React and Flux: Dissecting Innovation by Cory House

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Innovations

1. **JSX**
    a. **"HTML" in JavaScript (as opposed to Angular/KO/Ember who put "JS" in HTML)**
    b. **Compiles to JavaScript**
    c. **Optional – Can just write plain JS instead since that's what JSX compiles to**
    d. **Some minor differences like className, htmlFor**
    e. **Actually useful having JS and HTML in same file – they must stay in sync and there's no interface**
2. **Virtual DOM**
    a. **Updating the DOM is expensive**
    b. **Compares current state to new state. Updates DOM in most efficient way.**
    c. **Delivers exceptional performance**
    d. **Not just about performance. Enables React Native, synthetic events, and Isomorphic JS as well.**
3. **Hot Reloading**
    a. **Don't lose client-side state when editing code**
    b. **See your changes without a browser refresh**
4. **Isomorphic Rendering**
    a. **Run the same code on the client and server**
    b. **Better perceived performance**
    c. **SEO – Full HTML is sent to browser**
    d. **Maintainability – Use single tech and code base for server and client.**
5. **Unidirectional Data Flow**
    a. **Two-way binding can create unpredictable data flows**
    b. **Flux utilizes a unidirectional flow so data flows are easy to reason about and debug**
    c. **Actions are things that happen in the UI. They're triggered by React**
    d. **The dispatcher tells everyone about the action that just happened**
    e. **Stores respond to the dispatcher and update data accordingly**