Universidad de las Fuerzas Armadas ESPE

Object Oriented Programming

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WorkShop # 27

Topic:Overriding and Overloading

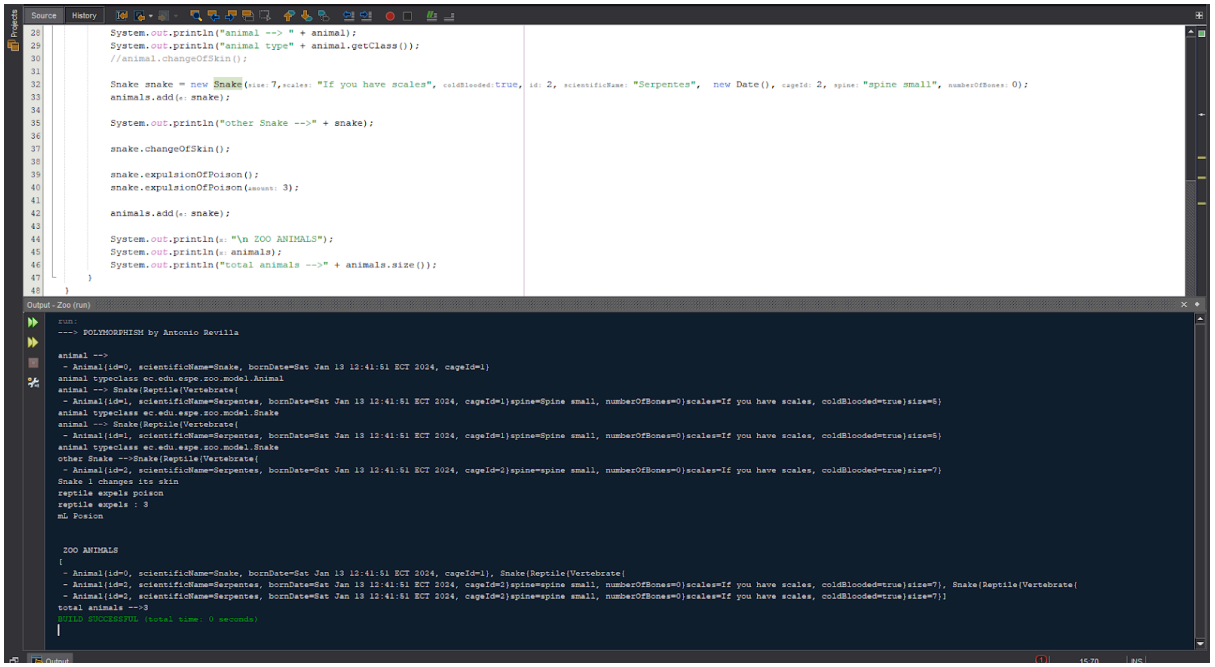
1.

```java
/**
 *
 * @author Antonio Revilla
 */
public class Zoo {
    public static void main(String[] args) {
        System.out.println("---> POLYMORPHISM by Antonio Revilla\n");
        Animal animal= new Animal(id: 0, scientificName: "Platypus", new Date(), cageId: 1);
        ArrayList<Animal> animals = new ArrayList<>();
        animals.add(e: animal);
        System.out.println("animal --> " + animal);
        System.out.println("animal type" + animal.getClass());

        animal=new Platypus(poisoness: true, poisonGlands: 0, numberOfMammaryGlands: 0, id: 0, scientificName: "Platypus", new Date(), cageId: 0, spine: "Spine small", numberOfBones: 0);
        System.out.println("animal --> " + animal);
        System.out.println("animal type" + animal.getClass());

        animal=new Giraffe(numberOfMammaryGlands: 0, id: 0, scientificName: "girafus", new Date(), cageId: 0, spine: "big spine", numberOfBones: 0);
        System.out.println("animal --> " + animal);
        System.out.println("animal type" + animal.getClass());
        //animal.brushNeck();

        Giraffe giraffe = new Giraffe(numberOfMammaryGlands: 4,id: 2,scientificName: "Giraffa", new Date(year:2023,month: 1,date:1), cageId: 3,spine: "long", numberOfBones: 206);
        animals.add(e: giraffe);
        System.out.println("other Giraffe -->" + giraffe);

        giraffe.brushNeck();

        giraffe.breastfeed();
        giraffe.breastfeed(calf:1);

        animals.add(e: giraffe);

        System.out.println("\n ZOO ANIMALS");
        System.out.println(x: animals);
        System.out.println("total animals -->" + animals.size());
    }
}
```

```
Output - Zoo (run)
run:
---> POLYMORPHISM by Antonio Revilla

animal -->
 - Animal{id=0, scientificName=Platypus, bornDate=Sat Jan 13 07:40:52 ECT 2024, cageId=1}
animal typeclass ec.edu.espe.zoo.model.Animal
animal --> Platypus{Mammal{Vertebrate{
 - Animal{id=0, scientificName=Platypus, bornDate=Sat Jan 13 07:40:52 ECT 2024, cageId=0}spine=Spine small, numberOfBones=0}numberOfMammaryGlands=0}poisoness=true, poisonGlands=0}
```

