CMPS 356 – Fall 2022
Web Applications Design and Development

Lab 09
State, Slices, and Store

Objective

1. Application state, reduction, and contexts in Next
2. Slices and stores using Zustand
3. Immutable structures with Immer

Prerequisites

1. React: https://reactjs.org/docs/getting-started.html
2. Next: https://nextjs.org/docs
3. Faker: https://fakerjs.dev
4. Zustand: https://github.com/pmndrs/zustand
5. Immer: https://immerjs.github.io/immer

1. State Management for a Cart

1. Create a new directory `01-cart-context` and a Next application under it.

2. Install and use MUI for your user interface components: "`npm install @mui/material @mui/icons-material @emotion/react @emotion/styled @emotion/server`".

3. Install and use Faker to create a list of products: "`npm install @faker-js/faker`". Each product has at least a name, an image, a description, and a price.

4. Display the list of products using cards and a responsive grid.

5. Update the product card with actions to add and remove that product from the cart. The card should display the quantity currently in the cart for a given product.

6. Lift the state up to the application level to store the list of items currently in the cart.

7. Use a reducer hook to manage updates to the application state.

8. Create two additional pages with additional product categories and use a navigation bar to link to the different pages.

9. Display the total number of items in the cart and their total cost in the navigation bar.

10. Allow the user the click on the cart icon to display a menu with detailed information about the cart items.

11. Create a page with a detailed view of the cart that allows you to update the quantities of the items and remove them.

12. Use a context hook to store the list of available products and the ones currently in the cart.

2. Slices and Stores with Zustand

1. Create a new directory `02-cart-store` and reuse the code from the previous exercise.

2. Install Zustand: "`npm install zustand`" and Immer: "`npm install immer`".

3. Replace the context with a store using Zustand.

4. Create two slices: one for the list of products and another for the items in the cart.

5. Use the persist middleware so that the cart is saved between sessions.

6. Simply your store updates using Immer.