

Hierarchical Inheritance

Name: Samiksha Thakur[57]

CODE:

```
package Inherit;
public class Test{

    public static void main(String[] args)
    {
        Cricket_player c = new Cricket_player("Arshad", 20, "Batsman");
        Football_player f = new Football_player("Prachi", 22, "Forward");
        Hockey_player h = new Hockey_player("SAM", 21, "Midfielder");
        c.show();
        f.show();
        h.show();
    }
}

class Player {
    String name;
    int age;

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

    void show() {
        System.out.println("Player Name: " + name);
        System.out.println("Player Age: " + age);
    }
}

class Cricket_player extends Player {
    String type;

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

    void show() {
        super.show();
        System.out.println("Cricket player");
        System.out.println("Type: " + type);
    }
}

class Football_player extends Player {
    String type;
```

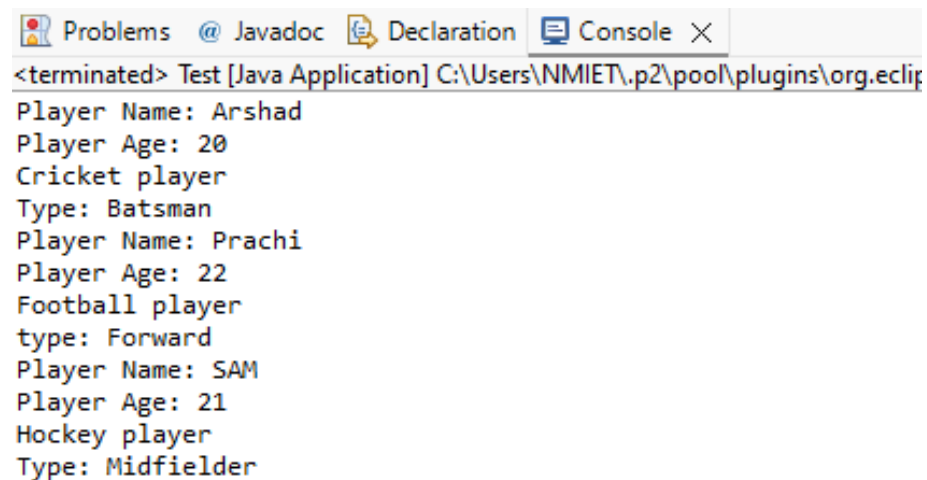
```

    Football_player(String name, int age, String type) {
        super(name, age);
        this.type = type;
    }
    void show() {
        super.show();
        System.out.println("Football player");
        System.out.println("type: " + type);
    }
}
class Hockey_player extends Player {
    String type;

    Hockey_player(String name, int age, String type)
    {
        super(name, age);
        this.type = type;
    }
    void show() {
        super.show();
        System.out.println("Hockey player");
        System.out.println("Type: " + type);
    }
}

```

Output:



The screenshot shows the Eclipse IDE's console window with the following output:

```

<terminated> Test [Java Application] C:\Users\NMIET\p2\pool\plugins\org.eclips
Player Name: Arshad
Player Age: 20
Cricket player
Type: Batsman
Player Name: Prachi
Player Age: 22
Football player
type: Forward
Player Name: SAM
Player Age: 21
Hockey player
Type: Midfielder

```

Addition of Two Matrices

Name: Samiksha Thakur [57]

