Frontend Testing Libraries



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# Frontend Testing

There is always a lot of emphasis on testing the software, but not so much the frontend part which is what the user is visually seeing and interacting with. Commonly, this gets tested with via clickthrough of a pre-set staging environment before releasing to end-users.

This is also the case in Drieam, where first line of live testing is the developers reviewing and clicking through each other’s PRs (Pull Requests). The second line is for the PO and/or the UX designer to try and break the interface. However, just like backend has unit tests and automated integration tests via pipelines (actions), so should the frontend. For this reason, the frontend unit tests are written for each component of the interface. It is a relatively new practice and thus causes a lot of discussions within the company.

A frontend unit test should validate that the smallest possible module (unit) is functioning as expected independent of the other modules. They can be split into state-based and interaction-based, meaning it either checks if the state of an element changed as expected or if an interaction is calling the right methods/making the right changes. Drieam uses a Jest library for front-end testing. It is a simple and lightweight JavaScript testing framework that is well documented and can run tests in parallel making it fast too. Since the tests are run periodically, they are automated using Cypress integrated in the CI actions (pipelines). Thus, each time the code is pushed, merged, released the cypress will run all the unit tests to ensure the application is still meeting expectations.

# Common testing problems

Flaky tests

Execution duration

Mocking

# Other Potential Libraries

The following Testing libraries could be a decent replacement for the Jest or Cypress libraries.

Mocha, Jasmine, Jest, Vitest for unit tests

DOM structure rendering : Enzyme or Testing Library.

Cypress vs TestCafe for E2E

//perhaps compare based on the common problems?

# References

Bose, S. (2023, March 16). *Front End Testing: A Beginner’s Guide*. Retrieved from BrowserStack: https://www.browserstack.com/guide/front-end-testing