Assertions

Exercises and solutions

1. What is assertion in Java? What statement do you use to add assertions to your programs?

**Answer:**

Assertion in Java can be used to assert for some conditions to hold. It is used to detect logical errors in a program and typically enabled in development and testing environments.

You use the assert statement to add assertions in Java programs.

1. Describe two forms of the assert statement.

**Answer:**

The following are two forms of the assert statement:

* assert booleanAssertionExpression;

If the booleanAssertionExpression evaluates to true, no action is taken, otherwise an AssertionError is thrown.

* assert booleanAssertionExpression : errorMessageExpression;

In this form, the error message can be customized using errorMessageExpression. If the booleanAssertionExpression evaluates to true, no action is taken; otherwise, an AssertionError with the specified custom message is thrown.

1. Is assertion enabled by default? If your answer is no, how do you enable it?

**Answer:**

No. Assertion is disabled by default. Use the -ea or -enableassertions command-line runtime option to enable assertions.

1. In which of the following environment(s) you are supposed to enable assertion: development, test, and production?

**Answer:**

Development and test.

1. What are the command line options that you use to enable and disable assertions in all system classes?

**Answer:**

To enable assertions in all system classes, use the option -enablesystemassertions or -esa.

To disable assertions in all system classes, use the option -disablesystemassertions or -dsa

1. Complete the assert statement in the following snippet of code assuming that x must be greater than 10.  
     
   int x = getValue();  
   assert /\* Your code goes here \*/ : 'x must be greater than 10.";

**Solution:**

assert x > 10 : “x must be greater than 10.";

1. You are writing code for a public method and you want to validate method's arguments. Will you use assertion or exception to achieve it? Describe your response.

**Answer:**

An exception is used to handle a user’s error and business rules implementation whereas assertions are used to verify what the programmer assumes about the program at a specific point in code is true. Given that assertions are not meant to be enabled in production environment, public method should use exceptions to validate method’s arguments.