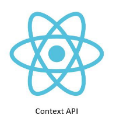
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|  | | React Theory | | | | | | | |  | |
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|  | React Intro & JSX | | | | | | | | | |  |
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| Js, react js, logo, react, react native icon - Free download  WHAT IS REACT?  React is a library that helps developers build the user interface of websites and applications.  React  **Simple**  React makes it painless to create interactive UIs by separating concerns into different parts  **Fast**  React will efficiently update and render just the right components when your data changes.  **Thinking in React**   1. Break your design up into components. 2. Think about the data your components will need 3. Consider what needs to happen for your component to change. | | |  |  | Component Web Design | |  | | React is based on a concept of web design that views the UI as a combination of reusable components.  In React a component is a combination of JavaScript and HTML, which forms a small section of the larger UI. | | |
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| Virtual DOM  The Document Object Model (DOM) connects web pages to scripts by representing the structure of a document  The issue is that whenever there is an update, everything on the page is reloaded.  React solves this issue by creating a lightweight copy of each object (Virtual DOM) in the document and comparing the changes to the previous DOM.  React makes sure only the Components that require an update are updated | |  |  | The design is not just what it looks like and feels like. The design is how it works”  - Steve Jobs | | |

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| WHAT IS JSX?  **JSX - JavaScript Syntax Extension**  **JSX is an extension to JavaScript** which **gives** developers **access** to **HTML** in a way that React understands and uses to build the UI  ***React does not require the use of JSX, but it makes things much easier.*** | | |  |  | Basic Render  **React Packages**  You will need to install the React packages required for your application to understand and compile React.    **Basic Render in React.** | |  | | **React-Dom Render**  React gives us the **ReactDom.render()** function    The **first argument** is the **JSX** expression to be compiled and rendered.  The **second argument** is the **HTML element we want to append it to.** | | |
| Nested JSX elements  In order for the code to compile, a **JSX expression must** have exactly **one outermost element.**  React Element Attributes  React DOM uses camelCase property naming convention instead of HTML attribute names.  React Element Styles  To apply inline styles, we use two sets of curly braces.  Inline styles are not written as plain strings, but as properties on objects:  **Warning:** ***Just like with HTML, avoid using inline styles, use className and change styles in a dedicated CSS or SASS file*** | |  |  |  | | |



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|  | Props | | | | | | | | | |  |
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| Js, react js, logo, react, react native icon - Free download  WHAT ARE PROPS?  **Props** stands for **properties**.  In React props are used to **pass data from the PARENT to the CHILD**. (uni-directional flow)  **Props data can only be changed by the parent component.** Where the data lives. | | |  |  | Passing and Receiving Simple Data  Passing props down to Components is the same as passing any other attribute.    Text  Description automatically generated  **React Props Destructuring**  React allows us to **destructure**  props by specifying their attribute  name **within curly brackets.**  **We can then use the prop directly.** | |  | | The child Component must specify the props passed to it within the parentheses. | | | |
| Extra tips and info  It is up to you what to name your props.  (Can’t use JS reserved word)  Functions and even components can be passed down as props  Multiple props can be passed to a component. | |  |  | **Random Tidbit**  Technologies such as Redux and Context API are used to overcome the uni-direction flow of data limitation | | | |

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|  | State | | | | | | | | | |  |
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| Js, react js, logo, react, react native icon - Free download  WHAT IS STATE?  **State** in React is **data** that is directly **initialized, owned and managed by a component.**  **State can only be changed by the Component who OWNS that state.**  **A function** created within a component can be passed down as a prop and be used to change the parents’ state.  **WHEN THE STATE OF A COMPONENT CHANGES, THE COMPONENT RE-RENDERS.**  **State is initialized with the HOOK useState()** | | |  | Component-based design Allows us to re-render only those components which are dependant on the component that changed state | React Reacts!  WHEN THE STATE OF A COMPONENT CHANGES, THAT COMPONENT AND ALL OF ITS CHILDREN RERENDER. | |  | | State Change Example  *\*ex. By Color*  Reference Image  **The Green component**  *The Green and Blue Components will Re-render*  **The Purple Component**  Only the Purple Component would Re-render  **The Orange Component**  All Components would Re-render since Orange is the parent of all the Components in the Image | | |
| OUR FIRST HOOK  useState()  Allows us to create, change and track state in a Component | | It is up to you what to name the state, and it’s function  (Can’t use JS reserved word) |  | **useState() is very similar to variables**, but **provides** a **function** that is required to **change it’s value.**  **greeting** = Name of the state variable  **setGreeting** = Name of the function that must be used to change the state of ‘greeting’ | | |