Quiz Section 2: React

   In this section, we will create a simple Trivia React App that will count the number of answers that the user gets correct. To get started, check out the starter code using the command

   `git clone https://gitlab.cs.washington.edu/cse331-24au-materials/sec02.git`

   To install the modules `cd sec02` and run `npm install --no-audit`. Then, start it with `npm run start`. Point your browser at `http://localhost:8080`. You should see an Application titled "Animal Trivia".

Task 1 – React Bug

Currently, when you submit your answer, nothing changes in the UI.

(a) Add a `debugger` statement at the top of the `doCheckAnswerClick` method in `App.tsx`. Confirm that the method is being called with the result of the correctness check.

(b) The `doCheckAnswerClick` method updates the state to include the field called "correct", but this information is not currently being used in render.

   Update `render` to show some HTML (either a congratulatory message or one saying that the answer is incorrect) when `this.state.correct` is not undefined.

   Verify that the HTML now appears on the screen when you submit an answer.

(c) Add a log entry to the Debugging Log with the bug you found and how you fixed it

Task 2 – State Bug

Currently, when you submit the correct answer, the score does not increase.

(a) Look at the `doCheckAnswerClick` method in `App.tsx` and add a debugger statement to check if the `score` field in the state is being updated when the user submits the correct answer.

(b) How is the `score` field being updated in the `doCheckAnswerClick` method? Is the `score` field being updated correctly? Fix the bug so that the score increases when the user submits the correct answer.

(c) Add a log entry to the Debugging Log with the bug you found and how you fixed it.

Task 3 – Mutation Bug

Currently, when you submit the correct answer to a question multiple times, the number of correct answers increases each time you submit the answer. The score should only increase the first time you submit the correct answer.

(a) Look at the `doCheckAnswerClick` method in `App.tsx` and add a `debugger` statement to see why the score is increasing each time you submit the correct answer.

(b) Notice that each question has a field `alreadyAsked` that should be set to `true` when the user has answered the question correctly for the first time. Is this field being set correctly?

(c) Fix the bug so that the score only increases the first time the user submits the correct answer.

(d) Add a log entry to the Debugging Log with the bug you found and how you fixed it. Was bug was due to mutating something that should not have been mutated?

Task 4 – Finishing the Trivia

Now, update the Application so that when a user click the "New Question" button, a new question that the users has not answered correctly yet is displayed. When a user has answered all questions correctly, display a message that the user has answered all questions correctly.

(a) Update the `doNewQuestionClick` method in `App.tsx` to get a random question that the user has not answered correctly yet. Notice that each question has an `alreadyAsked` field that you should be set to `true` when the user has answered the question correctly. You can use this field to determine whether a question has been answered correctly or not.

(b) Update the `doCheckAnswerClick` method in `App.tsx` to update the state `allQuestionsAnswered` field when all questions have been answered correctly.

(c) Be sure to log any bugs you encounter while implementing these features in the Debugging Log.