LAB 7

NAME: Aditya Anand

ROLL NO.: 20124009

BRANCH: IT

|  |  |  |  |
| --- | --- | --- | --- |
| S No. | Title | Date Of Implementation | Remarks |
| 1 | Program to illustrate polymorphism | 21-02-2021 |  |

Program to illustrate polymorphism(compile-time and run-time)

OBJECTIVE:

The following program creates a super class **child**. The classes **girl** and **boy** are children classes of the class **child**.

**child**

void introduce()

void introduce(int age)

String introduce(int age, String name)

**girl**

void introduce()

**boy**

void introduce()

In the class child,

The method introduce is overloaded (compile-time polymorphism)

In the class boy,

The method introduce overrides the introduce method of the class child (run-time polymorphism)

In the class girl,

The method introduce overrides the introduce method of the class child (run-time polymorphism)

CODE:

public class Lab7 {

    public class child{

        int age;

        void introduce(){

            System.out.println("I am a child");

        }

        // Method Overloading: Compile time polymorphism

        // Overloads the above introduce() method

        void introduce(int age){

            this.age=age;

            System.out.println("I am a child. I am "+age+" years old");

        }

        // Method Overloading

        String introduce(int age, String name){

            this.age=age;

            System.out.println("I am a child. I am "+age+" years old");

            return "My name is "+name;

        }

    }

    public class boy extends child{

        boy(int age){

            super.age = age;

        }

        // Method Overriding: Run time polymorphism

        // Overrides the introduce() method of parent class if object of child is created

        void introduce(){

            System.out.println("I am a boy");

        }

    }

    public class girl extends child{

        girl(int age){

            super.age = age;

        }

        // Method Overriding: Run time polymorphism

        // Overrides the introduce() method of parent class if object of child is created

        void introduce(){

            System.out.println("I am a girl");

        }

    }

    public static void main(String[] args) {

        Lab7 l = new Lab7();

        boy b = l.new boy(6);

        b.introduce();

        b.introduce(6);

        System.out.println(b.introduce(6, "Luke"));

        girl g = l.new girl(8);

        g.introduce();

        System.out.println(g.introduce(8, "Arya"));

    }

}

OUTPUT:

