"Web Development + Security"

Components, Props and JSX in React:

What Are Components?

A component in React is a reusable, independent piece of UI. Think of components as building blocks — like Lego pieces of your website.

Why Components?

- Reusable
- Organized
- Easier to maintain
- Scalable

Types of Components

Type	Syntax	Example
Functional Component	Uses function + hooks	function App() { return Hi ; }
Class Component	Uses class + lifecycle methods (old way)	class App extends React.Component { render() { return Hi ; } }

What Are Props (Properties)?

Props are like *function parameters* — they let you pass data from a parent component to a child component.

What Is JSX? (JavaScript XML)

JSX is a syntax extension for JavaScript that looks like HTML, but is actually converted into React elements behind the scenes.

In Short

- Components → building blocks of UI.
- Props → pass data between components.
- JSX → HTML-like syntax to write UI inside JS.
- Together, they make React reusable, readable, and dynamic.

Now, to understand this we will start to use, Vite: to install

When we run this, it will automatically creates a folder named: first-app
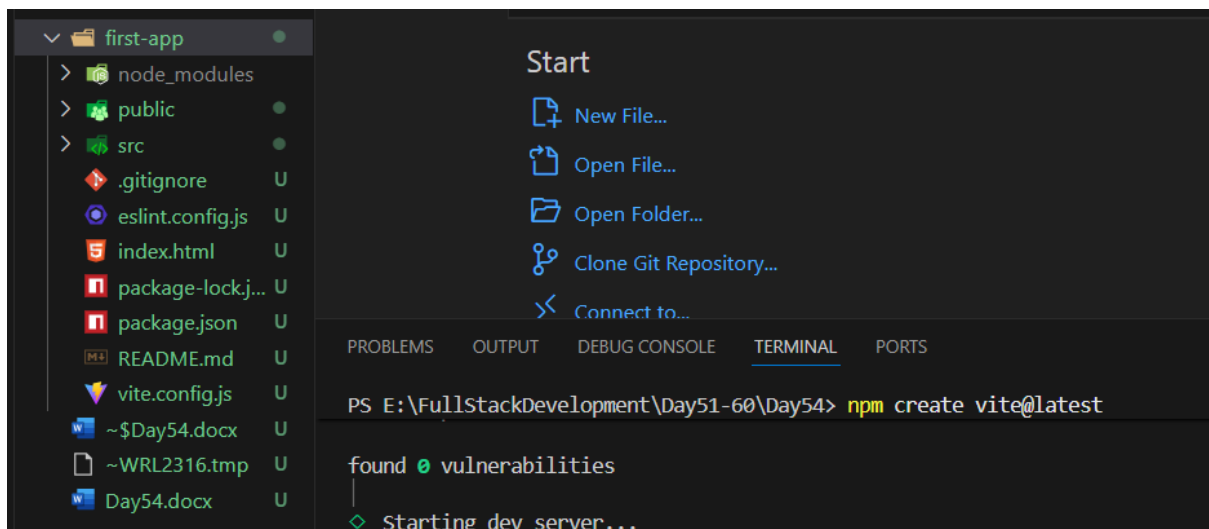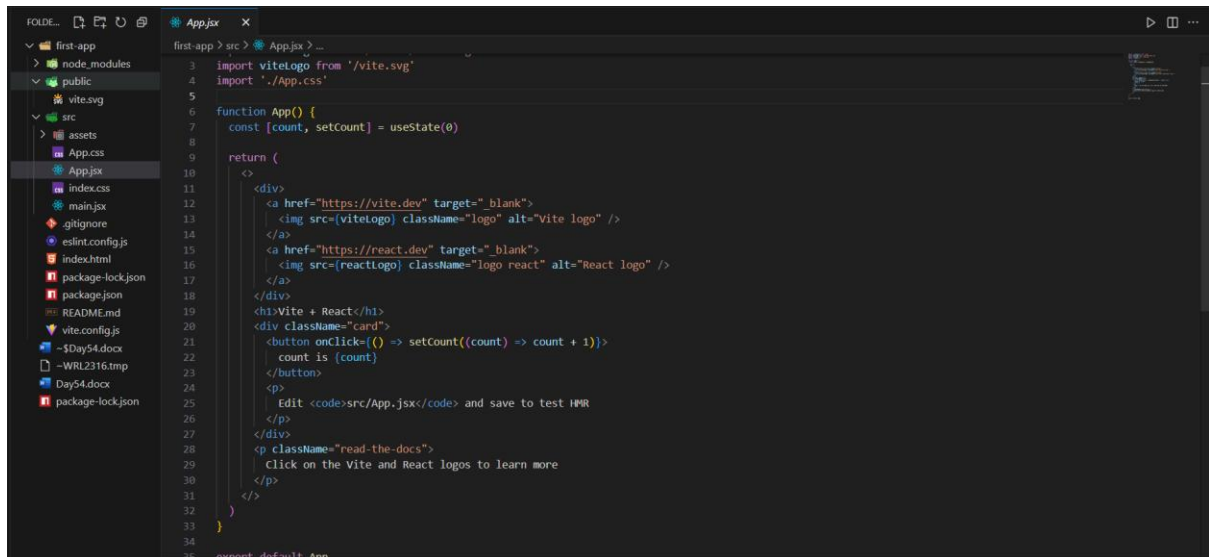
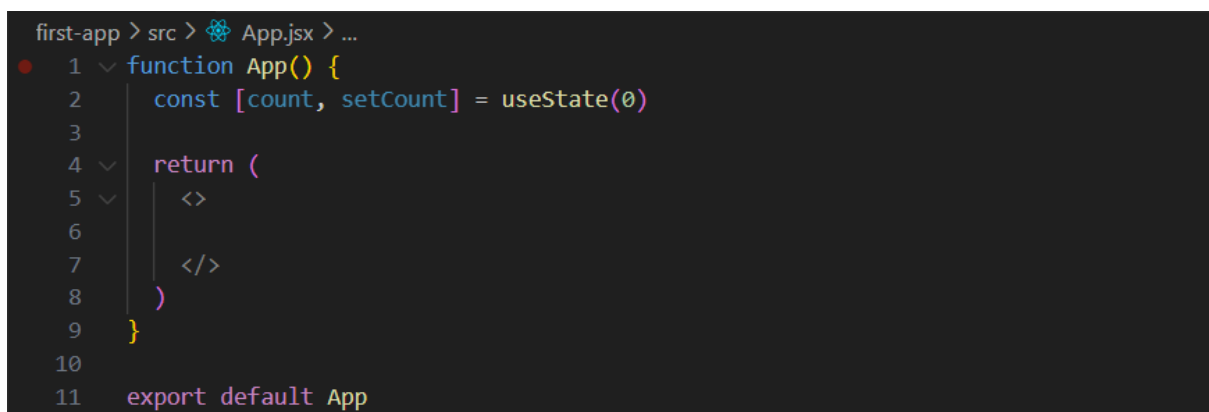

