

```
C:\Users\pc\Documents\4-2\CSE 4806_Software Verification and Validation Lab\3\calculator>npm test ./test/basic.test.js
```

```
> calculator@1.0.0 test
> jest ./test/basic.test.js
```

```
console.log
5
```

```
    at Object.log (src/basic.js:17:9)
```

```
PASS test/basic.test.js
```

```
Add
```

```
BVA: add(1, 2), Expected: 3
```

```
✓ returns 3 (5 ms)
```

```
BVA: add(4, 5), Expected: 9
```

```
✓ returns 9 (1 ms)
```

```
BVA: add(3, 12), Expected: 15
```

```
✓ returns 15 (1 ms)
```

```
BVA: add(4, 6), Expected: 10
```

```
✓ returns 10 (1 ms)
```

```
DT: add(0, 89), Expected: 89
```

```
✓ returns 89 (1 ms)
```

```
DT: add(-17, -35), Expected: -52
```

```
✓ returns -52
```

```
DT: add(65, -12), Expected: 53
```

```
✓ returns 53 (1 ms)
```

```
DT: add(-78, 24), Expected: -54
```

```
✓ returns -54
```

```
Test Suites: 1 passed, 1 total
```

```
Tests: 8 passed, 8 total
```

```
Snapshots: 0 total
```

```
Time: 0.887 s
```

```
Ran all test suites matching /.\test\\basic.test.js/i.
```

```
C:\Users\pc\Documents\4-2\CSE 4806_Software Verification and Validation Lab\3\calculator>npm test ./test/basic.test.js
```

```
> calculator@1.0.0 test
> jest ./test/basic.test.js
```

```
console.log
5
```

```
    at Object.log (src/basic.js:17:9)
```

```
PASS test/basic.test.js
```

```
Add
```

```
BVA: add(1, 2), Expected: 3
```

```
✓ returns 3 (3 ms)
```

```
BVA: add(4, 5), Expected: 9
```

```
✓ returns 9 (1 ms)
```

```
BVA: add(3, 12), Expected: 15
```

```
✓ returns 15
```

```
BVA: add(4, 6), Expected: 10
```

```
✓ returns 10
```

```
DT: add(0, 89), Expected: 89
```

```
✓ returns 89
```

```
DT: add(-17, -35), Expected: -52
```

```
✓ returns -52
```

```
DT: add(65, -12), Expected: 53
```

```
✓ returns 53 (1 ms)
```

```
DT: add(-78, 24), Expected: -54
```

```
✓ returns -54
```

File	% Stmts	% Branch	% Funcs	% Lines	Uncovered Line #s
All files	50	100	25	50	
basic.js	50	100	25	50	6-14

