

**Java Programming**

**MCA-272**

**Assignment – 06**

***BY***

**HIMANSHU HEDA (24225013)**

**SUBMITTED TO**

**Dr. Manjula Shannhog**

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**INTERFACE : --**

package Interface;

interface Shape{

    int calculateArea();

    int calculatePerimeter();

}

class Rectangle implements Shape {

    int length;

    int width;

    public Rectangle(int length,int width) {

        this.length = length;

        this.width = width;

    }

    @Override

    public int calculateArea(){

        return length \* width;

    }

    @Override

    public int calculatePerimeter(){

        return 2 \* (length + width);

    }

}

public class inter {

    public static void main(String[] args) {

        Rectangle rectangle = new Rectangle(5, 6);

        System.out.println("Area of Rectangle: " + rectangle.calculateArea());

        System.out.println("Perimeter of Rectangle: " + rectangle.calculatePerimeter());

        Shape rect = new Rectangle(10, 20);

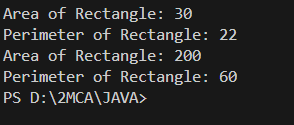
        System.out.println("Area of Rectangle: " + rect.calculateArea());

        System.out.println("Perimeter of Rectangle: " + rect.calculatePerimeter());

    }

}

**OUTPUT : --**

****

**MULTIPLE INTERFACE**

package Interface;

interface animal{

    void eat();

    default void make\_sound(){

        System.out.println("Animal makes a sound");

    }

}

interface bird{

    void fly();

    default void make\_sound(){

        System.out.println("Bird makes a sound");

    }

}

class Sparrow implements animal, bird {

    public void eat() {

        System.out.println("Sparrow is eating");

    }

    public void fly() {

        System.out.println("Sparrow is flying");

    }

    public void make\_sound() {

        animal.super.make\_sound();      // Calling Animal's default method

        bird.super.make\_sound();        // Calling Bird's default method

        System.out.println("Sparrow chirps");

    }

}

public class multiple\_interface {

    public static void main(String[] args) {

        Sparrow sp = new Sparrow();

        sp.eat();

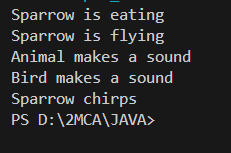
        sp.fly();

        sp.make\_sound();

    }

}

**OUTPUT : --**

****

**CALCULATOR : --**

package Interface;

// Define the interfaces

interface Basic {

    void add(int a, int b);

    void sub(int a, int b);

}

interface Advanced {

    void mul(int a, int b);

    void div(int a, int b);

}

// Implement the Advanced interface

class Calculator implements Advanced {

    // Implementing methods from the Advanced interface

    public void mul(int a, int b) {

        System.out.println("Multiplication: " + (a \* b));

    }

    public void div(int a, int b) {

        if (b != 0) {

            System.out.println("Division: " + (a / b));

        } else {

            System.out.println("Division by zero is not allowed.");

        }

    }

    // Implementing methods from the Basic interface

    public void add(int a, int b) {

        System.out.println("Addition: " + (a + b));

    }

    public void sub(int a, int b) {

        System.out.println("Subtraction: " + (a - b));

    }

}

// Main class with the main function

public class Main {

    public static void main(String[] args) {

        // Create an instance of the Calculator class

        Calculator calc = new Calculator();

        // Perform operations

        calc.add(10, 15);

        calc.sub(20, 5);

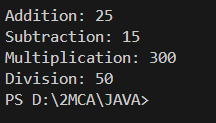
        calc.mul(30, 10);

        calc.div(100, 2);

    }

}

**OUTPUT : --**

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