Advanced React Patterns

# Reusable Code - basic

There are 2 things that we can reuse in React:

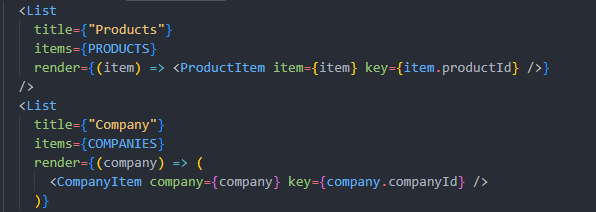
* UI
  + Component and Props
  + Children Prop
* Stateful Logic (logic with hooks)
  + Custom Hooks

# Render Props Pattern – advanced reuse of code

* Complete control by passing a **function** as a **PROP**
* The **Function** tells the component what and how to render

## How to:

1. Use the **render** prop to pass the function we want to use in the **List** component
   1. We pass the function for the **map** logic



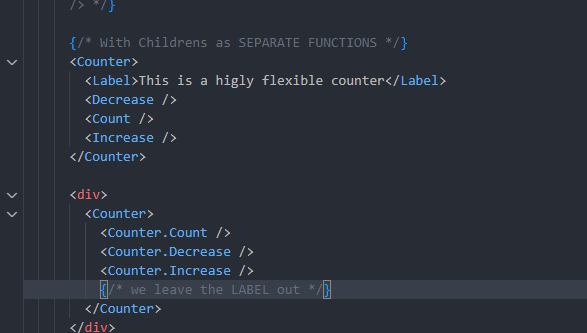
# Compound Component Pattern – advanced reuse of code

* For very self-contained components that need to manage their own state
* Fancy super-components
* We create a **Parent** component and then some **Child** components that will make sense only in use with the **Parent** component
* This will allow us to create **highly usable components** with an expressive API

## How

1. The **Parent component** will keep the **STATE**
2. We will use the **CONTEXT API** to pass **STATE** to children Components





## Modal in Wild Oasis App

1. We create a new component AddCabin
2. Use the Modal component
3. Use the **children** prop on the Modal to pass the FORM component
   1. We add a new prop to the Form in CreateCabinForm
      1. Type
      2. To know when the form is rendered in a modal
      3. We use the onCloseModal prop to check if we are in a modal or not
      4. A screen shot of a computer

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      5. To **ADJUST the form** we use the StyledComponents power to adjust based on props

## React Portal

* React Feature to use with components that we want to be **OVER** other components
* The Component **TREE** structure remains the same, only the physical **DOM changes**
* Generally used with **MODALS, tooltips, menus etc.**
* **Usage**
  + **createPortal()** hook

A screen shot of a computer program

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## Compound Component – Modal

1. The Modal Component will hold **ITS OWN STATE**
   1. It will **DISPLAY THE OPEN BUTTON**
   2. It will take care of when it’s open or closed
   3. It will **not** use OUTSIDE state like previous AddCabin
2. Create the Parent **Modal**
   1. Create the state
   2. Create the handlers
   3. Create the Context
3. Create the Children Components
   1. Open
      1. This will have a button that will tell the Modal what Window to Open
      2. We use **cloneElement** from React to **add props to childrens**
      3. We pass the onClick prop and the setWindowName to the prop of the **Open** button
      4. A screen shot of a computer code

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   2. Window
      1. If the name of the window is different that what we want to Open, we return null
      2. The window will contain the **FORM** as a **cloned element**  so that we can pass the  **onCloseModal prop**
      3. A screen shot of a computer program

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      4. A screen shot of a computer program

         Description automatically generated

## Detecting a Click Outside the Modal

* We are using useEffect and document.addEventListener
  + REMOVE THE eventListener
* We use a REF to identify the clicked element
  + On dom elements we can call **contain**
  + If we click on an element that is outside the **ref** (form), the function will be called
* We will listen on the event on the **CAPTURE PHASE, not on the BUBBLE Phase**
  + WE pass the **TRUE** option in the listener
  + A screen shot of a computer program

    Description automatically generated

## A Reusable Table (Compound Component)