Since, we had started it, it will give output as:
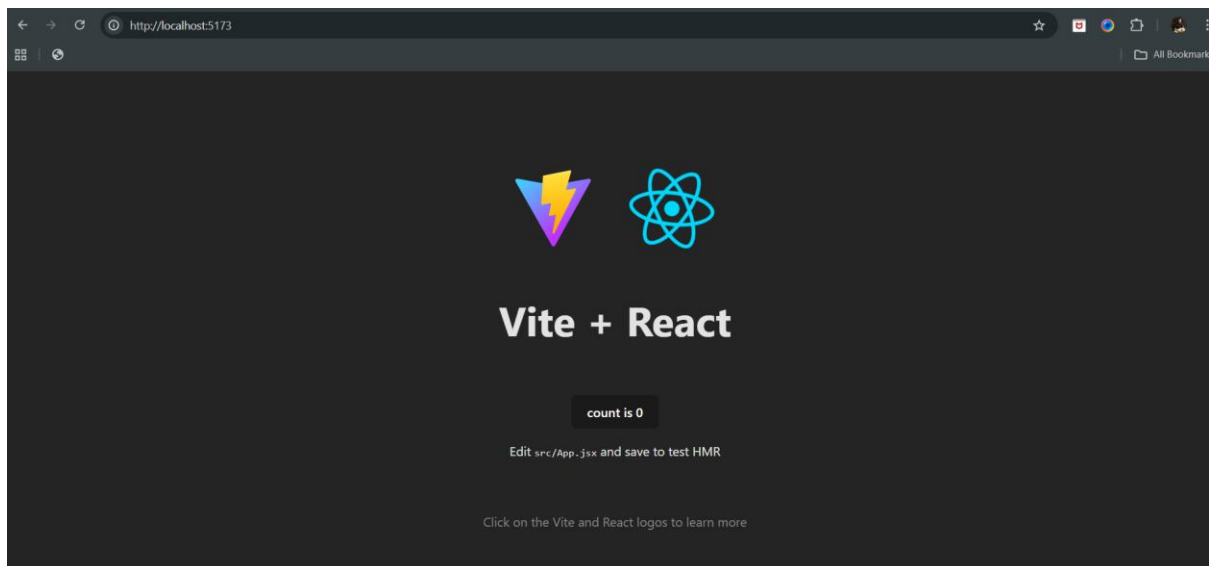
Now, since we had created a counter on last day, we can see that it is there on the screen too. So, now we will edit App.jsx and remove that part:
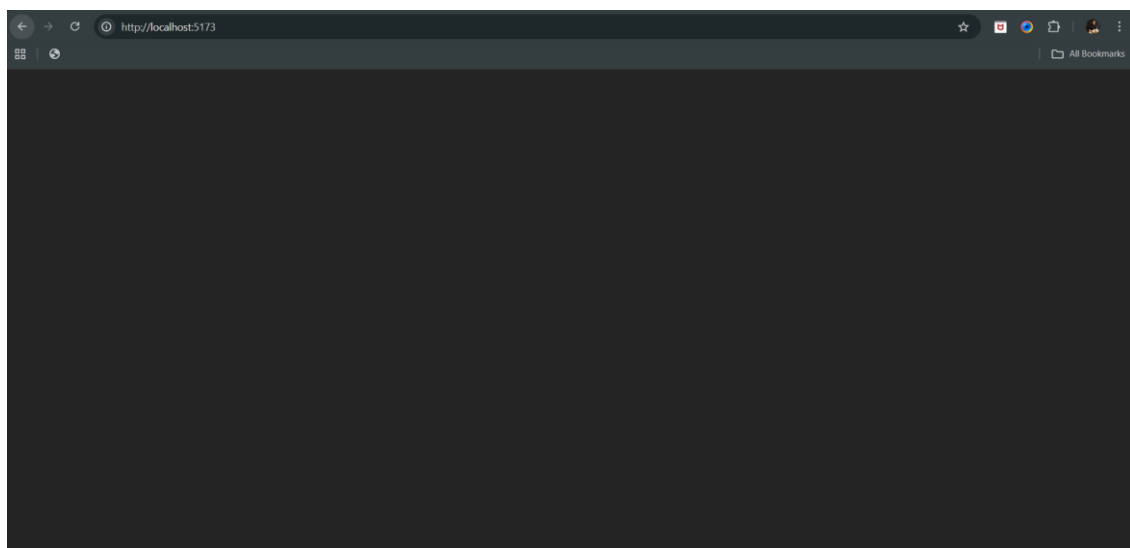
Old: App.jsx

