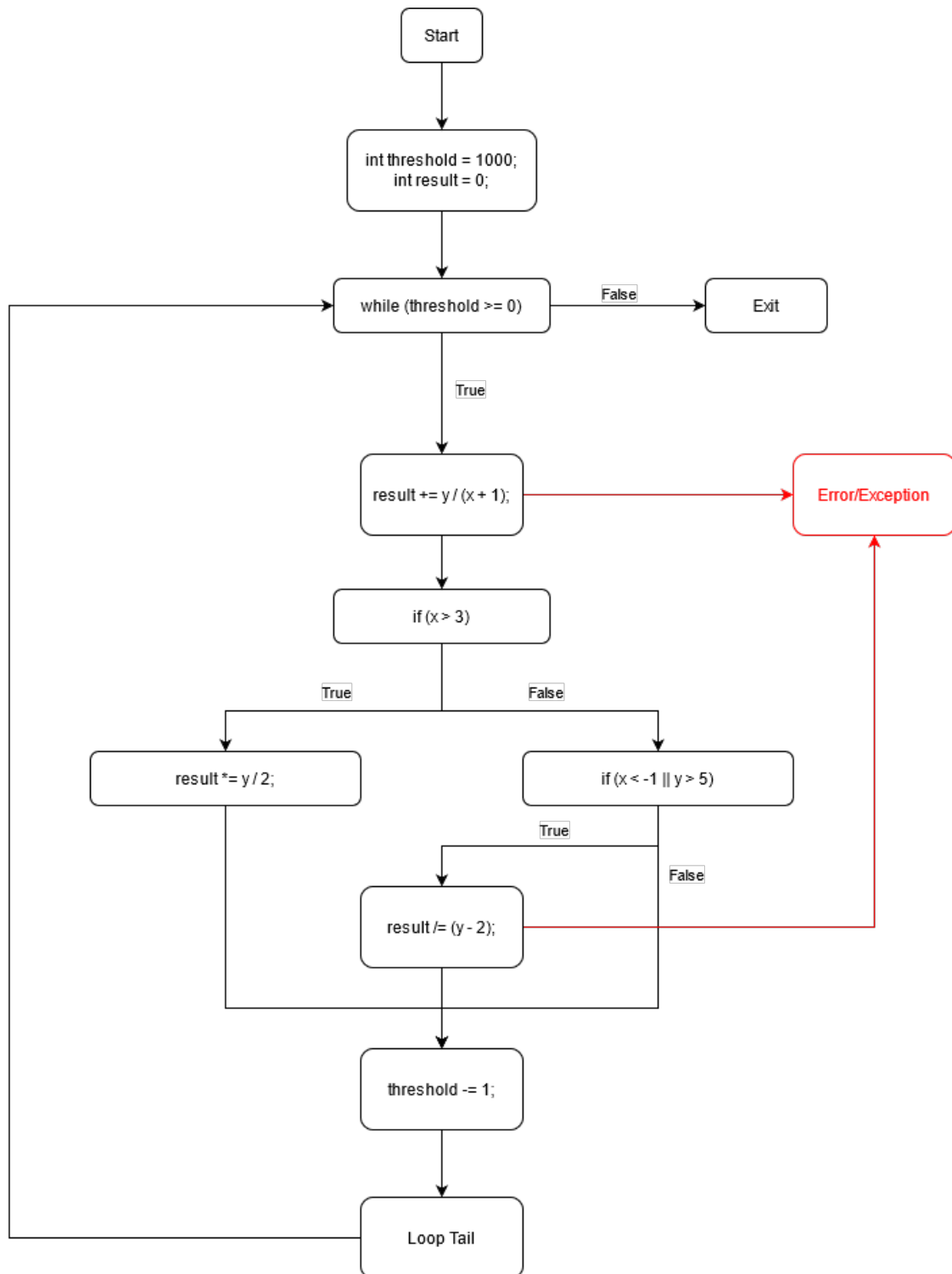


SUTD 2021 50.003 Quiz 2 Version 2

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Q1 – Control Flow Graph

This is the control flow graph for the `test()` method:



The while loop always executes for 1001 iterations without exceptions. The class attributes/fields/variables, x and y, can be considered as integer inputs.

Two cases of division by zero error might occur at these lines:

```
1. result += this.y / (this.x + 1);  
2. result /= (this.y - 2);
```

These constitute the error/exception paths of the code.

Test cases for normal/regular execution paths:

- Test 1: {x = 5, y = 10} [true branch of x > 3]
- Test 2: {x = -2, y = 6} [false branch of x > 3 and true branch of x < -1 || y > 5]
- Test 3: {x = -1, y = 5} [false branch of x > 3 and true branch of x < -1 || y > 5]

Test cases for exception paths:

- Test 4: {x = -1, y = 100} [division by zero in y / (x + 1)]
- Test 5: {x = -2, y = 2} [division by zero in result / (y - 2)]