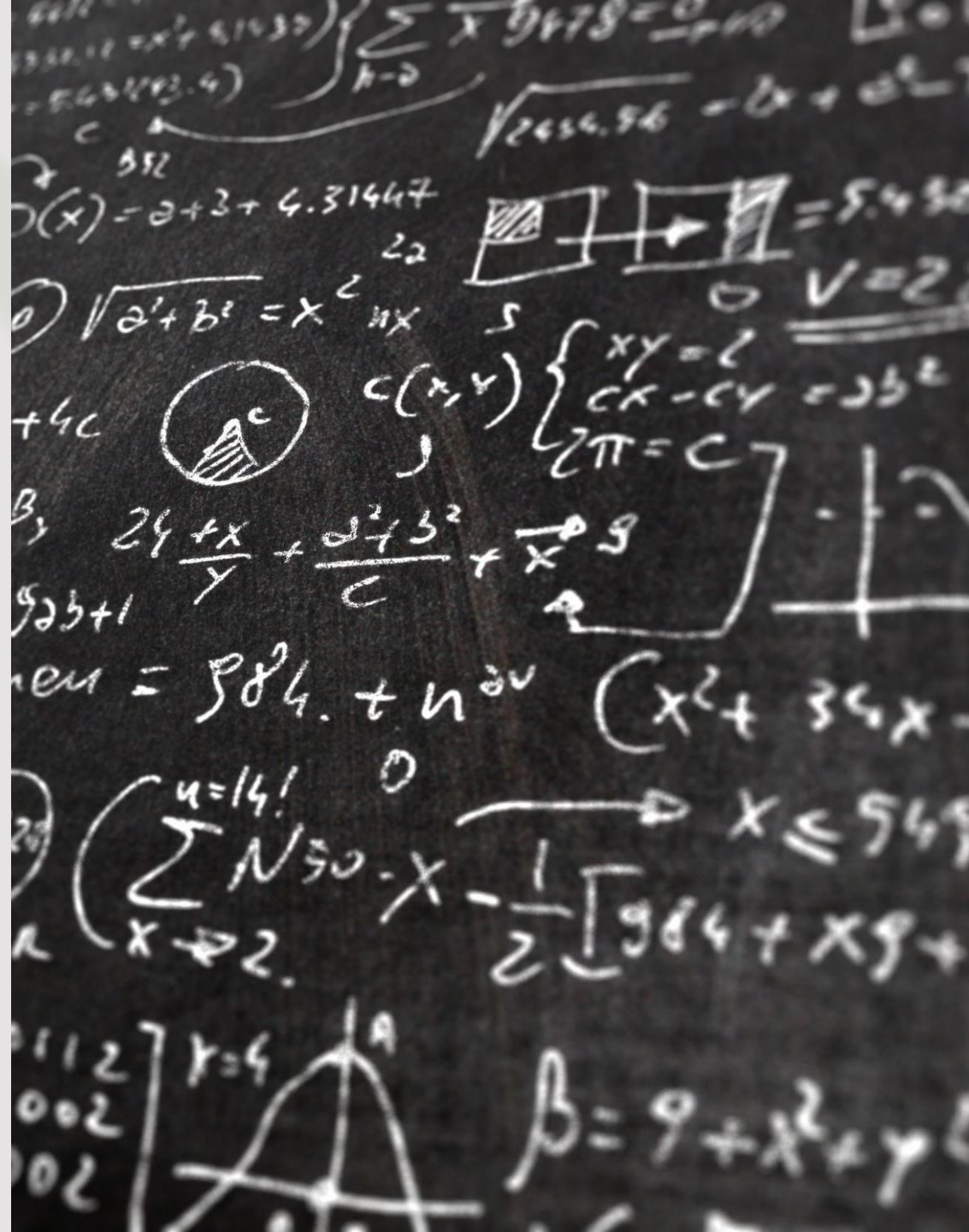


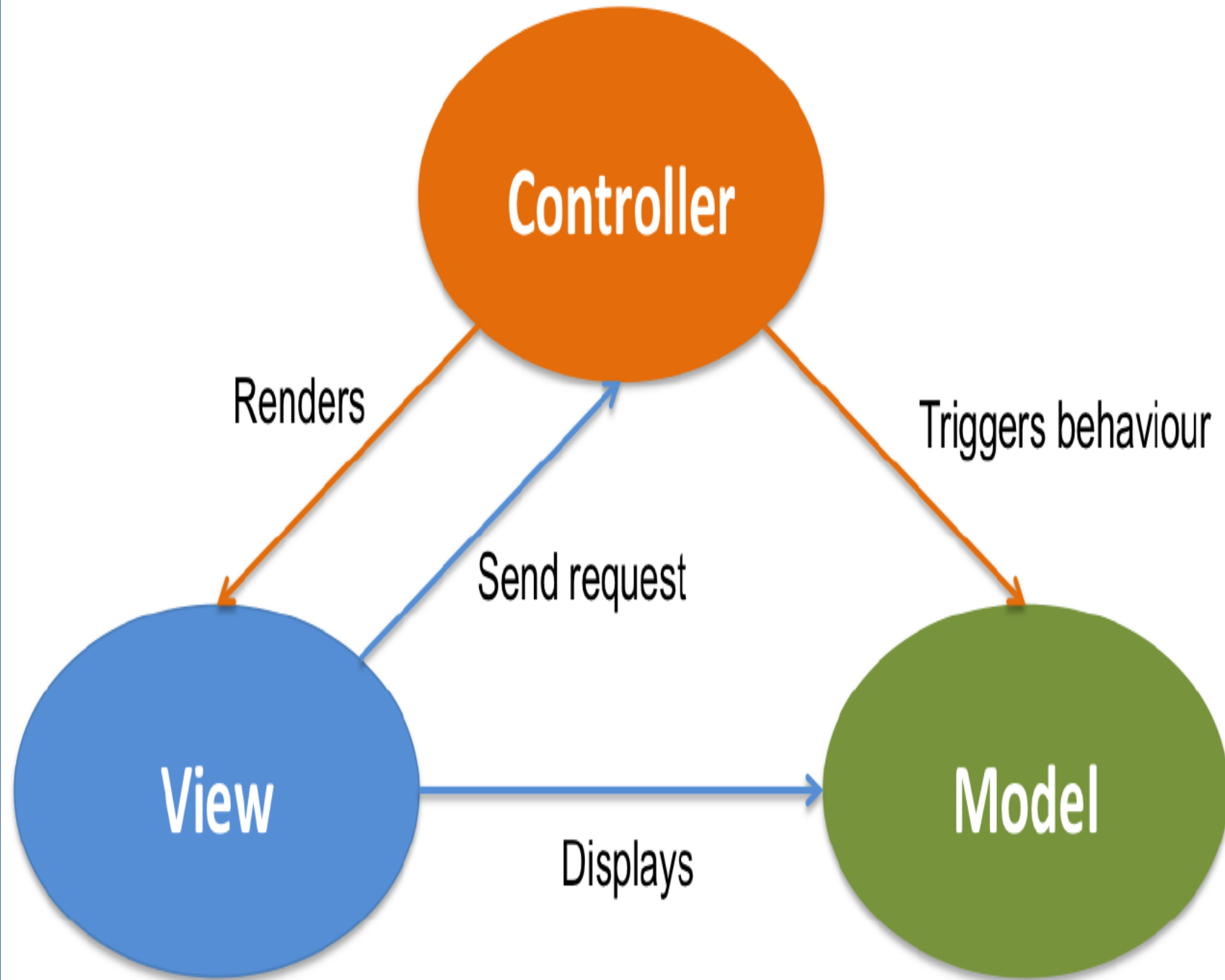
# Introduction to ReactJS

Prof. Andrew Sheehan

Boston University/MET  
Computer Science Dept.