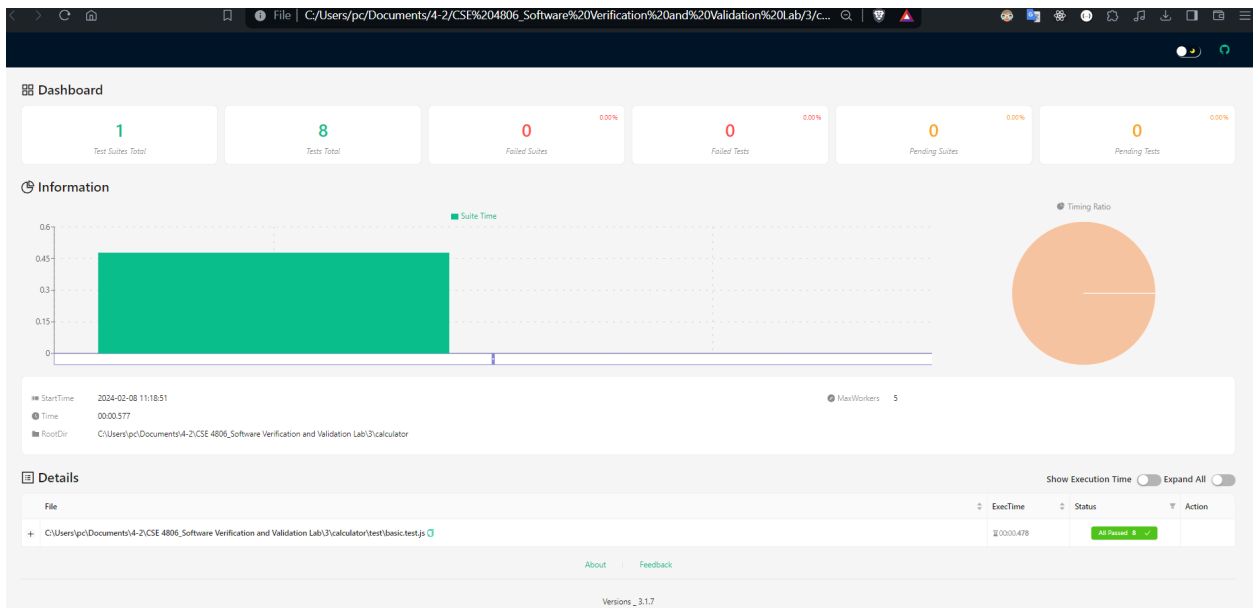
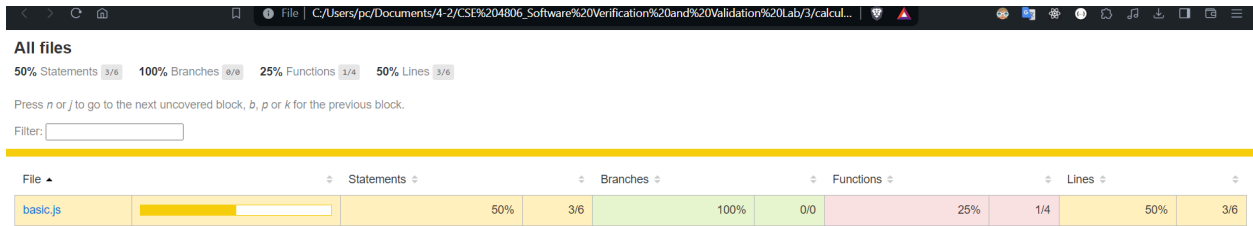
```
Test Suites: 1 passed, 1 total
```

```
Tests: 8 passed, 8 total
```

```
Snapshots: 0 total
```

```
Time: 2.002 s
```

```
Ran all test suites matching /.\test\\basic.test.js/i.
```



After adding all test cases

*Basic.test.js*

**FAIL** test/basic.test.js

Add

BVA: add(1, 2), Expected: 3

✓ returns 3 (3 ms)

BVA: add(4, 5), Expected: 9

✓ returns 9

BVA: add(3, 12), Expected: 15

✓ returns 15

BVA: add(4, 6), Expected: 10

✓ returns 10 (1 ms)

DT: add(0, 89), Expected: 89

✓ returns 89

DT: add(-17, -35), Expected: -52

✓ returns -52

DT: add(65, -12), Expected: 53

✓ returns 53 (1 ms)

DT: add(-78, 24), Expected: -54

✓ returns -54

## Subtract

```
BVA: subtract(1, 2), Expected: 3
    x returns -1 (3 ms)
BVA: subtract(4, 5), Expected: 9
    x returns -1 (1 ms)
BVA: subtract(3, 12), Expected: 15
    x returns -9 (1 ms)
BVA: subtract(4, 6), Expected: 10
    x returns -2 (1 ms)
DT: subtract(0, 89), Expected: 89
    x returns -89 (1 ms)
DT: subtract(-17, -35), Expected: -52
    x returns 18 (1 ms)
DT: subtract(65, -12), Expected: 53
    x returns 77 (1 ms)
DT: subtract(-78, 24), Expected: -54
    x returns -102 (1 ms)
```

