React Hooks

Re-using the Code

@sergiodxa - 12 May

Rules of Hooks

Only Calls Hooks at the Top Level

- Not inside loops
- Not inside conditionals
- Not inside non React functions

Only Call Hooks from React Functions

- Call hooks from inside a React component
- Call hooks from inside a custom React hook

Built-in Hooks

Basic Hooks

- useState
- useEffect
- useContext

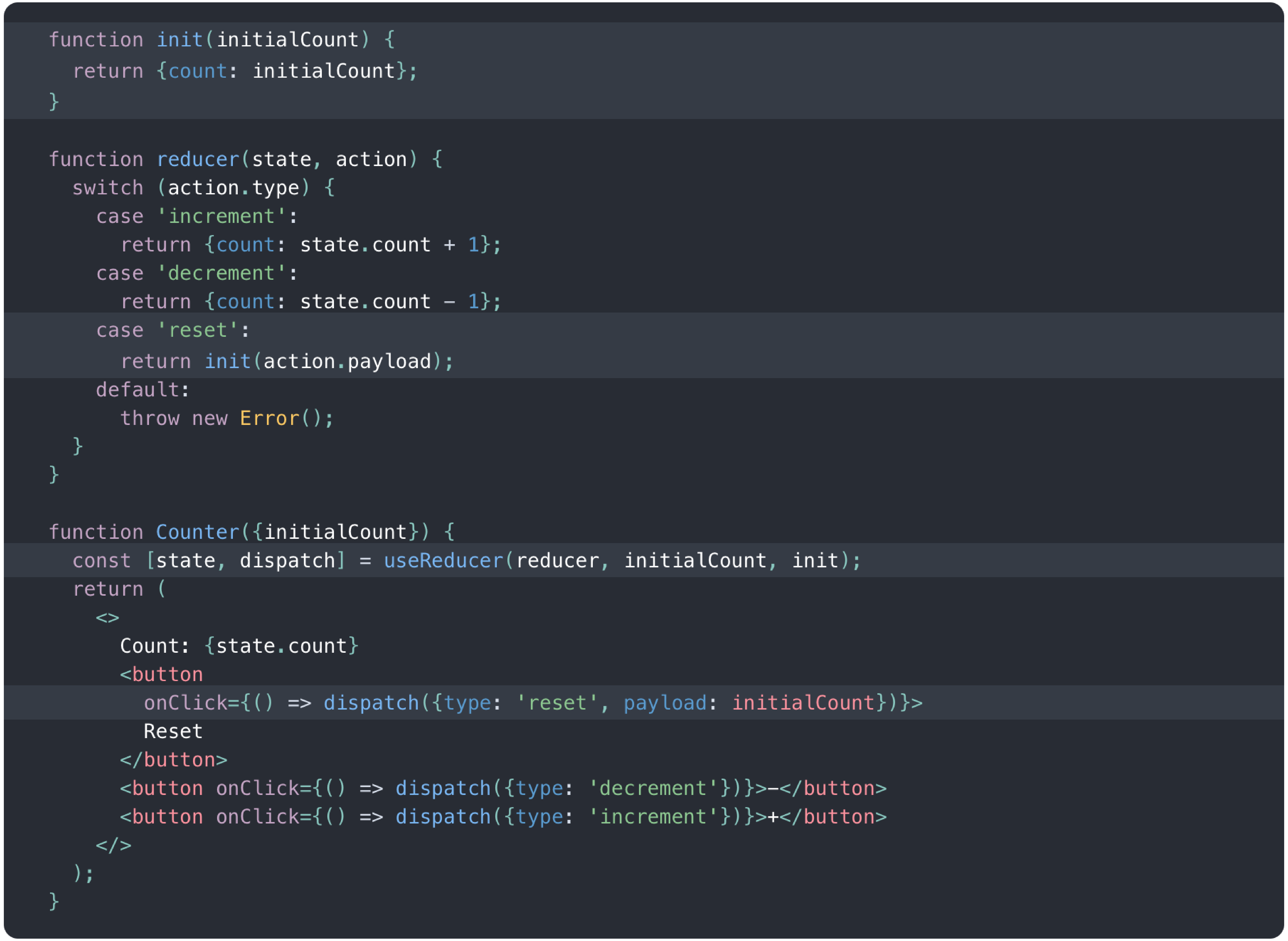
```
function Counter({initialCount}) {
  const [count, setCount] = useState(initialCount);
  return (
    <>
      Count: {count}
      <button onClick={() => setCount(initialCount)}>Reset</button>
      <button onClick={() => setCount(prevCount => prevCount - 1)}>-</button>
      <button onClick={() => setCount(prevCount => prevCount + 1)}>+</button>
    </>
  );
}
```

```
useEffect(
  () => {
    const subscription = props.source.subscribe();
    return () => {
      subscription.unsubscribe();
    };
  },
  [props.source],
);
```

```
const themes = {
  light: {
    foreground: "#000000",
    background: "#eeeeee"
  },
  dark: {
    foreground: "#ffffff",
    background: "#222222"
  }
};

const ThemeContext = React.createContext(themes.light);

function App() {
  return (
    <ThemeContext.Provider value={themes.dark}>
      <Toolbar />
    </ThemeContext.Provider>
  );
}

function Toolbar(props) {
  return (
    <div>
      <ThemedButton />
    </div>
  );
}

function ThemedButton() {
  const theme = useContext(ThemeContext);
  return (
    <button style={{ background: theme.background, color:
theme.foreground }}>
      I am styled by theme context!
    </button>
  );
}
```

