

## Data Binding in React

- Data binding is a technique used in web applications to access the data and bind to UI, identify the changes in UI and update into data.
- Web Applications support
  - o One Way Binding
  - o Two Way Binding
- React Supports only “One Way Binding”
- Two Way Binding requires “Event Handling”.
- Server Technologies support Two Way Binding by using frameworks like
  - o MVC (Model View Controller)
  - o MVP (Model View Presenter)
  - o MVVM (Model View – View Model)
- You can store data in “Variables” if you are using “Function” component.
- You can store data in “Properties” if you are using “Class” component.
- Variables and Properties are “Immutable”, they can’t change according to state and situation.
- Hence you have to use “State” for component.

### Ex: Function Component without state

#### DataBindingComponent.js

```
export default function DataBindingComponent()
{
  var product = {
    Name: "JBL Speaker",
    Price: 4500.55,
    Stock: true,
    Photo: "images/speaker.jpg"
  };
  return(
    <div className="container-fluid">
      <h3>Product Details</h3>
      <dl>
        <dt>Edit Name</dt>
        <dd><input type="text" value={product.Name} /></dd>
      </dl>
    </div>
  );
}
```

```

        <dt>Name</dt>
        <dd>{product.Name}</dd>
        <dt>Price</dt>
        <dd>{product.Price}</dd>
        <dt>Stock</dt>
        <dd>{(product.Stock===true)?"Available":"Out of Stock"}</dd>
        <dt>Preview</dt>
        <dd>
            <img src={product.Photo} alt="speaker" width="100" height="100"/>
        </dd>
    </dl>
</div>
)
}

```

### Ex: Properties in Class Component

#### DataBindingComponent.js

```

import React from "react";
export default class DataBindingComponent extends React.Component
{
    product = {
        Name: "Nike Casuals",
        Price: 6500.55,
        Stock: true,
        Photo: "images/shoe.jpg"
    };
    render(){
        return(
            <div className="container-fluid">
                <h3>Product Details</h3>

```

```

<dl>
  <dt>Edit Name</dt>
  <dd><input type="text" value={this.product.Name} /></dd>
  <dt>Name</dt>
  <dd>{this.product.Name}</dd>
  <dt>Price</dt>
  <dd>{this.product.Price}</dd>
  <dt>Stock</dt>
  <dd>{(this.product.Stock===true)?"Available":"Out of Stock"}</dd>
  <dt>Preview</dt>
  <dd>
    <img src={this.product.Photo} alt="speaker" width="100" height="100"/>
  </dd>
</dl>
</div>
)
}
}

```

### State in Function Component

- State allows to store data and handle between requests in a component.
- React 16.8 and higher versions are introduced with “useState()” hook in function component.
- It can maintain state for component, where you can store value and use across requests.
- “useState()” configure a state object.

#### Syntax:

```
import {useState} from 'react';
```

```
const [getterRef, setter] = useState();
```

```
setter(value);          - set value into state
```

{ getterRef }                    - get value from state

FAQ: Why state is defined as “const”?

A: State requires initialization of memory. “const” defines initialization.

Ex: **State in Function Component**

**DataBindingComponent.js**

```
import {useState} from "react";
```

```
export default function DataBindingComponent()
```

```
{
```

```
  const [product, setProduct] = useState({Name:"", Price: 0, Stock: false});
```

```
  const [title, setTitle] = useState('State in Function Components');
```

```
  function handleNameChange(e){
```

```
    setProduct({
```

```
      Name: e.target.value,
```

```
      Price: product.Price,
```

```
      Stock: product.Stock
```

```
    })
```

```
}
```

```
function handlePriceChange(e){
```

```
  setProduct({
```

```
    Name: product.Name,
```

```
    Price: e.target.value,
```

```
    Stock: product.Stock
```

```
  })
```

```
}
```

```
function handleStockChange(e){
```

```
  setProduct({
```

```

    Name: product.Name,
    Price: product.Price,
    Stock: e.target.checked
  })
}

return(
  <div className="container-fluid">
    <h1 className="text-center">{title}</h1>
    <div className="row">
      <div className="col-3">
        <h2>Register Product</h2>
        <dl>
          <dt>Name</dt>
          <dd>
            <input type="text" value={product.Name} onChange={handleNameChange} />
          </dd>
          <dt>Price</dt>
          <dd>
            <input type="text" value={product.Price} onChange={handlePriceChange} />
          </dd>
          <dt>Stock</dt>
          <dd className="form-check form-switch">
            <input className="form-check-input" type="checkbox"
checked={product.Stock} onChange={handleStockChange} />
          </dd>
        </dl>
      </div>
      <div className="col-9">
        <h2>Product Details</h2>
        <dl>

```

<dt>Name</dt>

<dd>{product.Name}</dd>

<dt>Price</dt>

<dd>{product.Price}</dd>

<dt>Stock</dt>

<dd>{(product.Stock==true)?"Available":"Out of Stock"}</dd>

</dl>

</div>

</div>

</div>

)

}

