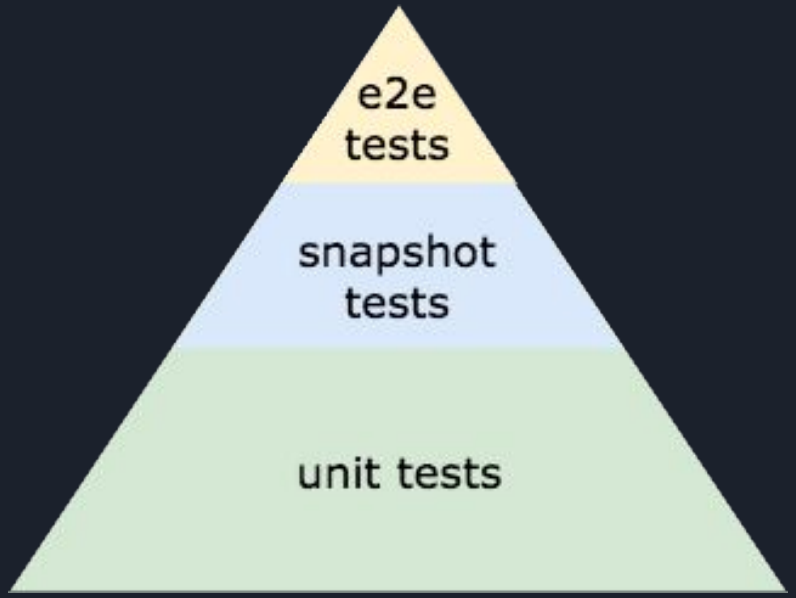
Vue.js Testing

Europe PMC Redesign

Why Testing?

- Development
  - Better team cooperation (E.g., not break each other's code)
- Release
  - More confident to release
- Maintenance
  - Refactoring
  - Bug fix
- Documentation
  - Served as documentation

Which Test?

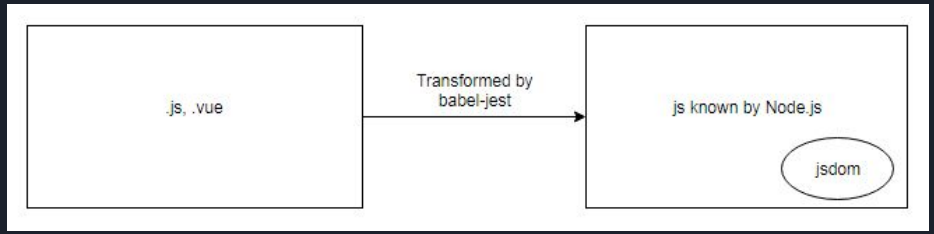


Test Jargons

- Mock
- Stub
- Spy

How test works in Vue.js

- Test runner running on Node.js: Jest vs Mocha
  - Mocking
  - Assertion functions
- Babel
  - Presets for Vue and ES6, etc.
- @vue/test-utils
- Eslint



Test Result and Coverage Report

How to generate these test reports?

Use Vue Test Utils to test a component (1)

Mount and render a component to get its Wrapper object

import {mount, shallowMount} from ‘@vue/test-utils’

- mount
  - const wrapper = mount(MyComponent)
- shallowMount
  - Child components will be automatically stubbed.

Use Vue Test Utils to test a component (2)

A Wrapper is an object that contains a mounted component and methods to test the component. What to test:

- computed properties
- watchers
- methods
- lifecycle hooks

How to test

- wrapper.vm.aDataProperty
- wrapper.setData({aDataProperty: xxx})
- wrapper.setProps({aProp: xxx})
- expect(wrapper).toMatchSnapshot()

Test Vuex and Vue Routing

Covered in the demo

Debugging

- Log

  console.log()

- Step through
  a. Add debugger breakpoint
  b. node --inspect-brk node_modules/@vue/cli-service/bin/vue-cli-service.js test:unit QueryBox.test
  c. chrome://inspect

Good Practices

- Keep unit tests small
  - Bug free itself
  - Easy to understand
- Keep unit tests independent
  - No coupling between each other
  - Easy to understand
- Keep unit test deterministic
- Pyramid model
  - Up to 2 or 3 snapshot tests per component

- Public contract oriented
  - Focus on input and output
  - Black box test
  - Free to refactor internal implementation
- TDD
  - Code is contract-based designed
  - Guarantee all code is test covered
  - Code is testable in the first place
- Dependency abstraction, e.g.:
  - APIs
  - Vuex
  - Vue Router
- --watchAll mode
  - Real time feedback

References

- Vue Test Utils: https://vue-test-utils.vuejs.org/
- Jest: https://jestjs.io/
- Vue.js: https://vuejs.org/
- Vuex: https://vuex.vuejs.org/
- Vue Router: https://router.vuejs.org/
- Vue CLI: https://cli.vuejs.org/
- jest-html-reporters: https://www.npmjs.com/package/jest-html-reporters

Thank you

Live demo time