New: App.jsx

```jsx
function App() {
  const [count, setCount] = useState(0)

  return (
    <>

    </>
  )
}

export default App
```

Now, as we changed the App.jsx. our output will change as well: it is blank as App.jsx is blank

Now, we will create a nav bar, for which we will first create a folder inside the "src":
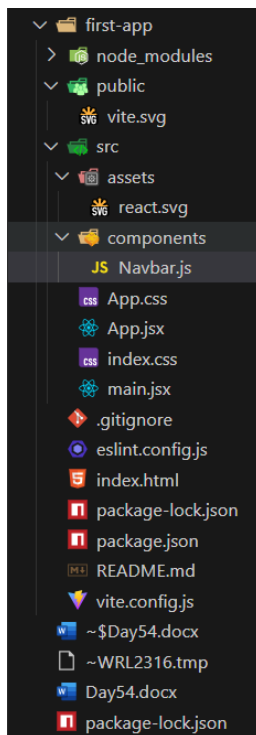
Inside the Navbar.js, we will write this template:


```
import React from 'react'

const Navbar = () => {
  return (
    <div>

    </div>
  )
}

export default Navbar
```

Change it to jsx:


```
import React from 'react'

const Navbar = () => {
  return (
    <div>

    </div>
  )
}

export default Navbar
```

