

FULL STACK



Automation Testing

Assertions



A Day in the Life of an Automation Test Engineer

Marcelo now understands the justification of writing tests in JUnit with structure, method, and hierarchies.

Now, he has to acknowledge the assertions and their types and learn how to write them with their opposed keyword.

This lesson will help him to understand the scenario for the next phase of his project.



Learning Objectives

By the end of this lesson, you will be able to:

- 👁 Define assertions
- 👁 Recognize the opposed keyword to write the assertions
- 👁 Classify the different types of assertions
- 👁 Analyze the examples of assertions with the help of every module's code



What Are Assertions?

What Are Assertions?



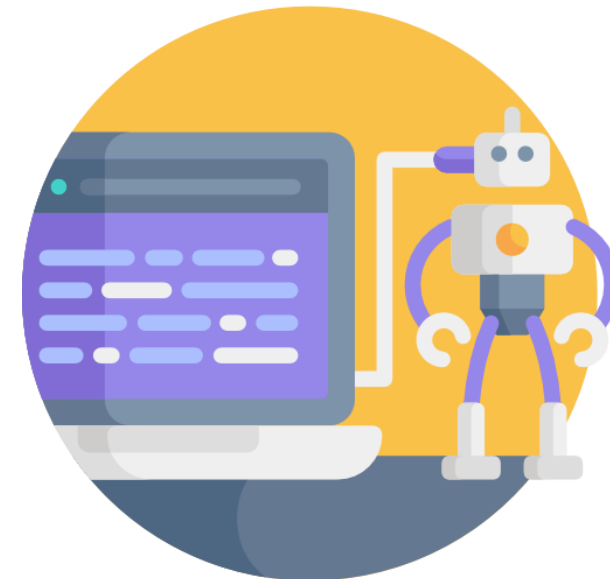
- Assertions in JUnit help to detect bugs by testing the code that users assume to be true.
- It is a statement in Java, which ensures the correctness of any assumptions done in the program.
- When an assertion is executed, it is assumed to be true. If the assertion is false, the JVM will throw an Assertion error.
- It finds its application primarily for the testing purposes.
- Assertion statements are used along with boolean expressions.

What Are Assertions?

Assertions in Java can be done with the help of the assert keyword.

```
assert expression;
```

```
assert expression1 : expression2
```



What Are Assertions?

Here is an example of generating an assertion error by the JVM:

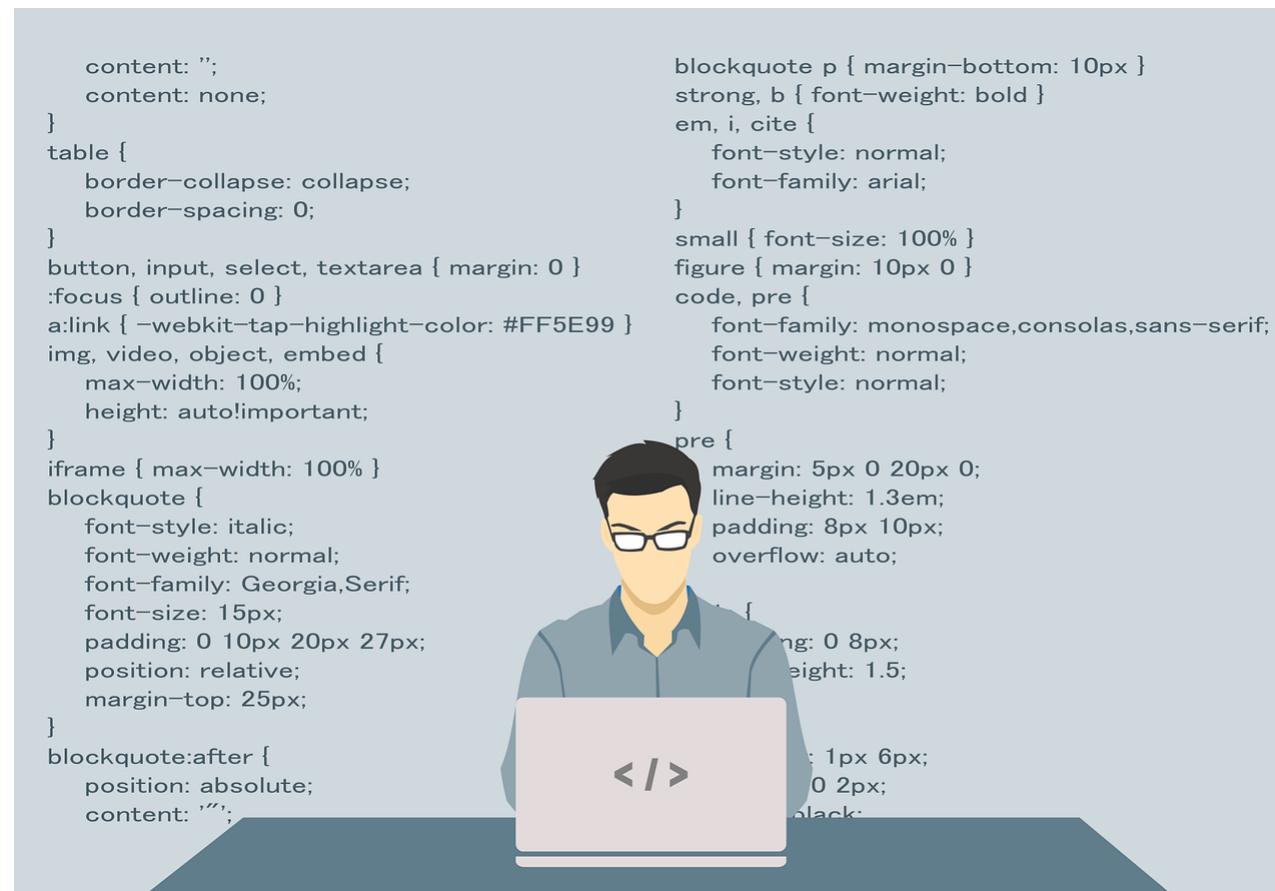
```
public class Assertion
{
    public static void main(String[] args)
    {
        int age = 19;
        assert age >= 18 : "Can Vote";
        System.out.println("The voter's age is " + age);
    }
}
```



