

Experiment: Product Card Component using Props

Aim

To create a reusable product card component in React that displays product details using props for dynamic data rendering.

Theory

Props in React:

- Props (short for properties) are used to pass data from a parent component to a child component.
- They make React components reusable by allowing different data to be injected into the same component structure.

Product Card Component:

- A Product Card is a UI element that displays product information such as name, price, image, and description.
- By using props, we can create one generic card component and reuse it for multiple products without duplicating code.

Working Principle:

1. A parent component passes product details (like name, price, image) as props.
2. The child ProductCard component receives these props and renders them inside a styled card.
3. Multiple ProductCard instances can be rendered with different data.

Code

```
import React from "react";

// Product Card Component
function ProductCard({ name, price, image, description }) {
  return (
    <div className="max-w-xs rounded-2xl shadow-lg p-4 m-4 border bg-white hover:scale-105 transition duration-300">
      <img src={image} alt={name} className="w-full h-40 object-cover rounded-lg" />
      <h2 className="text-xl font-bold mt-3">{name}</h2>
      <p className="text-gray-600 text-sm">{description}</p>
      <p className="text-lg font-semibold text-green-600 mt-2">${price}</p>
      <button className="mt-3 bg-blue-500 text-white px-4 py-2 rounded-lg hover:bg-blue-600">
        Add to Cart
      </button>
    </div>
  );
}
```

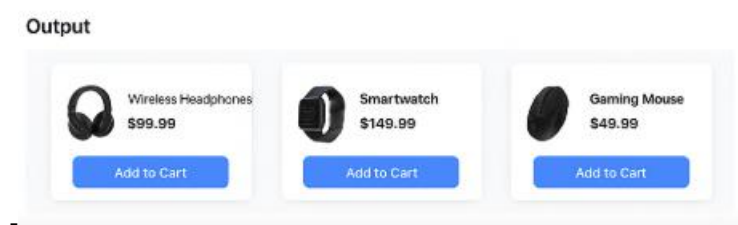
```

    );
  }

  // Parent Component
  export default function App() {
    return (
      <div className="flex flex-wrap justify-center">
        <ProductCard
          name="Wireless Headphones"
          price="99.99"
          image="https://via.placeholder.com/150"
          description="High-quality wireless headphones with noise cancellation."
        />
        <ProductCard
          name="Smartwatch"
          price="149.99"
          image="https://via.placeholder.com/150"
          description="Stylish smartwatch with health tracking features."
        />
        <ProductCard
          name="Gaming Mouse"
          price="49.99"
          image="https://via.placeholder.com/150"
          description="Ergonomic gaming mouse with RGB lighting."
        />
      </div>
    );
  }
}

```

Output



Learning Outcomes

1. Learned the concept of props in React and their role in component reusability.
2. Understood how to pass data from parent to child components effectively.
3. Built a reusable UI component (Product Card) using React and Tailwind CSS.
4. Gained practical experience in styling and rendering multiple dynamic components.

5. Understood how React promotes modularity and maintainability in frontend development.