## Lab 20 - Assignment

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

package myapplication;

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();}
}
package myapplication;
import org.junit.jupiter.params.ParameterizedTest;
import org.junit.jupiter.params.provider.CsvSource;
import org.junit.jupiter.params.provider.ValueSource;
import static
org.junit.jupiter.api.Assertions.assertEquals;
import static
org.junit.jupiter.api.Assertions.assertTrue;
```

```
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) {
```

## Output:

```
♯ Package Explorer ×
                                          🖹 💲 🖟 📮 🛘 🛽 Palindrome.java 🔻 PalindromeTest.java 🔻 StringManipulator.java 🔻 StringManipulatorTest.java 🗴
> 📂 bubbyapplication
                                                          1 package myapplication;
> 👺 com.file1
                                                          2ºimport org.junit.jupiter.params.ParameterizedTest;
> 📂 Exception
                                                          3 import org.junit.jupiter.params.provider.CsvSource;
v 👺 myapplication
                                                          4 import org.junit.jupiter.params.provider.ValueSource;
  ∨ # myapplication
     > 🛭 Calculator.java
                                                          6 import static org.junit.jupiter.api.Assertions.assertEquals;
      > Palindrome.java
                                                          7 import static org.junit.jupiter.api.Assertions.assertTrue;
     >  StringManipulator.iava
   src/main/resources
                                                        9 public class StringManipulatorTest {
  10⊖
                                                                  @ParameterizedTest
   v 🏭 myapplication
                                                                      @ValueSource(strings = {"hello", "world", "JUnit"})
     > In PalindromeTest.iava
                                                         12
                                                                      void testToUppercase(String input) {
     > If Parameters.java
     > 1 StringManipulatorTest.java
                                                         13
                                                                           StringManipulator manipulator = new StringManipulator();
     > 🛭 TestCase.java
                                                         14
                                                                           String result = manipulator.toUppercase(input);
   src/test/resources
                                                                           assertEquals(input.toUpperCase(), result);
  > A JRE System Library [JavaSE-1.8]
                            ₀√u JUnit ×
Finished after 0.326 seconds
                                                          18⊖
                                                                      @ParameterizedTest
Runs: 12/12 ■ Errors: 0 ■ Failures: 0
                                                         19
                                                                      @ValueSource(strings = {"radar", "level", "deified"})
                                                                      void testIsPalindromeTrue(String input) {
                                                 國泽部
> 🖺 StringManipulatorTest = Failure Trace
                                                                           StringManipulator manipulator = new StringManipulator();
                                                                           boolean result = manipulator.isPalindrome(input);
                                                                                                                                            ■ × ¾ | ♣ /
                                                        Problems @ Javadoc Q Declaration Q Console X ☐ Coverage
                                                        <terminated > StringManipulatorTest [JUnit] C\Users\USER\,p2\pool\plugins\org.eclipse.justj.openjdkhotspot.jre.full.win32x86_64_19.0.2.v20230129-1123\jre\
```