## Multiply

```
BVA: multiply(1, 2), Expected: 3
    x returns 2 (1 ms)
BVA: multiply(4, 5), Expected: 9
    x returns 20 (1 ms)
BVA: multiply(3, 12), Expected: 15
    x returns 36 (1 ms)
BVA: multiply(4, 6), Expected: 10
    x returns 24 (1 ms)
DT: multiply(0, 89), Expected: 89
    x returns 0 (1 ms)
DT: multiply(-17, -35), Expected: -52
    x returns 595 (1 ms)
DT: multiply(65, -12), Expected: 53
    x returns -780 (1 ms)
DT: multiply(-78, 24), Expected: -54
    x returns -1872 (1 ms)
```

```
Divide
  BVA: divide(1, 2), Expected: 3
    ✗ returns 0.5
  BVA: divide(4, 5), Expected: 9
    ✗ returns 0.8
  BVA: divide(3, 12), Expected: 15
    ✗ returns 0.25
  BVA: divide(4, 6), Expected: 10
    ✗ returns 0.6666666666666666 (1 ms)
  DT: divide(0, 89), Expected: 89
    ✗ returns 0 (1 ms)
  DT: divide(-17, -35), Expected: -52
    ✗ returns 0.4857142857142857 (1 ms)
  DT: divide(65, -12), Expected: 53
    ✗ returns -5.416666666666667 (1 ms)
  DT: divide(-78, 24), Expected: -54
    ✗ returns -3.25 (1 ms)
```

```
Test Suites: 1 failed, 1 total
Tests:       24 failed, 8 passed, 32 total
Snapshots:   0 total
Time:        0.786 s, estimated 1 s
Ran all test suites matching /\.\\test\\basic.test.js/i.
```



Multiply > BVA: multiply(4, 5), Expected: 9 > returns 20	00000001	X Failed	Info
Multiply > BVA: multiply(3, 12), Expected: 15 > returns 36	00000001	X Failed	Info
Multiply > BVA: multiply(4, 6), Expected: 10 > returns 24	00000001	X Failed	Info
Multiply > DT: multiply(0, 89), Expected: 89 > returns 0	00000001	X Failed	Info
Multiply > DT: multiply(-17, -35), Expected: -52 > returns 595	00000001	X Failed	Info
Multiply > DT: multiply(65, -12), Expected: 53 > returns -780	00000001	X Failed	Info
Multiply > DT: multiply(-78, 24), Expected: -54 > returns -1872	00000001	X Failed	Info
Divide > BVA: divide(1, 2), Expected: 3 > returns 0.5	00000000	X Failed	Info
Divide > BVA: divide(4, 5), Expected: 9 > returns 0.8	00000000	X Failed	Info
Divide > BVA: divide(3, 12), Expected: 15 > returns 0.25	00000000	X Failed	Info
Divide > BVA: divide(4, 6), Expected: 10 > returns 0.6666666666666666	00000001	X Failed	Info
Divide > DT: divide(0, 89), Expected: 89 > returns 0	00000001	X Failed	Info
Divide > DT: divide(-17, -35), Expected: -52 > returns 0.4857142857142857	00000001	X Failed	Info
Divide > DT: divide(65, -12), Expected: 53 > returns -5.416666666666667	00000001	X Failed	Info
Divide > DT: divide(-78, 24), Expected: -54 > returns -3.25	00000001	X Failed	Info

