

CSE 2102: Lab 6 (Final Project)

Tom McCarthy

Code located in my repo: <https://github.com/tommcc314/CSE-2102-Software-Engineering>

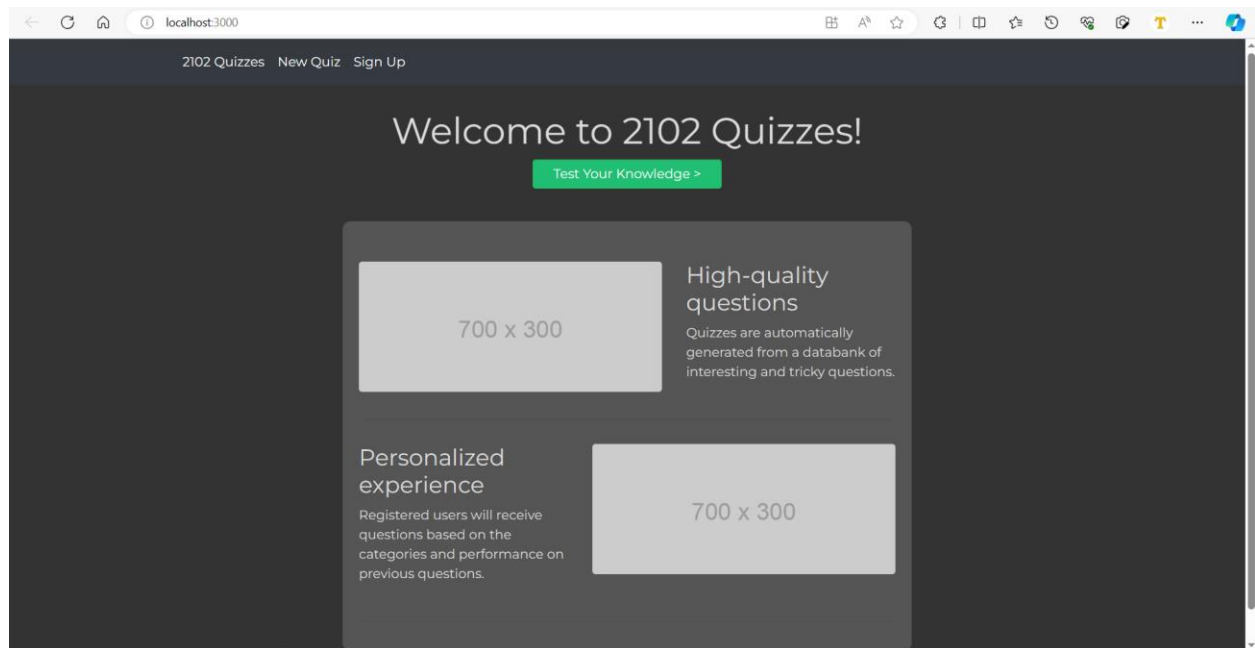
Libraries/Frameworks/Tools Used:

- React Router: A React library for handling multiple pages. Some example code I based my router off of is from <https://stackoverflow.com/questions/41956465/how-to-create-multiple-page-app-using-react>
- Jest/testing-library: For unit tests related to rendering and functionality of elements.
- Bootstrap: For portable UI like buttons and the navigation bar.

Description of Quiz System:

There are three pages: home, quiz and signup.

The home page contains a welcome message with a brief description of what the quiz system offers. It has a call to try a quiz.



The signup page has an email and password field. These are validated by a similar method to Lab 5, where the email format and password length/complexity are checked.

This page utilizes React state to track the inputted email and passwords, as well as the outcome of validating those fields. When the validation function receives the values and detects errors, it sets the validation states to contain those errors, which display on the page accordingly.

Sign Up

Email

Email is invalid!

Password

Passwords must be at least 8 characters, contain an uppercase letter, lowercase letter and a number.

Create Account

The quiz page has 10 questions related to the content of this course (some are traditional multiple choice, some are true/false). When the user clicks the “submit” button, the score appears.

1. Which of the following statements is NOT part of the agile manifesto?

- ☐ Individuals and interactions over processes and tools
- ☐ Working software over comprehensive documentation
- ☐ Customer collaboration over contract negotiation
- ☐ Following a plan over responding to change

2. What does it mean to work iteratively?

- ☐ Repeating a sequence of operations to improve upon the current state and move towards a desired result
- ☐ Working on small pieces of a system and building up to the desired result
- ☐ Using evidence to drive decisions

The system keeps track of the score by updating a Boolean array of results. Every time a user clicks an answer choice, the system dynamically updates the corresponding result in the array. When the user submits, the system sums up the number of correct answers in results and displays the score.

8. True/False: React helps create responsive multi-page applications.

☒ True

☐ False

9. In Javascript, what is a variable defined by the const keyword?

☒ An immutable reference to a value

☐ An immutable value

10. Which of these is NOT a SOLID principle?

☒ Open-Closed

☐ Dependency Inversion

☐ Interface Union

☐ Single Responsibility

You got a 3 out of 10!

