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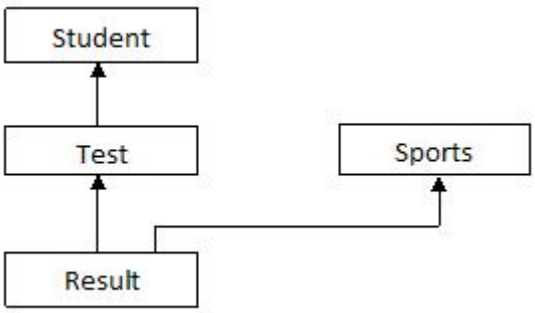
Experiment No – 09

AIM: To implement Inheritance, interfaces and method Overriding

THEORY:

In this program we created, and interface named sports which consists of score function and created 3 classes namely student, text by extending the student class and Result by extending student class and implementing the interface sports. Lastly, we created class multiple and executed all the functions. Inheritance in Java is a mechanism in which one object acquires all the properties and behaviors of a parent object. It is an important part of OOPs (Object Oriented programming system). An interface is a reference type, similar to a class. That can contain only constants, method signatures, default methods, static methods, and nested types.

CODE (i): WAP to implement three classes namely Student, Test and Result. Student class has member as roll no, Test class has members as sem1_marks and sem2_marks and Result class has member as total. Create an interface named sports that has a member score (). Derive Test class from Student and Result class has multiple inheritances from Test and Sports. Total is formula based on sem1_marks, sem2_mark and score.



Code1_OOPs.java

Exp9 > Code1_OOPs.java > ...

```java
package Exp9;
import java.util.Scanner;
interface Sports {
    int score = 100;
    void member_score();
}
class Student {
    int roll_no;
    void read(int n) {
        roll_no = n;
    }
    void display() {
        System.out.println(roll_no);
    }
}
class Test extends Student {
    int sem1_marks, sem2_marks;
    void read1(int n) {
        sem1_marks = n;
    }
    void read2(int n) {
        sem2_marks = n;
    }
    void display() {
        System.out.println(sem1_marks + sem1_marks);
    }
}
class Result extends Test implements Sports {
    public void member_score() {
        int total;
        total = sem1_marks + sem2_marks + score;
        System.out.println("The total score is " + total);
    }
}
public class Code1_OOPs {
    Run | Debug
    public static void main(String args[]) {
        System.out.println(x: "Prerna Jadhav - 60004220127");
        Scanner s = new Scanner(System.in);
        Result r = new Result();
        System.out.println(x: "Enter roll no.");
        int roll = s.nextInt();
        System.out.println(x: "Enter sem1.");
        int sem1 = s.nextInt();
        System.out.println(x: "Enter sem2.");
        int sem2 = s.nextInt();
        r.read(roll);
        r.read1(sem1);
        r.read2(sem2);
        r.member_score();
        s.close();
    }
```

Output:

```
Prerna Jadhav - 60004220127
Enter roll no.
23
Enter sem1.
122
Enter sem2.
234
The total score is 456
```

Conclusion:
Thus we implemented Inheritance, interfaces and method Overriding