

UCS 2611 Internet Programming Lab

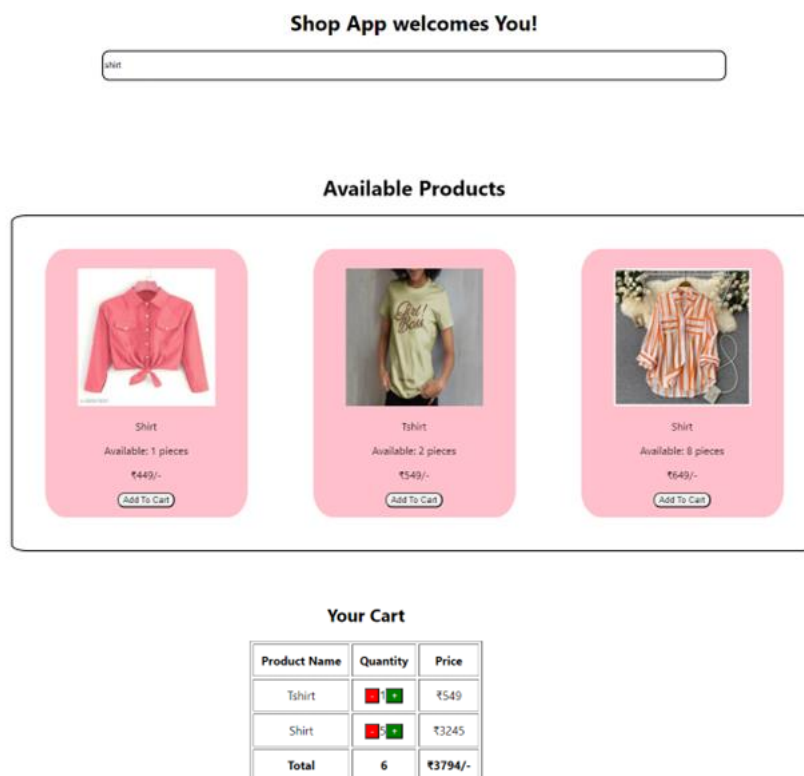
Exercise 11. Online Shopping Application using ReactJS

Develop an Online Shopping Application to enable the users to order the products. [CO2, K3]

This Application contains necessary components namely, *App*, *Show*, and *Cart*. The *App* Component ensures maintaining the data related to products and the necessary functions. *Show* Component helps to show the details of the products to the users based on the input. *Cart* component is responsible for maintaining the data the user wishes to purchase.

Application has the following:

- The parent component App hosts the other components.
- Maintain the details of the products in the App component
- Define necessary functionalities in the required components to display the shopping cart application looks like below:



Best Practices to be followed:

1. Design before coding
2. Incremental coding
3. Usage of proper naming convention
4. Usage of Comments to the code
5. Indentation of code

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Online Shopping Application using ReactJS

Assignment 11

Aim:

The aim of this project is to create an online shopping application that allows users to browse products, add them to a shopping cart, and view their cart summary. This project will help in understanding how to manage state in React, create reusable components, and handle user interactions in a web application.

Learning Outcomes:

Understand the basics of React components and their lifecycle.

Learn how to manage state and props in React.

Gain experience in creating reusable components.

Learn how to handle user interactions such as adding and removing items from a shopping cart.

Practice implementing best practices in coding such as designing before coding, incremental coding, proper naming conventions, commenting, and code indentation.