Types of Assertions

Types of Assertions

There are four types of assertions available in the JUnit 5:



Boolean assertion

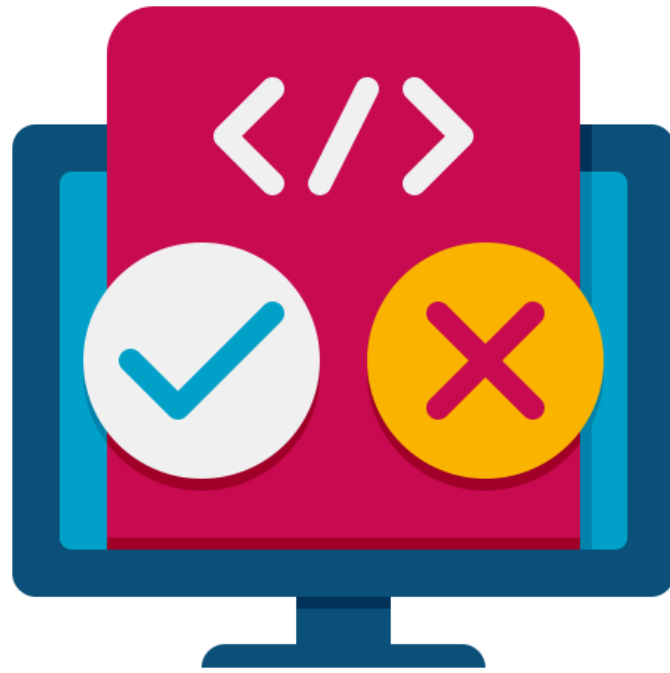
Null assertion

Identical assertion

Assert Array Equals



Types of Assertions



Boolean assertion :

- **assert True(condition):** Checks if the condition is true
- **assert False(condition):** Checks if the condition is false

Types of Assertions

Example of boolean assertion:

```
public class MyAssertTrueTest
{
    public boolean isEvenNumber(int number)
    {
        boolean result = false;
        if (number % 2 == 0)
        {
            result = true;
        }
        return result;
    }
}
```



Types of Assertions



Null assertion:

- **assert Null(object):** Checks if the object is null
- **assert Not Null(object):** Checks if the object is not null



Types of Assertions

Example of null assertion:

```
public class AssertNullTest
{
    AssertNullTest ant;
    public String getCapital(String country)
    {
        Map<String,String> countryCapitalMap = new HashMap<String,String>();
        countryCapitalMap.put("Pune");
        countryCapitalMap.put("Japan");
        countryCapitalMap.put("Zimbabwe");
        countryCapitalMap.put("Belgiaum");
        return countryCapitalMap.get(country);
    }
}
```

Types of Assertions



Identical assertion:

- **assert Same(expected, actual):** Checks if the objects are identical
- **assert NotSame(expected, actual):** Checks if the objects are not identical

Types of Assertions

Example of identical assertion:

```
public class MyAssertSameTest {

    public String getPropValue(final String key){
        Map<string, string=""> appProps = new HashMap<string,
string="">();
        appProps.put("key1", "value 1");
        appProps.put("key2", "value 2");
        appProps.put("key3", "value 3");
        return appProps.get(key);
    }
    @Test
    public void isSameReferenceTest()
    {
        MyAssertSameTest msnt = new MyAssertSameTest();
        assertEquals(msnt.getPropValue("key1"), msnt.getPropValue("key1"));
    }
}
```


Types of Assertions



Assert Array Equals:

- **assert ArrayEquals(expected, actual):** Checks if the array is equal
- **assert ArrayNotEquals(expected, actual):** Checks if the array is not equal

Types of Assertions

Example of array equals assertion:

```
public static void assertEquals(String message Object[]  
expecteds, Object[] actuals)  
{  
    throws org.junit.internal.ArrayComparisonFailure;  
}  
public static void assertEquals(String message, Object[]  
expecteds, Object[] actuals)  
{  
    throws org.junit.internal.ArrayComparisonFailure;  
}
```



Key Takeaways

- An assertion is a statement in Java which ensures the correctness of any assumptions done in the program.
- Assertions in Java can be done with the help of the assert keyword (assert expression, assert expression1 : expression2)
- There are four types of assertions available in the junit5 : boolean, null, identical, and assert arrays equals assertions.
- When an assertion is executed, it is assumed to be true. If the assertion is false, the JVM will throw an Assertion error.