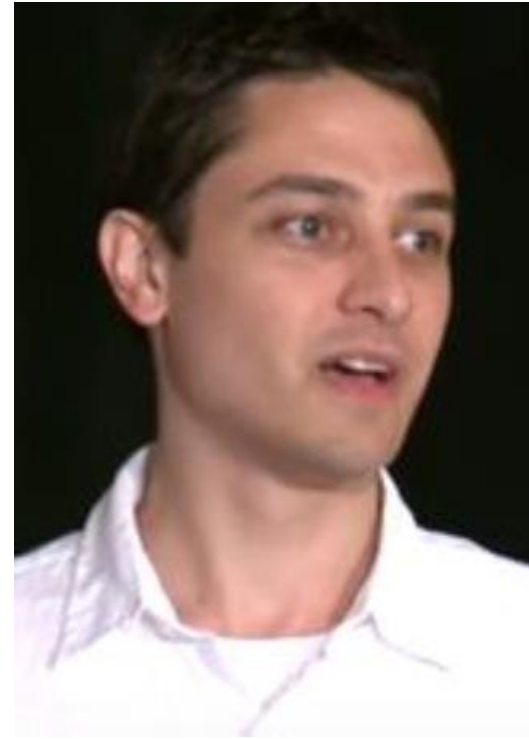
1979: State  
of the Art



What is React?

React is a JavaScript  
library for building  
user interfaces

Jordan Walke



React was created by Jordan Walke

A Software Engineer at Facebook (2013)

facebook

HomeProfileFriendsInbox

Jason B. StandingSettingsLog out

Search

Welcome, Jason. You have 1 event invitation.

News Feed

London

Public Profiles

Photos

Links

Video

More

What's on your mind?

Share



is outta here. Peace!

about a minute ago · Comment · Like



is finding old friends :)

6 minutes ago · Comment · Like



Take this quiz with me!

Sarah just took the Dr. Phil's Personality Test quiz.

The Careful Prodder Your friends see you as very cautious, extremely careful, a slow and steady plodder. It would really surprise them if you ever did something impulsively or on the spur of the moment, expecting you to examine everything carefully from every angle and then, usually decide against it. They think this reaction is caused partly by your careful nature.

Take this quiz · See Other Quizzes

9 minutes ago · Comment · Like · Take this Quiz · See Other Quizzes



(sigh) Mr4 decided that turning off the power to the naked-DSL router would be "fun".

9 minutes ago · Comment · Like



is a pokemon. "What Pokemon Are You?" I can be: Squirtle.

Pokemonist

Sarah took What Pokemon Are You? quiz and the result is Squirtle. You are squirtle, you are always pily and popular to be around. You can be counted on for a good time.

10 minutes ago · Comment · Like · Take this Quiz · See other Quizzes

likes this.

TODAY

See More



The PTA Lost Your Mobile Numbers Foundation

Now



birthday - Send a gift

birthday - Send a gift

HIGHLIGHTS

flaming capers

and are tagged.

1



Plan your future finance.



Free CD-Rom from Age Concern helps you check that you're saving enough money to have the retirement lifestyle you hope for.

Sponsored by



Masquerade Party

2 friends are attending. RSVP to this event



Three things

by

1



I love sex!

