PER SCHOLAS

R-ALAB 308A.4.1:

Working with External Data

Version 1.0, 10/18/23

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Introduction

This **graded** assignment challenges you to create an interactive application using data from an external Application Programming Interface (API). In order to accomplish this task, you will employ the tools and techniques you have learned thus far, including fetch, Axios, and async/await syntax.

Objectives

- Request data from an external API using fetch and Axios.
- Create an interactive, dynamic webpage that serves content from an external API.
- Use async/await and Promises to create synchronous logic in asynchronous actions.
- Using fetch or Axios, POST data to and DELETE data from an external API.

Submission

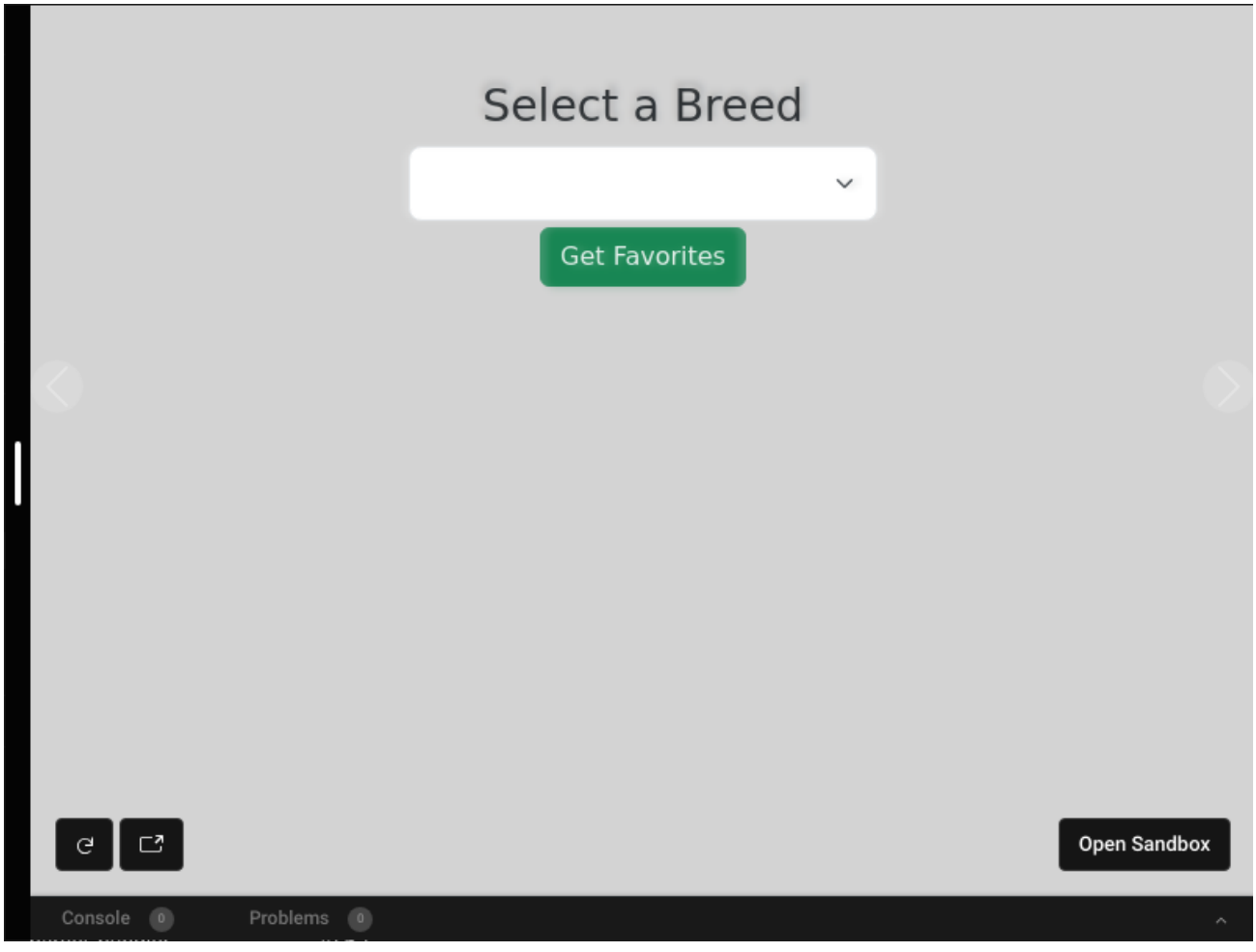
Submit your completed lab using the **Start Assignment** button on the assignment page in Canvas.

