****

**Lab#9**

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**BSCS 7B**

**\*used open source code and template for shopping cart and did modifications**

**Backend:**

**Server.js:**

The server.js file contains the main functionality of the backend:

The first route displays the array of products from the data file

The second route displays the products placed in the cart

|  |
| --- |
| const express = require('express');  const app = express();  const cors = require('cors');  const bodyParser = require('body-parser');  const data = require('./data');  app.use(bodyParser.json());  app.use(bodyParser.urlencoded({ extended: true }));  app.use(cors());  app.get('/api/products', (req, res) => {    return res.json(data.products); //display products from data file  });  //display products that are placed in the cart  app.post('/api/products', (req, res) => {    let products = [], id = null;    let cart = JSON.parse(req.body.cart);    if (!cart) return res.json(products);    for (var i = 0; i < data.products.length; i++) {      id = data.products[i].id.toString();      if (cart.hasOwnProperty(id)) {        data.products[i].qty = cart[id];        products.push(data.products[i]);      }    }    return res.json(products);  });  const PORT = 5000;  app.listen(PORT);  console.log('api runnging on port ' + PORT + ': '); |

**Data.js:**

**This file contains the array of products objects and users:**

|  |
| --- |
| const products = [    {      id: 01,      name: 'Product 1- SHIRTS',      available\_quantity: 5,      price: 50,      description: 'branded lawn shirts'    },    {      id: 02,      name: 'Product 2- CUPS',      available\_quantity: 1,      price: 10,      description: 'plastic painted cups'    },    {      id: 03,      name: 'Product 3- Lipsticks',      available\_quantity: 6,      price: 15,      description: 'matte lipsticks'    },    {      id: 04,      name: 'Product 4 -SHOES',      available\_quantity: 4,      price: 150,      description: 'jogging shoes'    },  ];    const users = [      {        'name': 'ayesha',        'password': '123'      },      {        'name': 'eiman',        'password': '123'      }  ];  module.exports = { 'products': products, users: users } |

**Front-End:**

**App.js:**

The next is the front-end created using react.js. the first is the app.js file which contains the basic structure:

A header which shows the basic navigation bar

Product component which will display the products

Cart Component which will display the products in the cart

|  |
| --- |
| import React, { Component } from 'react';  import Products from './components/ProductList';  import Cart from './components/Cart';  import {  BrowserRouter as Router, Link, Route } from 'react-router-dom';    class App extends Component {     render() {        return (    //navigation bar        <Router>              <div>              <nav className="navbar navbar-expand-lg navbar-dark bg-dark">              <div className="container">                <Link className="navbar-brand" to="/">ShoppingCart</Link>                <button className="navbar-toggler" type="button" data-toggle="collapse" data-target="#navbarNavAltMarkup" aria-controls="navbarNavAltMarkup" aria-expanded="false" aria-label="Toggle navigation">                  <span className="navbar-toggler-icon"></span>                </button>                <div className="collapse navbar-collapse" id="navbarNavAltMarkup">                  <div className="navbar-nav">                    <Link className="nav-item nav-link" to="/">Products</Link>                    <Link className="nav-item nav-link" to="/cart">Cart</Link>                    </div>                </div>              </div>            </nav>            <div className="container">              <br/>              <Route exact path="/" component={Products} />              <Route exact path="/cart" component={Cart} />                </div>          </div>        </Router>      );    }  }  export default App; |

**Index.js:**

**It call the app.js file through tagname:**

|  |
| --- |
| import React from 'react';  import ReactDOM from 'react-dom';  import App from './App';  ReactDOM.render(<App />, document.getElementById('root')); |

**Repsitory.js:**

This file contains all interactions with the backend:

Used ‘**axios**’ http client which helps to get and post requests from the browser. Axios makes request to API and returns the data from API:

|  |
| --- |
| import axios from 'axios';  const BASE\_URL = 'http://localhost:5000';  export function getProducts() {      return axios.get(`${BASE\_URL}/api/products`)          .then(response => response.data);  }  export function getCartProducts(cart) {      return axios.post(`${BASE\_URL}/api/products`, {cart})          .then(response => response.data);  } |

**Components:**

**ProductList:**

The first component is the productlist which displays all the available products, and allow to view cart

|  |
| --- |
| import React from 'react';  import ProductItem from './ProductItem';  import { getProducts } from '../repository';  import { Link } from 'react-router-dom';  export default class ProductList extends React.Component {      constructor(props) {          super(props);          this.state = {              products: []          }      }      componentWillMount() {          getProducts().then((products) => {            this.setState({ products });          });      }      render() {          const { products } =  this.state;          return (              <div className=" container">                  <h3 className="card-title">List of Available Products</h3>                  <hr/>                  {                      //display all products                      products.map((product, index) => <ProductItem product={product} key={index}/>)                  }                  <hr/>                    <Link to="/cart"><button className="btn btn-primary float-right" style={{  marginRight: "10px" }}>View Cart</button></Link>                  <br/><br/><br/>              </div>          );      }  } |