App.js

```
import React, { useState } from 'react';
```

```
import Show from './Show';
```

```
function App() {
```

```
  const [products] = useState([
```

```
    { id: 1, name: 'tshirt', price: 4, quantity: 1, image: '/images/tshirt.jpg' },
```

```
    { id: 2, name: 'hoodie', price: 2, quantity: 1, image: '/images/hoodie.jpg' },
```

```
    { id: 3, name: 'zudio', price: 3, quantity: 1, image: '/images/zudio.jpg' },
```

```
    { id: 4, name: 'zarashirt', price: 2, quantity: 1, image: '/images/zarashirt.jpg' },
```

```
    { id: 5, name: 'armanishirt', price: 1, quantity: 1, image: '/images/armanishirt.jpg' },
```

```
    { id: 6, name: 'poloshirt', price: 1, quantity: 1, image: '/images/poloshirt.jpg' }
```

```
  ]);
```

```
  const [cart, setCart] = useState([]);
```

```
  const [searchTerm, setSearchTerm] = useState("");
```

```
  const addToCart = (product) => {
```

```
    const existingItemIndex = cart.findIndex(item => item.id === product.id);
```

```
    if (existingItemIndex !== -1) {
```

```
      const updatedCart = [...cart];
```

```
      updatedCart[existingItemIndex].quantity += 1;
```

```
      setCart(updatedCart);
```

```
    } else {
```

```
      setCart([...cart, { ...product, quantity: 1 }]);
```

```
}  
};
```

```
const cartTotal = cart.reduce((total, item) => total + item.price * item.quantity, 0);
```

```
const filteredProducts = products.filter(product =>  
  product.name.toLowerCase().includes(searchTerm.toLowerCase())  
);
```

```
return (  
  <div className="App" style={{ textAlign: 'center', backgroundColor: 'pink' }}>  
    <header className="App-header">  
      <h1 style={{  
        backgroundImage: 'linear-gradient(45deg, #ff0000, #ff8000, #ffff00, #80ff00,  
#00ff00, #00ff80, #00ffff, #0080ff, #0000ff, #8000ff, #ff00ff, #ff0080)',  
