

# **Homework 8**

## **Software Quality**

### **Group 06**

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GitHub Link: <https://github.com/okikio-school/Homework-8>

```

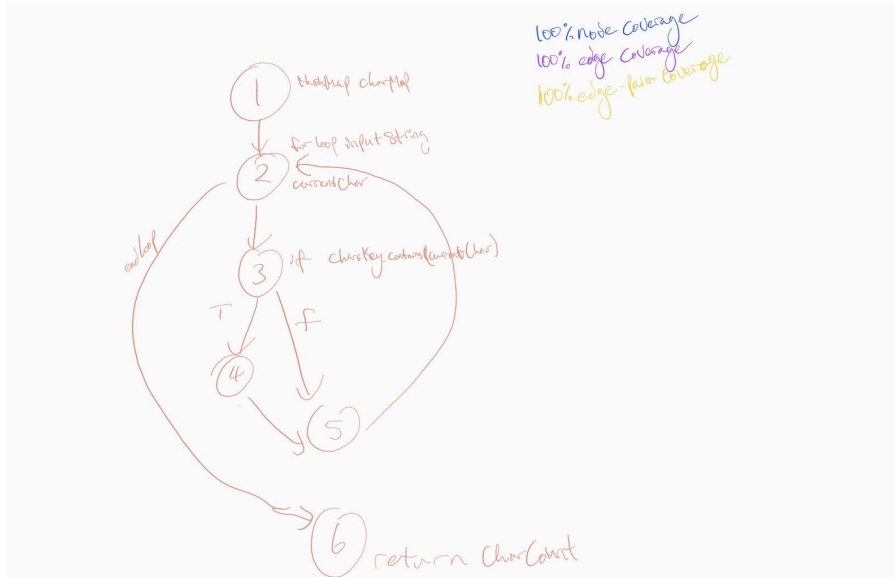
1 package com.ontariotechu.sofe3980U;
2 import java.util.HashMap; // import the HashMap class
3
4 class App {
5     public static int charCount(String input, char character) {
6         // Store a count of all characters in the HashMap
7         // use the keys to represent the character and the value to
8         // represent the number of times the character is listed in
9         // the input string
10        HashMap<Character, Integer> charMap = new HashMap<>();
11        for (char current : input.toCharArray()) {
12            // Default to a count of 1, if the character
13            // has never been seen before
14            int count = 1;
15
16            // If the character already exists in the HashMap
17            // bump up the character count by 1
18            if (charMap.containsKey(current)) {
19                count = charMap.get(current) + 1;
20            }
21
22            charMap.put(current, count);
23        }
24
25        if (!charMap.containsKey(character)) {
26            return 0;
27        }
28
29        return charMap.get(character);
30    }
31
32    Run | Debug
33    public static void main(String[] args) {
34        String input = "Hello World";
35
36        System.out.println("Count of 'o': " + charCount(input, character:'o'));
37    }
38 }

```

```

[INFO] --- exec:3.2.0:java (default-cli) @ App ---
Count of 'o': 2

```



Assuming input is “cc”

Due to logic constraints node 3 always has to take the path with node 4, so all Test cases take this into account

100% node coverage: 1 2 3 4 5 6

Test paths: [1 2 3 4 5 2 3 5 2 6] [1 2 3 5 2 6]

100% edge coverage: [1 2] [2 3] [3 5] [5 2] [4 5] [2 6]

Test paths: [1 2 3 4 5 2 3 5 2 6] [1 2 3 5 2 6]

100% edge-pair: [1 2 3] [2 3 4] [2 3 5] [3 4 5] [3 5 2] [4 5 2] [5 2 6] [1 2 6]

Test paths: [1 2 3 5 2 3 4 5 2 6] [1 2 3 5 2 6] [1 2 6]

Prime paths: [1 2 3 4 5 2 6] [1 2 3 5 2 6] [1 2 3 5 2 3 4 5 2 6] [1 2 6]

Test paths: [1 2 3 5 2 6] [1 2 3 5 2 3 4 5 2 6] [1 2 6]

Test cases

Test cases	Inputs	Outputs
#1	Input string: “cc” Character: “c”	2
#2	Input string: “c” Character: “c”	1

#3	Input string: "a" Character: "c"	0
----	-------------------------------------	---

```

1 package com.ontariotechu.sofe3988U;
2
3 import static org.junit.jupiter.api.Assertions.assertEquals;
4
5 import org.junit.jupiter.api.DisplayName;
6 import org.junit.jupiter.params.ParameterizedTest;
7 import org.junit.jupiter.params.provider.CsvSource;
8
9 /**
10  * Unit test for simple App.
11  */
12 public class AppTest
13 {
14     @DisplayName("Count Character Test Cases")
15     @ParameterizedTest(name = "{index} => {0}, {1} = {2}")
16     @CsvSource({
17         "cc, c, 2",
18         "c, c, 1",
19         "a, c, 0",
20     })
21     public void charCountTest(String input, char character, int expected) {
22         int result = App.charCount(input, character);
23         assertEquals(expected, result);
24     }
25 }
26

```

```

root@Okiki-PC:/mnt/c/Users/school/OneDrive - Ontario Tech University/Year 3/Software Quality/Homework 8# mvn clean test
[INFO] Scanning for projects...
[INFO]
[INFO] -----< com.ontariotechu.sofe3988U:App -----
[INFO] Building App 1.0.0
[INFO] from pom.xml
[INFO] -----[ jar ]-----
[INFO]
[INFO] --- clean:3.1.0:clean (default-clean) @ App ---
[INFO] Deleting /mnt/c/Users/school/OneDrive - Ontario Tech University/Year 3/Software Quality/Homework 8/target
[INFO]
[INFO] --- resources:3.0.1:resources (default-resources) @ App ---
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] skip non existing resourceDirectory /mnt/c/Users/school/OneDrive - Ontario Tech University/Year 3/Software Quality/Homework 8/src/main/resources
[INFO]
[INFO] --- compiler:3.0.0:compile (default-compile) @ App ---
[INFO] Changes detected - recompiling the module!
[INFO] Compiling 1 source file to /mnt/c/Users/school/OneDrive - Ontario Tech University/Year 3/Software Quality/Homework 8/target/classes
[INFO]
[INFO] --- resources:3.0.2:testResources (default-testResources) @ App ---
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] skip non existing resourceDirectory /mnt/c/Users/school/OneDrive - Ontario Tech University/Year 3/Software Quality/Homework 8/src/test/resources
[INFO]
[INFO] --- compiler:3.0.0:testCompile (default-testCompile) @ App ---
[INFO] Changes detected - recompiling the module!
[INFO] Compiling 1 source file to /mnt/c/Users/school/OneDrive - Ontario Tech University/Year 3/Software Quality/Homework 8/target/test-classes
[INFO]
[INFO] --- surefire:3.2.1:test (default-test) @ App ---
[INFO] Using auto detected provider org.apache.maven.surefire.junitplatform.JUnitPlatformProvider
[INFO]
[INFO] -----
[INFO] T E S T S
[INFO] -----
[INFO] Running com.ontariotechu.sofe3988U.AppTest
[INFO] Tests run: 3, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.341 s -- in com.ontariotechu.sofe3988U.AppTest
[INFO]
[INFO] Results:
[INFO]
[INFO] Tests run: 3, Failures: 0, Errors: 0, Skipped: 0
[INFO]
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 3.747 s
[INFO] Finished at: 2024-03-25T23:16:42-04:00
[INFO]
root@Okiki-PC:/mnt/c/Users/school/OneDrive - Ontario Tech University/Year 3/Software Quality/Homework 8#

```