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Shift Creator
Team Project – D.7 Verification & Validation
CS 386 – Software Engineering
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Prof. Dr. Marco Gerosa

1. Description

ShiftCreator is a work shift scheduling software that automatically generates the weekly work schedules of multiple employees to save time for the manager and be a more streamlined experience that automatically schedules employees given the necessary information, and if the schedule is not ideal, a new one can be randomly generated in seconds.
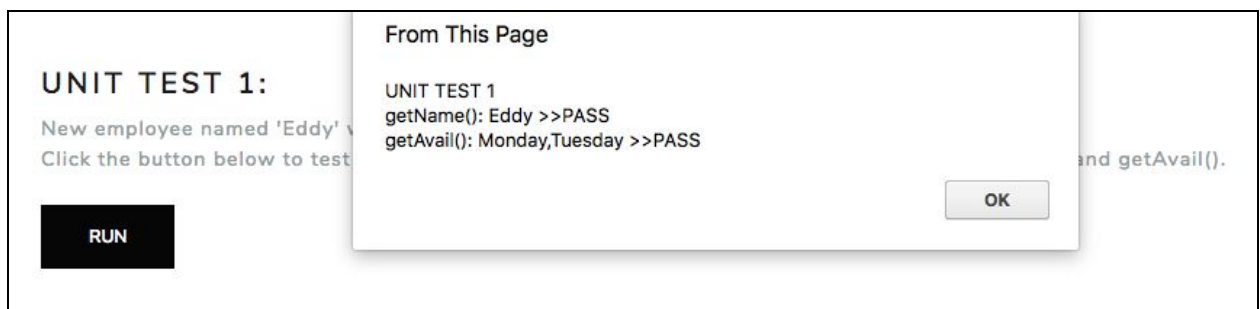
2. Verification (tests)

2.1. Unit test
Github Link (To run the unit tests):
https://github.com/csmartinez/job-scheduler/blob/master/Test.html
Github Link (To view the code for the tests, at the bottom of this page):
https://github.com/csmartinez/job-scheduler/blob/master/js/fields.js

For unit testing, I created javascript functions that are called when buttons are clicked on a Test.html file to run them. They each create new objects with sample information and allow the user to view the results via a pop up window that appears. A 'PASS' or 'FAIL' is written beside the output to indicate the test result.
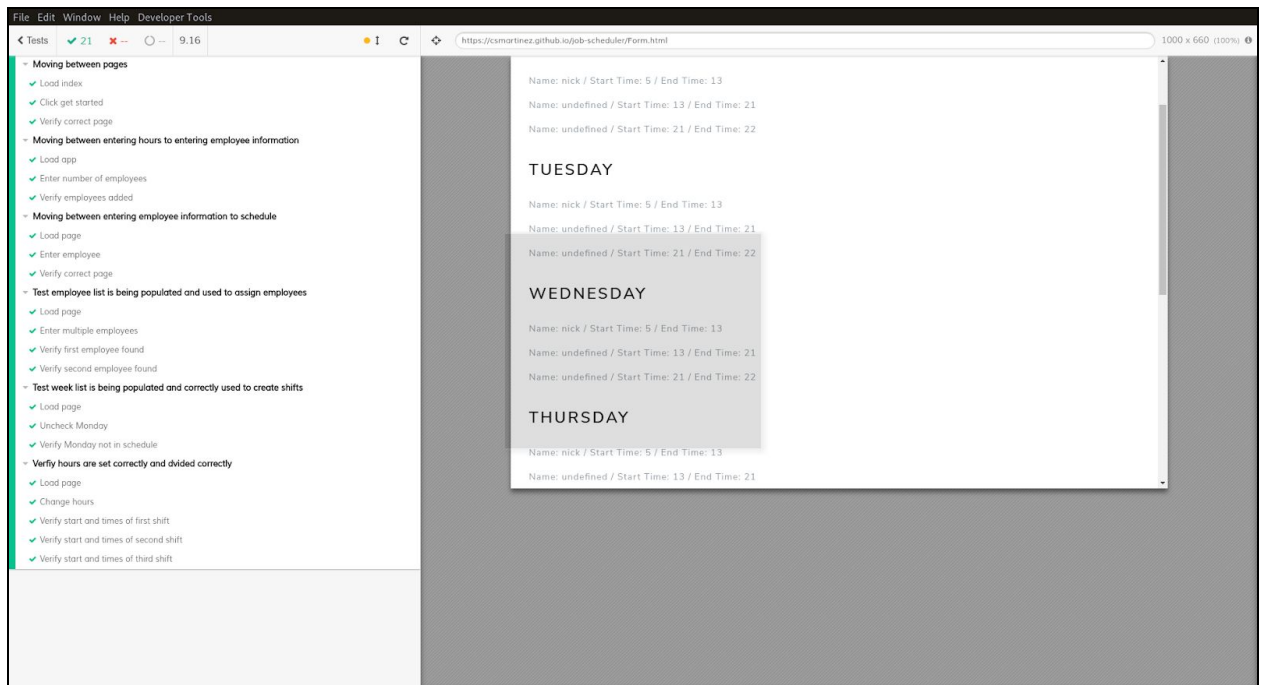
2.2. Integration test