Now, we give the basic layout of the Navbar:

```
App.jsx        Navbar.js  ×     index.css
first-app > src > components > Navbar.js > [∅] Navbar
  1    import React from 'react'
  2
  3    const Navbar = () => {
  4      return (
  5        <div>
  6          <nav>
  7            <ul>
  8              <li>Home</li>
  9              <li>About</li>
 10              <li>Contact</li>
 11            </ul>
 12          </nav>
 13        </div>
 14      )
 15    }
 16
 17    export default Navbar
```
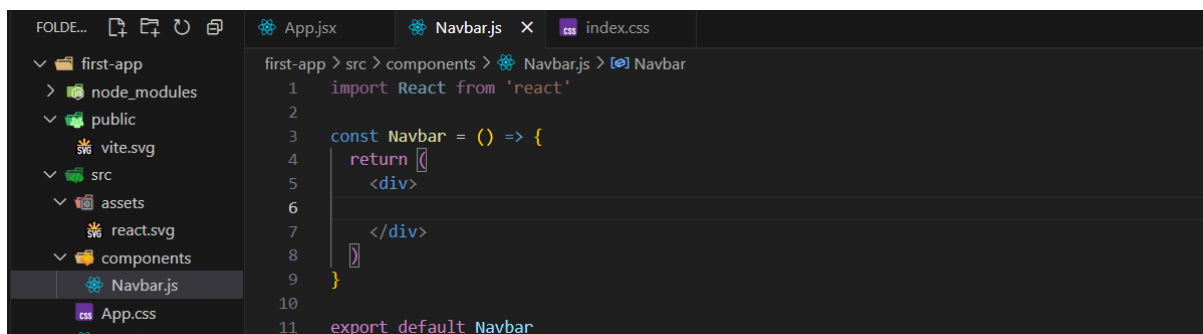
Now, write the css for this nav bar, for which we will create Navbar.css in the same components folder as shown below:

```
∨  first-app                 first-app > src > components > Navbar.css
  >  node_modules               1    Generate code (Ctrl+I), or select a language (Ctrl+K M). Start typing to dismiss or don't
  ∨  public
       vite.svg
  ∨  src
    ∨  assets
         react.svg
    ∨  components
         Navbar.css
         Navbar.js
```

Now, we will import that .css in the Navbar.js as shown below:

```
first-app > src > components > Navbar.js > [∅] default
  1    import React from 'react'
  2    import "./Navbar.css"
  3
  4    const Navbar = () => {
  5      return (
  6        <div>
  7          <nav>
  8            <ul>
  9              <li>Home</li>
 10              <li>About</li>
 11              <li>Contact</li>
 12            </ul>
 13          </nav>
 14        </div>
 15      )
 16    }
 17
 18    export default Navbar
```
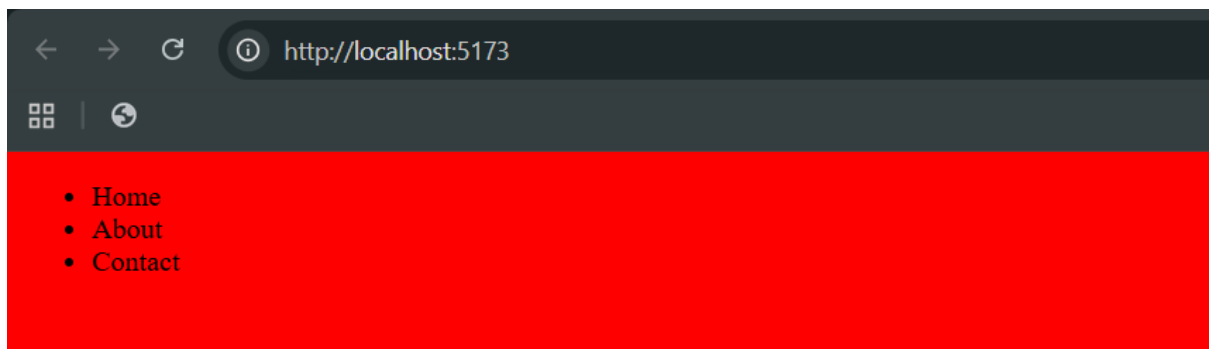
Now, we will write the Navbar.css as shown below:

```css
body{
    background-color: red;
}
```

