



React Pre-requisites

Before we start...

- Ask questions 🙋
- It's okay to take a break 😊
- Self-study post sessions 📖
- Teamwork 👥

Things to know before learning React...

- ES6
- JSX
- Virtual Dom
- Single Page App
- NodeJS
- Node Package Manager (npm)

Bonus (if time permits)

- How Browsers Work?
- Open questions (Regarding Web, Front End, CSS, DOM, JavaScript)

What is ES6?

- **ES6** refers to version 6 of the ECMA Script programming language.
- Not all features of ES6 are supported by all the browsers yet.
- Libraries such as **babel.js** are used to **transpile** ES6 code to ES5 (version that is supported by all the browsers) using a process called **Transpilation**

What is Transpilation?

Example

Consider the following code:

Arrow Functions (ES6)

```
var names = [  
  'Pranay',  
  'Rahat',  
  'Girish'  
];  
  
console.log(names.map(name => name));
```

Transpilation

ES5

```
var names = [  
  'Pranay',  
  'Rahat',  
  'Girish'  
];  
  
console.log(names.map(function (name) {  
  return name;  
}));
```

Why bother transpiling? 🤔

- ES6 provides more modern APIs which are much cleaner & safer, that will eventually be supported by all the browsers.
- Transpiling allows developer to right the latest JS features today without waiting for it to be supported by all the browsers in the future.
- Once all the browsers support ES6 — transpiling phase can simply be removed from the build process.
- Future versions (such as ES7) can also be used even when ES6 matures and is widely supported.

Demo

<https://babeljs.io/en/repl>

What is JSX?

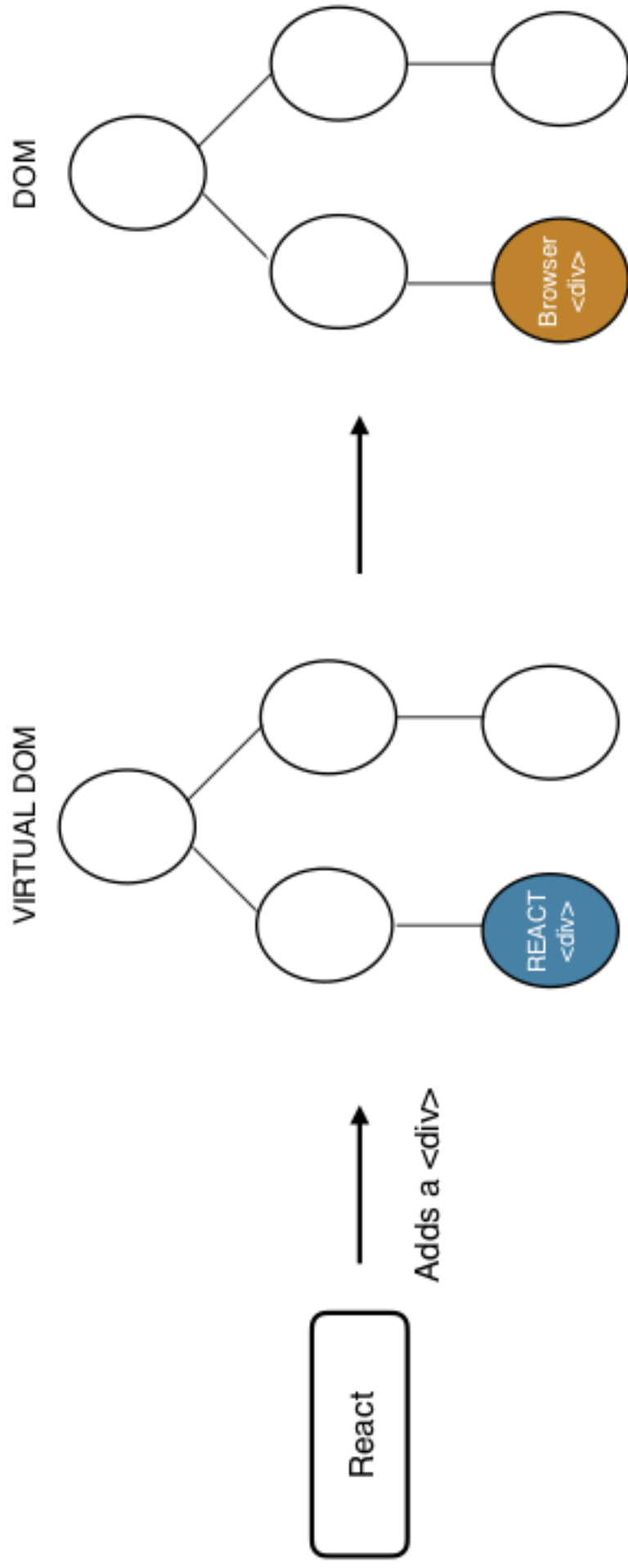
- **JSX** is neither JavaScript nor HTML. It is a combination of JS + HTML that is a syntactic extension of the JS language
- JSX is also one of the transpiled language — meaning it's not supported by the browser.
- **React transpiles JSX** (using babel.js) to output what is called as React Components. (more on this when we start learning React)

Demo

<https://jsfiddle.net/reactjs/69z2wepo/>

What is a Virtual DOM?

