React – Forms

Controlled/Uncontrolled Form Components

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Forms

Controlled and Uncontrolled Forms

Forms

- Form elements work a little bit **differently** in React
  - They naturally keep some **initial state**
- React provides **2** standard ways to handle forms
  - **Controlled** components
  - **Uncontrolled** components

Uncontrolled Components

- Uncontrolled components provide a different approach to managing user input
- Values managed by the DOM
- Values accessed through refs, not React state
- When to Use **Uncontrolled** Components:
  - For simpler forms with fewer states.
  - In cases where direct DOM manipulation is needed.

Uncontrolled Components Demo

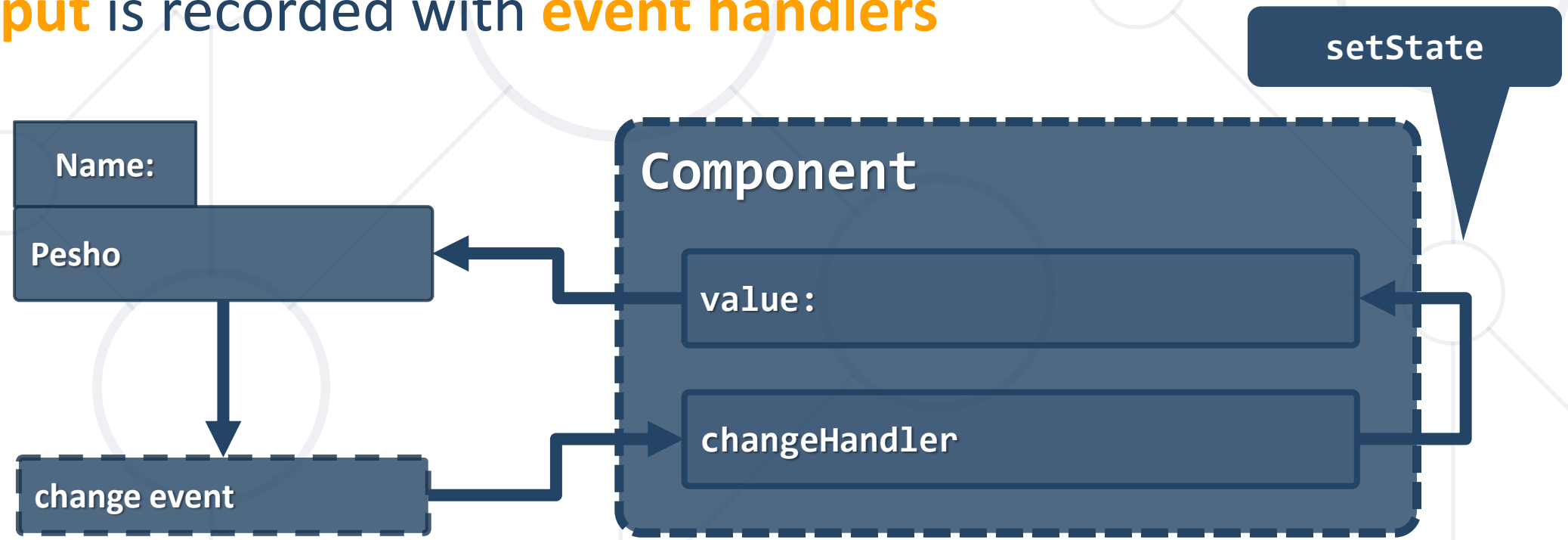
Controlled Components

Controlled Components

- Most **recommending** technique to implement forms
- In a **controlled component**, form data is handled by a **React**
  - Input element's value is kept in the **state**
  - Custom handlers for **change** or **submit** events
  - Piping all the input state through a React Component

Controlled Forms

- Inputs are **explicitly managed**
  - The **value** is stored inside the component **state**
  - **Input** is recorded with **event handlers**



Form Component Declaration

```
const Register = () => {
  const [email, setEmail] = useState('');

  const emailChangeHandler = (e) => {
       setEmail(e.target.value);
  }

  submitHandler(event) {
    event.preventDefault();
    // Doing some AJAX with the data...
  }

  // Continues ...
}
```

Form Component Rendering

```
...
return (
    <form onSubmit={submitHandler}>
      <div>
        <label htmlFor='email'>Email:</label>
        <input type="email"
               value={email}
               onChange={emailChangeHandler} />
      </div>
      // And so on for other input elements...

      <button type="submit">Register</button>
    </>
  );
};
```

Unified Input Approach

- React handles all form **input elements** the same
  - **textarea** uses a **value** prop

```
<form onSubmit={this.handleSubmit}>
  <textarea value={this.state.value} onChange={this.handleChange} />
  <input type="submit" value="Submit" />
</form>
```

  - **select uses a value prop on the root element**
    - Pass an array to select multiple values

```
<select multiple={ true } value={ ['A', 'B', 'C'] }>
```

