Oops encapsulation

1.creating a class for “course” with the following properties:

courseName,courseCode,creditHours,enrolledStudents

public class Course {

private String courseName;

private String courseCode;

private int creditHours;

private int enrolledStudents;

public Course(String courseName, String courseCode, int creditHours, int enrolledStudents) {

this.courseName = courseName;

this.courseCode = courseCode;

this.creditHours = creditHours;

this.enrolledStudents = enrolledStudents;

}

}

2.properties should be private and create getter and setter methods for these properties:

public String getCourseName() {

return courseName;

}

public void setCourseName(String courseName) {

this.courseName = courseName;

}

public String getCourseCode() {

return courseCode;

}

public void setCourseCode(String courseCode) {

this.courseCode = courseCode;

}

public int getCreditHours() {

return creditHours;

}

public void setCreditHours(int creditHours) {

this.creditHours = creditHours;

}

public int getEnrolledStudents() {

return enrolledStudents;

}

public void setEnrolledStudents(int enrolledStudents) {

this.enrolledStudents = enrolledStudents;

}

3.setCreditHours and setEnrolledStudents should have a validation: negative values should result in an error.

public void setEnrolledStudents(int enrolledStudents) {

if (enrolledStudents < 0) {

throw new IllegalArgumentException("Number of enrolled students cannot be negative.");

}

this.enrolledStudents = enrolledStudents;

}

}

4.Add a courseinfo method,which will print all the course properties with good formatting

public void courseInfo() {

System.out.println("Course Information:");

System.out.println("Course Name: " + courseName);

System.out.println("Course Code: " + courseCode);

System.out.println("Credit Hours: " + creditHours);

System.out.println("Enrolled Students: " + enrolledStudents);

}

5.Create a test class named “Course test”,which should initialize three different course objects with different values and call courseInfo() from all three objects.

public class CourseTest {

public static void main(String[] args) {

Course course1 = new Course();

course1.setCourseName("Java");

course1.setCourseCode("JAVA");

course1.setCreditHours(36);

course1.setEnrolledStudents(5);

Course course2 = new Course();

course2.setCourseName("php");

course2.setCourseCode("PHP");

course2.setCreditHours(40);

course2.setEnrolledStudents(4);

Course course3 = new Course();

course3.setCourseName("ada");

course3.setCourseCode("ADA");

course3.setCreditHours(30);

course3.setEnrolledStudents(3);

course1.courseInfo();

course2.courseInfo();

course3.courseInfo();

}

}

OUTPUT:

Course Information:

Course Name: Java

Course Code: JAVA

Credit Hours: 36

Enrolled Students: 5

Course Information:

Course Name: php

Course Code: PHP

Credit Hours: 40

Enrolled Students: 4

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Course Information:

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Course Name: ada

Course Code: ADA

Credit Hours: 30

Enrolled Students: 3