        WebkitBackgroundClip: 'text',  
        WebkitTextFillColor: 'transparent',  
        margin: 0  
      }}>Online Shopping App</h1>  
      <input  
        type="text"  
        placeholder="Search for a product"  
        value={searchTerm}  
        onChange={(e) => setSearchTerm(e.target.value)}  
        style={{ margin: '10px' }}  
      />  
    </header>  
    <div style={{ display: 'flex' }}>  
      <div style={{ flex: 1, borderRight: '1px solid black' }}>
```

```

<h2>Images</h2>

{products.map(product => (
  <React.Fragment key={product.id}>
    <div style={{ textAlign: 'center' }}>
      <img src={process.env.PUBLIC_URL + product.image} alt={product.name}
style={{ width: '100px', height: '100px', marginBottom: '10px' }} />
      <p>{product.name}</p>
    </div>
    <hr style={{ width: '80%', margin: '10px auto', border: '1px solid black' }} />
  </React.Fragment>
)}}
</div>

<div style={{ flex: 1, borderRight: '1px solid black' }}>
  <h2>Products</h2>
  {filteredProducts.map(product => (
    <React.Fragment key={product.id}>
      <Show product={product} addToCart={addToCart} />
      <hr style={{ width: '80%', margin: '10px auto', border: '1px solid black' }} />
    </React.Fragment>
  ))}
</div>

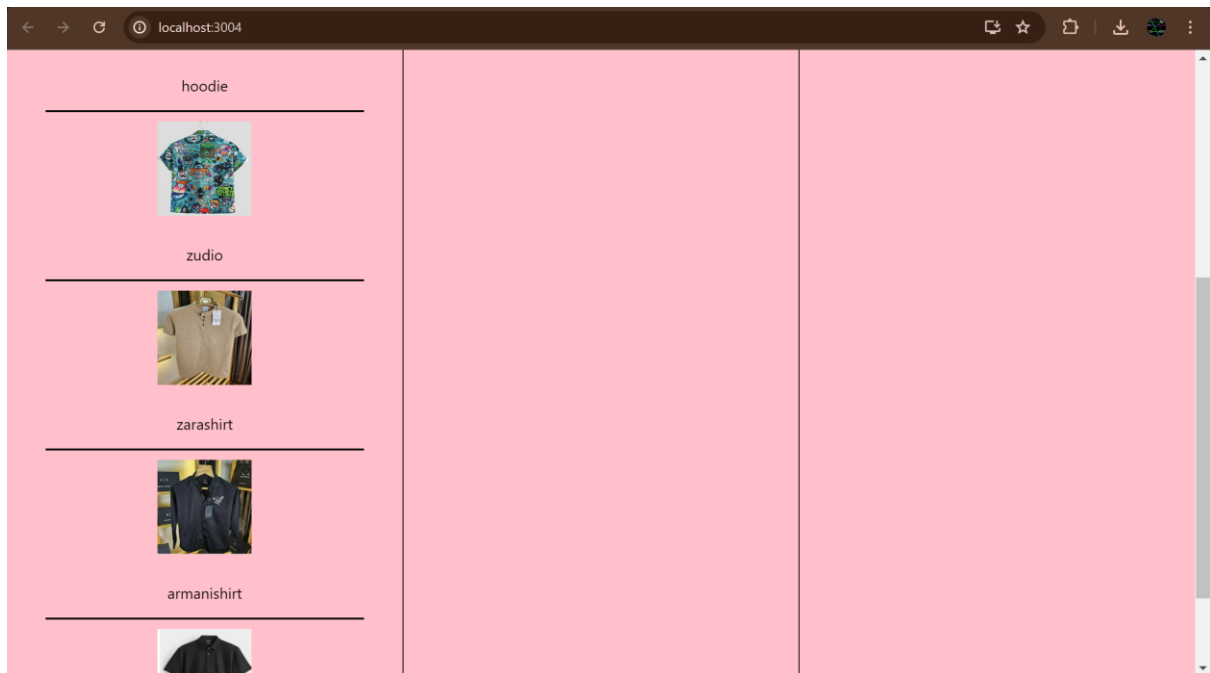
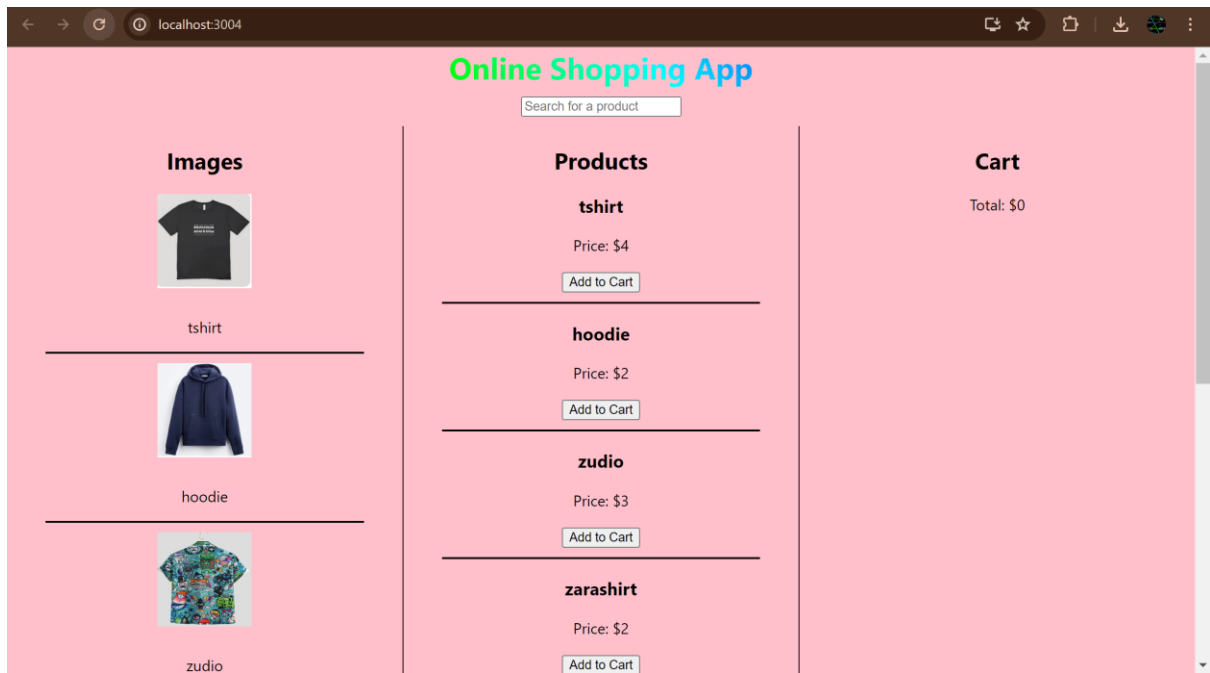
<div style={{ flex: 1 }}>
  <h2>Cart</h2>
  {cart.map(item => (
    <div key={item.id}>
      <h3>{item.name}</h3>
      <p>Price: ${item.price} for one</p>
      <p>Quantity: {item.quantity}</p>
      <p>Total Price: ${item.price * item.quantity}</p>
    </div>
  ))}

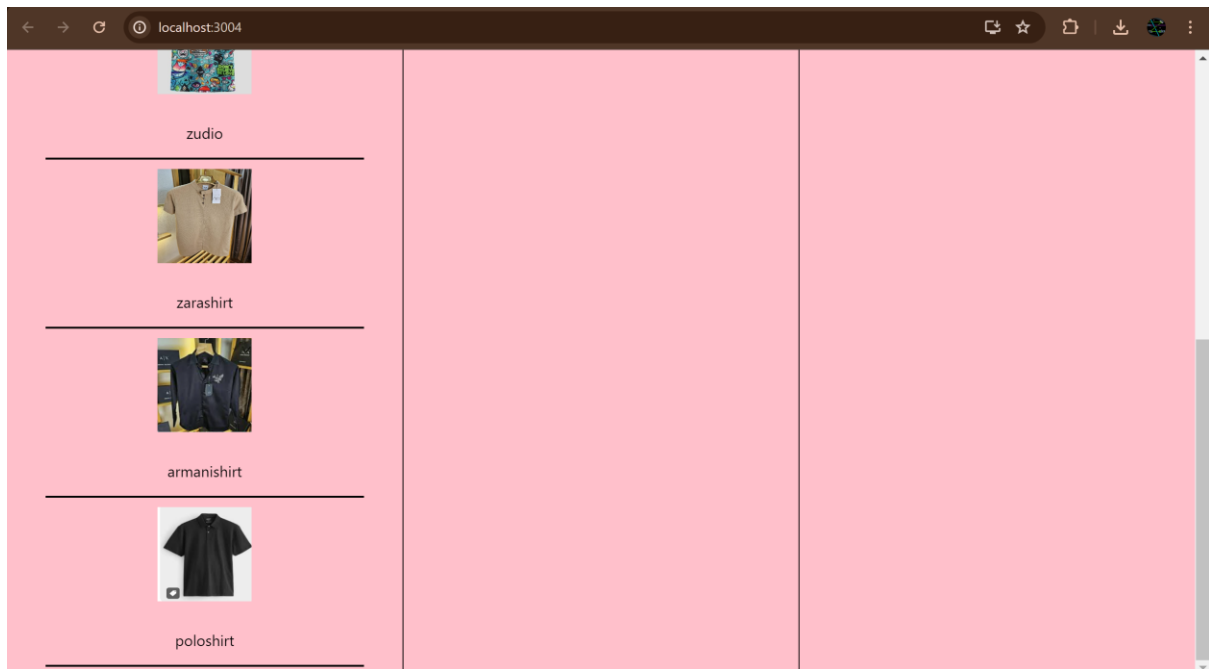
```

```
        </div>
      )}}
      <p>Total: ${cartTotal}</p>
    </div>
  </div>
</div>
);
}

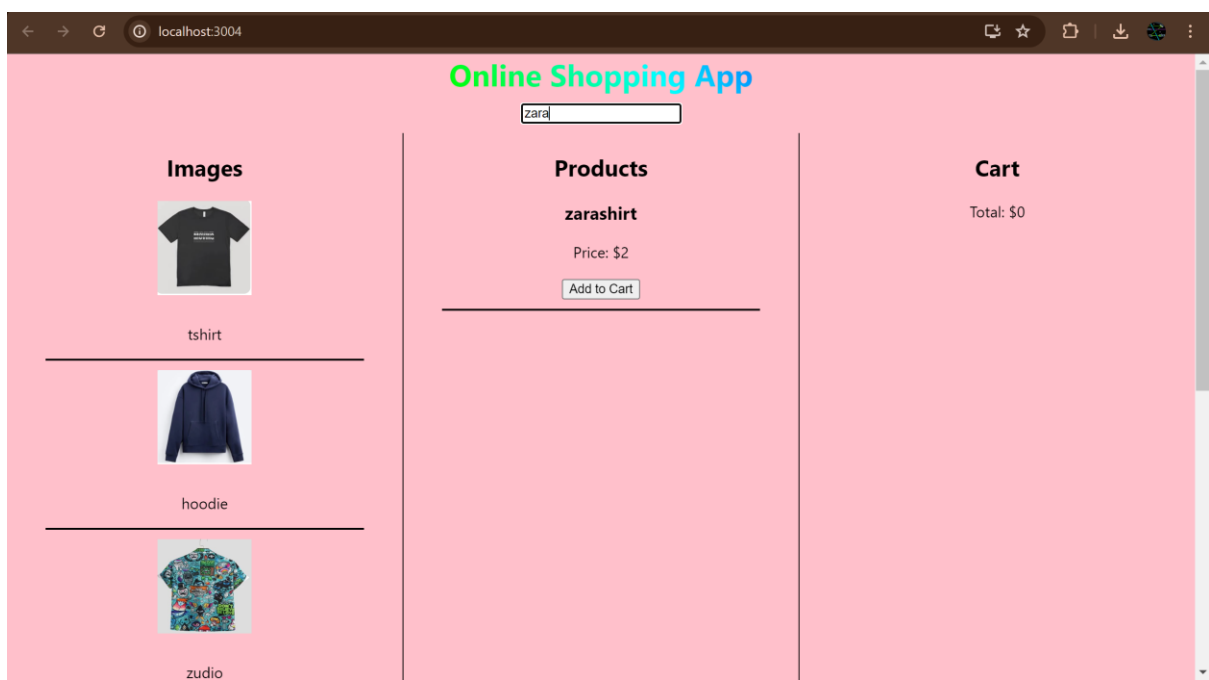
export default App;
```