- React maintains its own version of DOM which is essentially a **BluePrint** of the Browser's DOM.
- Any change in React components is done to the Virtual DOM (VDOM) and then copied to the actual DOM.
- VDOM maintains the state of the DOM and diffs between actual DOM and the changes made to it anytime a DOM node is updated/removed/added.



Why bother with the virtual DOM? 🤔

- DOM traversal is time consuming and state management is very difficult once the size of the html increases.
- Virtual DOM manages that state of the DOM and makes **intelligent** manipulations whenever a react component is changed to update the DOM
- Virtual DOM is **not part of React** but a stand alone project/library that React utilises.

Demo

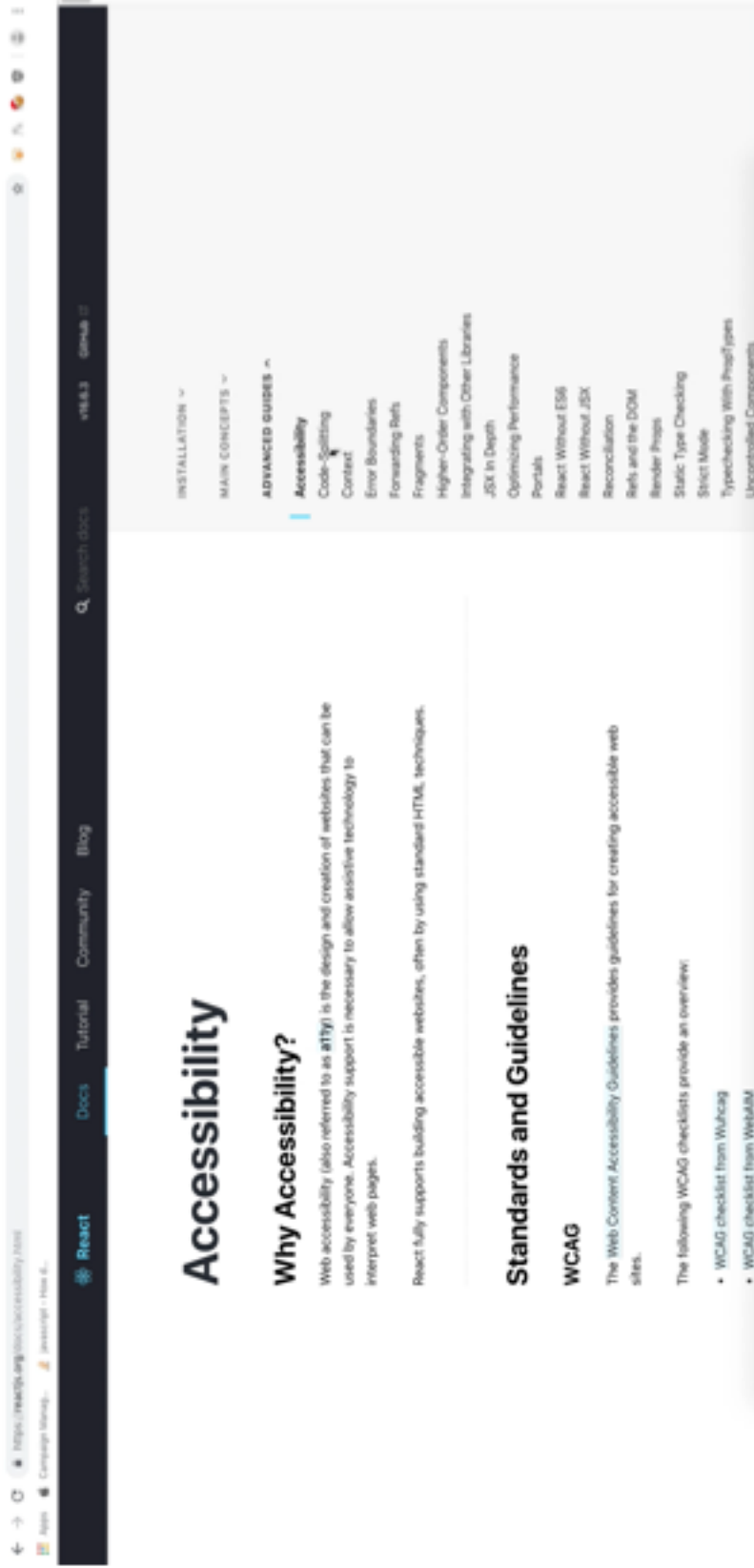
<https://jsfiddle.net/c4g3fwou/1/>

What is a Cinelo Data App?

What is a Single Page App:

- Single Page App (SPA) dynamically load parts of the page while routing unlike traditional web based application where the entire page re-loads when a link is clicked.

Building a Web App



Traditional Web App

Website for APP



Popular websites using SPA

- **Facebook**
- **Amazon**
- **Flipkart**

What is Node.js?

- Running JS on the Server.
- Follows same characteristics of the browser (except a few things)
- Light-weight-single-threaded non-blocking I/O 😊

What is npm?

- Stands for **Node Package Manager**
- Used to install and manage node packages (i.e libraries)
- Comes bundled as part of a Node.js installation.



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