**Java Classes and Objects Challenge**

**Objective:**

Design a Java program that uses classes, objects, constructors, and methods based on the concepts you’ve learned. This will deepen your understanding of creating and interacting with objects in Java.

**Scenario:**

(a)

Create a **"Library Management System"** where you can manage information about books in a library. Each book has properties such as a title, author, number of pages, and availability status. You should be able to perform actions like adding a new book, checking out a book, returning a book, and displaying the book’s details.

**Challenge Requirements:**

1. **Create a Book Class**:
   * Define private fields for the title, author, numberOfPages, and isAvailable.
   * Create a constructor that initializes the title, author, and numberOfPages, and sets isAvailable to true by default (indicating the book is available).
2. **Methods in the Book Class**:
   * checkOut(): Set isAvailable to false to indicate the book is checked out. If the book is already checked out, display a message that the book is not available.
   * returnBook(): Set isAvailable to true to indicate the book is returned and available.
   * displayDetails(): Print the book’s title, author, number of pages, and availability status.
3. **Main Program**:
   * In your main method, create a few sample Book objects using the constructor.
   * Demonstrate the checkOut(), returnBook(), and displayDetails() methods.
   * Use an anonymous object to display details for a temporary book without assigning it to a variable.

**Example Interaction:**

**Adding new books...**

**Checking out "Java Basics" by John Doe...**

**Book checked out: Java Basics**

**Displaying book details:**

**Title: Java Basics**

**Author: John Doe**

**Pages: 300**

**Available: No**

**Returning "Java Basics"...**

**Book returned: Java Basics**

**Displaying book details:**

**Title: Java Basics**

**Author: John Doe**

**Pages: 300**

**Available: Yes**

**Temporary book details:**

**Title: Temporary Book**

**Author: Jane Doe**

**Pages: 150**

**Available: Yes**

(b)

Write a java program which contains two (2) classes (*SchoolData* and *ResultData*). *SchoolData* class contains two (2) methods, one is *courseData()* parameterized with *CourseName* and the second method is called *TeacherData()* parameterized with *TeacherName.*

The *ResultData* class must initialize the states of the parameterized methods in *SchoolData* class where the values are entered from the user and finally, the program displays the name of the teacher with the course h/she teaches. The console data must look like this below:

**ENTER YOUR NAME: Kim**

**ENTER THE COURSE YOU TEACH: PHP**

**Kim teaches PHP course.**