assertNull() method

This lesson demonstrates how to use assertNull() method in JUnit 5 to assert test conditions.

WE'LL COVER THE FOLLOWING

assertNull() method

Assertions API provide static `assertNull()` method. This method helps us in validating that the particular object is null. This method takes an actual value and checks whether it is `null` or not.

- If the actual value is **null** then test case will pass.
- If the actual value is **not null** then test case will fail.

There are basically three overloaded methods for assertNull which are described below:-

```
public static void assertNull(Object actual)

public static void assertNull(Object actual, String message)

public static void assertNull(Object actual, Supplier<String> messageSupplier)
```

1. `assertNull(Object actual)` - It asserts whether actual value is null or not.
2. `assertNull(Object actual, String message)` - It asserts whether actual value is null or not. In case, if the actual value is not null then the test

case will fail with a provided message.

3. `assertNull(Object actual, Supplier<String> messageSupplier)` - It assert whether actual value is null or not. In case, if the actual value is not null then the test case will fail with a provided message through Supplier function. The main advantage of using Supplier function is that it lazily evaluates to String only when the test case fails.

assertNull method

Demo

Step 1 - Create a Java class in Eclipse as discussed in previous lessons.

Step 2 - Give it a name as, StringUtils.

StringUtils.java

```
package com.hubberspot.junit5.assertions;

public class StringUtils {

	public static String reverse(String input) {
		if(input == null) {
			return null;
		}
```

```
                if(input.length() == 0) {
                        return "";

                }

                char[] charArray = input.toCharArray();
                int start = 0;
                int end = input.length() - 1;

                while(start < end) {
                        char temp = charArray[start];
                        charArray[start] = charArray[end];
                        charArray[end] = temp;
                        start++;
                        end--;
                }

                return new String(charArray);
        }

}
```

Class Under Test - StringUtils

StringUtils is our class under test. It has one method as, `reverse()`. This method takes in a String and returns reverse of it.

For example -

1. If we provide input String as, “ABCD”, it returns back “DCBA”.
2. If we provide input String as, “Student”, it returns back “tnedutS”.
3. If we provide input String as, **null**, it returns back **null**.
4. If we provide input String as, “”, it returns back “” String.

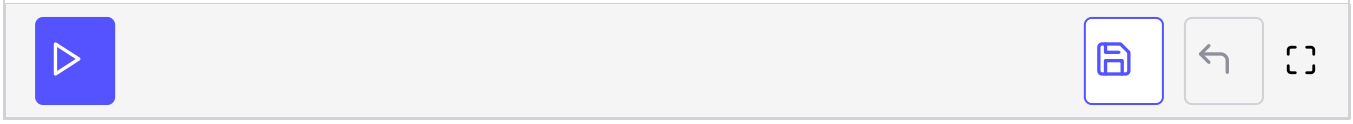
Step 3 - Create a test class by name, `"StringUtilsTest"`. This test class will demonstrate all overloaded `assertNull()` methods.

StringUtilsTest.java

StringUtils.java

```
package io.educative.junit5;

import static org.junit.jupiter.api.Assertions.*;
import java.util.function.Supplier;
import org.junit.jupiter.api.Test;

class StringUtilsTest {
```