25 friends are fans. Become a Fan



I know 2

by

Initial Use

Newsfeed

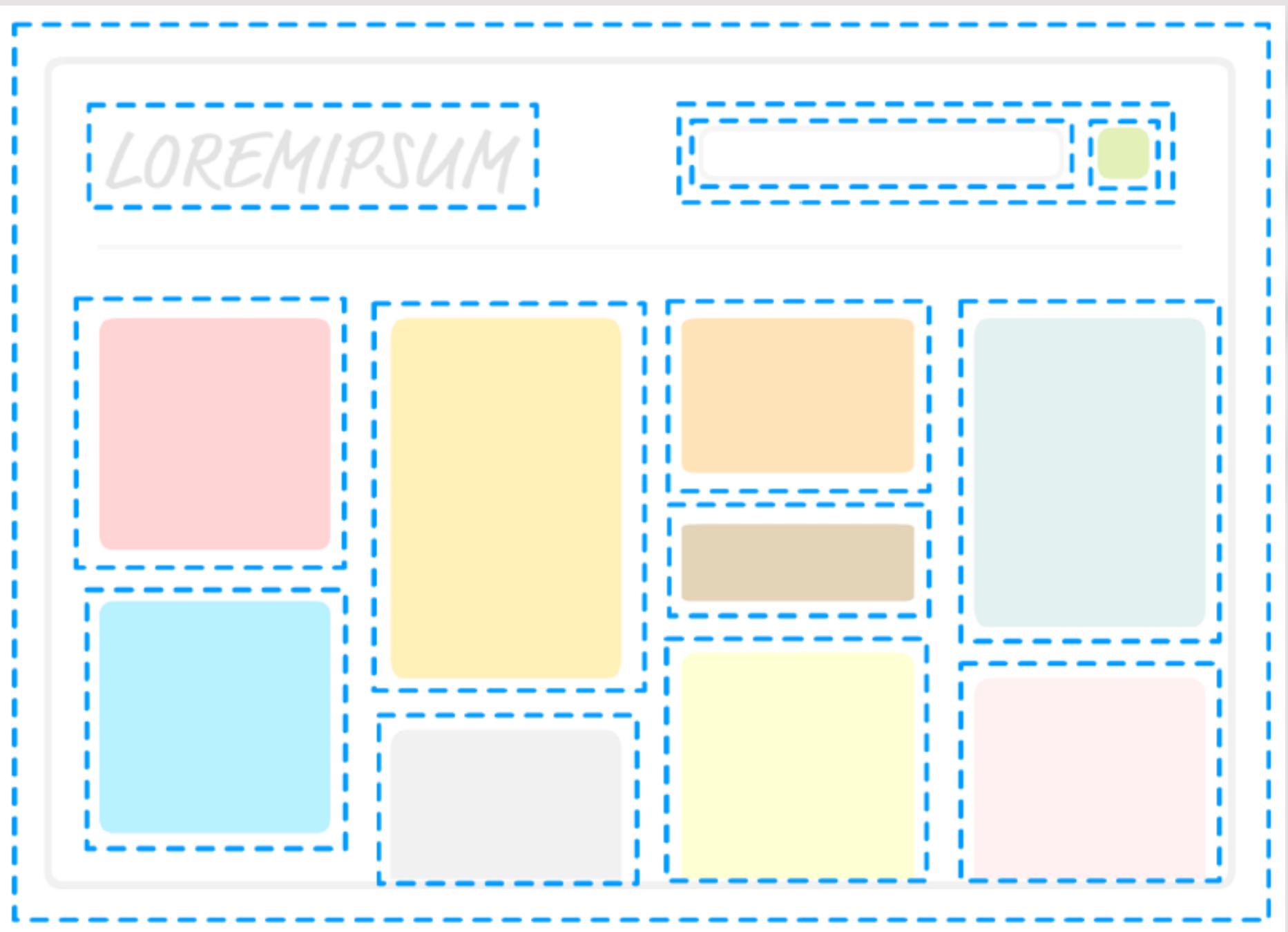


FIRST

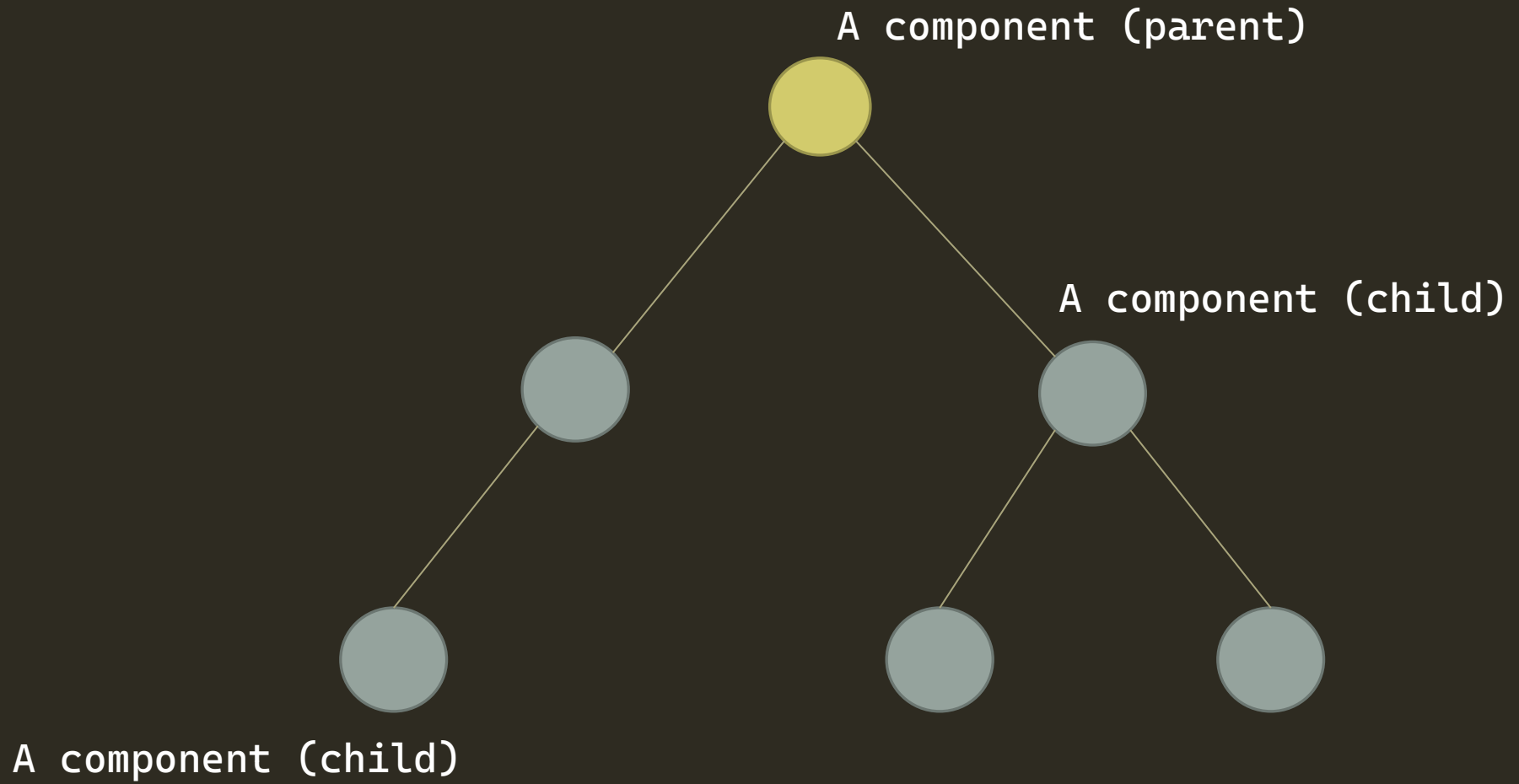
EXTERNAL USE



# React is driven by Components



# PARENT AND CHILD RELATIONS





# THE 'ROOT' ELEMENT

```
1  <!doctype html>
2  <html lang="en">
3    <head>
4      <meta charset="utf-8">
5      <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">
6      <meta name="theme-color" content="#000000">
7      <link rel="manifest" href="%PUBLIC_URL%/manifest.json">
8      <link rel="shortcut icon" href="%PUBLIC_URL%/favicon.ico">
9      <title>Hello World</title>
10   </head>
11   <body>
12     <noscript>
13       | You need to enable JavaScript to run this app.
14     </noscript>
15
16     <div id="root"></div>
17
18   </body>
19 </html>
```

