



SEMESTRE MAYO- AGOSTO

Name: Jefferson David Yépez Morán

NRC: 14575

Activity: WS28 – abstraction

```
10
11
12
13
14
15
16
17
18
19
20
21
22
23

/*
 * @author Jefferson Yopez - Bit Coderz - DCCO ESPE
 */
public class zooSystem2 {
    public static void main(String[] args) {
        System.out.println("-----");
        ArrayList<Animal> animals = new ArrayList<>();
        Animal animal = new Animal(1, "Platypus", new Date(), 1);
        System.out.println("Animal --> " + animal);
        System.out.println("animaltype" + animal.getClass());
        animals.add(animal);

        animal = new Platypus(poisoness: true, poisonGlands: 0, numberOfMammaryGlands: 2);
        System.out.println("Animal --> " + animal);
    }
}
```



SEMESTRE MAYO- AGOSTO

The screenshot displays the NetBeans IDE environment for a Java project named 'zoo2'. The Project Explorer on the left shows the project structure, including source packages and project files. The Source Packages view shows the package 'ec.edu.espe.zoo2.model' containing classes 'Animal.java', 'Giraffe.java', 'Mammal.java', 'Platypus.java', and 'Vertebrate.java'. The Main- Navigator shows the 'zooSystem2' class with a 'main(String[] args)' method.

The code in the 'Animal.java' file is as follows:

```
1 import java.util.Date;
2
3 /**
4  *
5  * @author Jefferson Yopez - Bit Coderz - DCCO ESPE
6  */
7
8 public abstract class Animal {
9
10     private int id;
11     private String scientificName;
12     private Date bornDate;
13     private int cageId;
14
15     public Animal(int id, String scientificName, Date bornDate,
16
17     public Animal(int id, String scientificName, Date bornDate, int cageId) {
18         this.id = id;
19         this.scientificName = scientificName;
20         this.bornDate = bornDate;
21         this.cageId = cageId;
22     }
23
24     @Override
25     public String toString() {
26         return "Animal(" + "id=" + id + ", scientificName=" + scientificName + ", bornDate=" + bornDate + ", cageId=" + cageId +
27     }
28
29     /**
30      * @return the id
31      */
32     public int getId() {
```

The code in the 'zooSystem2.java' file is as follows:

```
10
11
12 /**
13  *
14  * @author Jefferson Yopez - Bit Coderz - DCCO ESPE
15  */
16
17 public class zooSystem2 {
18     public static void main(String[] args) {
19         System.out.println("ABSTRACT CLASSES by Mateo Garcia");
20         ArrayList<Animal> animals = new ArrayList<>();
21         Animal animal = new Animal(1, "Platypus", new Date(), 1);
22         System.out.println("Animal -->" + animal);
23         System.out.println("Animal type " + animal.getClass());
24         animals.add(animal);
25
26         animal = new Platypus(groomness: true, spineLength: 0, numberOfHammaryGlands: 0, spine: "spine small", numberOfBones: 0, id: 0, scientificName:
27         System.out.println("Animal -->" + animal);
28         System.out.println(animal.toString());
29         animals.add(animal);
30
31         animal = new Giraffe(numberOfHammaryGlands: 4, spine: "giraffe scientific", numberOfBones: 206, id: 0, scientificName: "giraffe scientific
32         System.out.println("Animal -->" + animal);
33         animals.add(animal);
34
35         Giraffe giraffe = new Giraffe(numberOfHammaryGlands: 4, spine: "giraffe scientific", numberOfBones: 206, id: 0, scientificName: "giraffe
36         giraffe.brushNeck();
37         giraffe.breastfeed();
38         giraffe.breastfeed(-1);
39         animals.add(giraffe);
40
41         System.out.println("Zoo animals -->" + animals);
42         System.out.println("total animals -->" + animals.size());
43     }
44 }
```



SEMESTRE MAYO- AGOSTO

The screenshot displays the Apache NetBeans IDE interface. The main editor window shows the `zooSystem2.java` file, which contains a `main` method. The code creates a `zooSystem2` object and calls its `main` method, which in turn creates a `Vertebrate` object and a `Platypus` object, and adds them to a list. The output window shows the execution results, including the creation of the objects and the output of the `toString` method.

```
public class zooSystem2 {  
    public static void main(String[] args) {  
        System.out.println("ABSTRACT CLASSES by Jefferson Yepes");  
        ArrayList<Animal> animals = new ArrayList<>();  
        Animal animal = new Vertebrate(spine: "cool spine", numberOfBones: 290, id: 3, scientificName: "giraffe", new Date(), cageId: 1);  
        System.out.println("Animal -->" + animal);  
        System.out.println("AnimalType " + animal.getClass());  
        animals.add(animal);  
  
        animal = new Platypus(poisonous: true, poisonousGlands: 0, numberOfMammaryGlands: 0, spine: "spine small", numberOfBones: 0, id: 0, scientificName: "platypus");  
        System.out.println("Animal -->" + animal);  
        System.out.println("AnimalType " + animal.getClass());  
        animals.add(animal);  
    }  
}
```

Output - Run (zooSystem2) x

```
Changes detected - recompiling the module! :source  
Compiling 6 source files with javac [debug target 21] to target\classes  
--- exec:3.1.0:exec (default-cli) @ zoo2 ---  
ABSTRACT CLASSES by Jefferson Yepes  
Animal -->Vertebrate[Animal{id=3, scientificName=giraffe, bornDate=Mon Jan 15 11:45:11 COT 2024, cageId=1}spine=cool spine, numberOfBones=290]  
AnimalType class ec.edu.espe.zoo2.model.Vertebrate  
Animal -->Platypus[Mammal(Vertebrate[Animal{id=0, scientificName=platypus scientific, bornDate=Mon Jan 15 11:45:12 COT 2024, cageId=0}spine=spine small  
Platypus[Mammal(Vertebrate[Animal{id=0, scientificName=platypus scientific, bornDate=Mon Jan 15 11:45:12 COT 2024, cageId=0}spine=spine small, number0  
animal --> Giraffe[Mammal(Vertebrate[Animal{id=0, scientificName=giraffe scientific, bornDate=Mon Jan 15 11:45:12 COT 2024, cageId=0}spine=giraffe sci  
bursing the neck of the giraffe  
giraffe is breastfeeding 1
```