Instanceof and getClass()

Java has two ways to determine what class an object is: operator `instanceof` and function `getClass()`.

1. instanceof operator

The instanceof operation has the syntax:

<object> `instanceof` <class-name>

Its evaluation yields true if the object has a partition named <class-name> and false otherwise. Identifier `instanceof` is a keyword of Java and cannot be use as a variable name.

Here are examples, using variable `s` and the object to which it points shown at the bottom of this page.

`s instanceof Object`	is true	`s instanceof JFrame`	is false
`s instanceof C`	is true	`s instanceof Time`	is false
`s instanceof S`	is true		

Checking the specific class with getClass()

Sometimes, you need to check whether an object was created using `new C(…)` —whether the name on its bottom partition is `C`. We explain how to do this.

Java has a class `java.lang.Class` each instance of which contains information about a class. You can't create an instance of class `Class`; Java does that automatically. For example,

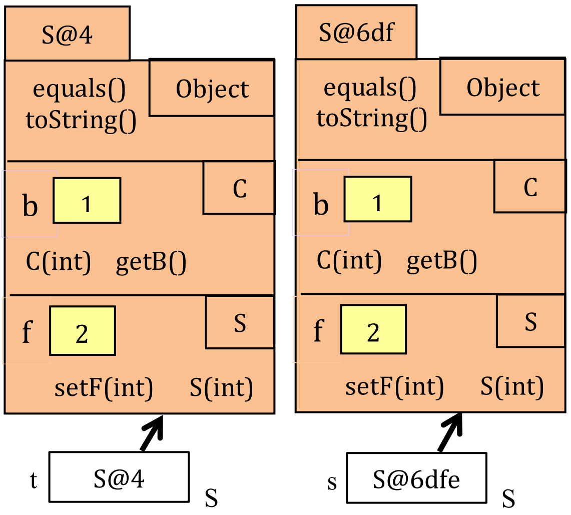
> For any class `C`, static field `C.class` is an object of class `Class` that describes `C`. For example, object `JFrame.class` describes class `JFrame`.

You can use the object to find out things about the class. For example, the call `JFrame.class.getFields()` gives you an array that describes all the fields declared in class JFrame![1] For our purposes here, we need only function getClass:

> For an object `ob`, function `ob.getClass()` returns an object of class `Class` that describes the class of `ob` —the class whose name is on its bottom partition.

We provide some examples using variable s that appears at the bottom of this page.

`s.getClass() == Object.class`	is false
`s.getClass() == C.class`	is false
`s.getClass() == JFrame.class`	is false
`s.getClass() == S.class`	is true
`s.getClass() == t.getClass()`	is true



[1] Class `Class` is part of Java's *reflection* mechanism, which allows you, within a program, to get all sorts of information about the classes in the program. A full explanation is beyond the scope of this JavaHyperText. Look at JavaHyperText entry "Reflection" for a brief intro and a program that illustrates the use of *reflection*.