LAB_ANP_C6339_CLASSES_ **StudenID:AF0339439**

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Assignment: Create a JUnit test class to test a StringManipulator class that provides methods for manipulating strings. Write parameterized tests to cover cases like reversing astring, converting to uppercase, and checking for palindrome strings. Useparameterized tests to validate the string manipulation methods

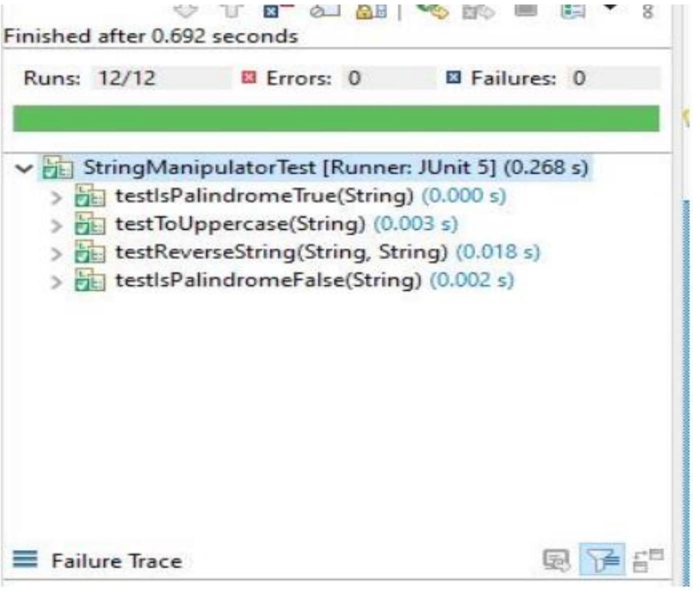
Program:1

```
package Project;
public class StringManipulator {
public String toUppercase(String input) {
return input.toUpperCase();
}
public boolean isPalindrome(String input) {
StringBuilder reversed = new StringBuilder(input).reverse();
return input.equalsIgnoreCase(reversed.toString());
}
public String reverseString(String input) {
return new StringBuilder(input).reverse().toString();
}
}
```

Main method:

```
package Project;
import static org.junit.Assert.assertEquals;
import static org.junit.Assert.assertTrue;
import org.junit.jupiter.params.ParameterizedTest;
import org.junit.jupiter.params.provider.CsvFileSource;
import org.junit.jupiter.params.provider.CsvSource;
import org.junit.jupiter.params.provider.ValueSource;
public class StringManipulatorTest {
@ParameterizedTest
@ValueSource(strings = {"hello", "world", "JUnit"})
void testToUppercase(String input) {
StringManipulator manipulator = new StringManipulator();
String result = manipulator.toUppercase(input);
assertEquals(input.toUpperCase(), result);
}
@ParameterizedTest
@ValueSource(strings = {"radar", "level", "deified"})
void testIsPalindromeTrue(String input) {
StringManipulator manipulator = new StringManipulator();
boolean result = manipulator.isPalindrome(input);
assertTrue(result);
}
@ParameterizedTest
@ValueSource(strings = {"hello", "world", "java"})
void testIsPalindromeFalse(String input) {
StringManipulator manipulator = new StringManipulator();
boolean result = manipulator.isPalindrome(input);
assertTrue(!result);
}
@ParameterizedTest
@CsvSource({"hello, olleh", "world, dlrow", "JUnit, tinUJ"})
void testReverseString(String input, String expected) {
StringManipulator manipulator = new StringManipulator();
String result = manipulator.reverseString(input);
assertEquals(expected, result);
}
}
```

Output:



```
Finished after 0.692 seconds
Runs: 12/12    Errors: 0    Failures: 0
StringManipulatorTest [Runner: JUnit 5] (0.268 s)
  testIsPalindromeTrue(String) (0.000 s)
  testToUppercase(String) (0.003 s)
  testReverseString(String, String) (0.018 s)
  testIsPalindromeFalse(String) (0.002 s)
```