Github Link:

https://github.com/csmartinez/job-scheduler/blob/master/cypress/integration/integration.js

For integration testing I used an application called cypress found at:
https://www.cypress.io/. The first three tests are checking movement between part of the
application. I tested the flow from welcome page to entering store information to entering
employee information. The next tests check that data entered is being collected from the
page, passed to the work functions, and then displayed on the schedule. Employee
information is checked by entering multiple employees then verifying that they both
appear on the schedule. Then the correct list of open days is checked by removing
Monday from business hours and verifying the schedule does not contain Monday. The
last test checks that hours are set correctly, the hours are used to correctly divide into
separate shifts, and finally those shifts are correctly displayed on the page.
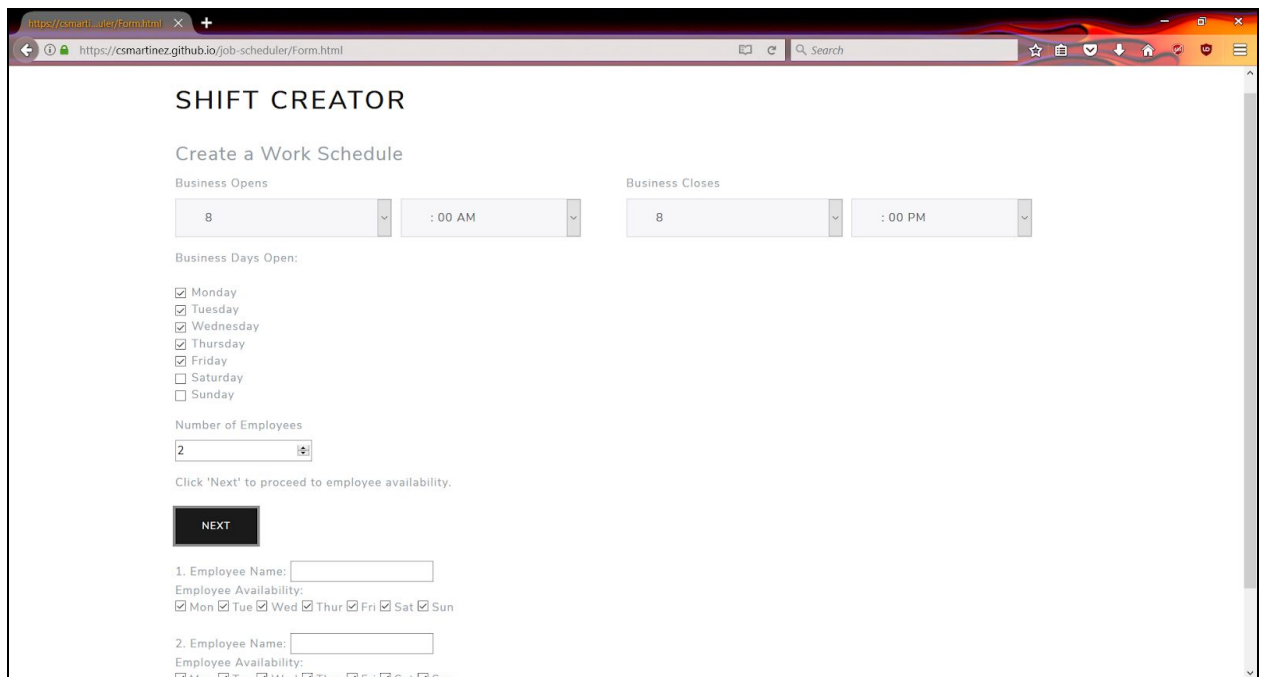

