INTRODUCTION
TO REACT.JS

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Overview

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What is react ?

React.js (often referred to as React) is an open-source JavaScript library for building user interfaces. It's maintained by Facebook and used widely in web development. React simplifies UI development by breaking it into reusable components, uses a virtual DOM for performance, and encourages a declarative programming style. It's known for creating interactive and efficient web applications.

ReactJS Development

Benefits of using React.

1. **Component-Based Architecture**: React breaks down UIs into reusable, modular components, making code organization and maintenance easier.
2. **Declarative Syntax:** React's code describes how the UI should look based on data, promoting code predictability.
3. **Virtual DOM for Performance**: React uses a virtual DOM to minimize actual DOM updates, resulting in faster rendering and better performance.
4. **One-Way Data Binding**: Data flows in a single direction, simplifying state management and reducing data synchronization issues.
5. **Reusable Components**: Components can be reused across the application, saving development time and ensuring consistency.
6. **Strong Community Support:** A large developer community provides resources, libraries, and solutions for common issues.
7. **Cross-Platform with React Native**: React skills can be used to build mobile apps with React Native, saving time and effort.
8. **Server-Side Rendering (SSR)**: React supports SSR for faster initial page loads and improved SEO.
9. **Efficient Ecosystem**: React works seamlessly with a wide range of libraries and tools, streamlining development.
10. **Backed by Facebook:** Ongoing support and updates from Facebook ensure React remains relevant and up-to-date.

Setup react App

Before you begin, make sure you have Node.js and npm (Node Package Manager) installed on your computer. You can download them from the official Node.js website: https://nodejs.org/
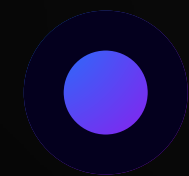
Create a React App:

npx create-react-app my-react-app

Start the Development Server:

npm start

Navigate to the App Directory:

cd my-react-app

JSX

JSX, which stands for JavaScript XML, is a syntax extension used in React.js to define the structure and content of user interface components. It allows developers to write HTML–like code within JavaScript, making it easier to create and visualize the UI hierarchy in React applications.

HTML-Like Syntax: JSX resembles HTML, allowing you to create elements like <div>, <p>, and <h1> directly in your JavaScript code.

Embedding Expressions:

You can embed JavaScript expressions within curly braces {} in JSX. This allows you to insert dynamic data and values into your components.

```
const name = "John";
const element = <p>Hello,
{name}!</p>;
```

Attributes:

You can use attributes just like in HTML to set properties on JSX elements. Event handlers and custom properties can also be defined.

```
const buttonElement = <button onClick=
{handleClick}>Click me</button>;
```

Components:

Components are one of the most important things in react and you will be using it throughout you whole project.
The reason for this is because whenever you have some piece of code that you might wanna to reuse it and you might to organize it in some sort of way that will make your project not look messy

Components syntax :

```
const User = ()=>{
return (
<div>
<h1>hello </h1>
</div>
)
}
```

when we call it in another component we just write in self close element

```
<User/>
```

Props :

Like when i call the the component three time
<User/>
<User/>
<User/>

it show the same name email and age show
i want to show different name email and age so for this
you can pass arguments like in react we cannot do it
with argument pass
what you can do you can have what is known as props

Props :

In React.js, "props" is a shorthand for "properties," and it refers to a mechanism for passing data from a parent component to a child component. Props allow you to make your React components dynamic by injecting values or configuration into them, enabling the reusability and flexibility of your components.

Implementing CSS in react

In React, you can implement CSS styles in several ways, depending on your project's requirements and preferences.

Virtual DOM :

The Virtual DOM (VDOM) is a concept in web development, particularly associated with libraries like React.js, that represents a lightweight, in-memory copy of the actual Document Object Model (DOM) of a web page. It acts as an intermediary between the application's components and the real browser DOM.