

Trabajo Práctico 7: Herencia y Polimorfismo en Java

1) Main:

```
package EJ1;

public class Main {

    public static void main(String[] args) {
        Auto a = new Auto(3, "Mercedes", "C63 Black Series 2012");

        a.mostrarInfo();
    }

}
```

Vehículo:

```
package EJ1;

public class Auto extends Vehiculo {
    private int cantidadDePuertas;

    public Auto(int cantidadDePuertas, String marca, String modelo) {
        super(marca, modelo);
        this.cantidadDePuertas = cantidadDePuertas;
    }

    @Override
    public void mostrarInfo(){
        System.out.println("Modelo del Auto: " + this.modelo + " , Marca: " + this.marca + ", Cantidad de Puertas: " + cantidadDePuertas);
    }

}
```

Auto:

```
package EJ1;

public class Auto extends Vehiculo {
    private int cantidadDePuertas;

    public Auto(int cantidadDePuertas, String marca, String modelo) {
        super(marca, modelo);
        this.cantidadDePuertas = cantidadDePuertas;
    }

    @Override
    public void mostrarInfo(){
        System.out.println("Modelo del Auto: " + this.modelo + " , Marca: " + this.marca + ", Cantidad de Puertas: " + cantidadDePuertas);
    }

}
```

Consola/Build:

```

--- compiler:3.13.0:compile (default-compile) @ TP7 ---
Recompiling the module because of changed source code.
Compiling 21 source files with javac [debug target 12] to target\classes
location of system modules is not set in conjunction with -source 12
not setting the location of system modules may lead to class files that cannot run on JDK 12
--release 12 is recommended instead of -source 12 -target 12 because it sets the location of system modules automatically

--- exec:3.1.0:exec (default-cli) @ TP7 ---
Modelo del Auto: C63 Black Series 2012 , Marca: Mercedes, Cantidad de Puertas: 3
-----
BUILD SUCCESS
-----
Total time: 1.373 s
Finished at: 2025-10-20T14:58:59-03:00
-----

```

2) Main:

```

public class Main {

    public static void main(String[] args) {

        ArrayList<Figura> figuras = new ArrayList<>();

        Rectangulo r1 = new Rectangulo(4.0, 4.0, "Rectangulo 1");
        Rectangulo r2 = new Rectangulo(6.0, 4.0, "Rectangulo 2");
        Circulo c1 = new Circulo(72, "Circulo 1");
        Circulo c2 = new Circulo(27, "Circulo 2");

        figuras.add(r1);
        figuras.add(r2);
        figuras.add(c1);
        figuras.add(c2);

        for(Figura f : figuras){
            f.calcularArea();
        }

    }

}

```

Circulo:

```

package EJ2;

public class Circulo extends Figura{
    private double radio;

    public Circulo(double radio, String nombre) {
        super(nombre);
        this.radio = radio;
    }

    @Override
    public void calcularArea(){
        System.out.println("Area de el cirulo " + nombre + " es de : " + (radio * 3.14));
    }

}

```

Figura:

```
package EJ2;

public abstract class Figura {
    protected String nombre;

    public Figura(String nombre) {
        this.nombre = nombre;
    }

    public void calcularArea() {
    }
}
```

Rectangulo:

```
package EJ2;

public class Rectangulo extends Figura{
    private double base;
    private double altura;

    public Rectangulo(double base, double altura, String nombre) {
        super(nombre);
        this.base = base;
        this.altura = altura;
    }

    @Override
    public void calcularArea(){
        System.out.println("El area del rectangulo " + nombre + " es: " + (base * altura));
    }
}
```

Consola/Build:

```
--- compiler:3.13.0:compile (default-compile) @ TP7 ---
Recompiling the module because of changed source code.
Compiling 21 source files with javac [debug target 12] to target\classes
location of system modules is not set in conjunction with -source 12
not setting the location of system modules may lead to class files that cannot run on JDK 12
--release 12 is recommended instead of -source 12 -target 12 because it sets the location of system modules automatically

--- exec:3.1.0:exec (default-cli) @ TP7 ---
El area del rectangulo Rectangulo 1 es: 16.0
El area del rectangulo Rectangulo 2 es: 24.0
Area de el cirulo Circulo 1 es de : 226.08
Area de el cirulo Circulo 2 es de : 84.78

-----
BUILD SUCCESS
-----
```

3) Main:

```

package EJ3;

import java.util.ArrayList;

public class Main {

    public static void main(String[] args) {
        ArrayList<Empleado> empleados = new ArrayList<>();

        EmpleadoPlanta e1 = new EmpleadoPlanta();
        EmpleadoPlanta e2 = new EmpleadoPlanta();
        EmpleadoTemporal e3 = new EmpleadoTemporal();
        EmpleadoTemporal e4 = new EmpleadoTemporal();

        empleados.add(e1);
        empleados.add(e2);
        empleados.add(e3);
        empleados.add(e4);

        int i = 0;
        for(Empleado e : empleados) {
            System.out.println("El sueldo del empleado " + i + " es de: " + e.calcularSueldo(e));
            i++;
        }
    }
}

```

Empleado:

```

package EJ3;

public abstract class Empleado {

    public double calcularSueldo(Empleado e) {
        if (e instanceof EmpleadoPlanta) {
            return 1500000.0;
        } else if (e instanceof EmpleadoTemporal) {
            return 980000.0;
        } else {
            return 0;
        }
    }
}

```

Empleado Temporal:

```

package EJ3;

public class EmpleadoTemporal extends Empleado {

}

```

Empleado Planta:

```
package EJ3;

public class EmpleadoPlanta extends Empleado{

}
```

Build:

```
--- compiler:3.13.0:compile (default-compile) @ TP7 ---
Recompiling the module because of changed source code.
Compiling 21 source files with javac [debug target 12] to target\classes
location of system modules is not set in conjunction with -source 12
not setting the location of system modules may lead to class files that cannot run on JDK 12
--release 12 is recommended instead of -source 12 -target 12 because it sets the location of system modules automatically

--- exec:3.1.0:exec (default-cli) @ TP7 ---
El sueldo del empleado 0 es de: 1500000.0
El sueldo del empleado 1 es de: 1500000.0
El sueldo del empleado 2 es de: 980000.0
El sueldo del empleado 3 es de: 980000.0
-----
BUILD SUCCESS
```

4) Main:

```
package EJ4;

import java.util.ArrayList;

public class Main {

    public static void main(String[] args) {
        ArrayList<Animal> animales = new ArrayList<>();

        Perro p1 = new Perro();
        Gato g1 = new Gato();
        Vaca v1 = new Vaca();

        animales.add(p1);
        animales.add(g1);
        animales.add(v1);

        for (Animal a : animales) {
            a.hacerSonido();
        }

    }

}
```

Animal:

```
package EJ4;

public class Animal {
    public void hacerSonido() {

    }

    public void describirAnimal() {

    }

}
```

Perro:

```
package EJ4;

public class Perro extends Animal{
    @Override
    public void hacerSonido(){
        System.out.println("Wof");
    }
}
```

Gato:

```
package EJ4;

public class Gato extends Animal{
    @Override
    public void hacerSonido(){
        System.out.println("Miau");
    }
}
```

Vaca:

```
package EJ4;

public class Vaca extends Animal{
    @Override
    public void hacerSonido(){
        System.out.println("Muuu");
    }
}
```

Build:

```
--- exec:3.1.0:exec (default-cli) @ TP7 ---
Wof
Miau
Muuu
-----
BUILD SUCCESS
```