44:66 | INS | Windows (CRLF)

```java
import ec.edu.espe.zoo.model.Snake;
import java.util.ArrayList;
import java.util.Date;

/**
 *
 * @author Antonio Revilla
 */

public class Zoo {
    public static void main(String[] args) {
        System.out.println("---> POLYMORPHISM by Antonio Revilla\n");

        Animal animal= new Animal(id: 0, scientificName: "Snake", new Date(), cageId: 1);
        ArrayList<Animal> animals = new ArrayList<>();
        animals.add(e: animal);
        System.out.println("animal --> " + animal);
        System.out.println("animal type" + animal.getClass());

        animal=new Snake(size:5, scales: "If you have scales", coldBlooded:true, id: 1, scientificName: "Serpentes", new Date(), cageId: 1, spine: "Spine small", numberOfBones: 0);
        System.out.println("animal --> " + animal);
        System.out.println("animal type" + animal.getClass());

        animal=new Snake(size:5, scales: "If you have scales", coldBlooded:true, id: 1, scientificName: "Serpentes", new Date(), cageId: 1, spine: "Spine small", numberOfBones: 0);
        System.out.println("animal --> " + animal);
        System.out.println("animal type" + animal.getClass());
        //animal.changeOfSkin();

        Snake snake = new Snake(size:7,scales: "If you have scales", coldBlooded:true, id: 2, scientificName: "Serpentes",  new Date(), cageId: 2, spine: "spine small", numberOfBones
        animals.add(e: snake);

        System.out.println("other Snake -->" + snake);

        snake.changeOfSkin();

        snake.expulsionOfPoison();
        snake.expulsionOfPoison(amount: 3);

        animals.add(e: snake);

        System.out.println(x: "\n ZOO ANIMALS");
        System.out.println(x: animals);
        System.out.println("total animals -->" + animals.size());
    }
}
```



```
            System.out.println("animal --> " + animal);
            System.out.println("animal type" + animal.getClass());
            //animal.changeOfSkin();

            Snake snake = new Snake(size:7,scales: "If you have scales", coldBlooded:true, id: 2, scientificName: "Serpentes",  new Date(), cageId: 2, spine: "spine small", numberOfBones: 0);
            animals.add(e: snake);

            System.out.println("other Snake -->" + snake);

            snake.changeOfSkin();

            snake.expulsionOfPoison();
            snake.expulsionOfPoison(amount: 3);

            animals.add(e: snake);

            System.out.println(x: "\n ZOO ANIMALS");
            System.out.println(x: animals);
            System.out.println("total animals -->" + animals.size());
        }
    }
```

```
Output - Zoo (run)
run:
---> POLYMORPHISM by Antonio Revilla

animal -->
 - Animal{id=0, scientificName=Snake, bornDate=Sat Jan 13 12:41:51 ECT 2024, cageId=1}
animal typeclass ec.edu.espe.zoo.model.Animal
animal --> Snake{Reptile{Vertebrate{
 - Animal{id=1, scientificName=Serpentes, bornDate=Sat Jan 13 12:41:51 ECT 2024, cageId=1}spine=Spine small, numberOfBones=0}scales=If you have scales, coldBlooded=true}size=5}
animal type=class ec.edu.espe.zoo.model.Snake
animal --> Snake{Reptile{Vertebrate{
 - Animal{id=1, scientificName=Serpentes, bornDate=Sat Jan 13 12:41:51 ECT 2024, cageId=1}spine=Spine small, numberOfBones=0}scales=If you have scales, coldBlooded=true}size=5}
animal typeclass ec.edu.espe.zoo.model.Snake
other Snake -->Snake{Reptile{Vertebrate{
 - Animal{id=2, scientificName=Serpentes, bornDate=Sat Jan 13 12:41:51 ECT 2024, cageId=2}spine=spine small, numberOfBones=0}scales=If you have scales, coldBlooded=true}size=7}
Snake 1 changes its skin
reptile expels poison
reptile expels : 3
mL Posion


 ZOO ANIMALS
[
 - Animal{id=0, scientificName=Snake, bornDate=Sat Jan 13 12:41:51 ECT 2024, cageId=1}, Snake{Reptile{Vertebrate{
 - Animal{id=2, scientificName=Serpentes, bornDate=Sat Jan 13 12:41:51 ECT 2024, cageId=2}spine=spine small, numberOfBones=0}scales=If you have scales, coldBlooded=true}size=7}, Snake{Reptile{Vertebrate{
 - Animal{id=2, scientificName=Serpentes, bornDate=Sat Jan 13 12:41:51 ECT 2024, cageId=2}spine=spine small, numberOfBones=0}scales=If you have scales, coldBlooded=true}size=7}]
total animals -->3
BUILD SUCCESSFUL (total time: 0 seconds)
```

```java
package ec.edu.espe.zoo.model;

import java.util.Date;

/**
 *
 * @author revil
 */
public class Snake extends Reptile {
    private int size;

    public Snake(int size, String scales, boolean coldBlooded, int id, String scientificName, Date bornDate, int cageId, String spine, int numberOfBones) {
        super(scales, coldBlooded, id, scientificName, bornDate, cageId, spine, numberOfBones);
        this.size = size;
    }

    @Override
    public String toString() {
        return "Snake{" + super.toString() + "size=" + size + '}';
    }

    @Override
    public void expulsionOfPoison(){
        System.out.println(x: "reptile expels poison");
    }

    public void expulsionOfPoison(int amount){
        System.out.println("reptile expels : " + amount);
        System.out.println(x: "mL Posion \n");
    }

    public void changeOfSkin(){
        System.out.println(x: "Snake 1 changes its skin");
    }

    /**
     * @return the size
     */
    public int getSize() {
        return size;
    }

    /**
     * @param size the size to set
     */
    public void setSize(int size) {
        this.size = size;
    }
```