**ProductItem.js:**

This component is for a single product to display its name, price, available quantity and allows to add product in the cart

|  |
| --- |
| import React from 'react';  export default class ProductItem extends React.Component {      constructor(props) {          super(props);          this.state = {              quantity: 1          }      }      handleInputChange = event => this.setState({[event.target.name]: event.target.value})      addToCart = () => {          let cart = localStorage.getItem('cart') ? JSON.parse(localStorage.getItem('cart')) : {};          let id = this.props.product.id.toString();          cart[id] = (cart[id] ? cart[id]: 0);          let qty = cart[id] + parseInt(this.state.quantity);          if (this.props.product.available\_quantity < qty) {              cart[id] = this.props.product.available\_quantity;          } else {              cart[id] = qty          }          localStorage.setItem('cart', JSON.stringify(cart));      }      render(){          const { product } = this.props;          return (              <div className="card" style={{ marginBottom: "10px"}}>                <div className="card-body">                  <h4 className="card-title">{product.name}</h4>                  <p className="card-text">{product.description}</p>                  <h5 className="card-text"><small>price: </small>${product.price}</h5>                  <span className="card-text"><small>Available Quantity: </small>{product.available\_quantity}</span>                    { product.available\_quantity > 0 ?                      <div>                          <button className="btn btn-sm btn-warning float-right" onClick={this.addToCart}>Add to cart</button>                          <input type="number" value={this.state.quantity} name="quantity" onChange={this.handleInputChange} className="float-right" style={{ width: "60px", marginRight: "10px", borderRadius: "3px"}}/>                      </div> :                      <p className="text-danger"> product is out of stock </p>                  }                </div>              </div>          )      }  } |

**Cart.js:**

The Cart.js displays all the products in the cart along with the total amount and allows to remove all items from the cart:

|  |
| --- |
| import React from 'react';  import { Link } from 'react-router-dom';  import { getCartProducts } from '../repository';  import CartItem from './CartItem';  export default class Cart extends React.Component {      constructor(props) {          super(props);          this.state = {              products: [],              total: 0          }      }      componentWillMount() {          let cart = localStorage.getItem('cart');          if (!cart) return;          getCartProducts(cart).then((products) => {              let total = 0;              for (var i = 0; i < products.length; i++) {                  total += products[i].price \* products[i].qty;              }              this.setState({ products, total });          });      }      removeFromCart = (product) => {          let products = this.state.products.filter((item) => item.id !== product.id);          let cart = JSON.parse(localStorage.getItem('cart'));          delete cart[product.id.toString()];          localStorage.setItem('cart', JSON.stringify(cart));          let total = this.state.total - (product.qty \* product.price)          this.setState({products, total});      }      clearCart = () => {          localStorage.removeItem('cart');          this.setState({products: []});      }      render() {          const { products, total } =  this.state;          return (              <div className=" container">                  <h3 className="card-title">Cart</h3>                  <hr/>                  {                      products.map((product, index) => <CartItem product={product} remove={this.removeFromCart} key={index}/>)                  }                  <hr/>                  { products.length ? <div><h4><small>Total Amount:</small><span className="float-right text-primary">${total}</span></h4><hr/></div>: ''}                  { !products.length ? <h3 className="text-warning">No item on the cart</h3>: ''}                    <button className="btn btn-danger float-right" onClick={this.clearCart} style={{ marginRight: "10px" }}>Clear Cart</button>                  <br/><br/><br/>              </div>          );      }  } |

**CartItem.js:**

It displays a single item in the cart, its name, price, quantity and allows to remove item from the cart

|  |
| --- |
| import React from 'react';  export default class CartItem extends React.Component {      constructor(props) {          super(props);          this.state = {              quantity: 1          }      }      render(){          const { product } = this.props;          return (              <div className="card" style={{ marginBottom: "10px"}}>                <div className="card-body">                  <h4 className="card-title">{product.name}</h4>                  <h5 className="card-text"><small>price: </small>${product.price}</h5>                  <span className="card-text text-success"><small>Quantity: </small>{product.qty}</span>                    <button className="btn btn-sm btn-warning float-right" onClick={() => this.props.remove(product)}>Remove from cart</button>                </div>              </div>          )      }  } |

**Output:**





