

Writing Constructor Statements Based on Constructor Definitions

Study the Animal class below, and answer the following questions with a partner:

1. How many constructor definitions are provided in this class?
2. Compare and contrast a Constructor header to a Method header. What keywords are, or are not, included in each? How does style allow us to identify constructors?
3. List the three identifiers for the instance variables found in the class:
4. What do you think the keyword `this` does?

File #1: Animal Class	File #2: Animal Tester Class
<pre> public class Animal { // Declaring private instance data private String nameOfAnimal; ← identifiers private int numberOfLegs; private boolean canFly; // Constructor Def #1 public Animal(String name, int numL, boolean canFly) { nameOfAnimal = name; use when parameter name numberOfLegs = numL; ↓ is same this.canFly = canFly; ↓ thoughts on 'this'? as } instance variable // Constructor Definition #2 public Animal(int numL, String name) { numberOfLegs = numL; nameOfAnimal = name; } public String getName() { return nameOfAnimal; } public void changeNumberOfLegs(int numL) { numberOfLegs = numL; } } </pre>	<pre> public class AnimalTester { public static void main(String[] args) { Animal a1 = new Animal("bird", 2, true); Animal a2 = new Animal(4, "dog"); S.O.P. (a1.getName()); a2.changeNumberOfLegs(3); } } </pre>

Writing Classes Based on Constructor Statements

In the tester class below, underline all method calls and circle all identifiers for your variables.

File #1: Bird Class	File #2: Animal Tester Class
<pre> public class Bird { private String type; private int avgSpan; private String country; public Bird (String t, int a, String c) { type = t; avgSpan = a; country = c; } public Bird (String t, int a) { type = t; avgSpan = a; } public void changeLifeSpan (int a) { avgSpan = a; } public int getLifeSpan () { return avgSpan; } } </pre>	<pre> public class AnimalTester { public static void main (String[] args) { /* instantiates a Bird object. The type of bird is * a Puffin, with an average life span of 25 years, * which is native to Canada */ Bird b1 = new Bird ("Puffin", 25, "Canada"); /* instantiates a Bird object. The type of bird is * a Hawk, with an average life span of 18 years */ Bird tam_hawk = new Bird ("Hawk", 18); /* Sample accessor/mutator method calls to * change the average life span of a bird, and * access that private data */ b1.changeLifeSpan(20); // b1 lifespan sets to 20 int puffSpan = b1.getLifeSpan(); System.out.println("New life span:" + puffSpan); tam_hawk.changeLifeSpan(13); int hawkSpan = tam_hawk.getLifeSpan(); System.out.println("New life span:" + hawkSpan); } } </pre>