

Answer

1. What will be printed?

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```
----jGRASP exec: java Lab1Stage2
Meow. I am a cat. My name is Kurre
and I am 6 years old.
Woof. I am a dog. My name is Vilma
and I am 3 years old.

----jGRASP: operation complete.
```

2. Explain how it is that the instance variable age of Animal can be used in Cat and Dog when it is declared in Animal.

= Its s because Cat and dog is the subclass of Animal.

3. What actually consists an instance of?

=Formally, "instance" is synonymous with "object" as they are each a particular value (realization), and these may be called an instance object; "instance" emphasizes the distinct identity of the object. The creation of an instance is called instantiation.

4. And what consists a class of?

=A class contains data field descriptions (or properties, fields, data members, or attributes). These are usually field types and names that will be associated with state variables at program run time; these state variables either belong to the class or specific instances of the class.

5. What is the difference between a class and an instance?

=A class is a blueprint which you use to create objects. An object is an instance of a class - it's a concrete 'thing' that you made using a specific class. So, 'object' and 'instance' are the same thing, but the word 'instance' indicates the relationship of an object to its class.

6. Change the declaration of the instance variable age of Animal to a class variable using static, in this way: public static int age;

What is the result of the output now? Why?

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```
----jGRASP exec: java Lab1Stage2
Meow. I am a cat. My name is Kurre
and I am 3 years old.
Woof. I am a dog. My name is Vilma
and I am 3 years old.

----jGRASP: operation complete.
```

It is because the variable will shared by all instances of the class after changed it to static.

7. Where is the value of an instance variable stored?

=The value of an instance variable stored in heap.

8. Where is the value of a class variable stored?

=The value of class variable is stored in heap

9. What refers the variable this to?

=The current class belong to the variable this