Additional Hooks

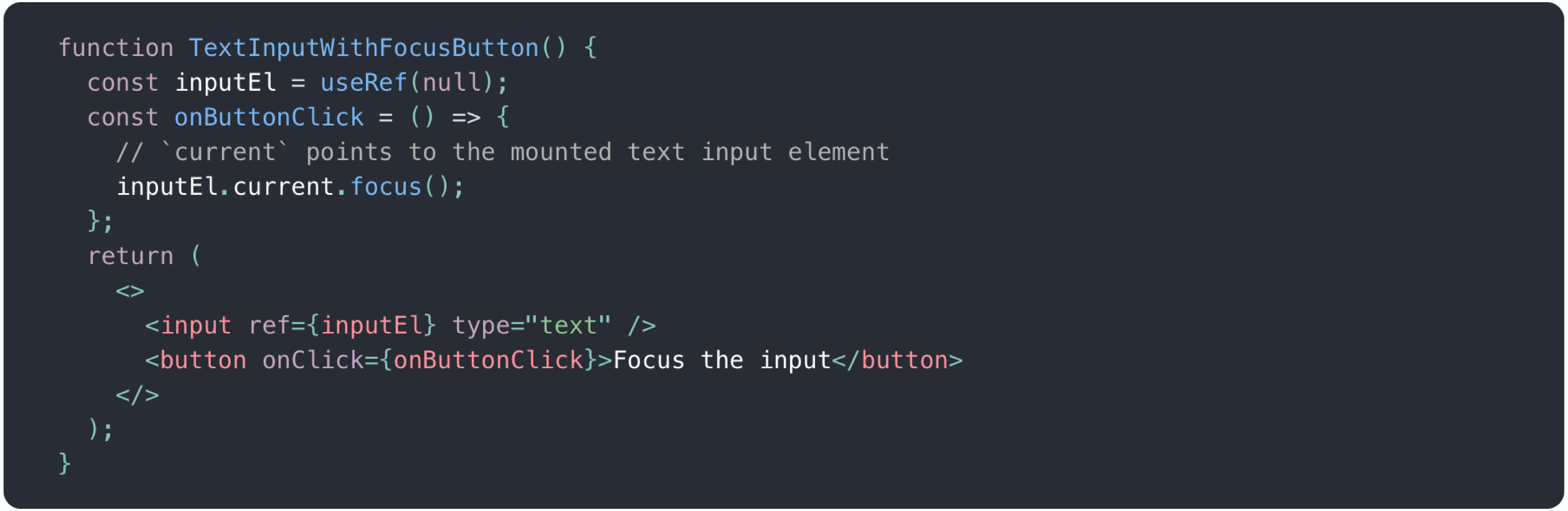
- useReducer
- useCallback
- useMemo
- useRef
- useImperativeHandle
- useLayoutEffect
- useDebugValue
- useDeferredValue
- useTransition
- useId



```
function init(initialCount) {
  return {count: initialCount};
}

function reducer(state, action) {
  switch (action.type) {
    case 'increment':
      return {count: state.count + 1};
    case 'decrement':
      return {count: state.count - 1};
    case 'reset':
      return init(action.payload);
    default:
      throw new Error();
  }
}

function Counter({initialCount}) {
  const [state, dispatch] = useReducer(reducer, initialCount, init);
  return (
    <>
      Count: {state.count}
      <button
        onClick={() => dispatch({type: 'reset', payload: initialCount})}>
        Reset
      </button>
      <button onClick={() => dispatch({type: 'decrement'})}>-</button>
      <button onClick={() => dispatch({type: 'increment'})}>+</button>
    </>
  );
}
```

```
const memoizedCallback = useCallback(
  () => {
    doSomething(a, b);
  },
  [a, b],
);
```

```
const memoizedValue = useMemo(() => computeExpensiveValue(a, b), [a, b]);
```



```
function TextInputWithFocusButton() {
  const inputEl = useRef(null);
  const onButtonClick = () => {
    // `current` points to the mounted text input element
    inputEl.current.focus();
  };
  return (
    <>
      <input ref={inputEl} type="text" />
      <button onClick={onButtonClick}>Focus the input</button>
    </>
  );
}
```

```
function FancyInput(props, ref) {
  const inputRef = useRef();
  useImperativeHandle(ref, () => ({
    focus: () => {
      inputRef.current.focus();
    }
  }));
  return <input ref={inputRef} ... />;
}
FancyInput = forwardRef(FancyInput);
```

```
useLayoutEffect(
  () => {
    const subscription = props.source.subscribe();
    return () => {
      subscription.unsubscribe();
    };
  },
  [props.source],
);
```

```
function useFriendStatus(friendID) {
  const [isOnline, setIsOnline] = useState(null);

  // ...

  // Show a label in DevTools next to this Hook
