

Week-09**Interfaces and Packages programs****Lab Exercises:**

1. Create an interface called “Sports” with methods getNumberOfGoals and dispTeam. Create classes Hockey and football that uses the interface “Sports”. Write the appropriate code for the methods to display the score of each team.
2. Write a Java program that defines an interface Shape with methods area() and perimeter(). Implement this interface in two classes: Circle and Rectangle. Calculate and display the area and perimeter of a circle and a rectangle in your program.
3. Create two interfaces, Movable and Resizable, each with methods like move() and resize(). Implement these interfaces in a class called ShapeTransformer to demonstrate how a class can implement multiple interfaces.
4. Create a package structure for a library management system. Design packages for library, book, member, and transaction. Organize classes accordingly and demonstrate how to import classes from these packages in your main program.

Additional Exercises

5. Write a program to compute the areas of a rectangle and a circle by using abstract class.
6. For the above use interface instead of abstract class.
7. Write a java program to store student record of college named “MIT”. Class Student_Detail should contain name, id, college_name as its members. display_details() method should display the details of the students.
8. Create a package math.geometry and place a class Circle inside it. Implement a method in Circle that is package-private and calculates the circumference. Demonstrate how this method can be accessed only within the same package.