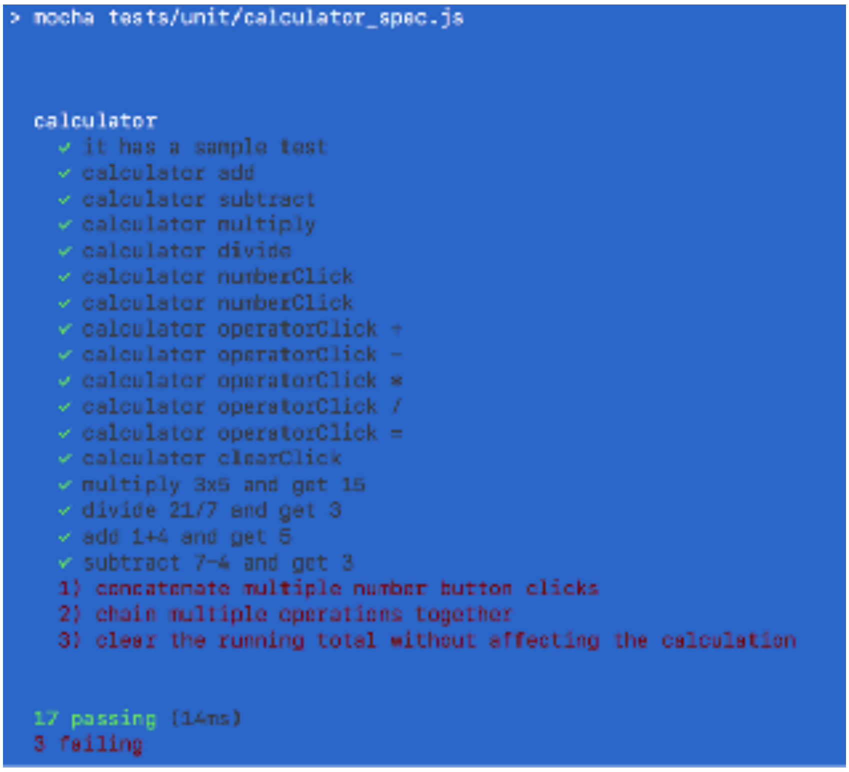
P.r.

Project testing

Demonstrate the use of testing in your program, passes, failures.

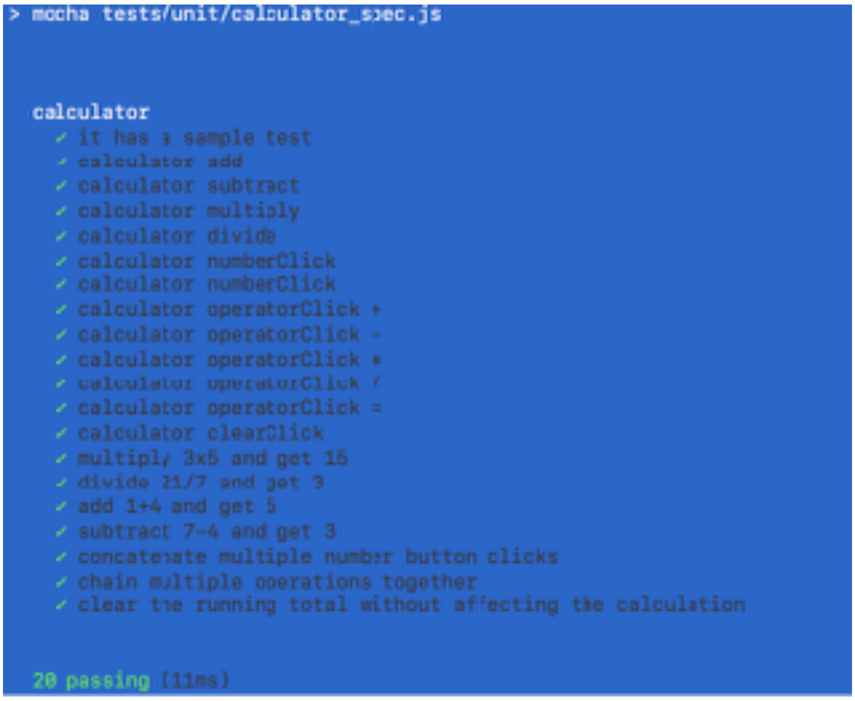


```
> mocha tests/unit/calculator_spec.js



  calculator
    ✓ it has a sample test
    ✓ calculator add
    ✓ calculator subtract
    ✓ calculator multiply
    ✓ calculator divide
    ✓ calculator numberClick
    ✓ calculator numberClick
    ✓ calculator operatorClick +
    ✓ calculator operatorClick -
    ✓ calculator operatorClick *
    ✓ calculator operatorClick /
    ✓ calculator operatorClick =
    ✓ calculator clearClick
    ✓ multiply 3x5 and get 15
    ✓ divide 21/7 and get 3
    ✓ add 1+4 and get 5
    ✓ subtract 7-4 and get 3
    1) concatenate multiple number button clicks
    2) chain multiple operations together
    3) clear the running total without affecting the calculation


  17 passing (14ms)
  3 failing
```



