Inheritance 2

05

java.lang.Object
Final classes, methods and fields
Abstract classes and methods

Object as superclass

In Java all classes ultimately inherit from **one** root class:
`java.lang.Object`. Implemented methods:

- `clone()` *returns copy of object*

- `equals(Object obj)` *establishes equivalence*

- `finalize()` *called by GC before reclaiming*

- `getClass()` *returns runtime class of the object*

- `hashCode()` *returns a hash code for the object*

- `toString()` *returns string representation of object*

Final Classes and Methods

The `final` keyword in a class declaration states that the class *may not* be subclassed.

The `final` keyword in a method declaration states that the method *may not* be overridden.

Abstract Classes and Methods

The `abstract` keyword in a class declaration states that the class is abstract, and therefore cannot be instantiated (its subclasses may be, if they are not abstract).

The `abstract` keyword in a method declaration states that the method declaration is abstract; the implementation must be provided by a subclass.