Your submission should include:

- A GitHub link to your completed project repository.

Instructions

The CodeSandbox below contains pre-configured contents, including an HTML layout, CSS styling, and instructions embedded in the form of comments. Take a few minutes to familiarize yourself with the contents of the sandbox.



Download the sandbox and initialize a local git repository. Link this repository to GitHub, and use your local development environment to complete the tasks that follow.

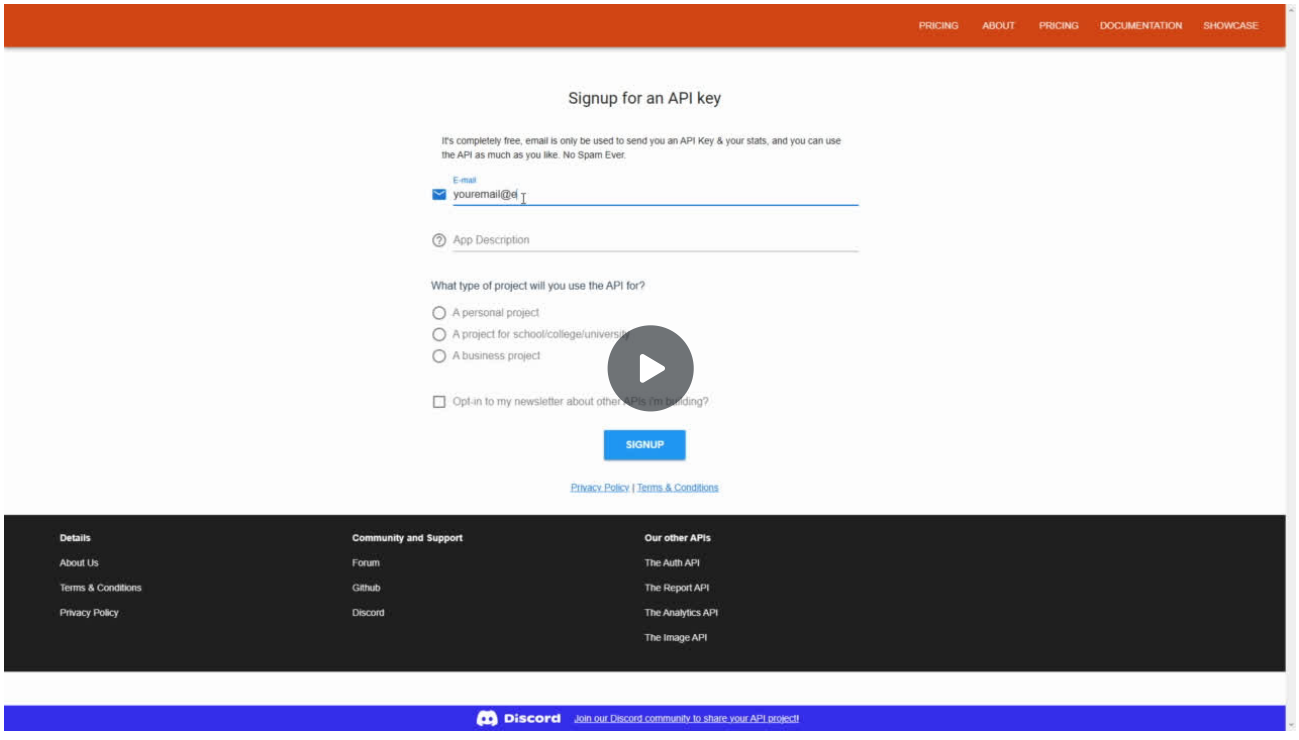
You will be primarily working within the index.js file.

Commit frequently! Every time something works, you should commit it. Remember, you can always go back to a previous commit if something breaks.

Part 1: The API

For the purposes of this assignment, you will be working with The Cat API, which is a free public API.