Data flow is  
**unidirectional**



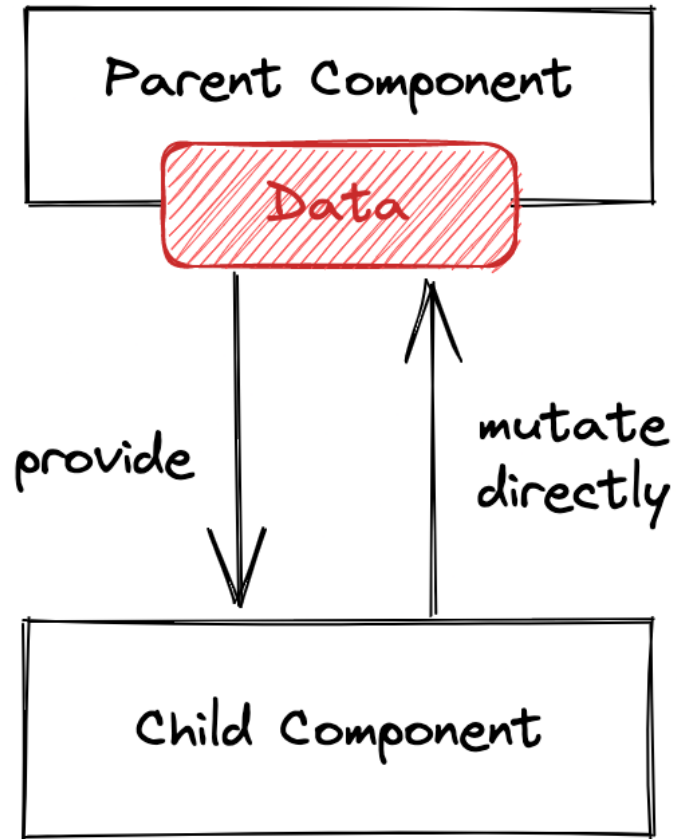
From parent to  
children

Top to bottom

# DATA BINDING

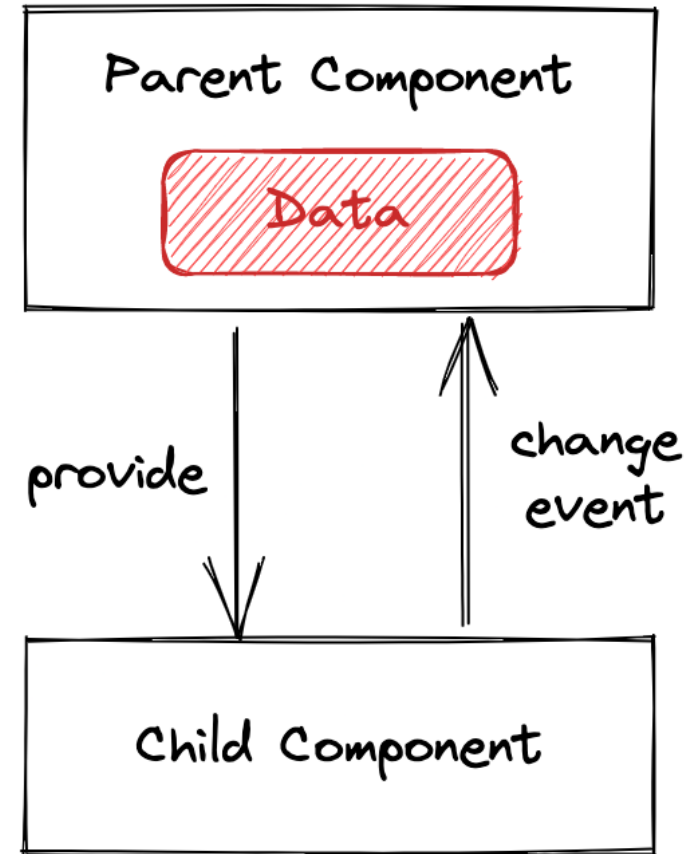
## Two-way Data Binding

AngularJS



## One-way Data Binding

React, Vue, Angular



```
const elem = <h1>Hi</h1>
```



