



Syllogistek

Systems Private Limited

Assignment – Day 16

1. Problem -1

- a. Define a **Person** class with the following private attributes: **name** and **age**. Provide getter and setter methods for each attribute.
- b. Define a **Student** class that inherits from the **Person** class and adds the following private attributes: **student_id** and **major**. Provide getter and setter methods for each attribute.
- c. Define a **Professor** class that inherits from the **Person** class and adds the following private attributes: **employee_id** and **department**. Provide getter and setter methods for each attribute.
- d. Implement methods to:
 - i. Add a new student.
 - ii. Add a new professor.
 - iii. Display all students.
 - iv. Display all professors.

Marks-2

2. Problem-2:

- a. Define a **Product** class with the following private attributes: **product_id**, **name**, **price**, and **discount_percentage**. Provide getter and setter methods for each attribute. Include a protected method to calculate the final price after applying the discount.
- b. Define an **Electronics** class that inherits from the **Product** class and adds the following private attribute: **warranty_period**. Provide getter and setter methods for this attribute.
- c. Define a **Clothing** class that inherits from the **Product** class and adds the following private attributes: **size** and **material**. Provide getter and setter methods for each attribute.
- d. Implement methods to:
 - i. Add a new electronic item.
 - ii. Add a new clothing item.
 - iii. Display all products.
- e. Include a method to calculate and display the total price of all products in the shopping cart, including a fixed tax rate of 10%.

Marks-3