Navigate to the API's website using the link above, and then create an account as follows:



The first step toward working with any API is exploring its documentation. Every API you work with will be different, so never make any assumptions about how an API works.

Once you have familiarized yourself with the fundamentals of the API, continue to the tasks below.

Part 2: Tasks

Now that you know what you are working with, implement the following. These steps are best accomplished in order, but feel free to approach the problem differently if you see a creative and efficient solution:

1. Create an async function "initialLoad" that does the following:
    - Retrieve a list of breeds from the cat API using fetch().
    - Create new <options> for each of these breeds, and append them to breedSelect.
        - Each option should have a value attribute equal to the id of the breed.
        - Each option should display text equal to the name of the breed.
    - This function should execute immediately.

2. Create an event handler for breedSelect that does the following:
    - Retrieve information on the selected breed from the cat API using fetch().
        - Make sure your request is receiving multiple array items!
        - Check the API documentation if you are only getting a single object.
    - For each object in the response array, create a new element for the carousel.
        - Append each of these new elements to the carousel.
    - Use the other data you have been given to create an informational section within the infoDump element.
        - Be creative with how you create DOM elements and HTML.
        - Feel free to edit index.html and styles.css to suit your needs.

        - Remember that functionality comes first, but user experience and design are also important.
    - Each new selection should clear, re-populate, and restart the carousel.
    - Add a call to this function to the end of your initialLoad function above to create the initial carousel.

3. Create an additional file to handle an alternative approach.

4. Within this additional file, change all of your fetch() functions to Axios!
    - Axios has already been imported for you within index.js.
    - If you've done everything correctly up to this point, this should be simple.
    - If it is not simple, take a moment to re-evaluate your original code.
    - **Hint:** Axios has the ability to set default headers. Use this to your advantage by setting a default header with your API key so that you do not have to send it manually with all of your requests! You can also set a default base URL!

5. Add Axios interceptors to log the time between request and response to the console.
    - **Hint:** you already have access to code that does this!
    - Add a console.log statement to indicate when requests begin.
    - As an added challenge, try to do this on your own without referencing the lesson material.

6. Create a progress bar to indicate the request is in progress.
    - The progressBar element has already been created for you.
        - You need only to modify its width style property to align with the request progress.
    - In your request interceptor, set the width of the progressBar element to 0%.
        - This is to reset the progress with each request.
    - Research the axios onDownloadProgress config option.
    - Create a function "updateProgress" that receives a ProgressEvent object.
        - Pass this function to the axios onDownloadProgress config option in your event handler.
    - console.log your ProgressEvent object within updateProgress, and familiarize yourself with its structure.
        - Update the progress of the request using the properties you are given.
    - Note that we are not downloading a lot of data, so onDownloadProgress will likely only fire once or twice per request to this API. This is still a concept worth familiarizing yourself with for future projects.

7. As a final element of progress indication, add the following to your Axios interceptors:
    - In your request interceptor, set the body element's cursor style to "progress."
    - In your response interceptor, set the body element's cursor style to "default."

8. To practice posting data, we will create a system to "favourite" certain images.
    - The skeleton of this favourite() function has already been created for you.
    - This function is used within Carousel.js to add the event listener as items are created.
        - This is why we use the export keyword for this function.
    - Post to the cat API's favourites endpoint with the given id.
    - The API documentation gives examples of this functionality using fetch(); use Axios!
    - Add additional logic to this function such that if the image is already favourited, you delete that favourite using the API, giving this function "toggle" behavior.

- You can call this function by clicking on the heart at the top right of any image.

9. Test your favourite() function by creating a getFavourites() function.
   - Use Axios to get all of your favourites from the cat API.
   - Clear the carousel and display your favourites when the button is clicked.
   - You will have to bind this event listener to getFavouritesBtn yourself.
   - **Hint:** you already have all of the logic built for building a carousel. If that is not in its own function, maybe it should be so that you do not have to repeat yourself in this section.

10. Test your site, thoroughly! Debug your code as needed.
    - What happens when you try to load the Malayan breed?
      - If this is working, good job! If not, look for the reason why and fix it!
    - Test other breeds as well. Not every breed has the same data available, so your code should account for this.