

MultiplyString.java

```
1 package com.example;
2
3 public class MultiplyString {
4     public String multiply(String num1, String num2) {
5         int[] n1 = new int[num1.length()];
6         int[] n2 = new int[num2.length()];
7
8         for (int i = 0; i < num1.length(); i++) {
9             n1[i] = num1.charAt(num1.length() - 1 - i) - '0';
10        }
11
12        for (int i = 0; i < num2.length(); i++) {
13            n2[i] = num2.charAt(num2.length() - 1 - i) - '0';
14        }
15
16        int[] result = new int[num1.length() + num2.length()];
17
18        for (int i = 0; i < n2.length; i++) {
19            int carry = 0;
20            for (int j = 0; j < n1.length; j++) {
21                int product = n1[j] * n2[i] + carry + result[i + j];
22                carry = product / 10;
23                result[i + j] = product % 10;
24            }
25            result[i + n1.length] = carry;
26        }
27
28        StringBuilder sb = new StringBuilder();
29        int i = result.length - 1;
30        while (i > 0 && result[i] == 0) {
31            i--;
32        }
33        while (i >= 0) {
34            sb.append(result[i--]);
35        }
36
37        return sb.toString();
38    }
39
40 }
```

Mutations

- 8
 - 1. changed conditional boundary → KILLED
 - 2. negated conditional → KILLED
- 9
 - 1. Replaced integer subtraction with addition → KILLED
 - 2. Replaced integer subtraction with addition → KILLED
 - 3. Replaced integer subtraction with addition → KILLED

12	1. changed conditional boundary → KILLED 2. negated conditional → KILLED
13	1. Replaced integer subtraction with addition → KILLED 2. Replaced integer subtraction with addition → KILLED 3. Replaced integer subtraction with addition → KILLED
16	1. Replaced integer addition with subtraction → KILLED
18	1. changed conditional boundary → KILLED 2. Changed increment from 1 to -1 → KILLED 3. negated conditional → KILLED
20	1. changed conditional boundary → KILLED 2. Changed increment from 1 to -1 → KILLED 3. negated conditional → KILLED
21	1. Replaced integer multiplication with division → KILLED 2. Replaced integer addition with subtraction → KILLED 3. Replaced integer addition with subtraction → KILLED 4. Replaced integer addition with subtraction → KILLED
22	1. Replaced integer division with multiplication → KILLED
23	1. Replaced integer addition with subtraction → KILLED 2. Replaced integer modulus with multiplication → KILLED
25	1. Replaced integer addition with subtraction → KILLED
29	1. Replaced integer subtraction with addition → KILLED
30	1. changed conditional boundary → KILLED 2. negated conditional → KILLED 3. negated conditional → KILLED
31	1. Changed increment from -1 to 1 → KILLED
33	1. changed conditional boundary → KILLED 2. negated conditional → KILLED
34	1. Changed increment from -1 to 1 → KILLED
37	1. replaced return value with "" for com/example /MultiplyString::multiply → KILLED

Active mutators

- BOOLEAN_FALSE_RETURN
- BOOLEAN_TRUE_RETURN
- CONDITIONALS_BOUNDARY_MUTATOR
- EMPTY_RETURN_VALUES
- INCREMENTS_MUTATOR
- INVERT_NEGS_MUTATOR
- MATH_MUTATOR
- NEGATE_CONDITIONALS_MUTATOR
- NULL_RETURN_VALUES
- PRIMITIVE_RETURN_VALS_MUTATOR
- VOID_METHOD_CALL_MUTATOR

Tests examined

- com.example.MultiplyStringTest.test(com.example.MultiplyStringTest) (1 ms)

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