Initially the cart is empty

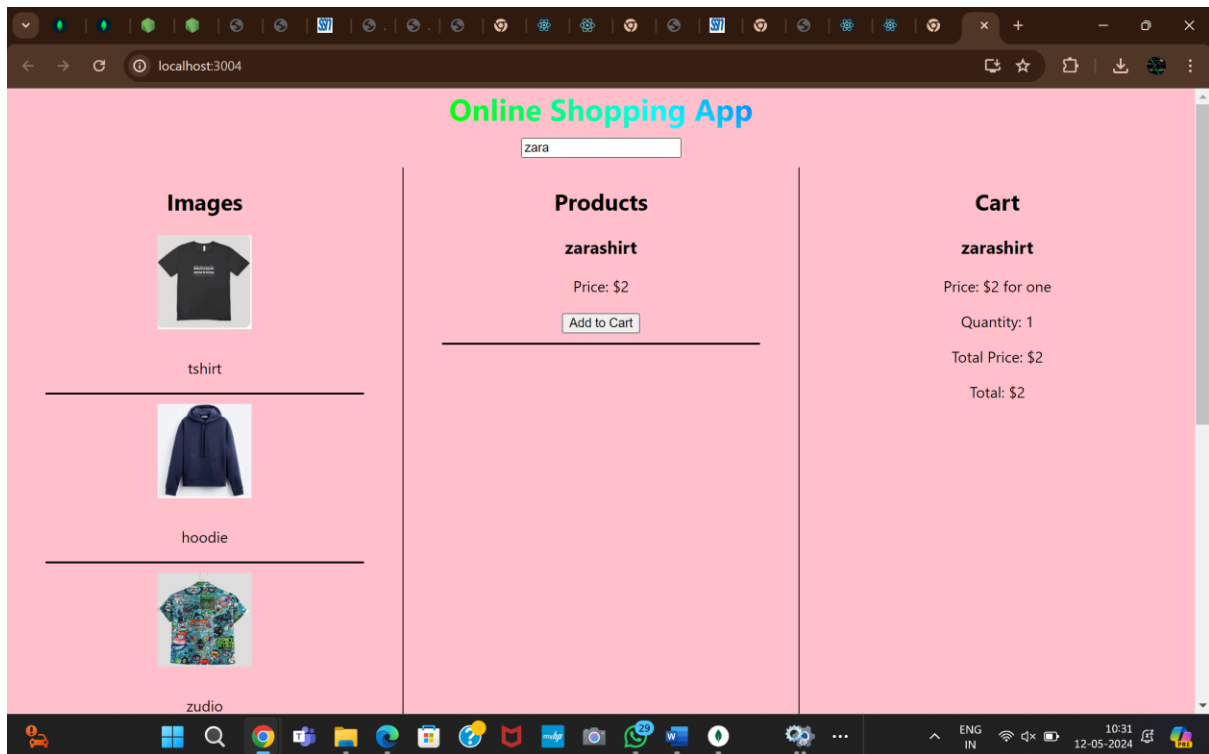




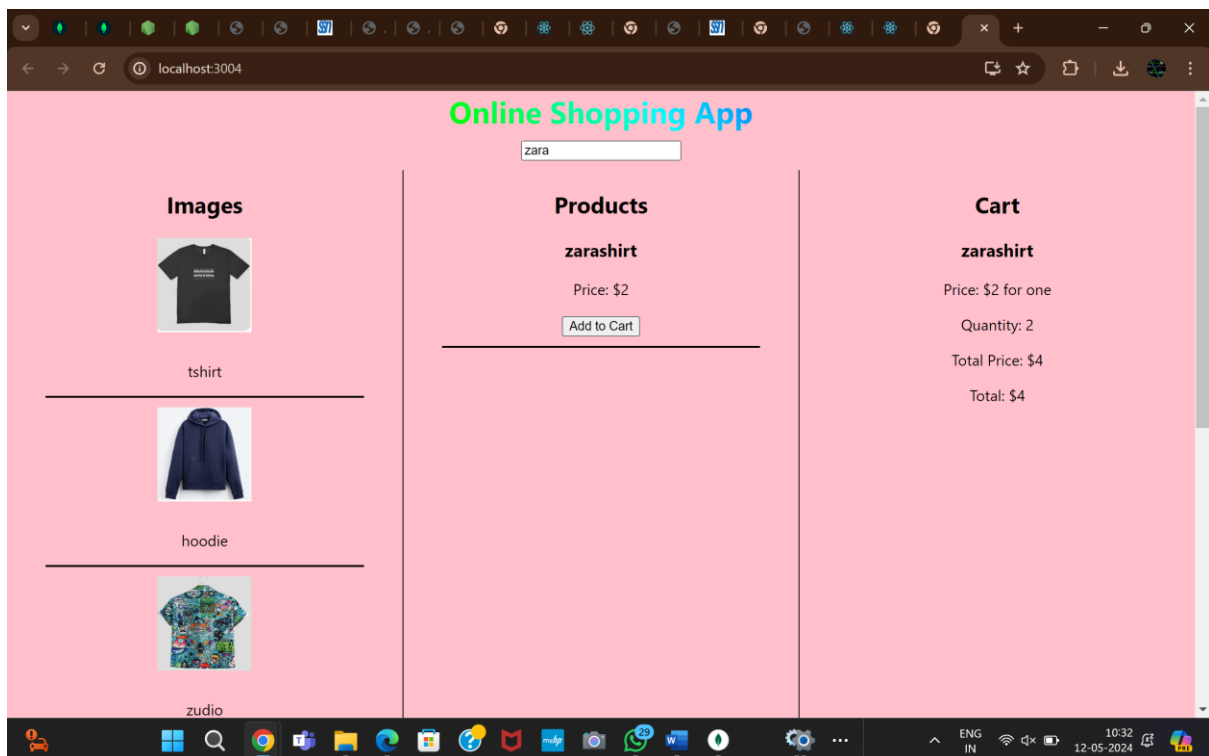
The search bar can be used to find the required shirt