# Virtual DOM

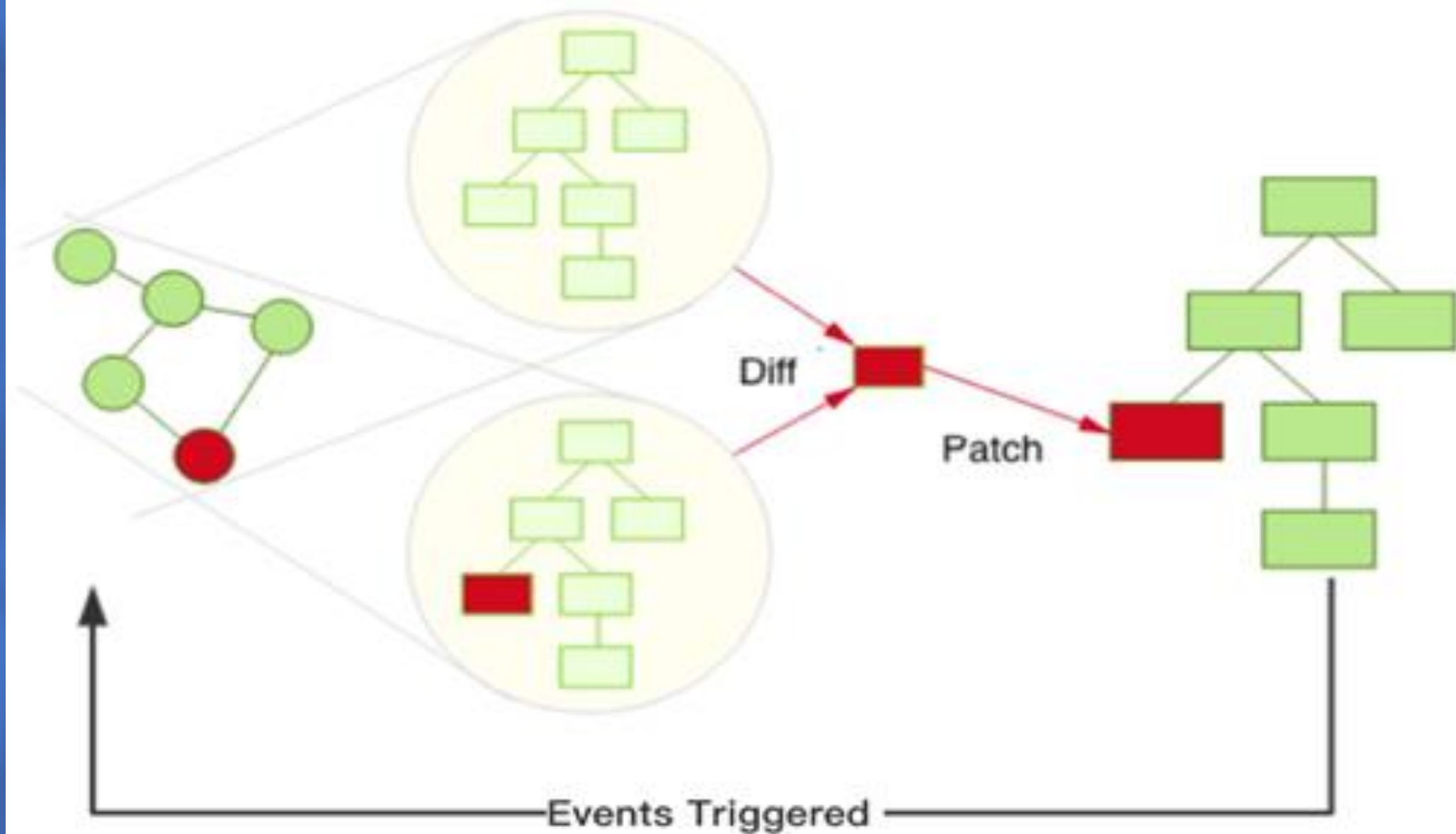
The Virtual DOM (VDOM) is a lightweight representation of the physical DOM

At any point in time there are 2 copies of VDOM present in memory, the old tree and the updated changes. React finds the differences between them and applies it **as a patch** to the browser.

