

**Subject:** [ap-compsci] Integers and == (was String literals and ==)

**Date:** Monday, December 21, 2009 10:54 AM

**From:** Robert Glen Martin <martinrg@sbcglobal.net>

**Reply-To:** "AP Computer Science" <ap-compsci@lyris.collegeboard.com>

**To:** AP Computer Science <ap-compsci@lyris.collegeboard.com>

**Conversation:** [ap-compsci] Integers and == (was String literals and ==)

> it makes sense to require the equals method for comparison of objects.

I agree

> Trying to take shortcuts around methods (yes, it takes few keystrokes  
> to use == to compare two Integers) might sometimes make sense for a  
professional ...

Using == to compare for equality may sometimes be right for a professional, but it requires knowledge of important subtleties. The following example hints at these subtleties:

```
Integer i1 = new Integer(0);
Integer i2 = new Integer(0);
System.out.println(i1 == i2); // false - two different objects

Integer i3 = 0;
Integer i4 = 0;
System.out.println(i3 == i4); // true - one object (see below)

Integer i5 = 1000;
Integer i6 = 1000;
System.out.println(i5 == i6); // false - two different objects
```

To understand this behavior, one first needs to understand that Integer auto-boxing uses the Integer.valueOf method. Then one needs to understand how that method works.

The creation of the i3 object actually creates 256 different Integer objects! These are cached for Integers in the range from -128 to 127. i3 and i4 both reference the single Integer object cached for 0. i5 and i6 reference new and distinct Integer objects.

--

Robert Glen Martin  
School for the Talented and Gifted

====

Course related websites:

<http://apcentral.collegeboard.com/compscia>

<http://apcentral.collegeboard.com/compsciab>

---

To unsubscribe click here:

[http://lyris.collegeboard.com/read/my\\_forums/?forum=ap-compsci](http://lyris.collegeboard.com/read/my_forums/?forum=ap-compsci)

To change your subscription address or other settings click here:

[http://lyris.collegeboard.com/read/my\\_account/edit](http://lyris.collegeboard.com/read/my_account/edit)