Try Again

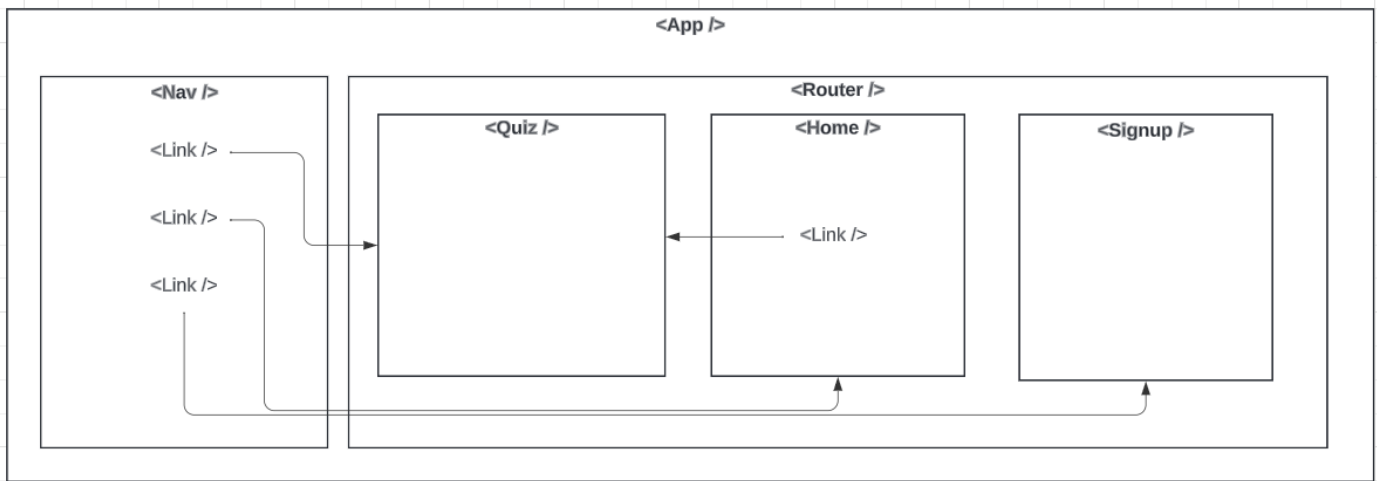
Unit Tests:

App.test.js contains React tests. Four of the tests test for proper rendering of components, like the home page and navigation bar. The test for the quiz page goes through every question and tests whether it is displayed on the page.

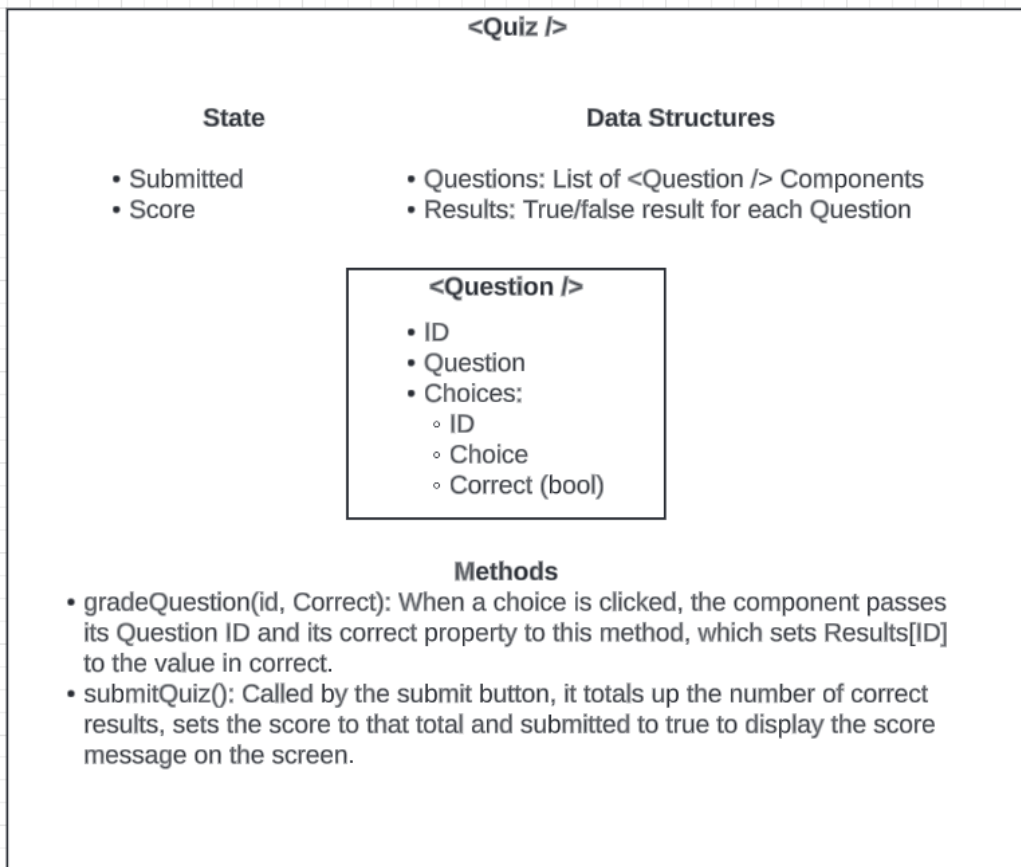
I also added a functional test for scoring, where the test clicks on the first option for every question, clicks “submit” and expects the proper score to display.

Architecture Diagrams:

App Structure:



Quiz Close-up:



Signup Close-up:

<Signup />

State

- Email: value in the email field; set by the <input />'s onChange property
- Password: value in the password field
- EmailValidation: displayed error message (if email validation fails)
- PasswordValidation: displayed error message (if password validation fails)

Methods

- validate(event): prevents the default behavior when submitting a form (to avoid reload of page) and then validates the fields. The email is checked to match standard email formatting and the password length and complexity are checked. If any validations fail, the corresponding states are updated with the appropriate error message.