Use cases

- Sometimes can be tedious to use controlled components
  - Writing every handler for every way your data
  - Pipe all the input state
- Reuse **changeHandler** and **state**
- **Uncontrolled components** is an alternative technique for implementing input forms

useRef

Uncontrolled Components

- To write an Uncontrolled Component you can create a **reference** to specific DOM element
  - Refs are created using `React.createRef()`
  - Attached to React elements via the **ref** attribute

```
const MyComponent = () => {
  myRef = React.createRef();

  return <div ref={this.myRef} />;
}
```

Using Refs Example

```
const Register = () => {
  inputRef = React.createRef();

  handleSubmit(event) {
    event.preventDefault();
    alert('A name was submitted: ' + inputRef.current.value);
  }
  // Continues ...
}
```

Using Refs Example

```
render() {
    return (
      <form onSubmit={handleSubmit}>
        <label>
          Name:
          <input type="text" ref={inputRef} />
        </label>
        <input type="submit" value="Submit" />
      </form>
    );
  }
```

When to Use Refs ?

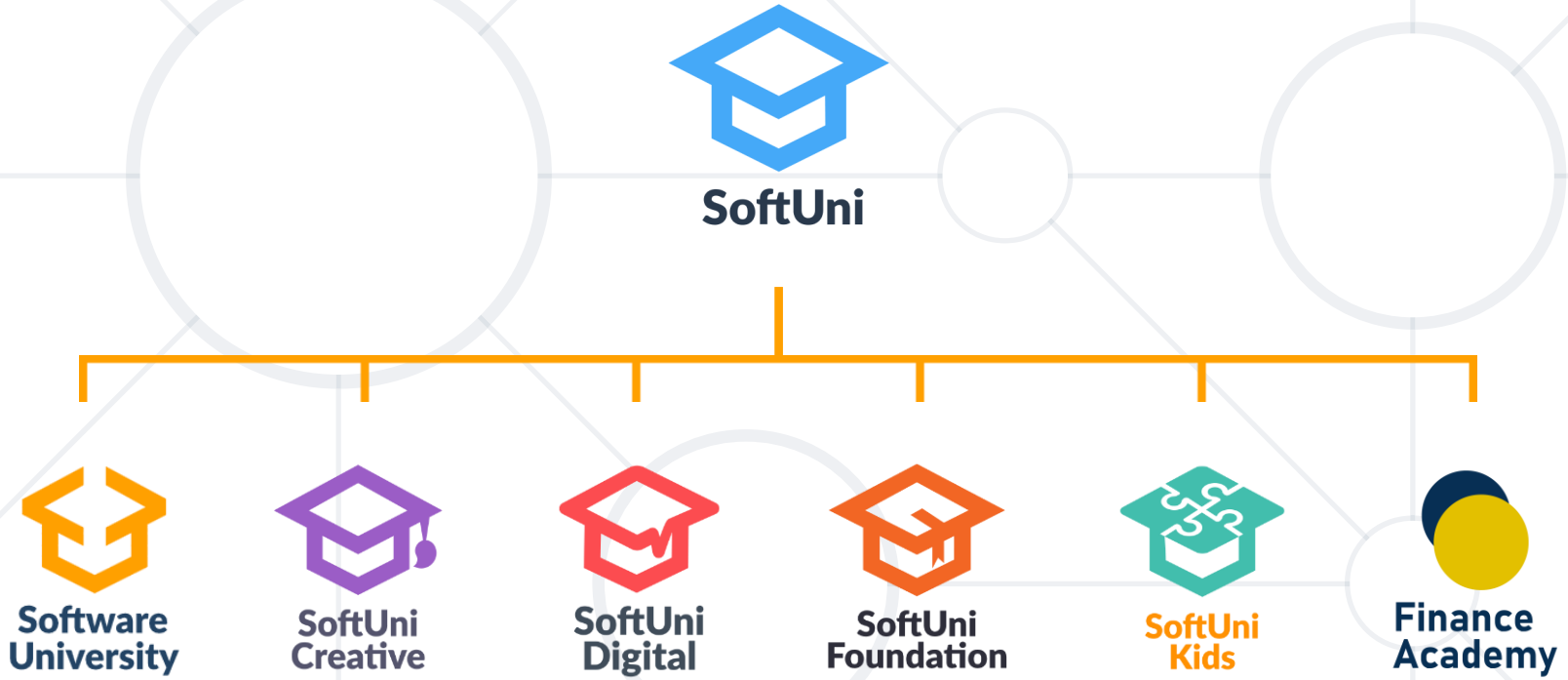
- There are a few good **use cases** for refs
  - Managing focus, text selection, or media playback
  - Triggering **imperative animations**
  - Integrating with third-party DOM libraries
- Avoid using refs for anything that can be done **declaratively**
- Don't overuse refs

Form Validation Demo

Summary

- Forms
  - Controlled Components - Unified Input Approach
  - Uncontrolled Components - Using Refs
  - Validation and Error handling

Questions?



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