Lab Exercise 4

AIM:

To write a program to implement inheritance by deriving the classes Cricket_player, Football_player and Hockey_player from the base class – player

Procedure:

1. **Define the Base Class (Player)**:
    - Create a class named Player.
    - Add common attributes like name and age.
    - Define a constructor to initialize these attributes.
    - Create a method showDetails() to display the player's details.
2. **Define Derived Classes**:
    - Create three classes: Cricket_Player, Football_Player, and Hockey_Player, inheriting from the Player class.
    - Add sport-specific attributes or methods to each derived class (e.g., runs for cricket, goals for football, etc.).
    - Override the showDetails() method in each derived class to include sport-specific details.
3. **Implement the Main Program**:
    - Create objects for each derived class.
    - Initialize the objects with appropriate data.
    - Call the showDetails() method for each object to display the details.

Program:

```
// Base class
class Player {
    String name;
    int age;

    Player(String name, int age) {
        this.name = name;
        this.age = age;
    }

    void showDetails() {
        System.out.println("Player Name: " + name);
```

```
        System.out.println("Player Age: " + age);
    }
}

// Derived class for Cricket Player
class Cricket_player extends Player {
    String role;

    Cricket_player(String name, int age, String role) {
        super(name, age);
        this.role = role;
    }

    void showDetails() {
        super.showDetails();
        System.out.println("Role in Cricket: " + role);
    }
}

// Derived class for Football Player
class Football_player extends Player {
    String position;

    Football_player(String name, int age, String position) {
        super(name, age);
        this.position = position;
    }

    void showDetails() {
        super.showDetails();
        System.out.println("Position in Football: " + position);
    }
}

// Derived class for Hockey Player
class Hockey_player extends Player {
    String team;
```

```
    Hockey_player(String name, int age, String team) {
        super(name, age);
        this.team = team;
    }

    void showDetails() {
        super.showDetails();
        System.out.println("Hockey Team: " + team);
    }
}

// Main class to test the program
public class Main {
    public static void main(String[] args) {
        Cricket_player cricketPlayer = new Cricket_player("MS Dhoni", 44, "Batsman");
        Football_player footballPlayer = new Football_player("Lionel Messi", 36, "Forward");
        Hockey_player hockeyPlayer = new Hockey_player("Manpreet Singh", 30, "India");

        System.out.println("Cricket Player Details:");
        cricketPlayer.showDetails();

        System.out.println("\nFootball Player Details:");
        footballPlayer.showDetails();

        System.out.println("\nHockey Player Details:");
        hockeyPlayer.showDetails();
    }
}
```

OUTPUT:

Cricket Player Details:

Player Name: MS Dhoni

Player Age: 44

Role in Cricket: Batsman

Football Player Details:

Player Name: Lionel Messi

Player Age: 36

Position in Football: Forward

Hockey Player Details:

Player Name: Manpreet Singh

Player Age: 30

Hockey Team: India

Result :

Thus the Java Program to implement inheritance is written, compiled and executed successfully.