

React Fundamentals

Web App Dev Guide · Module 5 of 8 · CHERIEDU Dev Series

1. Why React?

React is the most popular frontend library. It lets you build complex UIs by breaking them into small, reusable components. Used by Facebook, Instagram, Airbnb, and thousands of product companies.

2. Your First React Component

```
// FeatureCard.jsx
function FeatureCard({ title, description, icon }) {
  return (
    <div className="feature-card">
      <span className="icon">{icon}</span>
      <h3>{title}</h3>
      <p>{description}</p>
    </div>
  );
}
export default FeatureCard;
```

3. useState — Managing State

```
import { useState } from "react";

function ROICalculator() {
  const [students, setStudents] = useState(500);
  const savings = students * 12 * 0.3; // 30% admin cost saving
  return (
    <div>
      <input type="number" value={students}
        onChange={e => setStudents(e.target.value)} />
      <p>Annual Savings: {savings.toLocaleString()}</p>
    </div>
  );
}
```

4. useEffect — Side Effects & Data Fetching

```
import { useState, useEffect } from "react";

function SchoolList() {
  const [schools, setSchools] = useState([]);
  useEffect(() => {
    fetch("/api/schools").then(r => r.json())
```



```
return <ul>{schools.map(s => <li key={s.id}>{s.name}</li>)}</ul>;
```


5. Props vs State

Concept	What it is	Who controls it
Props	Data passed from parent to child	Parent component
State	Internal data that can change	The component itself

6. React Ecosystem

- React Router — handle multiple pages in a single-page app.
- Axios / React Query — fetch and cache API data efficiently.
- Tailwind CSS — utility-first CSS framework for fast styling.
- Next.js — React framework with server-side rendering and routing built in.

PROJECT

Rebuild your CHERIEDU contact form in React. Create components: `<ContactForm>`, `<FormField>`, `<SchoolDropdown>`. Use `useState` for form values and `useEffect` to load school data from an API.

