

You are a front-end developer at Billed, a company that produces SaaS solutions for human resources teams.

Unfortunately for Billed, Garance, a colleague on the expense report feature team, has left the company before completing the application. In one week, the team has to show the working solution to the whole company. Matthieu, the lead developer of the feature team, asked for support to meet the deadline and you learned yesterday at the team meeting that you were the one who was chosen!

Interface for creating an expense report with fields for the type of expense, the amount, a comment, a date, a receipt, etc.

Interface of the Billed application

When you arrived this morning, you received an e-mail from Matthieu, which gives more details on what is expected of you.

Subject: Urgent - Information on the reinforcement mission within the "expense report" feature team

From: Matthieu

To: Me

First of all, thank you for lending us a hand this week to set up tests on the "expense report" feature.

This feature is highly anticipated in the market and the top management has put a priority on it. The objective is to officially launch it to our customers within 2 weeks. The deadlines are therefore very tight. The feature team has been working hard for the last two weeks but Garance's departure is not helping, and we need your help for the final stretch.

Here is the feature description.

Most of it has already been developed, I assure you. You can find the code here. There are two user paths on this feature: on the HR administrator side and on the employee side. The back-end is ready (in alpha version). On the front-end, the HR administrator path is complete, fully tested and debugged.

What remains to be done is to make the employee path more reliable and improve it. Here is what I expect from you:

[Bug - report]

Fix the bugs identified in the bug report provided by Jest. I've put a copy in the Notion kanban.

[Bug - hunt]

Fix the bugs identified by Leila our QA on the employee route. They are described in the kanban too.

[Unit and integration tests]

Add unit and integration tests for the Bills and NewBill files: these tests will allow you to eliminate these bugs and avoid any regression during the next evolution of the solution. Some tests have already been developed (for the Login, and for the HR Administrators Dashboard): they are already ticked on the kanban, you can use them for the rest. As the demo is only a week away, we have no room for error. For this reason, you need to ensure 100% branch coverage (apart from calls to the

firebase back-end: these are indicated as comments in the code). You can rely on the Jest coverage report (launch the application with live-server to be able to read it and go to <http://127.0.0.1:8080/coverage/lcov-report/> : everything is indicated in the readme).

[E2E test]

Since there is no time to automate end-to-end testing, the tests will be done manually by Leila. So you need to make an End-to-End test plan to guide her. You can take inspiration from the End-to-End plan that Garance has already written on the HR administrator path.

Another thing: the application already contains test data, but if you want to create new data on the employee path and be able to consult it on the HR administrator path, you will have to use your personal e-mail to connect to both paths. This is because the code on the back end is still in beta and we had to put this in place to facilitate testing.

Good luck with solving these bugs and implementing the missing tests! We're counting on you.

Matthieu

Lead Developer @Billed

That's it, you have all the information to start fixing this application. Let's get started!

Deliverables

Link to the updated codebase on a public GitHub repo.

A screenshot with the Jest test report on all UI files (src/views) and UX files (src/containers).

A screenshot of the Jest coverage report.

A PDF document of the E2E plan for the route used.

The GitHub repo must be named with the following convention: FullName_#_DatedStart. The # is the project number of the pathway and the date must be in ddmmyyy format. For example, FrancoisLenotre_5_05032020.

Oral presentation

During the oral presentation, your mentor will play the role of Matthieu the lead developer of the project with whom you do a code review:

Presentation of the deliverables (15 minutes)

You will start by presenting the Jest test report to show the tests you have added and the updated coverage report. (5 minutes)

Then you will have 10 minutes to explain how you fixed each bug and how you wrote the unit and integration tests on the Employee journey.

Finally, you can quickly illustrate the End-to-End test plan you wrote on the Employee journey.

Discussion (10 min)

For 5 to 10 minutes your assessor will ask you about your understanding of bugs, and your choices in writing unit, integration and end-to-end tests.

Your assessor will question your choices, so be prepared to defend your work. At the end of the session, your assessor will resume his or her role as mentor so that you can debrief together.

Note on logging into the application: we recommend that you do not use your personal email address to log into the application if you do not want other students using the database to see your address. However, you need to use the same address on the HR administration side and on the employee side to be able to see the expense reports you have created.

Skills

Writing unit tests with JavaScript

Writing integration tests with JavaScript

Debugging a web application with the Chrome Debugger

Writing a manual end-to-end test plan