Object Oriented Programming-1

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Assignment

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Explanation: ***(Justify your answer here by identifying all the errors from the code)***

In the code I used 4 principles of OOP.

The private variables can't be used for inheritance. So I make them protected. In the constructor 'this' keyword is missing. There are get method only. One of them with no return type & other is private. The class need set method too. Abstract method can't be static & if we use abstract method then the class must be abstracted.

I used an extra class named MentionedAnimal, which must have to override all the abstracted method in Animal class with a body.

In the main class, we can't create an object with new constructor of Animal class because Animal class is abstracted. So, I just create the object & use the same object for creating new constructor of MentionedAnimal. Then called the methods.

Correct Code: *(Write your correct code here. Insert tables for writing your code)*

Animal	MentionedAnimal

public abstract class Animal
{
protected String species;
protected String name;
 	
public Animal() {
System.out.println("Animal Class");
}
public Animal(String name, String species) {
this.name = name;
this.species = species;
}
public void setSpecies(String species) {
this.species = species;
}
public String getSpecies() {
return species;
}
public void setName(String name) {
this.name = name;
}
public String getName() {
return name;
}
public abstract void canMakeSound();
public abstract void canSleep();
public abstract void canEat();
public abstract void canJump();
}
	public class MentionedAnimal extends Animal {
	
	public MentionedAnimal(String name, String species) {
	super(name,species);
	}
	
	public void canMakeSound() {
	System.out.println(name + " make sound \t Species :"+species);
	}
	
	public void canSleep() {
	System.out.println(name + " can sleep \t Species :"+species);
	}
	
	public void canEat() {
	System.out.println(name + " can eat \t Species :"+species);
	}
	
	public void canJump() {
	System.out.println(name + " can jump \t Species :"+species);
	}
	
	}

AnimalMain

```
public class AnimalMain
{

   public static void main(String[] args)
  {
       Animal animal;

       animal = new MentionedAnimal("Cat", "Mammal");
       animal.canMakeSound();
       animal.canSleep();
       animal.canEat();
       animal.canJump();

       animal = new MentionedAnimal("Dog", "unknown");
       animal.canMakeSound();
       animal.canSleep();
       animal.canEat();
       animal.canJump();
   }
}
```