



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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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 Language Selling System{  
    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, "Hagna 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")){
        SelectedCourse = 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("In Total Amount to pay: $"  
        + ((PaidLanguage) selectedCourse).calculateFinalPrice());  
    }  
  
    scanner.close();  
}
```