Controlled Components

A brief introduction to Controlled components and how it is different from uncontrolled components.

We covered unidirectional data flows before, and the same law applies for the input field, which updates the local state with the `searchTerm` to filter the list. When the state changes, the `render()` method runs again and uses the recent `searchTerm` from the local state to apply the filter condition.

But didn't we forget something in the input element? An HTML input tag comes with a `value` attribute. The value attribute usually contains the value shown in the input field. In this case, that is the `searchTerm` property. Form elements such as `<input>`, `<textarea>`, and `<select>` hold their own state in plain HTML. They modify the value internally once someone changes it from the outside. In React, that's called an **uncontrolled component**, because it handles its own state. We want to make sure those elements are **controlled components** instead.

To do this, we set the value attribute of the input field, which is already saved in the `searchTerm` state property, so we can access it from there:

```
class App extends Component {

  ...

  render() {
    const { searchTerm, list } = this.state;
    return (
      <div className="App">
        <form>
          <input
            type="text"
            value={searchTerm}
            onChange={this.onSearchChange}
          />
        </form>
        ...
      </div>
    );
  }
}
```

The unidirectional data flow loop for the input field is self-contained, and the local component state is the single source of truth for the input field.

Local state management and unidirectional data flow might be new to you, but once you adjust to it, it will likely become your natural flow of React implementation. React brings novel patterns with the unidirectional data flow, which have been adopted by several frameworks and libraries which create single page applications.

Further Readings:

- Read about React forms
- Learn more about different controlled components