React : The Big Picture

Monday, 8 October 2018 7:41 PM

- Good Source: https://app.pluralsight.com/library/courses/react-big-picture/table-of-contents
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- Each React component is a separate concern.
- **React Native** is a related library to react used to make native ios and android apps.
- React was developed by facebook and then open sourced.
- JSX used by React is an HTML-like language that compiles to JavaScript.
- React's virtual DOM improves performance by minimizing DOM changes.

Why React

- **Flexibility:** rendering is separated from react. Can be used to make a variety of things like web apps, native mob apps, desktop apps, etc. https://github.com/chentsulin/awesome-react-renderer
- **Developer Experience:**
  - Uses HTML inside JS (opposite of other frameworks like angular, vue.js etc.) which instead of making HTML powerful and making you learn their methods you use power of JS.
  - Also after every save changes are reflected in browser.
  - Whenever facebook has made a breaking change in react it gave a **codemod** to update your code.
- **Performance**: Updates **using Virtual** DOM which is highly effective.
- **Testability**: It makes testing front end easy . Tries to use **Pure Functions**.
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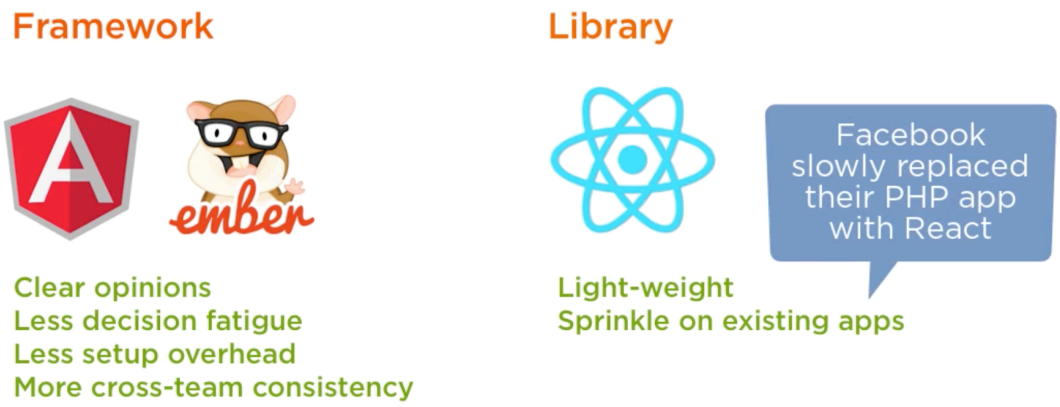
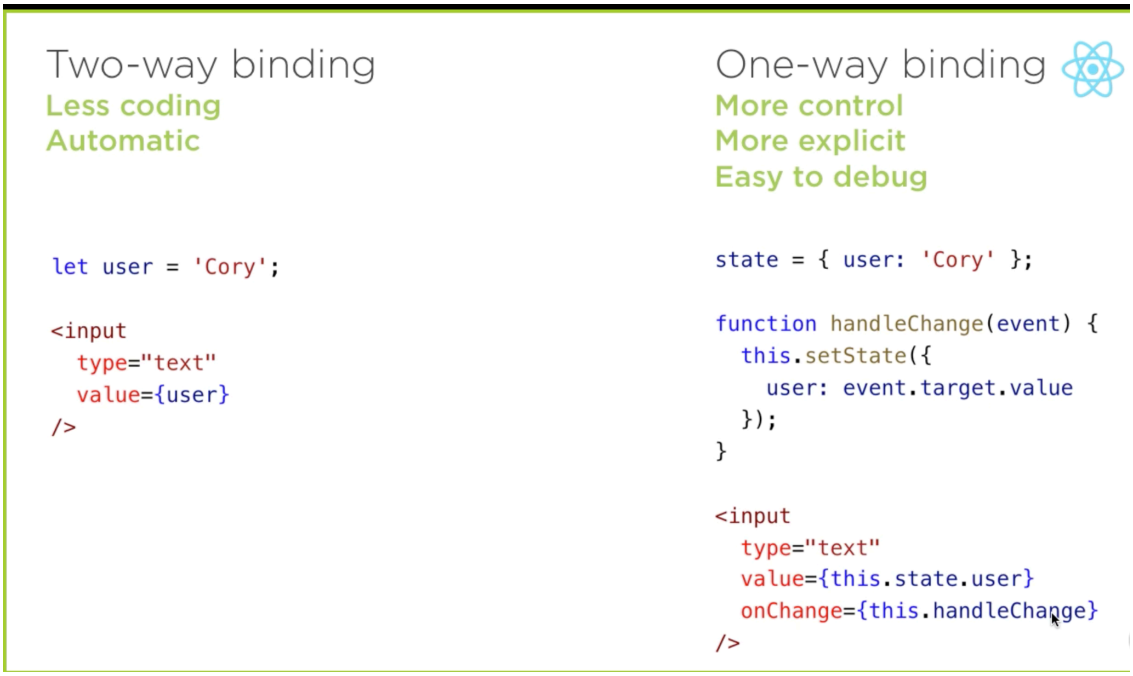
Traditional UI tests	React
Hassle to set up	Little to no config required
Requires browser	Run in-memory via Node
Slow	Fast
Brittle integration tests	Reliable, deterministic unit tests

