REFLECTION

While working on this project, I learned quite a lot about React and Javascript. The first challenge that confronted me was about preserving the items that used saved in their carts. I experienced a specific bug where the badge indicating the shopping cart's size next to the cart icon doesn't update when an item is added. I suspected that the problem had to do with my improper usage of local storage. To solve this problem, I read numerous stack overflow articles and came to the conclusion that I needed to use "useEffect" hook rather than simply using the "useState" hook. My update of the local storage has resulted in a mismatch between the stored cart and the cart's state, causing the cart badge to not re-render. I used the "useEffect" hook to monitor for update events from the local storage, which effectively solved the problem.

Another issue I encountered early on was with navigation. Because create-react-app constructed the application as a single page application, navigation with React became slightly different from what I understood from my experience with vanilla Javascript. I went to reactjs.org to search for answers and immediately recognized the need to use Routes. Using the App.js main component, I was able to create three different routes for the product page, the product details pages, and the cart page using three Route components. These routes are presented when the corresponding actions are performed. The only component that is unchanged, the navbar, was excluded from the routes section.

Since the users might also want to use the browser's built-in navigation buttons the go forward and backward, I use the HashRouter and the useHistory hook to allow for navigation with the browser's navigation buttons.

In conclusion, I have learned to solve web development problems by analyzing and searching. A close analysis helps me understand the problem, and a thorough search of Internet resources helps me determine the steps to address the problem.

PROGRAMMING CONCEPTS

I learned the following programming concepts while working on this assignment:

1. React Hooks

   React hooks bring states to a functional language. Specifically, it allows me to reuse stateful logic without changing my components. One hook, the useState hook, allowed me to track the local states inside my functional components. I used this hook inside the Product Detail component to determine the price of the item(s) to be added based on the quantity and gazing selected. The quantity and glazing selections were maintained as local states with “useState” and were used to compute to subtotal price.

2. Local Storage

   Local Storage, as its name implies, allows me to store data locally so that user data gets preserved even when the browser is reopened. I used local storage to store the items that the users saved to their carts. The local storage preserves the item information as an array of JSON objects, which are recovered upon the reopening of the website.

3. Props

   Props are values or properties passed on to components. I passed props to create different product detail pages for each of the flavors. This allowed me to reuse the product detail page instead of creating one for each of the flavors.

4. Routes

   Routes allow users to move between different pages of the website by changing the URL. I used routes because 1) I originally created this website with separate HTML files and 2) the React application was created as a single-page app. Routes allowed me to rewrite the URL links and present the correct components. A specialized version of Routes — HashRoute — was used and would allow users to navigate between pages using the browser’s navigation buttons.

5. Map and Reduce Functions

   Map and reduce functions allow functions to be applied to items of an iterable without the need for a loop. Map and reduce allow developers to manipulate iterables in a functional manner. Using map, I was able to iterate over the possible flavors on the products page without using a loop. Similarly, using reduce, I calculated the subtotal of the items in the cart on the cart page with a single line of code (and without a loop).

LINKS

Github Repository: https://github.com/sirkevinwang/PUI2020-HW6/tree/6b

Website: https://sirkevinwang.github.io/PUI2020-HW6/