

# Chapter 2: React Introduction and JSX

## 1 Introduction

Is chapter mein humne **React.js** ka basic introduction dekha aur **JSX** kya hai, yeh seekha. React ek JavaScript library hai jo user interfaces banane ke liye use hoti hai, aur JSX iska core part hai jo HTML jaisa syntax deta hai.

## 2 2.1 What is React?

React ko **Facebook** ne banaya, aur yeh popular hai kyunki:

- **Component-based**: UI ko chhote reusable components mein banaya jaata hai.
- **Fast**: Virtual DOM ke wajah se rendering jaldi hota hai.
- **Reusable**: Ek component banao, baar-baar use karo.

## 2.1 Real-World Example

Ek food delivery app mein **MenuCard**, **OrderButton**, aur **Cart** jaise components bana sakte hain.

## 3 2.2 Setting Up React

React app banane ke liye humne **CDN** use kiya, jo beginner-friendly hai. Yeh ek simple React app ka example hai jo "Hello, World!" dikhata hai.

## 3.1 Code Example: Basic React Setup

```
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <meta charset="UTF-8">
5   <title>Simple React App</title>
6   <!-- React and ReactDOM CDN -->
7   <script
8     src="https://cdn.jsdelivr.net/npm/react@18.2.0/umd/react.development.js
9   <script
10    src="https://cdn.jsdelivr.net/npm/react-dom@18.2.0/umd/react-dom.developo
11   <!-- Babel for JSX -->
12   <script
13     src="https://cdn.jsdelivr.net/npm/@babel/standalone@7.20.6/babel.min.js
14   <!-- Tailwind CSS for styling -->
15   <script src="https://cdn.tailwindcss.com"></script>
16 </head>
17 <body>
18   <div id="root"></div>
19   <script type="text/babel">
20     // React component
21     function App() {
```

```

19     return (
20         <div className="text-center p-4">
21             <h1 className="text-3xl font-bold
22                 text-blue-600">Hello, World!</h1>
23             <p className="text-lg">Yeh mera pehla React app
24                 hai!</p>
25         </div>
26     );
27 }
28
29 // Render component to DOM
30 const root =
31     ReactDOM.createRoot(document.getElementById('root'));
32     root.render(<App />);
33 </script>
34 </body>
35 </html>

```

### 3.2 Explanation

- **CDN Links:** React aur ReactDOM ke liye CDN use kiya.
- **Babel:** JSX ko JavaScript mein convert karta hai.
- **Tailwind CSS:** Styling ke liye.
- **App Component:** Ek function jo JSX return karta hai.
- **ReactDOM.createRoot:** DOM mein component render karta hai.

### 3.3 Output

Browser mein dikhega:

- Heading: **Hello, World!**
- Paragraph: **Yeh mera pehla React app hai!**

## 4 2.3 What is JSX?

**JSX** (JavaScript XML) ek syntax hai jo HTML jaisa dikhta hai lekin JavaScript ke saath mix hota hai. Yeh React mein UI banane ka aasan tareeka hai.

### 4.1 Code Example: JSX vs Without JSX

**With JSX:**

```

1 function Welcome() {
2     return <h1>Hello, React!</h1>;
3 }

```

**Without JSX:**

```

1 function Welcome() {
2   return React.createElement('h1', {}, 'Hello, React!');
3 }

```

JSX readable aur likhne mein asaan hai.

## 4.2 Real-World Example

Ek restaurant app ke liye menu item:

```

1 function MenuItem() {
2   return (
3     <div className="border p-4 m-2 rounded-lg">
4       <h2 className="text-xl font-bold">Chai</h2>
5       <p>Price: Rs 10</p>
6     </div>
7   );
8 }

```

## 4.3 Output

Ek card dikhega jisme:

- Heading: **Chai**
- Paragraph: **Price: Rs 10**

## 5 2.4 Common JSX Rules

- **Single Parent Element:** Ek hi parent element return karna hota hai, jaise `<div>` ya `<>` (fragment).
- **className:** HTML ke `class` ke jagah `className` use karo. stall
- **JavaScript in JSX:** Curly braces `{}` ke andar JavaScript likh sakte ho.

### 5.1 Code Example: JSX Rules

```

1 function MenuCard() {
2   const itemName = "Samosa";
3   return (
4     <>
5       <h2 className="text-2xl">{itemName}</h2>
6       \item<p>Price: Rs {20 + 5}</p>
7     </>
8   );
9 }

```

## 5.2 Output

- Heading: **Samosa**
- Paragraph: **Price: Rs 25**

## 6 Common Mistakes

- **Forgetting Parent Element:** Multiple elements ko `<div>` ya `<>` mein wrap karo.
- **class vs className:** Hamesha `className` use karo.
- **Closing Tags:** Har tag close karo, jaise `<br />`.

## 7 Interview Tip

JSX kya hai?

- JSX ek syntax extension hai jo HTML jaisa code JavaScript mein likhne deta hai.
- Yeh readable aur maintainable hai, aur `React.createElement` ko simple banata hai.

## 8 Assignment: Practice Time

### 8.1 Task 1: Create a Simple Component

- Component banao jo naam aur favorite food dikhaye.
- `<h1>` aur `<p>` use karo.
- Tailwind CSS se styling karo.

### 8.2 Task 2: Use JavaScript in JSX

- Component banao jo item name aur price variable mein store kare.
- Variables ko `{}` mein display karo.
- Price mein 10 ka tax add karo.

### 8.3 Task 3: Multiple Elements

- Component banao jo 3 food items ki list dikhaye.
- `<ul>` aur `<li>` use karo.
- Ek heading add karo.