

Homework 2: Practice TDD by adding functions to Calc

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Steps

1. Make a fail test
2. Modify the code to pass the test
3. Refactor the code
4. Repeat the process

Test cases

1. ADD

```
node --test --experimental-test-coverage
└─
  ▶ 測試加法功能
    ✓ 兩個正數相加 (0.490833ms)
    ✓ 兩個負數相加 (0.120792ms)
    ✓ 一個正數一個負數相加 (0.039959ms)
  ✓ 測試加法功能 (1.042417ms)
  i tests 4
  i suites 0
  i pass 4
  i fail 0
  i cancelled 0
  i skipped 0
  i todo 0
  i duration_ms 60.323791
  i start of coverage report
  i -----
  i file          | line % | branch % | funcs % | uncovered lines |
  i -----
  i Calc_test.js  | 100.00 |    100.00 |   100.00 |                  |
  i Calc.js       | 100.00 |    100.00 |   100.00 |                  |
  i -----
  i all files     | 100.00 |    100.00 |   100.00 |                  |
  i -----
  i end of coverage report
```

2. SUBTRACT 2-1. Add fail tests

```
node --test --experimental-test-coverage
└─
  ▶ 測試加法功能
    ✓ 兩個正數相加 (0.5545ms)
```

```

✓ 兩個負數相加 (0.119916ms)
✓ 一個正數一個負數相加 (0.042042ms)
✓ 測試加法功能 (1.090458ms)
▶ 測試減法功能
  ✖ 兩個正數相減 (0.08ms)
  ✖ 兩個負數相減 (0.414125ms)
  ✖ 一個正數一個負數相減 (0.03725ms)
  ✖ 一個負數一個正數相減 (0.030958ms)
✖ 測試減法功能 (0.7275ms)
i tests 9
i suites 0
i pass 4
i fail 5
i cancelled 0
i skipped 0
i todo 0
i duration_ms 64.004458
i start of coverage report
i -----
i file          | line % | branch % | funcs % | uncovered lines
i -----
i Calc_test.js  | 100.00 |   100.00 |   100.00 |
i Calc.js       | 100.00 |   100.00 |   100.00 |
i -----
i all files     | 100.00 |   100.00 |   100.00 |
i -----
i end of coverage report

✖ failing tests:

test at Calc_test.js:18:13
✖ 兩個正數相減 (0.08ms)
  TypeError [Error]: Calc.subtract is not a function
    at TestContext.<anonymous> (/Users/ysyang/Documents/NYCU/113-2/Software_Testing/113-spring-software-testing/HW2/Calc_test.js:19:33)
    at Test.runInAsyncScope (node:async_hooks:211:14)
    at Test.run (node:internal/test_runner/test:979:25)
    at Test.start (node:internal/test_runner/test:877:17)
    at TestContext.test (node:internal/test_runner/test:307:20)
    at TestContext.<anonymous> (/Users/ysyang/Documents/NYCU/113-2/Software_Testing/113-spring-software-testing/HW2/Calc_test.js:18:13)
    at Test.runInAsyncScope (node:async_hooks:211:14)
    at Test.run (node:internal/test_runner/test:979:25)
    at Test.processPendingSubtests
(node:internal/test_runner/test:677:18)
    at Test.postRun (node:internal/test_runner/test:1090:19)

test at Calc_test.js:21:13
✖ 兩個負數相減 (0.414125ms)
  TypeError [Error]: Calc.subtract is not a function
    at TestContext.<anonymous> (/Users/ysyang/Documents/NYCU/113-2/Software_Testing/113-spring-software-testing/HW2/Calc_test.js:22:33)
    at Test.runInAsyncScope (node:async_hooks:211:14)
    at Test.run (node:internal/test_runner/test:979:25)

```

```
    at Test.start (node:internal/test_runner/test:877:17)
    at TestContext.test (node:internal/test_runner/test:307:20)
    at TestContext.<anonymous> (/Users/ysyang/Documents/NYCU/113-
2/Software_Testing/113-spring-software-testing/HW2/Calc_test.js:21:13)
    at async Test.run (node:internal/test_runner/test:980:9)
    at async Test.processPendingSubtests
(node:internal/test_runner/test:677:7)

test at Calc_test.js:24:13
✖ 一個正數一個負數相減 (0.03725ms)
  TypeError [Error]: Calc.subtract is not a function
    at TestContext.<anonymous> (/Users/ysyang/Documents/NYCU/113-
2/Software_Testing/113-spring-software-testing/HW2/Calc_test.js:25:33)
    at Test.runInAsyncScope (node:async_hooks:211:14)
    at Test.run (node:internal/test_runner/test:979:25)
    at Test.start (node:internal/test_runner/test:877:17)
    at TestContext.test (node:internal/test_runner/test:307:20)
    at TestContext.<anonymous> (/Users/ysyang/Documents/NYCU/113-
2/Software_Testing/113-spring-software-testing/HW2/Calc_test.js:24:13)
    at async Test.run (node:internal/test_runner/test:980:9)
    at async Test.processPendingSubtests
(node:internal/test_runner/test:677:7)

test at Calc_test.js:27:13
✖ 一個負數一個正數相減 (0.030958ms)
  TypeError [Error]: Calc.subtract is not a function
    at TestContext.<anonymous> (/Users/ysyang/Documents/NYCU/113-
2/Software_Testing/113-spring-software-testing/HW2/Calc_test.js:28:33)
    at Test.runInAsyncScope (node:async_hooks:211:14)
    at Test.run (node:internal/test_runner/test:979:25)
    at Test.start (node:internal/test_runner/test:877:17)
    at TestContext.test (node:internal/test_runner/test:307:20)
    at TestContext.<anonymous> (/Users/ysyang/Documents/NYCU/113-
2/Software_Testing/113-spring-software-testing/HW2/Calc_test.js:27:13)
    at async Test.run (node:internal/test_runner/test:980:9)
    at async Test.processPendingSubtests
(node:internal/test_runner/test:677:7)
```