



Daffodil
International
University

ASSIGNMENT

Course Code: SE 216

Course Title: Object Oriented programming

Topic Name: Design a scenario-based question that demonstrates the main OOP concept

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Semester: Spring 25

Department: Software Engineering

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Submission Date: 2025-03-13

Code:

```
import java.util.Scanner;
```

```
class Language {
```

```
    private String courseName;
```

```
    private String languageName;
```

```
    protected double price;
```

```
    private String instructorName;
```

```
    private String instructorInitial;
```

```
    public Language(String courseName, String language-  
Name, double price, String instructorName, String  
instructorInitial) {
```

```
        this.courseName = courseName;
```

```
        this.languageName = languageName;
```

```
        this.price = price;
```

```
        this.instructorName = instructorName;
```

```
        this.instructorInitial = instructorInitial;
```

```
}
```

```
public String getCourseName(){  
    return courseName;  
}
```

```
public String getLanguageName(){  
    return languageName;  
}
```

```
public double getPrice(){  
    return price;  
}
```

```
public String getInstructorName(){  
    return instructorName;  
}
```

```
public String getInstructorInitial(){  
    return instructorInitial;  
}
```

```
}
```



```
public void display LanguageDetails() {  
    System.out.println("Course Name:" + courseName);  
    System.out.println("Language:" + languageName);  
    System.out.println("Instructor:" + instructorName);  
    System.out.println("Instructor Initial:" + instructorInitial);  
    System.out.println("Price : $" + price);  
}
```

```
public String getCourseType() {  
    return "General Course";  
}
```

```
class FreeLanguage extends Language {  
    public FreeLanguage(String courseName, String  
languageName, String instructorName, String instructorInitial) {  
        super(courseName, languageName, 0.00, instructor-  
Name, instructorInitial);  
}
```

@Override

```
public void displayLanguageDetails() {  
    super.displayLanguageDetails();  
    System.out.println("Course Type:" + getCourseType());  
    System.out.println("Enrollment Required : Yes (Free)");  
}
```

@Override

```
public String getCourseType() {  
    return "Free Course";  
}  
}
```

```
class PaidLanguage extends Language {  
    private double discount;
```

```
    public PaidLanguage(String courseName, String  
languageName, double price, String instructorName, String  
instructorInitial, double discount) {  
        super(courseName, languageName, price, instructorName,  
instructorInitial);  
        this.discount = discount;  
    }
```

@Override

```
public void displayLanguageDetails(){
```

```
    super.displayLanguageDetails();
```

```
    System.out.println("Course Type :" + getCourseType());
```

```
    System.out.println("Discount :" + discount + "%");
```

```
    System.out.println("Final Price : $" + calculateFinal-
```

```
Price());
```

```
}
```

```
public double calculateFinalPrice(){
```

```
    return getPrice() - (getPrice() * discount / 100);
```

```
}
```

@Override

```
public String getCourseType(){
```

```
    return "Paid Course";
```

```
}
```

```
}
```



```
public class LanguageSellingSystem{  
    public static void main (String [] args){  
        Scanner scanner = new Scanner(System.in);
```

```
        FreeLanguage language1 = new FreeLanguage("Introduction to Java", "Java", "Ali Akber Rudra", "MAAA");
```

```
        PaidLanguage language2 = new PaidLanguage("Advanced Python", "Python", 500.0, "Anisul Haque", "AH", 15);
```

```
        PaidLanguage language3 = new PaidLanguage("Learn PHP Easy", "PHP", 100.0, "Shahriar Parvez", "SP", 10);
```

```
        PaidLanguage language4 = new PaidLanguage("Acquire C++", "C++", 120.0, "Hasna Hena", "HH", 20);
```

```
        System.out.println("[ Available Programming Courses ]");
```

```
        language1.displayLanguageDetails();
```

```
        System.out.println();
```

```
        language2.displayLanguageDetails();
```

```
        System.out.println();
```

```
language3.displayLanguageDetails();
```

```
System.out.println();
```

```
language4.displayLanguageDetails();
```

```
System.out.println();
```

```
String selectedLanguage;
```

```
Language selectedCourse = null
```

```
while (true) {
```

```
    System.out.println("\n Enter Programming Language  
to Enroll (Java/Python/PHP/C++):");
```

```
    selectedLanguage = scanner.nextLine();
```

```
    if (selectedLanguage.equals("Java")) {
```

```
        Selected Course = language1;
```

```
        break;
```

```
    } else if (selectedLanguage.equals("Python")) {
```

```
        selectedCourse = language2;
```

```
        break;
```

```
    } else if (selectedLanguage.equals("PHP")) {
```

```
        selectedCourse = language3;
```

```
        break;
```



```
} else if (selectedLanguage.equals("C++")) {  
    selectedCourse = language4;  
    break;
```

```
} else {  
    system.out.println("Invalid choice! Please  
enter exactly! (Java/Python/PHP/C++)");
```

```
}
```

```
}  
  
selectedCourse.displayLanguageDetails();
```

```
if (selected instanceof PaidLanguage) {
```

```
    system.out.println("\n Total Amount to pay: $"  
+ ((PaidLanguage) selectedCourse).calculateFinalPrice());
```

```
}
```

```
scanner.close();
```

```
}
```

```
}
```