**React Props and Component**

**📌 1. Basic Setup**

**🔧 HTML Structure**

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<title>React User Card</title>

<!-- Required Scripts -->

<script crossorigin src="https://unpkg.com/react@18/umd/react.development.js"></script>

<script crossorigin src="https://unpkg.com/react-dom@18/umd/react-dom.development.js"></script>

<script src="https://unpkg.com/@babel/standalone/babel.min.js"></script>

<!-- Card Styling -->

<style>

.card {

border: 1px solid #ddd;

border-radius: 8px;

padding: 20px;

max-width: 300px;

text-align: center;

margin: 20px auto;

}

.card img {

width: 100px;

border-radius: 50%;

margin-bottom: 15px;

}

.card h3 {

margin: 10px 0;

font-size: 20px;

}

.card p {

color: gray;

}

</style>

</head>

<body>

<div id="root"></div>

<script type="text/babel" src="app.js"></script>

</body>

</html>

**🔄 2. Component Evolution**

**🏗️ Stage 1: Static Component**

// Basic static card

function UserCard() {

return (

<div className="card">

<img src="https://via.placeholder.com/100" alt="User Avatar" />

<h3>John Doe</h3>

<p>john.doe@example.com</p>

</div>

);

}

ReactDOM.createRoot(document.getElementById("root")).render(<UserCard />);

**🚀 Stage 2: Component with Props**

function UserCard(props) {

return (

<div className="card">

<img src={props.image} alt="User Avatar" />

<h3>{props.name}</h3>

<p>{props.email}</p>

</div>

);

}

function App() {

return (

<div>

<h1>User Profiles</h1>

<UserCard

image="https://via.placeholder.com/100"

name="John Doe"

email="john.doe@example.com"

/>

</div>

);

}

**📊 Stage 3: Using Array and Map**

const users = [

{

id: 1,

image: "https://via.placeholder.com/100",

name: "John Doe",

email: "john.doe@example.com",

isRegistered: true

},

// More users...

];

function App() {

return (

<div>

<h1>User Profiles</h1>

{users.map((user) => (

<UserCard key={user.id} user={user} />

))}

</div>

);

}

**⚙️ 3. Adding Advanced Features**

**🎨 Conditional Rendering and Styling**

function UserCard({ user }) {

return (

<div

className="card"

style={{

backgroundColor: user.isRegistered ? "white" : "#ffe6e6",

borderColor: user.isRegistered ? "#ddd" : "red"

}}

>

<img src={user.image} alt="User Avatar" />

<h3>{user.name}</h3>

{/\* Email Display \*/}

{user.email ? (

<p>{user.email}</p>

) : (

<p style={{ color: "red" }}>Email not available</p>

)}

{/\* Registration Badge \*/}

{!user.isRegistered && (

<span style={{ color: "red", fontWeight: "bold" }}>

Unregistered User

</span>

)}

{/\* Conditional Link \*/}

{user.isRegistered && (

<a href="#" style={{ color: "blue" }}>

View Profile

</a>

)}

</div>

);

}

**💎 4. Implementation Best Practices**

**🛡️ Prop Types and Default Values**

function UserCard({ user = {} }) {

const defaultImage = "https://via.placeholder.com/100";

return (

<div className="card">

<img src={user.image || defaultImage} alt="User Avatar" />

<h3>{user.name || 'Unknown User'}</h3>

<p>{user.email || 'No email available'}</p>

</div>

);

}

**📦 Component Organization**

// Separate components for better organization

function UserAvatar({ src }) {

return <img src={src} alt="User Avatar" />;

}

function UserInfo({ name, email }) {

return (

<>

<h3>{name}</h3>

<p>{email}</p>

</>

);

}

function UserCard({ user }) {

return (

<div className="card">

<UserAvatar src={user.image} />

<UserInfo name={user.name} email={user.email} />

</div>

);

}

**🌟 5. Common Patterns and Tips**

**🧩 Destructuring Props**

// Instead of props.user

function UserCard({ user }) {

const { image, name, email } = user;

return (

<div className="card">

<img src={image} alt="User Avatar" />

<h3>{name}</h3>

<p>{email}</p>

</div>

);

}

**🎭 Conditional Styling**

function UserCard({ user }) {

const cardStyle = {

backgroundColor: user.isRegistered ? "white" : "#ffe6e6",

border: user.isRegistered ? "1px solid #ddd" : "1px solid red"

};

return (

<div className="card" style={cardStyle}>

{/\* Card content \*/}

</div>

);

}

**💡 Remember!**

* ✅ Start simple and add complexity gradually
* ✅ Use props to make components reusable
* ✅ Implement conditional rendering for dynamic content
* ✅ Break down complex components into smaller ones
* ✅ Use meaningful names for props and components
* ✅ Add default values for props when appropriate
* ✅ Use array mapping for rendering lists of components

**🚀 React components should be modular, reusable, and easy to maintain! 🚀1**