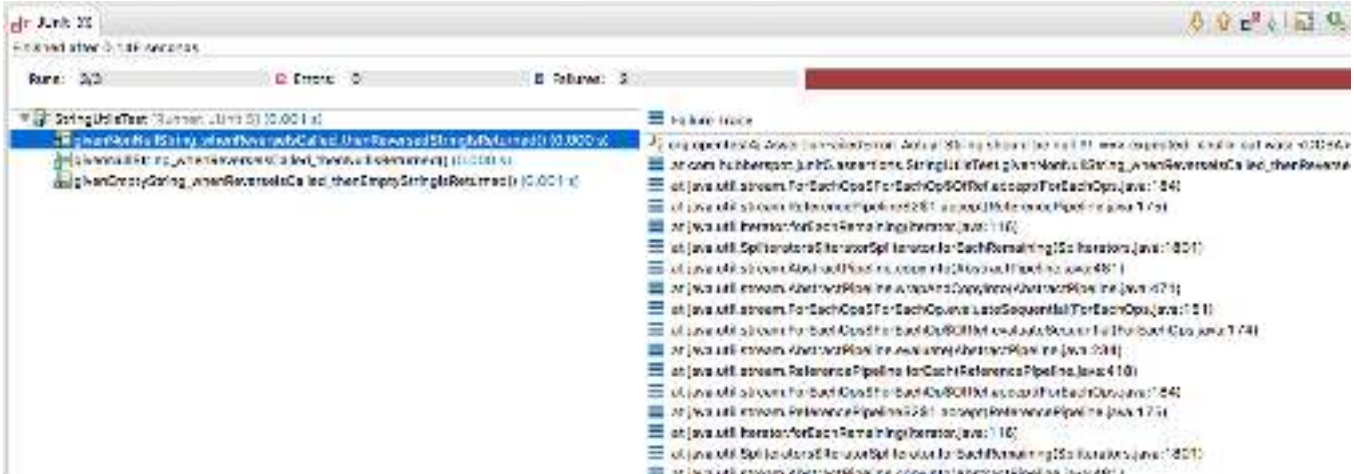
```
class StringUtilsTest {

	// ******** assertNull Example - Start **********
	@Test
	void givenNullString_whenReverseIsCalled_thenNullIsReturned() {
		String actual = StringUtils.reverse((null));

		// assertNull without message
		assertNull(actual);
	}

	@Test
	void givenEmptyString_whenReverseIsCalled_thenEmptyStringIsReturned() {
		String actual = StringUtils.reverse(("""));
		String message = "Actual String should be null !!! ";

		// assertNull with message
		assertNull(actual, message);
	}

	@Test
	void givenNonNullString_whenReverseIsCalled_thenReversedStringIsReturned() {
		String actual = StringUtils.reverse(("ABCD"));
		Supplier<String> messageSupplier = () -> "Actual String should be null !!! "

		// assertNull with Java 8 MessageSupplier
		assertNull(actual, messageSupplier);
	}

	// ******** assertNull Example - End **********
}
```



> You can perform code changes to above code widget, run and practice different outcomes.

Step 4 - Run StringUtilsTest class as Junit Test.

Output



Explanation -

The order of execution of test cases depends on Junit 5. In StringUtilsTest class there are 3 @Test methods:-

1. `givenNullString_whenReverseIsCalled_thenNullIsReturned()` - It tests the scenario that when **null** is provided to `reverse()` method of StringUtils class, then **null** is returned. So, on **line 15** providing `assertNull()` asserts that actual value returned is null. Thus, it passes the Junit test case.

2. `givenEmptyString_whenReverseIsCalled_thenEmptyStringIsReturned()` - It tests the scenario that when “” is provided to `reverse()` method of StringUtils class, then “” is returned. Here, return value is empty string which is not null. So, on **line 24** providing `assertNull()` asserts that actual value returned is null. Thus, it fails the Junit test case because actual value returned is “”. In this test case, we are using overloaded assertNull() method, which takes **String message** as second argument. As, this test case doesn’t satisfy assertion condition, it fails and give "`AssertionFailedError:` Actual String should be null !!! ==> expected: but was: <>". It gives `AssertionFailedError` followed by **String message** we provide to assertNull() method.

3. `givenNonNullString_whenReverseIsCalled_thenReversedStringIsReturned` - It tests the scenario that when **ABCD** is provided to `reverse()` method of StringUtils class, then **DCBA** is returned. Here, return value is not null. So, on **line 33** providing `assertNull()` asserts that actual value returned is null. Thus, it fails the Junit test case because actual value returned is **DCBA**. In this test case, we are using overloaded assertNull() method, which takes Supplier<String> messageSupplier as second argument. As, this test case doesn’t satisfy assertion condition, it fails and give "`AssertionFailedError:` Actual String should be null !!! ==> expected: but was: <DCBA>". It gives `AssertionFailedError` followed by lazily evaluates **String message** we provide to assertNull() method, as lambda expression.

In the next lesson, we will look into `assertNotNull()` assertion.