Also, we will import this in the App.jsx as shown below:

```jsx
import { useState } from 'react';
import Navbar from "./components/Navbar"

function App() {
  const [count, setCount] = useState(0)

  return (
      <Navbar/>
  )
}

export default App
```
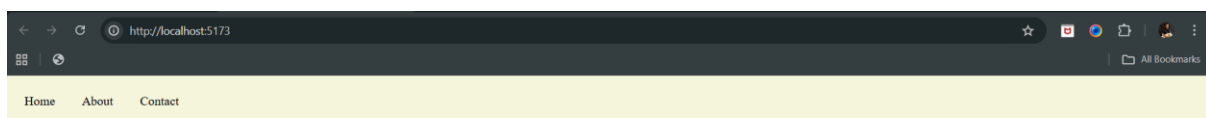
Output:

- Home
- About
- Contact

Now, we will arrange this <ul> in such a way that it will work as a Navbar, for which we will change the Navbar.css as:

```css
nav, ul{
    display: flex;
}

li{
    list-style-type: none;
}

ul{
    gap: 34px;
}

nav{
    background-color: beige;
    padding: 23px;
}
```

Index.css:
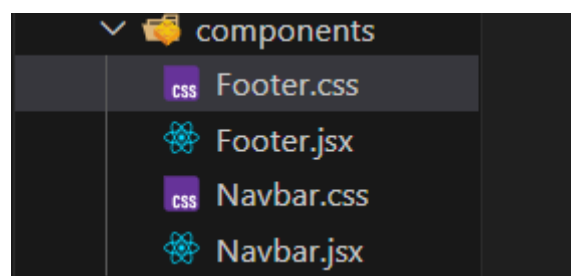
```css
*{
    margin: 0;
    padding: 0;
}
```

Output:

Home   About   Contact

Now, suppose we want to add the footer, then for it, we will create the footer.jsx and footer.css in the components folder:

Now, we will write code for the footer, first we will write the Footer.jsx:

```jsx
import React from 'react'
import "./Footer.css"

const Footer = () => {
  return (
    <div>
      Aditya is a boy!
    </div>
  )
}

export default Footer
```

Footer.css:

```css
div{
    text-align: center;
}
```

Also, include the Footer in the App.jsx:

```jsx
import { useState } from 'react';
import Navbar from "./components/Navbar"
import Footer from './components/Footer';

function App() {
  const [count, setCount] = useState(0)

  return (
    <>
      <Navbar/>
      <Footer/>
    </>
  )
}

export default App
```

Output: as expected footer text is at the center.