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    ✓ add 1+4 and get 5
    ✓ subtract 7-4 and get 3
    ✓ concatenate multiple number button clicks
    ✓ chain multiple operations together
    ✓ clear the running total without affecting the calculation


  20 passing (11ms)
```

```
var Calculator = require('../../public/js/calculator.js')
var assert = require('assert')

describe('calculator', function () {
  beforeEach(function () {
    calculator = new Calculator()
  });

  // write unit tests here in the form of "it should do something..."
  it('it has a sample test', function(){
    assert.equal(true, true)
  })

  it('calculator add', function(){
    calculator.previousTotal = 3;
    calculator.add(3);
    assert.equal(6, calculator.runningTotal)
  })

  it('calculator subtract', function(){
    calculator.previousTotal = 6;
    calculator.subtract(3);
    assert.equal(3, calculator.runningTotal)
  })

  it('calculator multiply', function(){
    calculator.previousTotal = 3;
    calculator.multiply(3);
    assert.equal(9, calculator.runningTotal)
  })

  it('calculator divide', function(){
    calculator.previousTotal = 9;
    calculator.divide(3);
    assert.equal(3, calculator.runningTotal)
  })

  it('calculator numberClick', function(){
    calculator.previousTotal = 9;
    calculator.numberClick(3);
    assert.equal(3, calculator.runningTotal)
  })

  it('calculator numberClick', function(){
    calculator.previousTotal = 9;
    calculator.numberClick(3);
    assert.equal(3, calculator.runningTotal)
  })

  it('calculator operatorClick +', function(){
    calculator.previousTotal = 9;
    calculator.previousOperator = '+';
    calculator.runningTotal = 1;
    calculator.operatorClick("=");
    assert.equal(10, calculator.runningTotal)
  })

  it('calculator operatorClick -', function(){
    calculator.previousTotal = 10;
    calculator.previousOperator = '-';
    calculator.runningTotal = 1;
    calculator.operatorClick("=");
    assert.equal(9, calculator.runningTotal)
  })

  it('calculator operatorClick *', function(){
    calculator.previousTotal = 10;
    calculator.previousOperator = '*';
    calculator.runningTotal = 10;
    calculator.operatorClick("=");
    assert.equal(100, calculator.runningTotal)
  })

  it('calculator operatorClick /', function(){
    calculator.previousTotal = 10;
    calculator.previousOperator = '/';
    calculator.runningTotal = 10;
    calculator.operatorClick("=");
    assert.equal(1, calculator.runningTotal)
  })

  it('calculator operatorClick =', function(){
    calculator.previousOperator = '/';
    calculator.operatorClick("=");
    assert.equal(null, calculator.previousOperator)
  })

  it('calculator clearClick', function(){
    calculator.previousOperator = '+';
    calculator.previousTotal = 100;
    calculator.runningTotal = 0;
    calculator.clearClick();
    assert.equal(null, calculator.previousOperator)
    assert.equal(null, calculator.previousTotal)
  })

  it('multiply 3x5 and get 15', function(){
    calculator.previousTotal = 3;
    calculator.previousOperator = '*';
    calculator.runningTotal = 5;
    calculator.operatorClick("*");
    assert.equal(15, calculator.runningTotal)
  })
```

```
it('divide 21/7 and get 3', function(){
  calculator.previousTotal = 21;
  calculator.previousOperator = '/';
  calculator.runningTotal = 7;
  calculator.operatorClick("/");
  assert.equal(3, calculator.runningTotal)
})

it('add 1+4 and get 5', function(){
  calculator.previousTotal = 1;
  calculator.previousOperator = '+';
  calculator.runningTotal = 4;
  calculator.operatorClick("+");
  assert.equal(5, calculator.runningTotal)
})

it('subtract 7-4 and get 3', function(){
  calculator.previousTotal = 7;
  calculator.previousOperator = '-';
  calculator.runningTotal = 4;
  calculator.operatorClick("-");
  assert.equal(3, calculator.runningTotal)
})

it('concatenate multiple number button clicks', function(){
  calculator.previousTotal = 10;
  calculator.previousOperator = '+';
  calculator.runningTotal = 1;
  calculator.operatorClick("+");
  calculator.runningTotal = 1;
  calculator.operatorClick("+");
  assert.equal(12, calculator.runningTotal)
})



it('chain multiple operations together', function(){
  calculator.previousTotal = 10;
  calculator.previousOperator = '+';
  calculator.runningTotal = 1;
  calculator.operatorClick("+");
  calculator.operatorClick("+");
  calculator.operatorClick("+");
  assert.equal(44, calculator.runningTotal)
})


it('clear the running total without affecting the calculation', function(){
  calculator.previousTotal = 10;
  calculator.previousOperator = '+';
  calculator.runningTotal = 1;
  calculator.operatorClick("+");
```

```
    calculator.clearClick();
    calculator.operatorClick("+");
    calculator.operatorClick("+");
    assert.equal(22, calculator.runningTotal)
  })
});
```