2.3. Acceptance

In the this part of the project, the acceptance could be done by making sure the link of
the website worked as in when going to the site and testing the website by inputting
each information then clicking next. Making sure no errors were found or frozen or halted
in testing. Checking the following which could not properly set a script to do so correctly.

Test: Enter business operating hours.
Plan:
1. Open application.
2. Set start hours to 8AM.
3. Set end hours to 8PM.
4. Select next.
Result: Pass

After it finish passing all the result it show the result and the list of employee with the hour in the day of the week.

Site url:
https://csmartinez.github.io/job-scheduler/Form.html

3. Validation (user evaluation)

Test Script:

Add in store hours 8AM - 8PM
Add at least 4 users to the system with different days off.
Generate a schedule.

What are your impressions of the website style or theme?

User 1: The site is clean but simplistic. Maybe add some color or a logo.
User 2: A little too much whitespace.
User 3: Works pretty well, first page looks very basic. No colors that 'pop out at you'.

Does the website feel responsive?
User 1: Yes the website was responsive but the checkboxes are tiny and hard to click.
User 2: It was fast even on my old laptop.
User 3: Form appears responsive. Checkboxes are small. Everything seems straightforward.

With the minimal instruction, do you feel you could do everything asked in the test script?
User 1: Yes it was pretty easy to follow along.
User 2: Not a lot of ways to go wrong, but yea it was easy to follow.

Is the schedule easy to read?
User 1: It needs to be in calendar format. It wasn't obvious at first but now that I know what I am looking at, it is. You should be able to see a week on a page.
User 2: No the font colors make it hard to read.
User 3: Not easy to read but straight forward. Looking at it quickly is difficult to infer information from.

What features do you think are missing?
User 1: Its missing the ability to add/remove people from a shift. There is no back functionality. There should be user profiles like supervisor that can edit the schedule and regular users to just view it.
User 2: Can you schedule multiple employees? I just got promoted and one of the full-time employees have to lock up at the library, is there a way to include that?
User 3: Seeing an actual schedule rather than just text. Like a weekly view and hours to be able to visually look at it quickly.

Is there anything I haven't asked that you would like to comment on?
User 1: There doesn't seem to be the ability to have employees with set shifts. You should also highlight when people are over 40 hours.
User 2: I can't think of anything.
User 3: Business hours might be different on the weekends for example, needs more flexibility in that area.

Analysis:
　　　With respect to the look of our site, many of the users commented that it could use some additional color to make it stand out. The next product release will implement some additional color based on this feedback. Additionally we received a lot of feedback saying that our checkboxes are too small and we noted that this was especially true for the users on laptop devices. All of our users found the test script easy to navigate with little direction. No responses

noted that any of the functionality did not perform the expected actions. We aim to keep the site's ease of use as we scale up the feature list. While sparse, the features that we currently have implemented are working well and as expected. Several of the users noted features that we have planned for the second release but were missing in the release they were testing such as: multiple employees per shift, viewing schedule in a more calender like format, and being able to go back and edit data. They were placed at the top of our implementation list. The main positive feature that we found was the speed of the site and how quickly data was entered. While adding to our feature list will increase time to a generated schedule, we hope to keep these features in future releases. We think that currently the project is missing the mark for our value proposition. Many of the aims of the product are fulfilled like ease of use and quick start up time. However, the lack of a few key features are preventing our product from being truly useful. We believe that the second release will rectify the situation and deliver on our value proposition.

4. Group participation

Nicholas Anderson - Completed a user evaluation, integration tests, and worked on validation section. 33%
Carli Martinez - Completed a user evaluation and unit tests. 33%
Brandon Thomas - Acceptance test 33%
Ryan Wallace - Personal emergency, group agreed to not assign work this week.