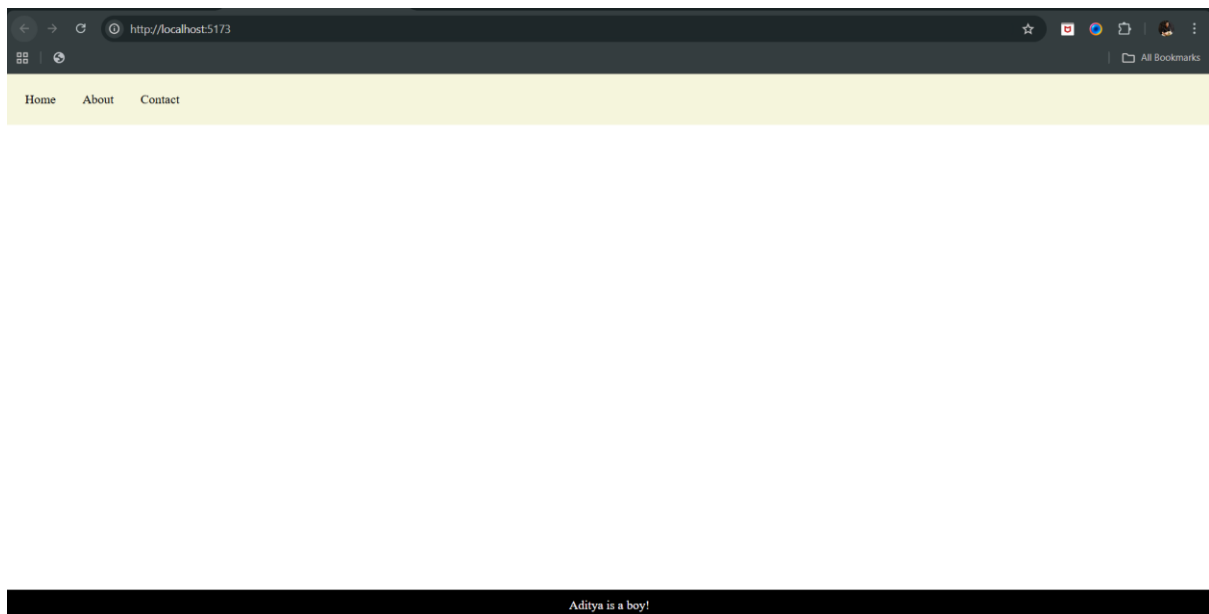

Now, since we want to target the <div> of the Footer.jsx specifically, we need to assign the class name to it as shown below:


```jsx
import React from 'react'
import "./Footer.css"

const Footer = () => {
  return (
    <div className='footer'>
      Aditya is a boy!
    </div>
  )
}

export default Footer
```
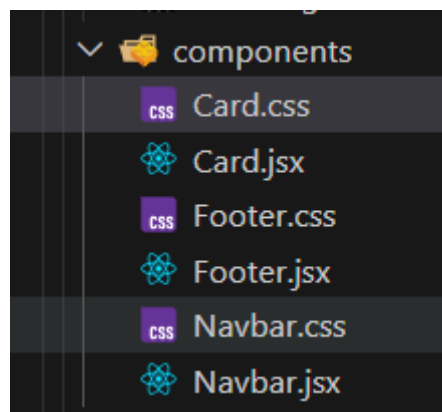
Now, redefining the Footer.css:


```css
.footer {
    position: fixed;
    bottom: 0;
    left: 0;
    width: 100%;
    text-align: center;
    background-color: black;
    color: white;
    padding: 10px 0;
}
```

Output:

Now, let's add the card component to it: for that create Card.jsx as well as Card.css in the components folder

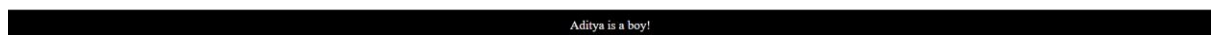Code for the Card.jsx:

```
first-app > src > components > Card.jsx > [∅] Card
 1    import React from 'react'
 2
 3    const Card = () => {
 4      return (
 5        <div className='card'>
 6          <h1>Title of the card</h1>
 7          <p>Description of the card</p>
 8        </div>
 9      )
10    }
11
12    export default Card
13
```

Code for the updated App.jsx:

```jsx
import { useState } from 'react';
import Navbar from "./components/Navbar"
import Footer from './components/Footer';
import Card from './components/Card';

function App() {
  const [count, setCount] = useState(0)

  return (
    <>
      <Navbar/>
      <div className="cards">
        <Card/>
      </div>
      <Footer/>
    </>
  )
}

export default App
```

Output:

Now, we will style these cards:

```css
.card{
    width: 20vw;
    border: 2px solid black;
    margin: 34px;
}
```