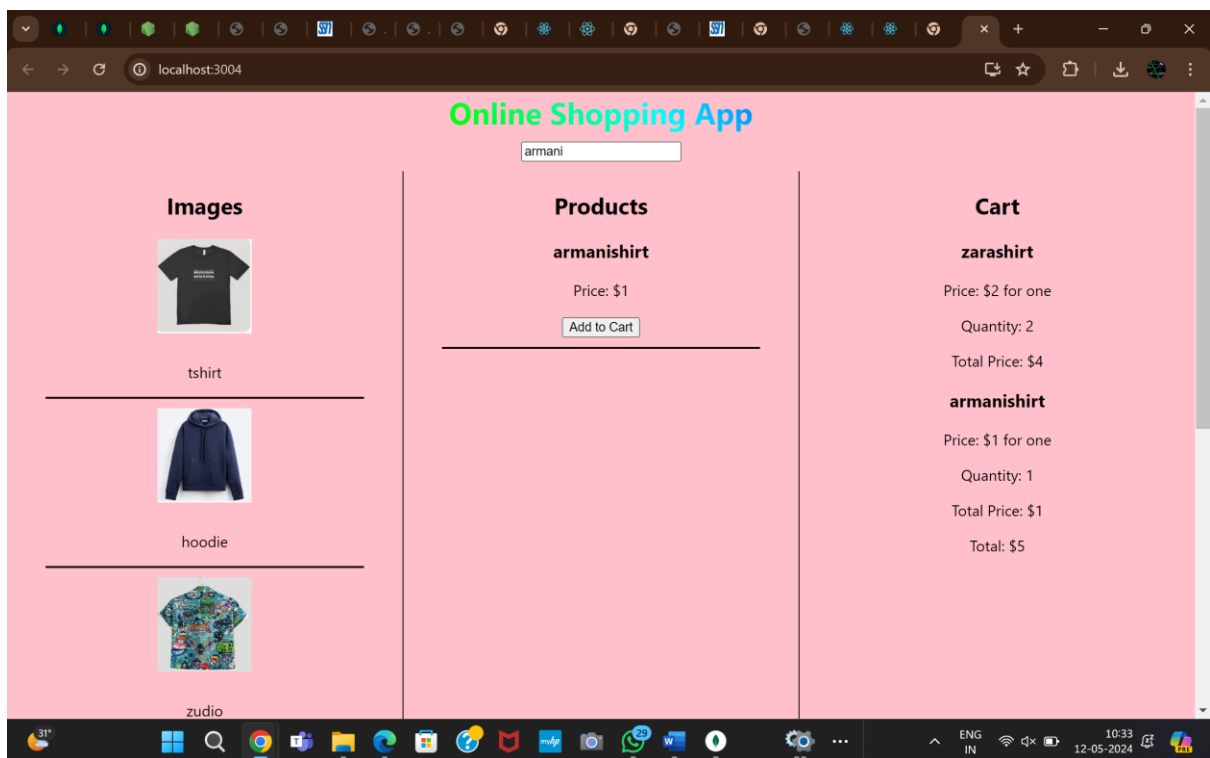
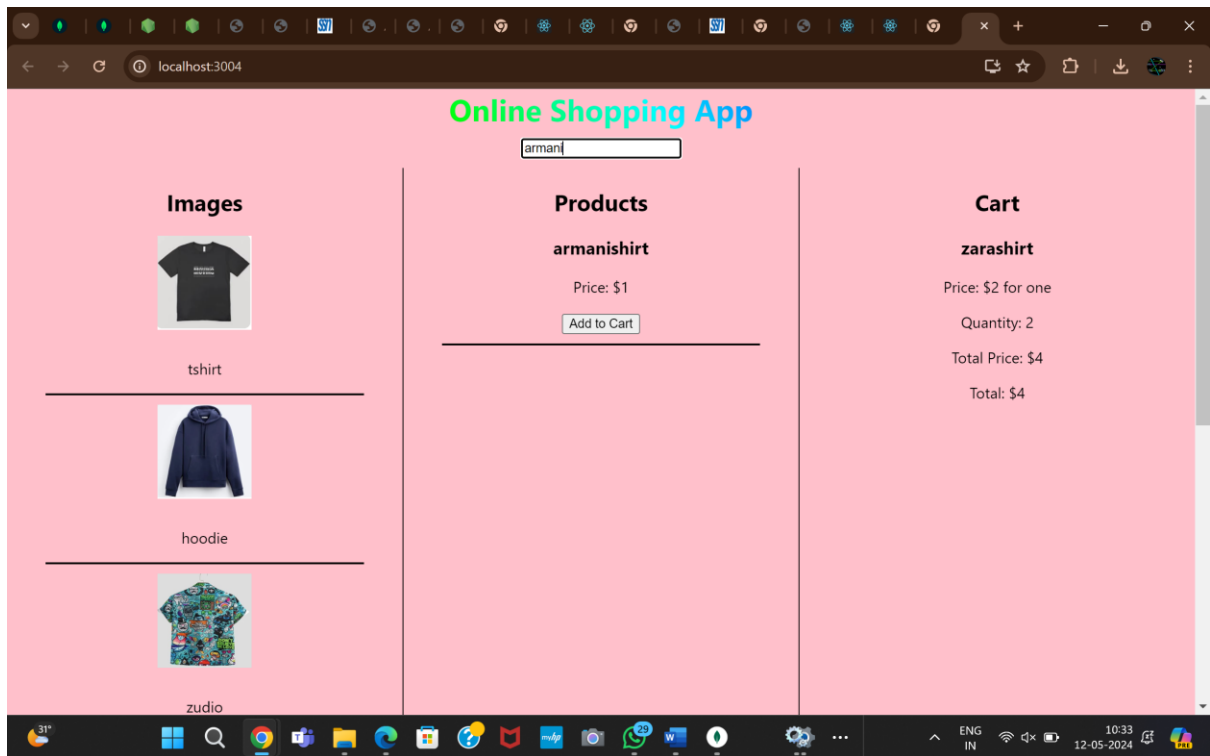
We can add the required type of shirt to to cart



We can also add many shirts of one type to the cart, the quantity and total price is updated



We can also add another type of shirt (eg I have added armanishirt after zarashirt)



App.test.js

```
import { render, screen } from '@testing-library/react';
import App from './App';

test('renders learn react link', () => {
  render(<App />);
  const linkElement = screen.getByText(/learn react/i);
  expect(linkElement).toBeInTheDocument();
});
```

