Testing Plans & Testing Strategies & Testing Tools

By

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# Testing Plan & Strategies

There are three parts in our in our testing plan. They are 1. Testing of components 2. Testing of System Level Functions after components’ integration 3. Testing of System Performance.

## Testing of components

We do testing of components because it allows developers to identity bugs and errors in the components before integrating them into the system. Early Identification of bugs eases the development process and also it is easier to debug the errors in component level since the scope each component is concrete and vivid.

Testing of components is done differently between components from FrontEnd and BackEnd. Detail Test Cases Document about components can be found at Lab 3 Folder. Basically, we adopt unit testing strategy for react.js and node.js components and blackbox testing strategy for html elements in frontend. We used unit testing because it is one of the best ways to sub-components inside each component is working perfectly and also unit tests involve small part of code to ensure the correctness of result for particular situation.

## Testing of System Level Functions after components’ integration

We do this testing to ensure that our system is able to fulfill all the defined functional requirements we have defined. Detail Test Cases Document about System Level Functions can be found at Lab 4 Folder. We used blackbox testing for this and all the test cases are designed based on the use cases and functional requirement.

## Testing of System Performance

For this testing, we want to make sure that our system can support the amount of the users that we expected. So, we created virtual users to use our system at the same time and check whether our system can withstand the load. We also test the amount of the amount of time our system takes to process those users’ request. We used k6 testing tools for this system performance test.

# Testing Tools

## Enzyme

Enzyme is a JavaScript Testing utility for React that makes it easier to assert, manipulate, and traverse your React Components' output.

It is used for testing React Components in FrontEnd.

## Moxios

Moxios is JavaScript Testing utility for testing http request in React.

It is used for testing http request in FrontEnd.

Chai

Chai is a BDD (Behaviour Driven Development) / TDD (Test Driven Development) assertion library for [node](http://nodejs.org/) and the browser that can be delightfully paired with any javascript testing framework. It is used for unit testing in BackEnd

## K6

k6 is a developer-centric load testing tool designed to help you, as a developer, incorporate load testing into your workflow, and ultimately get it into your automation flow.

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