

## Questions:

- **What will be printed?**

```
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.
```

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

Animal is the superclass and Cat and Dog are subclass of it. Hence, the instance variable age is inherits from superclass so it can be used in subclasses.

- **What actually consists an instance of?**

In class Animal, there are instance kurre and vilma with different properties like name and age.

- **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.

- **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.

- **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?**

**It may happen that you get warnings from the compiler that you should access the variable age via Animal.age, but it should be possible to run the program anyway. Otherwise, change the references to age into Animal.age.**

```
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.
```

Because *static* is used for a constant variable or a method that is same for every instance of a class. Hence, when age for vilma is set to 3, age of kurre also become 3.

- **Where is the value of an instance variable stored?**

Instance variable is stored in the a memory place, Heap.

- **Where is the value of a class variable stored?**

The value of a class variable age stored in Animal instance while class variable name stored in Cat instance and Dog instance respectively.

- **What refers the variable this to?**

Variable this refers to current object in a method or constructor.