Assignment Description on Java Inheritance

In this assignment, you will create a simple Java program to demonstrate the concept of Inheritance. You will create a superclass and a subclass, and then demonstrate how the subclass inherits properties and methods from the superclass.

Requirements

1. Create a superclass called "Animal". This class should have the following properties:
    - a "name" property of type String
    - a "species" property of type String
    - a constructor that takes in values for the name and species properties and sets them accordingly
    - a method called "eat" that prints out a message indicating that the animal is eating
2. Create a subclass called "Dog" that extends the Animal class. This class should have the following properties:
    - a "breed" property of type String
    - a constructor that takes in values for the name, species, and breed properties and sets them accordingly
    - a method called "bark" that prints out a message indicating that the dog is barking
3. Create a main method that creates an instance of the Dog class and demonstrates how it inherits properties and methods from the Animal class. Specifically, your main method should:
    - create an instance of the Dog class
    - call the "eat" method on the Dog instance
    - call the "bark" method on the Dog instance

Example Output

My dog's name is Fido and he is a dog of the breed Retriever.
Fido is eating.
Fido is barking.

here's a high-level class design for the above problem of demonstrating inheritance

- Animal class:
    - Fields:
        - name (String)
        - species (String)
    - Methods:
        - Constructor (takes in name and species parameters and sets the corresponding fields)
        - eat() (prints a message indicating that the animal is eating)
- Dog class (extends Animal class):
    - Fields:
        - breed (String)
    - Methods:
        - Constructor (takes in name, species, and breed parameters and sets the corresponding fields)
        - bark() (prints a message indicating that the dog is barking)
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- InheritanceDemo class:
    - main() method:
        - Creates an instance of the Dog class, passing in values for name, species, and breed
        - Calls the eat() method on the Dog instance
        - Calls the bark() method on the Dog instance

sample implementation of the classes and methods for the problem of demonstrating inheritance in Java, without any business logic implementation:

```
// Animal class
public class Animal {
   private String name;
   private String species;

   public Animal(String name, String species) {
      this.name = name;
      this.species = species;
   }

   public void eat() {
      // Business logic for eating
   }
}

// Dog class
public class Dog extends Animal {
   private String breed;

   public Dog(String name, String species, String breed) {
      super(name, species);
      this.breed = breed;
   }

   public void bark() {
      // Business logic for barking
   }
}

// InheritanceDemo class
public class InheritanceDemo {
   public static void main(String[] args) {
      Dog myDog = new Dog("Fido", "Dog", "Retriever");
      myDog.eat();
      myDog.bark();
   }

}
```

Note that the implementation of the eat() and bark() methods are left empty, as this assignment did not specify any specific business logic. You can add the necessary business logic within these methods as per the requirements of your specific use case.