Time-consuming to write, maintain | Write quickly, update easily

Trade Offs:

1. 

2. 

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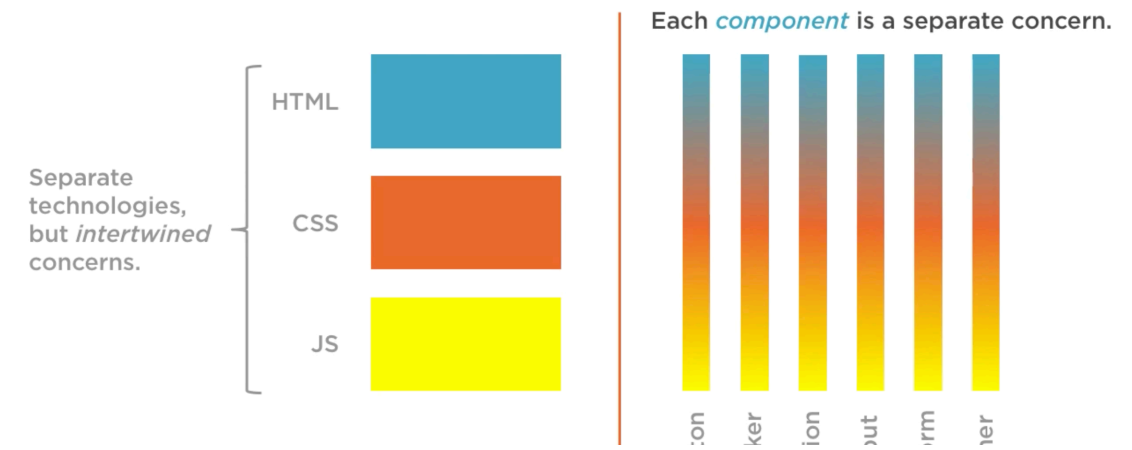
4. 

Benefit of React's single file approach:
You can read, understand, and work with each autonomous file in isolation.

React Disadvantages & solutions.

- **HTML and JSX differ: JSX** is 99% HTML. Only 4-5 line differences. We also have online convertors for it.
- **Build Step Required:** Build Step is required to convert JSX to JS. This does not matter now as every framework uses it.
- **IMPORTANT: Version Conflicts:** 2 version of react cannot run at same time on same page or else will lead to version conflict as it uses **Runtime**. So need to keep react component at same version. Also needs to run compatible versions of other react libraries. Also easy to upgrade using facebook's **codemon** libraries.
- **Outdated Resources:** Online sources come in react searches are for older version and outdated content creates problem.
- **Decision Fatigue**: Many options creates confusion. Main decisions to be taken:
    - **Dev Environment** (recommended use: **create-react-app**)
    - **ES class or createClass** (ES class recommended as is latest)
    - **Types** (recommended: **proptypes** over typescript or flow unless you need typesafety)
    - **State** (mostly new libraries not needed. **Redux** can be used.)
    - **Styling** (use Traditional CSS to start).