Subtract > DT: subtract(-78, 24), Expected: -54 > returns -102	00000001	X Failed	
Multiply > BVA: multiply(1, 2), Expected: 3 > returns 2	00000001	X Failed	
<div> <div>INFO FOR --&gt; Divide BVA: divide(4, 5), Expected: 9 returns 0.8</div> <div> <pre>Error: expect(received).toBe(expected) // Object.is equality  Expected: 9 Received: 0.8      at Object.toBe (C:\Users\pc\Documents\4-2\CSE 4806_Software Verification and Validation Lab\calculator\test\basic.test.js:97:45)     at Promise.then.completed (C:\Users\pc\Documents\4-2\CSE 4806_Software Verification and Validation Lab\calculator\node_modules\jest-circus\build\utils.js:298:28)     at new Promise (&lt;anonymous&gt;)     at callAsyncCircusFn (C:\Users\pc\Documents\4-2\CSE 4806_Software Verification and Validation Lab\calculator\node_modules\jest-circus\build\utils.js:231:18)     at _callCircusTest (C:\Users\pc\Documents\4-2\CSE 4806_Software Verification and Validation Lab\calculator\node_modules\jest-circus\build\run.js:316:40)     at processTicksAndRejections (node:internal/process/task_queues:96:15)     at _runTest (C:\Users\pc\Documents\4-2\CSE 4806_Software Verification and Validation Lab\calculator\node_modules\jest-circus\build\run.js:252:3)     at _runTestsForDescribeBlock (C:\Users\pc\Documents\4-2\CSE 4806_Software Verification and Validation Lab\calculator\node_modules\jest-circus\build\run.js:126:9)     at _runTestsForDescribeBlock (C:\Users\pc\Documents\4-2\CSE 4806_Software Verification and Validation Lab\calculator\node_modules\jest-circus\build\run.js:121:9)     at _runTestsForDescribeBlock (C:\Users\pc\Documents\4-2\CSE 4806_Software Verification and Validation Lab\calculator\node_modules\jest-circus\build\run.js:121:9)     at run (C:\Users\pc\Documents\4-2\CSE 4806_Software Verification and Validation Lab\calculator\node_modules\jest-circus\build\run.js:71:3)     at runAndTransformResultsToTestFormat (C:\Users\pc\Documents\4-2\CSE 4806_Software Verification and Validation Lab\calculator\node_modules\jest-circus\build\legacy-code-todo-rewrite\jestAdapterInit.js:122:11)     at jestAdapter (C:\Users\pc\Documents\4-2\CSE 4806_Software Verification and Validation Lab\calculator\node_modules\jest-circus\build\legacy-code-todo-rewrite\jestAdapter.js:79:19)     at runTestInternal (C:\Users\pc\Documents\4-2\CSE 4806_Software Verification and Validation Lab\calculator\node_modules\jest-runner\build\runTest.js:367:16)     at runTest (C:\Users\pc\Documents\4-2\CSE 4806_Software Verification and Validation Lab\calculator\node_modules\jest-runner\build\runTest.js:444:34)</pre> </div> <div>OK</div> </div>			
Divide > BVA: divide(4, 6), Expected: 10 > returns 0.6666666666666666	00000001	X Failed	
Divide > DT: divide(0, 89), Expected: 89 > returns 0	00000001	X Failed	