  // e.g. "FriendStatus: Online"
  useDebugValue(isOnline ? 'Online' : 'Offline');

  return isOnline;
}
```

```
function Typeahead() {
  const query = useSearchQuery('');
  const deferredQuery = useDeferredValue(query);

  // Memoizing tells React to only re-render when deferredQuery changes,
  // not when query changes.
  const suggestions = useMemo(() =>
    <SearchSuggestions query={deferredQuery} />,
    [deferredQuery]
  );

  return (
    <>
      <SearchInput query={query} />
      <Suspense fallback="Loading results...">
        {suggestions}
      </Suspense>
    </>
  );
}
```

```
function App() {
  const [isPending, startTransition] = useTransition();
  const [count, setCount] = useState(0);

  function handleClick() {
    startTransition(() => {
      setCount(c => c + 1);
    })
  }

  return (
    <div>
      {isPending && <Spinner />}
      <button onClick={handleClick}>{count}</button>
    </div>
  );
}
```

```jsx
function Checkbox() {
  const id = useId();
  return (
    <>
      <label htmlFor={id}>Do you like React?</label>
      <input id={id} type="checkbox" name="react"/>
    </>
  );
};
```

Library Hooks

- useSyncExternalStore
- useInsertionEffect

```
const selectedField = useSyncExternalStore(
  store.subscribe,
  () => store.getSnapshot().selectedField,
  () => INITIAL_SERVER_SNAPSHOT.selectedField,
);
```

```
useInsertionEffect(
  () => {
    const subscription = props.source.subscribe();
    return () => {
      subscription.unsubscribe();
    };
  },
  [props.source],
);
```

Custom Hooks

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

function useFriendStatus(friendID) {
  const [isOnline, setIsOnline] = useState(null);

  useEffect(() => {
    function handleStatusChange(status) {
      setIsOnline(status.isOnline);
    }

    ChatAPI.subscribeToFriendStatus(friendID, handleStatusChange);
    return () => {
      ChatAPI.unsubscribeFromFriendStatus(friendID, handleStatusChange);
    };
  });

  return isOnline;
}
```

Live Coding

https://codesandbox.io/s/useasync-hook-b7z69y?file=/src/App.js