Index.css

```
body {
  margin: 0;
  font-family: -apple-system, BlinkMacSystemFont, 'Segoe UI', 'Roboto', 'Oxygen',
    'Ubuntu', 'Cantarell', 'Fira Sans', 'Droid Sans', 'Helvetica Neue',
    sans-serif;
  -webkit-font-smoothing: antialiased;
  -moz-osx-font-smoothing: grayscale;
}

code {
  font-family: source-code-pro, Menlo, Monaco, Consolas, 'Courier New',
    monospace;
}
```

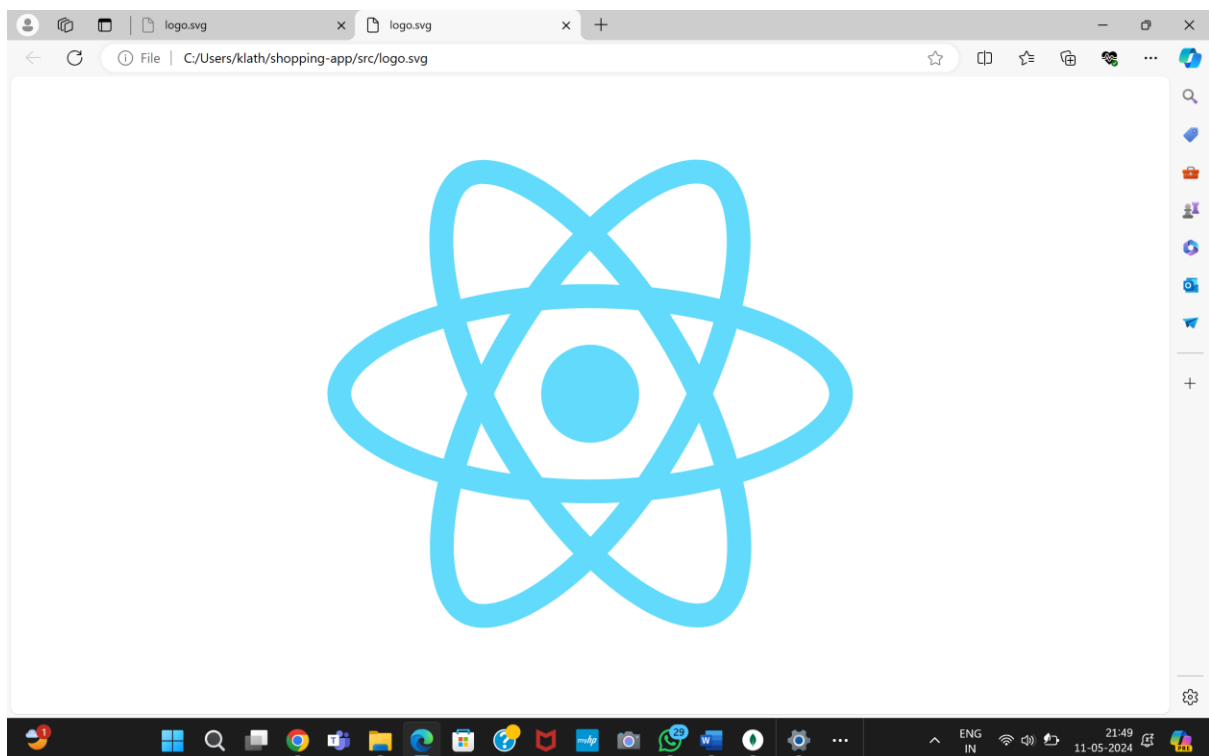
Index.js

```
import React from 'react';
import ReactDOM from 'react-dom/client';
import './index.css';
import App from './App';
import reportWebVitals from './reportWebVitals';
```

```
const root = ReactDOM.createRoot(document.getElementById('root'));
root.render(
  <React.StrictMode>
    <App />
  </React.StrictMode>
);

// If you want to start measuring performance in your app, pass a function
// to log results (for example: reportWebVitals(console.log))
// or send to an analytics endpoint. Learn more: https://bit.ly/CRA-vitals
reportWebVitals();
```

