|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 11 down vote accepted | **Integer objects**  Integer x = 1, y = 1;  System.out.println(x==y); // true, why?  This happens because for values in the byte range (-128 to +127), java uses cached Integer objects, stored in [Integer](http://download.oracle.com/javase/6/docs/api/java/lang/Integer.html)'s inner class, [IntegerCache](http://www.docjar.org/docs/api/java/lang/Integer%24IntegerCache.html). Every time an Integer object is created with value between -128 and +127, the *same object* will be returned (instead of creating the *new* object).  Conversely, for values *outside* the byte range, the comparison is false:  Integer x = 999, y = 999;  System.out.println(x==y); // false  **Class objects**  String s1 = "a", s2 = "b";  System.out.println(s1.getClass() == s2.getClass()); // true. Why?  This is true because the *class* of both objects is String, and there is only one copy of each class object per JVM (it's like a singleton). The *class object* returned from getClass() of each String is *the same* class object (String.class).   |  |  |  | | --- | --- | --- | | [share](http://stackoverflow.com/a/7464358)|[improve this answer](http://stackoverflow.com/posts/7464358/edit) | [edited Sep 19 '11 at 10:52](http://stackoverflow.com/posts/7464358/revisions) | answered Sep 18 '11 at 20:48  [[https://www.gravatar.com/avatar/d84b558fd67be10d5a718fb94231909d?s=32&d=identicon&r=PG](http://stackoverflow.com/users/256196/bohemian)](http://stackoverflow.com/users/256196/bohemian)  [Bohemian](http://stackoverflow.com/users/256196/bohemian) 95.3k1767137 | |
|  | |  |  | | --- | --- | |  | Actually the last sentence isn't really true. You can get more than one string class (and GREAT compile errors) if you play with classloaders the wrong way. Still +1, but a bit nitpicking is just too much fun to ressist ;) – [Voo](http://stackoverflow.com/users/144746/voo" \o "10549 reputation)[Sep 18 '11 at 20:55](http://stackoverflow.com/questions/7464340/why-are-autoboxed-integers-and-getclass-values-equal-not-only-equals-e?rq=1#comment9031204_7464358) | |  | @Bohemian Try this. ArrayList<Integer> x1 = new ArrayList<Integer>() and ArrayList<Integer> x2 = new ArrayList<<Integer>() and do a printout of the getClass() of both x1 and x2 using ==. It will print TRUE. Now that is not of String class. – [yapkm01](http://stackoverflow.com/users/303250/yapkm01)[Sep 18 '11 at 20:55](http://stackoverflow.com/questions/7464340/why-are-autoboxed-integers-and-getclass-values-equal-not-only-equals-e?rq=1#comment9031209_7464358) | | |  |  | | --- | --- | | 1 |  | | @yapkm01 Yeah obviously. There's only one ArrayList class. What the arraylist is unimportant too when comparing classes (generics being not available at runtime) – [Voo](http://stackoverflow.com/users/144746/voo" \o "10549 reputation)[Sep 18 '11 at 20:57](http://stackoverflow.com/questions/7464340/why-are-autoboxed-integers-and-getclass-values-equal-not-only-equals-e?rq=1#comment9031227_7464358) | |  | @Voo You sure mean GREAT *runtime* errors ;) – [Philipp Reichart](http://stackoverflow.com/users/180740/philipp-reichart)[Sep 18 '11 at 20:57](http://stackoverflow.com/questions/7464340/why-are-autoboxed-integers-and-getclass-values-equal-not-only-equals-e?rq=1#comment9031233_7464358) | |  | @yapkm01 Now you are comparing the classes of ArrayList - yes they are the same object ArrayList.class – [Bohemian](http://stackoverflow.com/users/256196/bohemian" \o "95333 reputation)[Sep 18 '11 at 20:58](http://stackoverflow.com/questions/7464340/why-are-autoboxed-integers-and-getclass-values-equal-not-only-equals-e?rq=1#comment9031236_7464358) | |  | @Philipp Reichart Ah yep obviously - how did that happen... the errors confused me! – [Voo](http://stackoverflow.com/users/144746/voo" \o "10549 reputation)[Sep 18 '11 at 20:59](http://stackoverflow.com/questions/7464340/why-are-autoboxed-integers-and-getclass-values-equal-not-only-equals-e?rq=1#comment9031247_7464358) | |  | This thing about Integer within byte range being cached trick is never mentioned in any SCJP books. Gee .. – [yapkm01](http://stackoverflow.com/users/303250/yapkm01)[Sep 18 '11 at 21:26](http://stackoverflow.com/questions/7464340/why-are-autoboxed-integers-and-getclass-values-equal-not-only-equals-e?rq=1#comment9031523_7464358) | |

# Singleton Design Pattern

Ensure a class has only one instance, and provide a global point of access to it