## Advanced.test.js

**FAIL** test/advanced.test.js

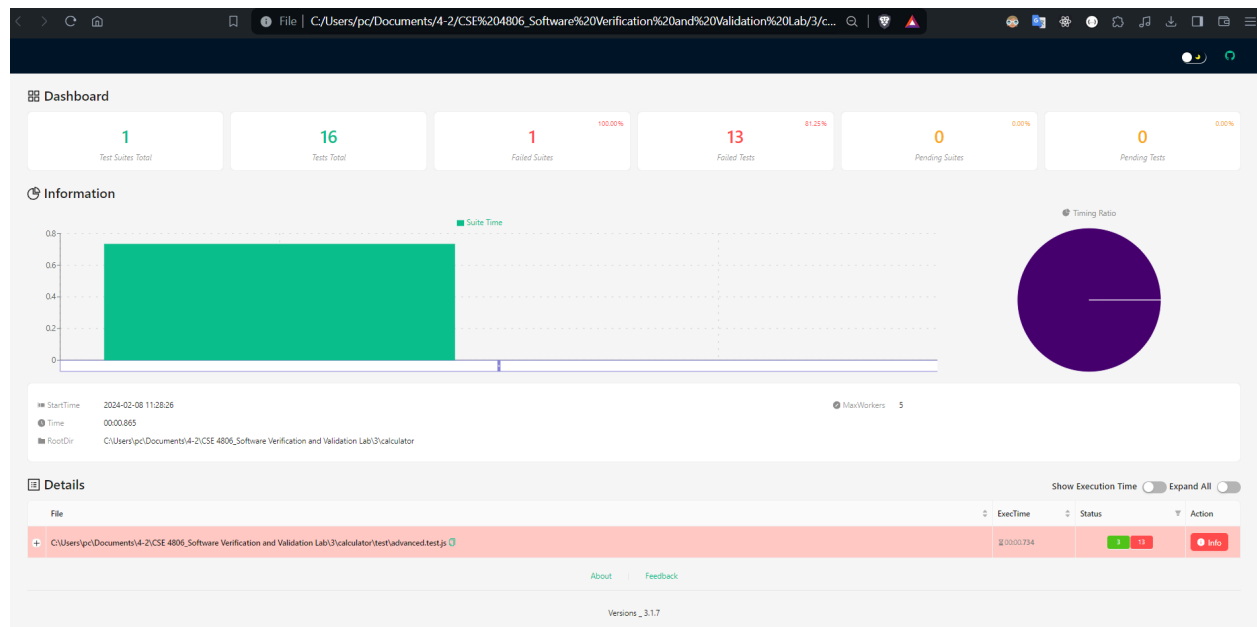
Pow

```
BVA: pow(1, 2), Expected: 3
  ✓ returns 3 (2 ms)
BVA: pow(4, 5), Expected: 9
  ✗ returns 1 (4 ms)
BVA: pow(3, 12), Expected: 15
  ✓ returns 15 (1 ms)
BVA: pow(4, 6), Expected: 10
  ✗ returns 2 (1 ms)
DT: pow(0, 89), Expected: 89
  ✓ returns 89
DT: pow(-17, -35), Expected: -52
  ✗ returns 50
DT: pow(65, -12), Expected: 53
  ✗ returns -75 (1 ms)
DT: pow(-78, 24), Expected: -54
  ✗ returns -86
```

Modulo

```
BVA: modulo(1, 2), Expected: 3
  ✗ returns 1 (1 ms)
BVA: modulo(4, 5), Expected: 9
  ✗ returns 4
BVA: modulo(3, 12), Expected: 15
  ✗ returns 3 (1 ms)
BVA: modulo(4, 6), Expected: 10
  ✗ returns 4 (1 ms)
DT: modulo(0, 89), Expected: 89
  ✗ returns 0 (1 ms)
DT: modulo(-17, -35), Expected: -52
  ✗ returns -17 (1 ms)
DT: modulo(65, -12), Expected: 53
  ✗ returns 5 (1 ms)
DT: modulo(-78, 24), Expected: -54
  ✗ returns -6
```

```
Test Suites: 1 failed, 1 total
Tests:      13 failed, 3 passed, 16 total
Snapshots:  0 total
Time:       0.92 s
Ran all test suites matching /.\\test\\advanced.test.js/i.
```



