React Example Code

```
import { useState, useEffect }
    from "react";
import "./App.css";
import sendIcon from
    "./images/envelope.png";
import Button from
   "./components/Button";

function App() {
  // Define starting state
  const [message, setMessage] =
    useState("");
  const [chatLog, setChatLog] =
    useState([]);

  // Form elements need state
  // modifying functions
  function onMsgChange (ev) {
    setMessage(ev.target.value);
  }

  function sendMsg (ev) {
    setChatLog(
      [message, ...chatLog]);
  }

  // When you need something to
  // happen after first render
  useEffect(() => {
    alert("First render!")
  });

  // When you need something to
  // happen after every render
  useEffect(() => {
    alert("Just rendered!")
  }, []);

  // When you need something to
  // happen after every time
  // the chatLog state changes
  useEffect(() => {
    alert("chatLog changed!")
  }, [chatLog]);

  const count = chatLog.length;

  return (

  <div className="App">
    <h1>{count} messages</h1>
    {chatLog.map(text => {
      return <p>{text}</p>
    })}
    <input
      value={message}
      onChange={onMsgChange} />
    <Button onClick={sendMsg}>
      <img src={sendIcon} />
      Send message
    </Button>
  </div>
);}}
```

Defining components

```
function Button(props) {
    return (
      <button className="Button"
        onClick={props.onClick}>
        {props.children}
      </button>
    )
}

export default Button;
```

Useful React patterns

Conditional rendering:

```
  if (!props.text) {
    return "Empty...";
  }

  return (
    // full render here ...
```

Using `map` to loop through data:

```
<div>{
  data.map((item, i) => (
    <p onClick={pClicked}>
      {i}: {item}
    </p>
  ))
}</div>
```

Using ternary operator:

```
<div>{
  props.image ? (
    <img src={props.image} />
  ) : (
    <em>No image provided.</em>
  )
}</div>
```

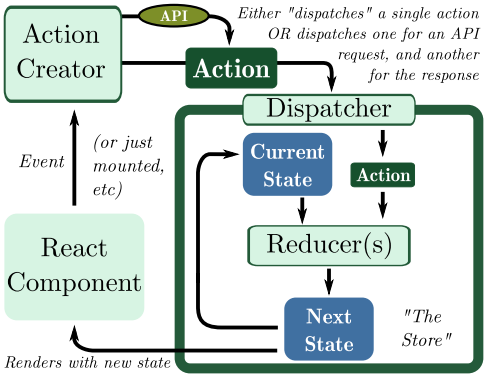
Using *ref* to incorporate legacy JS:

```
// At the top of the component
const [el, setEl] = useState(null);

// In a useEffect call
useEffect(() => {
  $(el).somePlugin();
}, [el]);

// Somewhere in JSX
<div ref={setEl}>Click me!</div>
```

React Redux



Action Creators (found in `actions/`)

```
const doIncrement = () =>
  ({type: INCREMENT});
const addTodo = (item) =>
  ({type: ADD_TODO, text: item});
```

Dispatching (found in `components/`)

```
let action =
  addTodo(text);
dispatch(action);
```

Reducers (found in `reducers/`)

```
const initialState = {
  count: 0,
  todoList: [],
};
const todo = (state, action) => {
switch (action.type) {
  case INCREMENT:
    return {...state, ...{
      count: state.count + 1,
    });
  case ADD_TODO:
    return {...state, ...{
      todoList: [...todoList,
                 action.text]),
    }); /* etc ... */
```

React Router

```
<nav>
  <Link to="/about/">About</Link>
  <Link to={"/post/"+postId+"/"}>
    Read More...</Link>
</nav>
<main>
  <Switch>
    <Route path="/about/"
      component={About} />
    <Route path="/post/:id/"
      component={BlogPost} />
  </Switch>
</main>
```