



SEMESTRE MAYO- AGOSTO

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NRC: 14575

Activity: WS26 – Polymorphism

The screenshot displays the NetBeans IDE environment. The main editor window shows the `ZooSystem.java` file with the following code:

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```

The output window shows the following text:

```
Output - Zoo (run)  
C:\Users\user\AppData\Local\NetBeans\Cache\19\executor-snippets\run.xml:24:  
Cancelled by user.  
BUILD FAILED (total time: 1 second)
```

The second screenshot shows the same code in the NetBeans IDE, but with the output window displaying the following text:

```
Output - Zoo (run)  
Giraffe is breastfeeding its calf number --> 1  
  
ZOO ANIMALS:  
[  
- Animal(id=1, scientificName=Platypus, bornOnDate=Sat Jan 13 07:34:10 ECT 2024, cageId=1)  
- Platypus(Mammal{Vertebrate{  
- Animal(id=2, scientificName=platypus scientific, bornOnDate=Sat Jan 13 07:34:10 ECT 2024, cageId=3)  
spine=spine small, numberOfBones=208, numberOfMammaryGlands=2, poisoness=true, poisonGlands=4, Giraffe(Mammal{Vertebrate{  
- Animal(id=4, scientificName=giraffa, bornOnDate=Sat Jan 13 07:34:10 ECT 2024, cageId=3)  
spine=big Spine, numberOfBones=206, numberOfMammaryGlands=4})]  
]
```



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```
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help Zoo - Apache NetBeans IDE 19 Search (Ctrl+I)

Output - Zoo (run)
run:
POLYMORPHISM by JEFFERSON YEPEZ
Animal -->
- Animal{id=1, scientificName=Platypus, bornOnDate=Sat Jan 13 07:36:33 ECT 2024, cageId=1}

animaltypeclass ec.edu.espe.zoo.model.Animal
Animal -->Platypus(Mammal{Vertebrate{
- Animal{id=2, scientificName=platypus scientific, bornOnDate=Sat Jan 13 07:36:33 ECT 2024, cageId=3}
spine=spine small, numberOfBones=208}numberOfMammaryGlands=2}poisoness=true, poisonGlands=4)
animaltypeclass ec.edu.espe.zoo.model.Platypus
Animal -->Giraffe(Mammal{Vertebrate{
- Animal{id=3, scientificName=Giraffe, bornOnDate=Sat Jan 13 07:36:33 ECT 2024, cageId=2}
spine=big spine, numberOfBones=208}numberOfMammaryGlands=2}}
animaltypeclass ec.edu.espe.zoo.model.Giraffe
other Giraffe --> Giraffe(Mammal{Vertebrate{
- Animal{id=4, scientificName=giraffa, bornOnDate=Sat Jan 13 07:36:33 ECT 2024, cageId=3}
spine=big Spine, numberOfBones=206}numberOfMammaryGlands=4}}
brushing the neck of the giraffe
Giraffe is breastfeeding
Giraffe is breastfeeding its calf numbre --> 1

ZOO ANIMALS:
[
- Animal{id=1, scientificName=Platypus, bornOnDate=Sat Jan 13 07:36:33 ECT 2024, cageId=1}
, Platypus(Mammal{Vertebrate{
- Animal{id=2, scientificName=platypus scientific, bornOnDate=Sat Jan 13 07:36:33 ECT 2024, cageId=3}
spine=spine small, numberOfBones=208}numberOfMammaryGlands=2}poisoness=true, poisonGlands=4), Giraffe(Mammal{Vertebrate{
- Animal{id=4, scientificName=giraffa, bornOnDate=Sat Jan 13 07:36:33 ECT 2024, cageId=3}
spine=big Spine, numberOfBones=206}numberOfMammaryGlands=4}})]
Total animals --> 3
BUILD SUCCESSFUL (total time: 0 seconds)

Pro: X Files Services Start Page X ZooSystem.java X Animal.java X Mammal.java X Giraffe.java X Vertebrate.java X ZooSystem.java X Lion.java X
Dependencies Java Dependencies Project Files
Zoo
Source Packages
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Animal.java
Giraffe.java
Lion.java
Mammal.java
Platypus.java
Vertebrate.java
ec.edu.espe.zoo.view
ZooSystem.java
Test Packages
Libraries
Test Libraries
Navigator X
Members
ZooSystem
ZooSystem()
main(String[] args)

Source History
11 /*
12 */
13 public class ZooSystem {
14     public static void main(String[] args) {
15         System.out.println(x: "POLYMORPHISM by JEFFERSON YEPEZ");
16         Animal animal = new Animal(id: 1, scientificName: "Platypus", new Date(), cageId:1);
17         ArrayList<Animal> animals = new ArrayList<>();
18         animals.add(e: animal);
19         System.out.println("Animal -->" + animal);
20         System.out.println("animaltype" + animal.getClass());
21
22         animal = new Platypus(poisoness: true, poisonGlands: 4, numberOfMammaryGlands: 2, spine: "spine small", numberOfBones: 208, id: 2, scier
23         animals.add(e: animal);
24         System.out.println("Animal -->" + animal);
25         System.out.println("animaltype" + animal.getClass());
26
27         animal = new Giraffe(numberOfMammaryGlands: 2, spine: "big spine", numberOfBones: 208, id: 3, scientificName: "Giraffe", new Date(),
28         System.out.println("Animal -->" + animal);
29         System.out.println("animaltype" + animal.getClass());
30         // giraffe.brushNeck();
31     }
32 }
```



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The image displays two screenshots of the Apache NetBeans IDE, showing the development of a Java application for a Zoo management system. The top screenshot shows the `Giraffe` class, which extends the `Mammal` class. The bottom screenshot shows the `Mammal` class, which extends the `Vertebrate` class.

Top Screenshot: `Giraffe.java`

```
import java.util.Date;

/**
 * @author Jefferson David Yepes Morán, Bit Coders, DCCO - ESPE
 */
public class Giraffe extends Mammal {

    public Giraffe(int numberOfMammaryGlands, String spine, int numberOfBones, int id, String scientificName, Date bornOnDate, int cageId) {
        super(numberOfMammaryGlands, spine, numberOfBones, id, scientificName, bornOnDate, cageId);
    }

    @Override
    public void breastfeed() {
        System.out.println("Giraffe is breastfeeding");
    }

    public void breastfeed(int calf) {
        System.out.println("Giraffe is breastfeeding its calf: " + calf);
    }

    @Override
    public String toString() {
        return "Giraffe(" + super.toString() + ")";
    }

    public void brushNeck() {
        System.out.println("brushing the neck of the giraffe");
    }
}
```

Bottom Screenshot: `Mammal.java`

```
/**
 * @author Jefferson David Yepes Morán, Bit Coders, DCCO - ESPE
 */
public class Mammal extends Vertebrate {

    private int numberOfMammaryGlands;

    public void breastfeed() {
        System.out.println("Mammal breastfeed baby 1");
    }

    public Mammal(int numberOfMammaryGlands, String spine, int numberOfBones, int id, String scientificName, Date bornOnDate, int cageId) {
        super(spine, numberOfBones, id, scientificName, bornOnDate, cageId);
        this.numberOfMammaryGlands = numberOfMammaryGlands;
    }

    @Override
    public String toString() {
        return "Mammal(" + super.toString() + " numberOfMammaryGlands: " + numberOfMammaryGlands + ")";
    }

    /**
     * @return the numberOfMammaryGlands
     */
    public int getNumberOfMammaryGlands() {
        return numberOfMammaryGlands;
    }

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