logo.svg

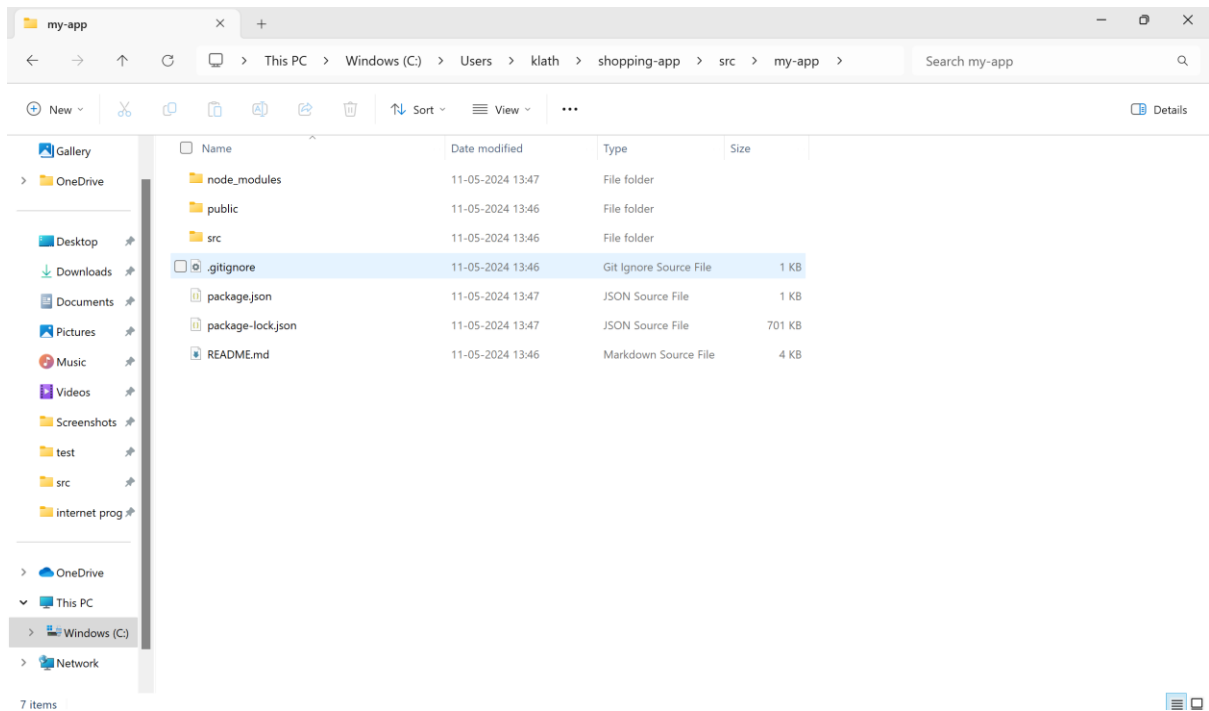


reportWebVitals.js

```
const reportWebVitals = onPerfEntry => {  
  if (onPerfEntry && onPerfEntry instanceof Function) {  
    import('web-vitals').then(({ getCLS, getFID, getFCP, getLCP, getTTFB }) => {  
      getCLS(onPerfEntry);  
      getFID(onPerfEntry);  
      getFCP(onPerfEntry);  
      getLCP(onPerfEntry);  
      getTTFB(onPerfEntry);  
    });  
  }  
};  
  
export default reportWebVitals;
```

setupTests.js

```
// jest-dom adds custom jest matchers for asserting on DOM nodes.  
// allows you to do things like:  
// expect(element).toHaveTextContent(/react/i)  
// learn more: https://github.com/testing-library/jest-dom  
import '@testing-library/jest-dom';
```



Show.js

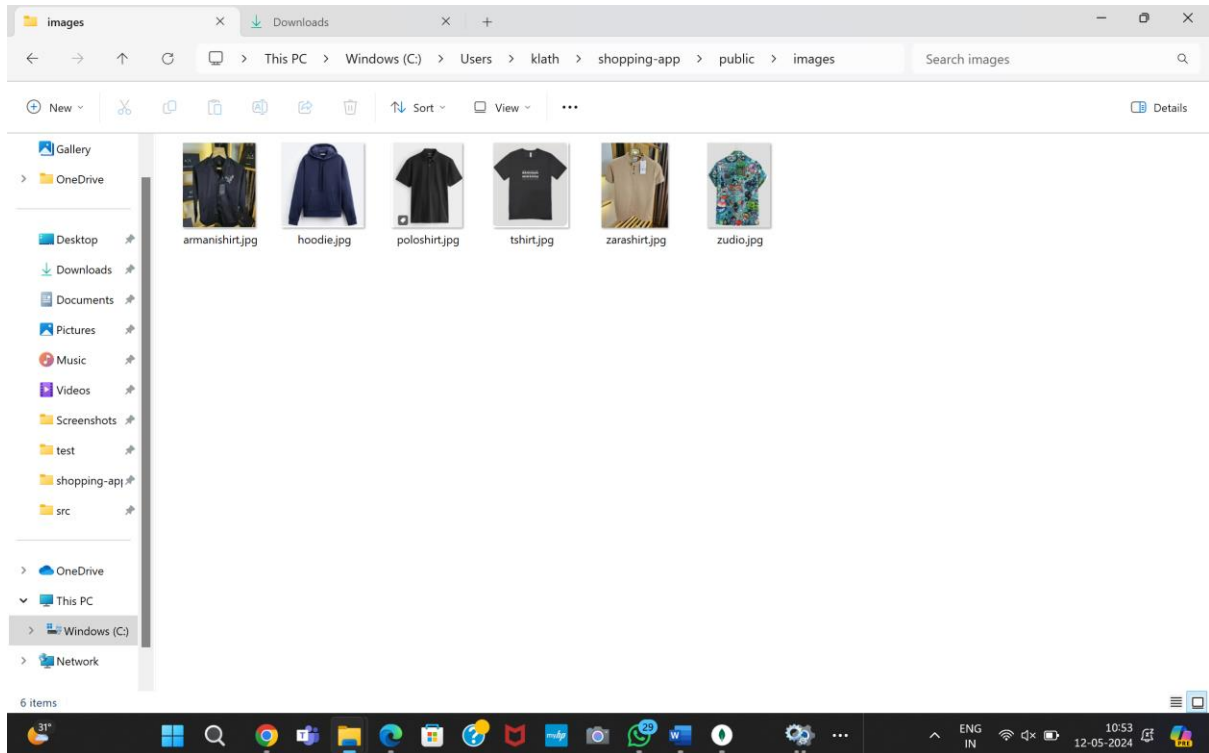
// Show.js

```
import React from 'react';
```

```
const Show = ({ product, addToCart }) => {  
  return (  
    <div>  
      <h3>{product.name}</h3>  
      <p>Price: ${product.price}</p>  
      <button onClick={() => addToCart(product)}>Add to Cart</button>  
    </div>  
  );  
};
```

```
export default Show;
```

images Folder



Command Prompt:

Microsoft Windows [Version 10.0.22631.3447]

(c) Microsoft Corporation. All rights reserved.

```
C:\Users\klath>cd C:\Users\klath
```

```
C:\Users\klath>npx create-react-app shopping-app
```

The directory shopping-app contains files that could conflict:

```
node_modules/
```

```
package-lock.json
```

package.json

public/

src/

Either try using a new directory name, or remove the files listed above.

```
C:\Users\klath>npx create-react-app my-shopping-app
```

Creating a new React app in C:\Users\klath\my-shopping-app.

Installing packages. This might take a couple of minutes.