CODE:

```
package Inherit;
import java.util.Scanner;

public class Matrix {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter no of rows: ");
        int rows = sc.nextInt();
        System.out.print("Enter number of columns: ");
        int col = sc.nextInt();

        int[][] r = new int[rows][col];
        int[][] c = new int[rows][col];
        int[][] sum = new int[rows][col];

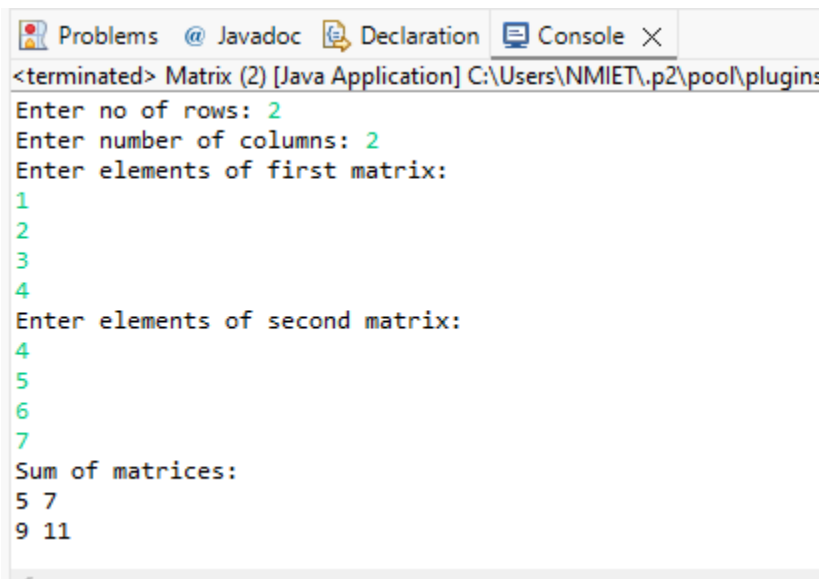
        System.out.println("Enter elements of first matrix:");
        for (int i = 0; i < rows; i++)
        {
            for (int j = 0; j < col; j++)
            {
                r[i][j] = sc.nextInt();
            }
        }
        System.out.println("Enter elements of second matrix:");
        for (int i = 0; i < rows; i++)
        {
            for (int j = 0; j < col; j++)
            {
                c[i][j] = sc.nextInt();
            }
        }
        for (int i = 0; i < rows; i++)
        {
            for (int j = 0; j < col; j++)
            {
                sum[i][j] = r[i][j] + c[i][j];
            }
        }
    }
}
```

```

        System.out.println("Sum of matrices:");
        for (int i = 0; i < rows; i++)
        {
            for (int j = 0; j < col; j++)
            {
                System.out.print(sum[i][j] + " ");
            }
            System.out.println();
        }
        sc.close();
    }
}

```

Output:



The screenshot shows a Java IDE window with the 'Console' tab selected. The title bar indicates the application is 'Matrix (2) [Java Application]' running from 'C:\Users\NMIET\p2\pool\plugins'. The console output shows the program prompting for the number of rows (2) and columns (2), then asking for the elements of the first matrix (1, 2, 3, 4) and the second matrix (4, 5, 6, 7). Finally, it displays the 'Sum of matrices' as two rows: '5 7' and '9 11'.

```

<terminated> Matrix (2) [Java Application] C:\Users\NMIET\p2\pool\plugins
Enter no of rows: 2
Enter number of columns: 2
Enter elements of first matrix:
1
2
3
4
Enter elements of second matrix:
4
5
6
7
Sum of matrices:
5 7
9 11

```

Interface

Name: Samiksha Thakur[57]

CODE:

```
package Inherit;

public interface Area {

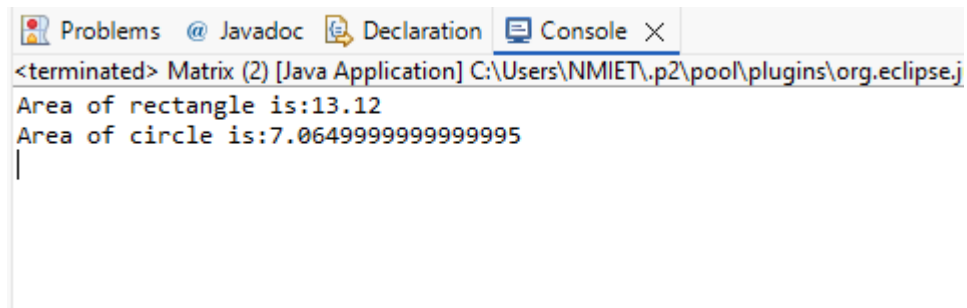
    double pi=3.14;
    void compute(double x,double y);
}

class Rect implements Area
{
    public void compute(double x,double y)
    {
        double a=x*y;
        System.out.println("Area of rectangle is:"+a);
    }
}

class circle implements Area
{
    public void compute(double x,double y)
    {
        double s=pi*x*x;
        System.out.println("Area of circle is:"+s);
    }
}

class Demo
{
    public static void main(String[] args)
    {
        Rect r=new Rect();
        circle c=new circle();
        r.compute(3.2, 4.1);
        c.compute(2.4, 3.2);
    }
}
```

Output:



The screenshot shows the Eclipse IDE's Console window. The title bar includes tabs for 'Problems', 'Javadoc', 'Declaration', and 'Console'. The console text displays the output of a Java application, including a termination message, the application name 'Matrix (2)', the file path, and two lines of calculated areas.

```
<terminated> Matrix (2) [Java Application] C:\Users\NMLET\p2\pool\plugins\org.eclipse.j
Area of rectangle is:13.12
Area of circle is:7.0649999999999995
|
```