Solutions Ltd." is a company that develops custom software solutions for clients. The company has different roles for its employees. At the top level, all employees have a common set of properties: employee ID, name, and basic salary. There are two main divisions in the company: Developers and Project Managers.

- **Developers** have an additional property called "programmingLanguage" and a method to display the programming language they specialize in.
- **Project Managers** are responsible for managing projects and have a property called "numberOfProjects" to store how many projects they manage.

Furthermore, the company has **Senior Project Managers**, who are a specialized type of Project Manager, and they have an additional property called "teamSize" which stores the number of team members they supervise. They also have a method to display their team size.

Write an object-oriented Java program using multilevel inheritance to:

1. Set and display employee details for a developer, including their programming language.
2. Set and display employee details for a senior project manager, including the number of projects they manage and their team size.