Import it in the Card.jsx too:

```
first-app > src > components > ⚛ Card.jsx > [∅] default
 1    import React from 'react'
 2    import "./Card.css"
 3    const Card = () => {
 4      return (
 5        <div className='card'>
 6          <h1>Title of the card</h1>
 7          <p>Description of the card</p>
 8        </div>
 9      )
10    }
11
12    export default Card
13
```
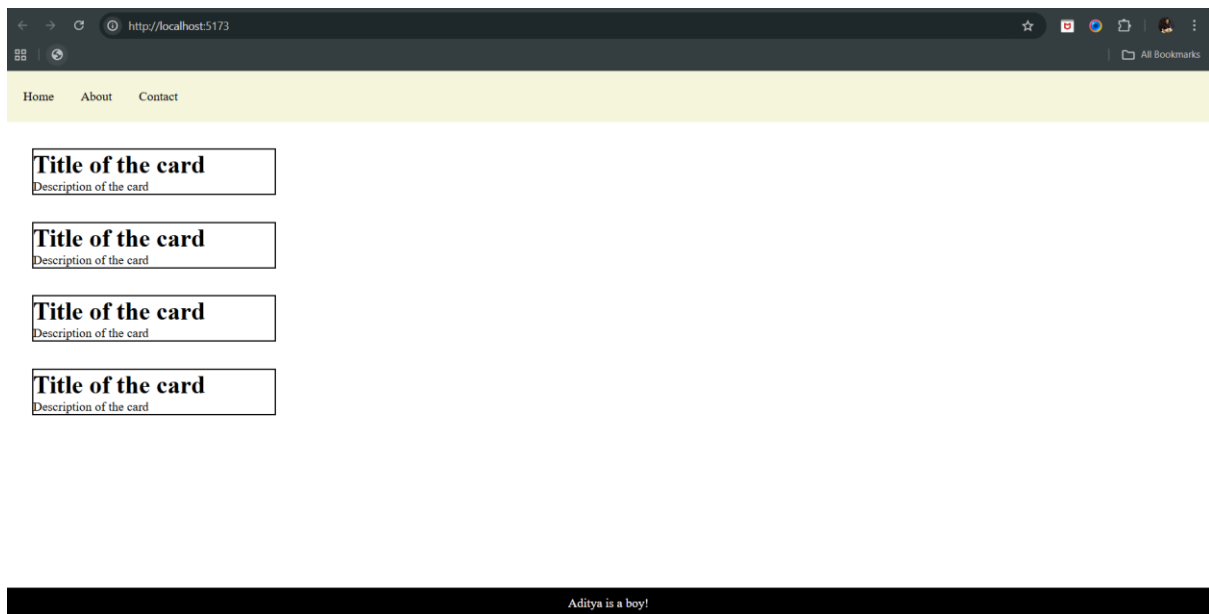
Output:
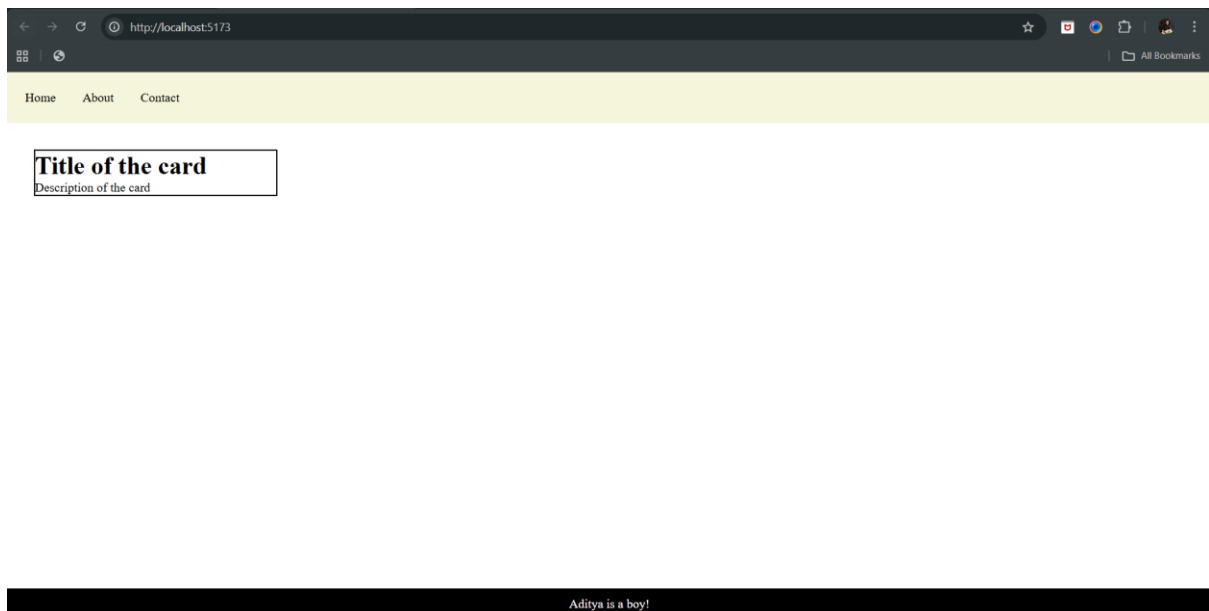
Now, we can duplicate these cards by simply writing the <Card/> in App.jsx as many times we wish:

```
App.jsx X    css Card.css •   css App.css    ⚛ Navbar.jsx    ⚛ main.jsx    css Navbar.css    css ind
first-app > src > ⚛ App.jsx > ⊕ App
 1    import { useState } from 'react';
 2    import Navbar from "./components/Navbar"
 3    import Footer from './components/Footer';
 4    import Card from './components/Card';
 5
 6    function App() {
 7      const [count, setCount] = useState(0)
 8
 9      return (
10        <>
11          <Navbar/>
12          <div className="cards">
13            <Card/>
14            <Card/>
15            <Card/>
16            <Card/>
17          </div>
18          <Footer/>
19        </>
20      )
21    }
22
23    export default App
```
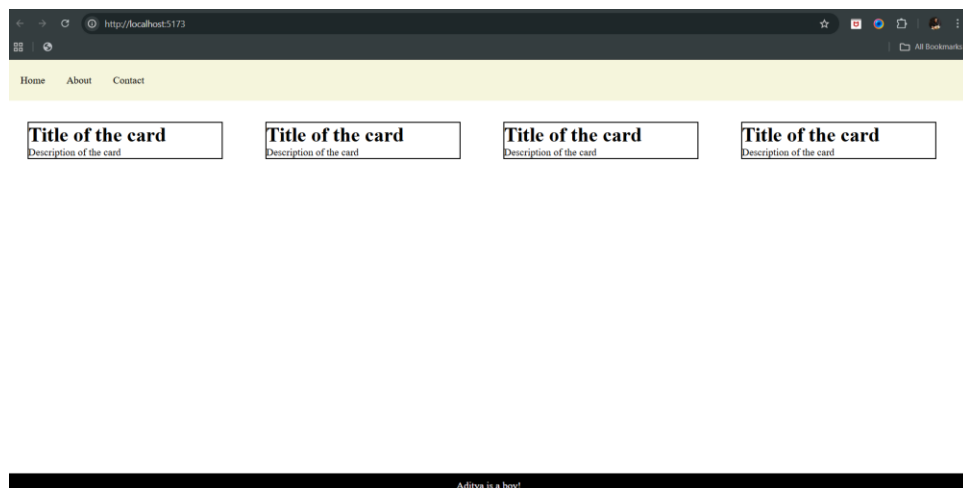
Output:

Now, we can also make these boxes come in one row, if we change the flex of the cards class in the index.css as shown below:

```
first-app > src > css index.css > .cards
1    *{
2        margin: 0;
3        padding: 0;
4    }
5    .cards{
6        display: flex;
7    }
```

Output:

So, what next?

We can also, make the card entry from the App.jsx easily. How? We will use props:

App.jsx:

```jsx
import { useState } from 'react';
import Navbar from "./components/Navbar"
import Footer from './components/Footer';
import Card from './components/Card';

function App() {
  const [count, setCount] = useState(0)

  return (
    <>
      <Navbar/>
      <div className="cards">
        <Card title="Card 1" description="Card 1 Description"/>
        <Card/>
        <Card/>
        <Card/>
      </div>
      <Footer/>
    </>
  )
}

export default App
```

Now, we will direct our Card.jsx to accept props, Card.jsx:

```jsx
import React from 'react'
import "./Card.css"
const Card = (props) => {
  return (
    <div className='card'>
      <h1>{props.title}</h1>
      <p>{props.description}</p>
    </div>
  )
}

export default Card
```

Output: clearly, whatever we had passed via the title and description in the <Card/> is printed
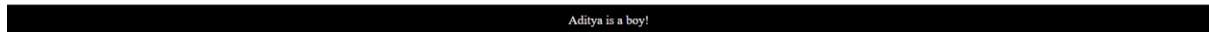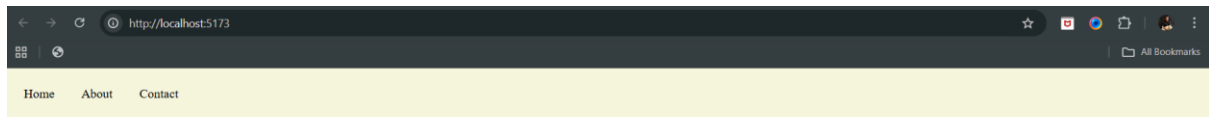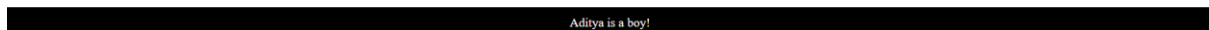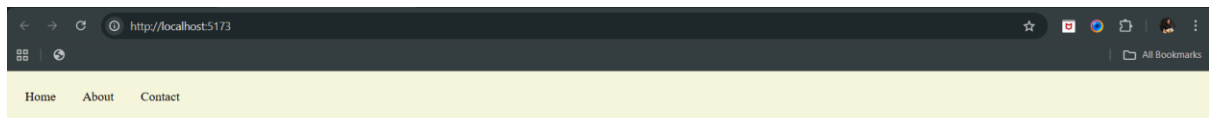

Why others are blank? Because we haven't passed any value in it yet.

So, let's update and check:

App.jsx:

Output:

--The End--