

Q → 1: What's the difference between

$(a == b)$ and $a.equals(b)$ in Java?

Ans: In Java, $(a == b)$ checks if a and b refers to the same memory location (reference comparison), while $a.equals(b)$ checks if the values or contents of a and b are the same (content comparison).

For objects like String, $==$ may return false even if contents match, but $equals()$ will return true if contents are equal.

For primitive types, $==$ compares actual values.

Q-2:- Java strings are immutable. Why?

Ans: In java, strings are immutable because once a string object is created, its value cannot be changed. This is done for:-

- i) security - avoids unexpected change in pass, url etc
- ii) Thread safety - multiple threads can use the same strings safely.
- iii) Performance - enables sharing and reusing strings from the string pool
- iv) Hashcode consistency - makes strings reliable as key in Hash map.

Because of immutability, any operation like concatenation or replace creates a new string instead of modifying the original.

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