

# 1. Tell us the differences between uncontrolled and controlled components.

In React, a controlled component is a form element whose value is controlled by React through its state. This means the component's state is updated whenever the user interacts with it. When the user changes the input, React updates the state and re-renders the component with the new value. A controlled component receives the current value from the component as a prop, and the component updates its value accordingly. Controlled components are typically used for inputs like text fields or dropdowns where you want to track the user's input. On the other hand, an uncontrolled component is a form element whose value is not controlled by React. In other words, the value of the component is not stored in the component's state, but rather in the DOM. When the user changes the input, the value is stored in the DOM, and the component is not re-rendered. Uncontrolled components are typically used in simple forms where tracking the user's input is not necessary.

## 2. How to validate React props using PropTypes?

React provides a library called prop-types which allows you to define the types of props that a component should receive. This ensures that the correct types of data are being passed down to the component. Here's an example of how to use prop-types:

1. First, install the prop-types package by running the following command: `npm install prop-types`
2. Import PropTypes at the top of your component file: `import PropTypes from 'prop-types';`
3. Add a propTypes object to your component, defining the type for each prop:

## 3. Tell us the difference between nodejs and express js.

Node.js is a JavaScript runtime built on the V8 JavaScript engine that allows developers to run JavaScript code outside of a browser. It is designed for building scalable network applications. Node.js includes features such as a non-blocking I/O model, event-driven architecture, and a large ecosystem of packages. This enables developers to write server-side applications in JavaScript.

Express.js is a web application framework for Node.js. It provides a set of features for building web applications such as routing, middleware, and database integration. Express.js simplifies the process of building web applications by providing a higher-level API on top of Node.js's core functionality. It allows developers to build web applications using an intuitive and flexible API.

In summary, Node.js is a JavaScript runtime that provides a runtime environment for building server-side applications. Express.js is a web application framework built on top of Node.js that simplifies the process of building web applications using Node.js. Express.js is built on top of Node.js and provides a higher-level API for building web applications.

## 4. What is a custom hook, and why will you create a custom hook?

In React, a custom hook is a reusable function that allows you to share logic between components. Custom hooks are similar to regular functions, but they are designed to be used with the `use` keyword. They are often used to abstract away repetitive logic in your components, making them more readable and reusable.

Custom hooks can be used to abstract away repetitive logic in your components, making them more readable and reusable. For example, if you have multiple components that share a common logic, such as handling a form submission or fetching data from an API, you can extract this logic into a custom hook. By using a custom hook, you can reuse this logic across multiple components, making your code more organized and easier to maintain. Additionally, custom hooks can help you avoid repetitive code in your components and improve the overall organization of your codebase.