Model

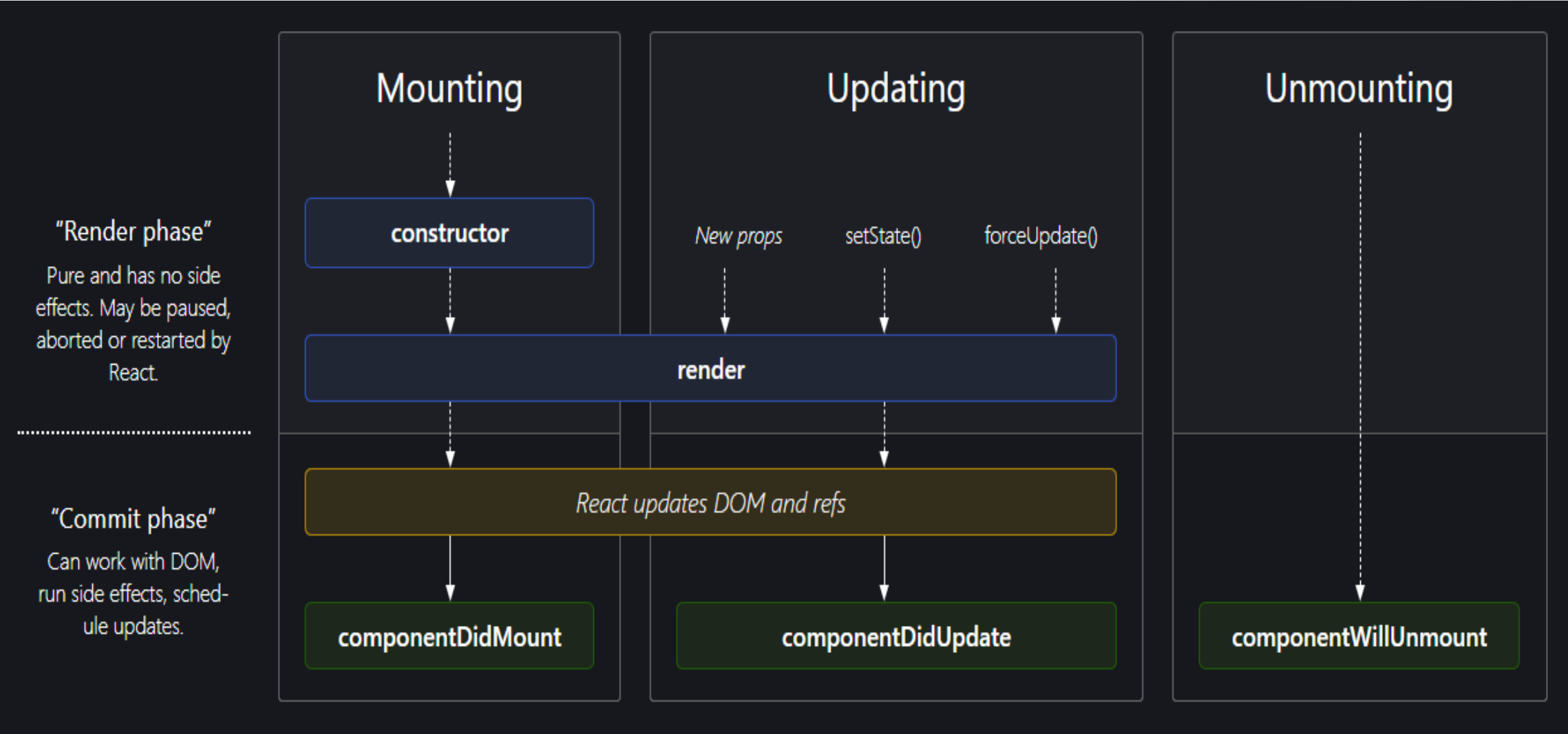
Virtual DOM

DOM





# Lifecycle Methods



Components can be simple HTML

```
const elem = <div>Weather</div>;
```

Components can use user-defined objects

```
const elem = <Weather low='15' high='30' />
```

HTML or  
User-Component

# ES6 CLASS APPROACH

```
import React, {Component} from 'react';

class FirstComponent extends Component {
  render() {
    return (
      <h1>Hi There. Welcome to React!</h1>
    );
  }
}
```