Details

Show Execution TimeExpand All

File	ExecTime	Status	Action
C:\Users\pc\Documents\4-2\CSE 4806_Software Verification and Validation Lab\3\calculator\test\advanced.test.js	00:00:015	119	Info
Merge Data			
Pow > BVA: pow(1, 2), Expected: 3 > returns 3	00:00:002	✓ Passed	
Pow > BVA: pow(4, 5), Expected: 9 > returns 1	00:00:004	✗ Failed	Info
Pow > BVA: pow(3, 12), Expected: 15 > returns 15	00:00:001	✓ Passed	
Pow > BVA: pow(4, 6), Expected: 10 > returns 2	00:00:001	✗ Failed	Info
Pow > DT: pow(0, 89), Expected: 89 > returns 89	00:00:000	✓ Passed	
Pow > DT: pow(-17, -35), Expected: -52 > returns 50	00:00:000	✗ Failed	Info
Pow > DT: pow(65, -12), Expected: 53 > returns -75	00:00:001	✗ Failed	Info
Pow > DT: pow(-78, 24), Expected: -54 > returns -86	00:00:000	✗ Failed	Info
Modulo > BVA: modulo(1, 2), Expected: 3 > returns 1	00:00:001	✗ Failed	Info
Modulo > BVA: modulo(4, 5), Expected: 9 > returns 4	00:00:000	✗ Failed	Info
Modulo > BVA: modulo(3, 12), Expected: 15 > returns 3	00:00:001	✗ Failed	Info
Modulo > BVA: modulo(4, 6), Expected: 10 > returns 4	00:00:001	✗ Failed	Info
Modulo > DT: modulo(0, 89), Expected: 89 > returns 0	00:00:001	✗ Failed	Info
Modulo > DT: modulo(-17, -35), Expected: -52 > returns -17	00:00:001	✗ Failed	Info
Modulo > DT: modulo(65, -12), Expected: 53 > returns 5	00:00:001	✗ Failed	Info
Modulo > DT: modulo(-78, 24), Expected: -54 > returns -6	00:00:000	✗ Failed	Info

INFO FOR --> Modulo BVA: modulo(3, 12), Expected: 15 returns 3

Error: expect(received).toBe(expected) // Object.is equality  
Expected: 15  
Received: 3  
at Object.toBe (C:\Users\pc\Documents\4-2\CSE 4806\_Software Verification and Validation Lab\3\calculator\test\advanced.test.js:41:45)  
at Promise.then.completed (C:\Users\pc\Documents\4-2\CSE 4806\_Software Verification and Validation Lab\3\calculator\node\_modules\jest-circus\build\utils.js:298:28)  
at new Promise (<anonymous>)  
at callAsyncCircusFn (C:\Users\pc\Documents\4-2\CSE 4806\_Software Verification and Validation Lab\3\calculator\node\_modules\jest-circus\build\utils.js:231:18)  
at \_callCircusTest (C:\Users\pc\Documents\4-2\CSE 4806\_Software Verification and Validation Lab\3\calculator\node\_modules\jest-circus\build\run.js:316:48)  
at processTicksAndRejections (node:internal/process/task\_queues:96:5)  
at \_runTest (C:\Users\pc\Documents\4-2\CSE 4806\_Software Verification and Validation Lab\3\calculator\node\_modules\jest-circus\build\run.js:252:3)  
at \_runTestsForDescribeBlock (C:\Users\pc\Documents\4-2\CSE 4806\_Software Verification and Validation Lab\3\calculator\node\_modules\jest-circus\build\run.js:126:9)  
at \_runTestsForDescribeBlock (C:\Users\pc\Documents\4-2\CSE 4806\_Software Verification and Validation Lab\3\calculator\node\_modules\jest-circus\build\run.js:121:9)  
at run (C:\Users\pc\Documents\4-2\CSE 4806\_Software Verification and Validation Lab\3\calculator\node\_modules\jest-circus\build\run.js:71:3)  
at runAndTransformResultsToTestFormat (C:\Users\pc\Documents\4-2\CSE 4806\_Software Verification and Validation Lab\3\calculator\node\_modules\jest-circus\build\legacy-code-todo-rewrite\jestAdapterInit.js:122:21)  
at jestAdapter (C:\Users\pc\Documents\4-2\CSE 4806\_Software Verification and Validation Lab\3\calculator\node\_modules\jest-circus\build\legacy-code-todo-rewrite\jestAdapter.js:79:19)  
at runTestInternal (C:\Users\pc\Documents\4-2\CSE 4806\_Software Verification and Validation Lab\3\calculator\node\_modules\jest-runner\build\runTest.js:367:16)  
at runTest (C:\Users\pc\Documents\4-2\CSE 4806\_Software Verification and Validation Lab\3\calculator\node\_modules\jest-runner\build\runTest.js:444:34)

OK

BVA: modulo(4, 6), Expected: 10 > returns 4

00:00:001

✗ Failed