Installing react, react-dom, and react-scripts with cra-template...

added 1489 packages in 7m

258 packages are looking for funding

run `npm fund` for details

Git repo not initialized Error: Command failed: git --version

at genericNodeError (node:internal/errors:984:15)

at wrappedFn (node:internal/errors:538:14)

at checkExecSyncError (node:child_process:890:11)

at execSync (node:child_process:962:15)

at tryGitInit (C:\Users\klath\my-shopping-app\node_modules\react-scripts\scripts\init.js:46:5)

at module.exports (C:\Users\klath\my-shopping-app\node_modules\react-scripts\scripts\init.js:276:7)

at [eval]:3:14

at runScriptInThisContext (node:internal/vm:209:10)

at node:internal/process/execution:118:14

at [eval]-wrapper:6:24 {


```
status: 1,  
signal: null,  
output: [ null, null, null ],  
pid: 4224,  
stdout: null,  
stderr: null  
}
```

Installing template dependencies using npm...

added 67 packages, and changed 1 package in 14s

262 packages are looking for funding

run `npm fund` for details

Removing template package using npm...

removed 1 package, and audited 1556 packages in 4s

262 packages are looking for funding

run `npm fund` for details

8 vulnerabilities (2 moderate, 6 high)

To address all issues (including breaking changes), run:

npm audit fix --force

Run `npm audit` for details.

Success! Created my-shopping-app at C:\Users\klath\my-shopping-app

Inside that directory, you can run several commands:

`npm start`

Starts the development server.

`npm run build`

Bundles the app into static files for production.

`npm test`

Starts the test runner.

`npm run eject`

Removes this tool and copies build dependencies, configuration files and scripts into the app directory. If you do this, you can't go back!

We suggest that you begin by typing:

`cd my-shopping-app`

`npm start`

Happy hacking!

`C:\Users\klath>cd C:\Users\klath\shopping-app\src`

`C:\Users\klath\shopping-app\src>npx create-react-app my-app`

Creating a new React app in C:\Users\klath\shopping-app\src\my-app.

Installing packages. This might take a couple of minutes.

Installing react, react-dom, and react-scripts with cra-template...

added 1489 packages in 1m

258 packages are looking for funding

run `npm fund` for details

Git repo not initialized Error: Command failed: git --version

at genericNodeError (node:internal/errors:984:15)

at wrappedFn (node:internal/errors:538:14)

at checkExecSyncError (node:child_process:890:11)

at execSync (node:child_process:962:15)

at tryGitInit (C:\Users\klath\shopping-app\src\my-app\node_modules\react-scripts\scripts\init.js:46:5)

at module.exports (C:\Users\klath\shopping-app\src\my-app\node_modules\react-scripts\scripts\init.js:276:7)

at [eval]:3:14

at runScriptInThisContext (node:internal/vm:209:10)

at node:internal/process/execution:118:14

at [eval]-wrapper:6:24 {

status: 1,

signal: null,

output: [null, null, null],

pid: 11492,

stdout: null,

stderr: null

}

Installing template dependencies using npm...

added 67 packages, and changed 1 package in 12s

262 packages are looking for funding

run `npm fund` for details

Removing template package using npm...

removed 1 package, and audited 1556 packages in 5s

262 packages are looking for funding

run `npm fund` for details

8 vulnerabilities (2 moderate, 6 high)

To address all issues (including breaking changes), run:

npm audit fix --force

Run `npm audit` for details.

Success! Created my-app at C:\Users\klath\shopping-app\src\my-app

Inside that directory, you can run several commands:

npm start

Starts the development server.

npm run build

Bundles the app into static files for production.

npm test

Starts the test runner.

npm run eject

Removes this tool and copies build dependencies, configuration files and scripts into the app directory. If you do this, you can't go back!

We suggest that you begin by typing:

```
cd my-app  
npm start
```

Happy hacking!

```
C:\Users\klath\shopping-app\src>cd my-app
```

```
C:\Users\klath\shopping-app\src\my-app>npm start
```

```
> my-app@0.1.0 start
```

```
> react-scripts start
```

```
√ Something is already running on port 3000.
```

Would you like to run the app on another port instead? ... yes

```
(node:26868)
```

```
[DEP_WEBPACK_DEV_SERVER_ON_AFTER_SETUP_MIDDLEWARE]
```

```
DeprecationWarning: 'onAfterSetupMiddleware' option is deprecated. Please use the  
'setupMiddlewares' option.
```

```
(Use `node --trace-deprecation ...` to show where the warning was created)
```

```
(node:26868)
```

```
[DEP_WEBPACK_DEV_SERVER_ON_BEFORE_SETUP_MIDDLEWARE]
```

```
DeprecationWarning: 'onBeforeSetupMiddleware' option is deprecated. Please use  
the 'setupMiddlewares' option.
```

```
Starting the development server...
```

One of your dependencies, babel-preset-react-app, is importing the

"@babel/plugin-proposal-private-property-in-object" package without

declaring it in its dependencies. This is currently working because "`@babel/plugin-proposal-private-property-in-object`" is already in your `node_modules` folder for unrelated reasons, but it may break at any time.

`babel-preset-react-app` is part of the `create-react-app` project, which is not maintained anymore. It is thus unlikely that this bug will ever be fixed. Add "`@babel/plugin-proposal-private-property-in-object`" to your `devDependencies` to work around this error. This will make this message go away.

Compiled successfully!

You can now view my-app in the browser.

Local: <http://localhost:3001>

On Your Network: <http://192.168.0.121:3001>

Note that the development build is not optimized.

To create a production build, use `npm run build`. `ebpack` compiled successfully

```
Windows PowerShell
Starting the development server...

One of your dependencies, babel-preset-react-app, is importing the
"@babel/plugin-proposal-private-property-in-object" package without
declaring it in its dependencies. This is currently working because
"@babel/plugin-proposal-private-property-in-object" is already in your
node_modules folder for unrelated reasons, but it may break at any time.

babel-preset-react-app is part of the create-react-app project, which
is not maintained anymore. It is thus unlikely that this bug will
ever be fixed. Add "@babel/plugin-proposal-private-property-in-object" to
your devDependencies to work around this error. This will make this message
go away.
Compiled successfully!

You can now view my-app in the browser.

Local:      http://localhost:3001
On Your Network:  http://192.168.0.121:3001

Note that the development build is not optimized.
To create a production build, use npm run build.

webpack compiled successfully
```

```
Windows PowerShell
Compiling...
```

Result:

The result of this project will be a functional online shopping application that allows users to browse products, add them to a shopping cart, and view their cart summary. The application will follow best practices in coding and provide a smooth user experience.