REACT.JS

A JavaScript library for building user interfaces

THE INTERNET

World Wide Web

The WorldWideWeb (W3) is a wide-area hypermedia information retrieval initiative aiming to give universal access to a large universe of documents.

Everything there is online about W3 is linked directly or indirectly to this document, including an executive summary of the project, Mailing lists , Policy , November's W3 news , Frequently Asked Questions .

What's out there?
: Pointers to the world's online information, subjects , W3 servers, etc.

Help
: on the browser you are using

Software Products
: A list of W3 project components and their current state. (e.g. Line Mode ,X11 Viola , NeXTStep , Servers , Tools , Mail robot , Library)

Technical
: Details of protocols, formats, program internals etc

Bibliography
: Paper documentation on W3 and references.

People
: A list of some people involved in the project.

History
: A summary of the history of the project.

How can I help ?
: If you would like to support the web..

Getting code
: Getting the code by anonymous FTP , etc.

CAUTION!

anyone
wanna
chill
tn?

Welcome to my
Homepage!

THE INTERNET IS A SERIES OF DOCUMENTS

- Static HTML with inline styling (gradually CSS)
- Some images
- Interactivity mostly meant linking to other pages
- “Brochureware”

BUZZWORD

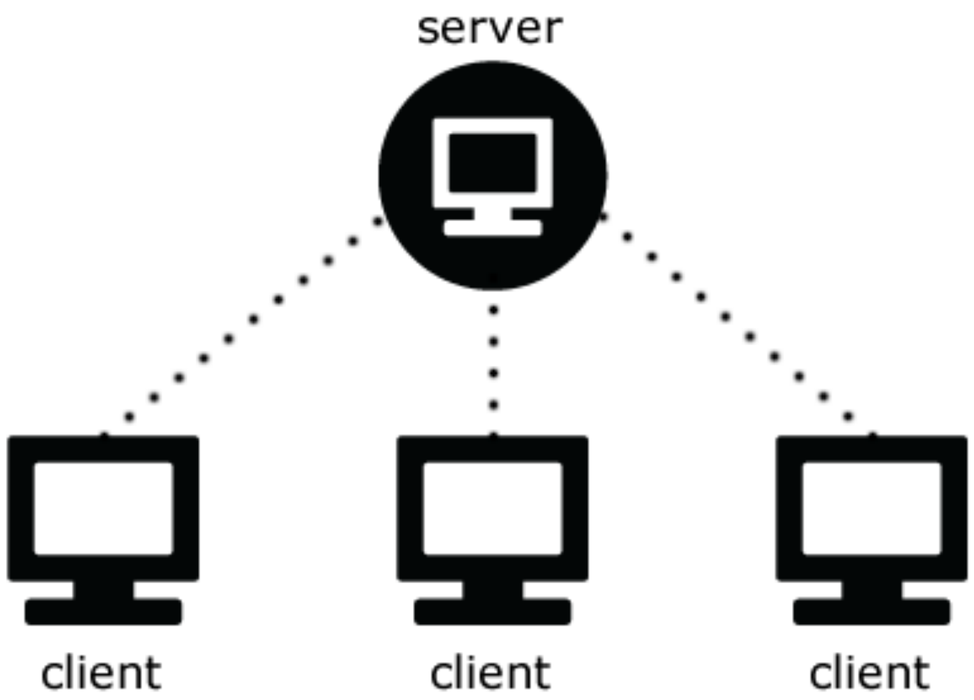
WEB 2.0

THE INTERNET IS A SERIES OF APPLICATIONS

- True interactive applications like Gmail and Google Maps arrive.
- Applications do not refresh; facilitate tons of user events, hardware.
- The browser becomes a maturing application platform.
- “Software”

DRIVEN BY JAVASCRIPT

The little language that could


server
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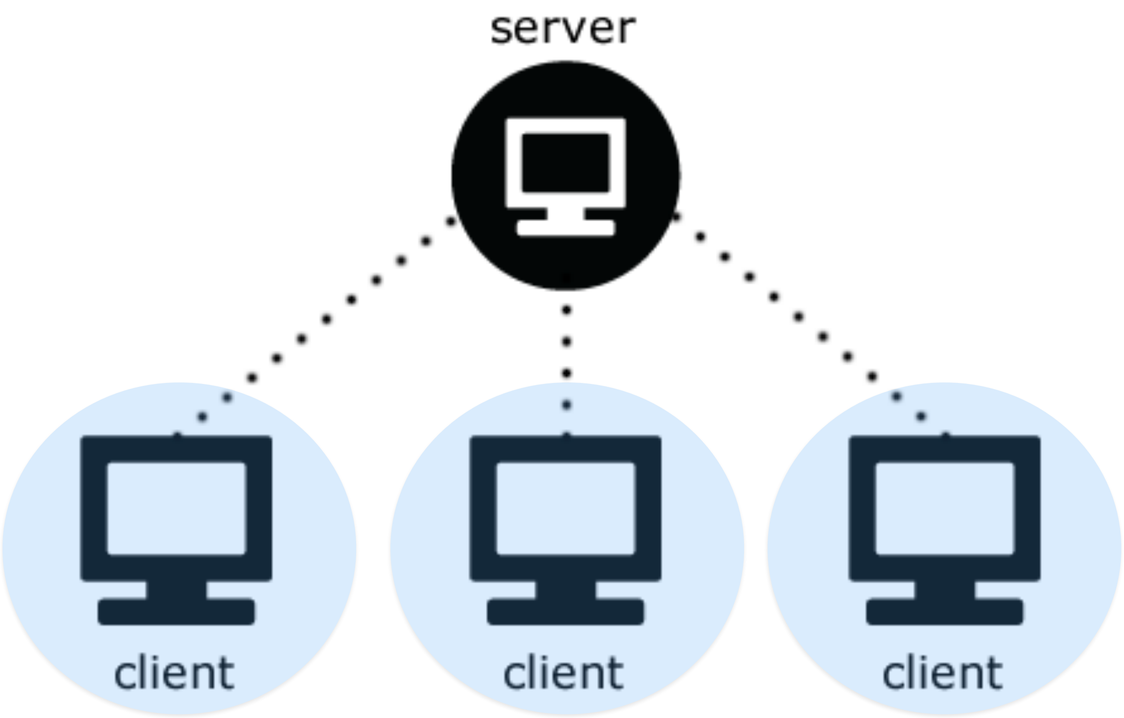
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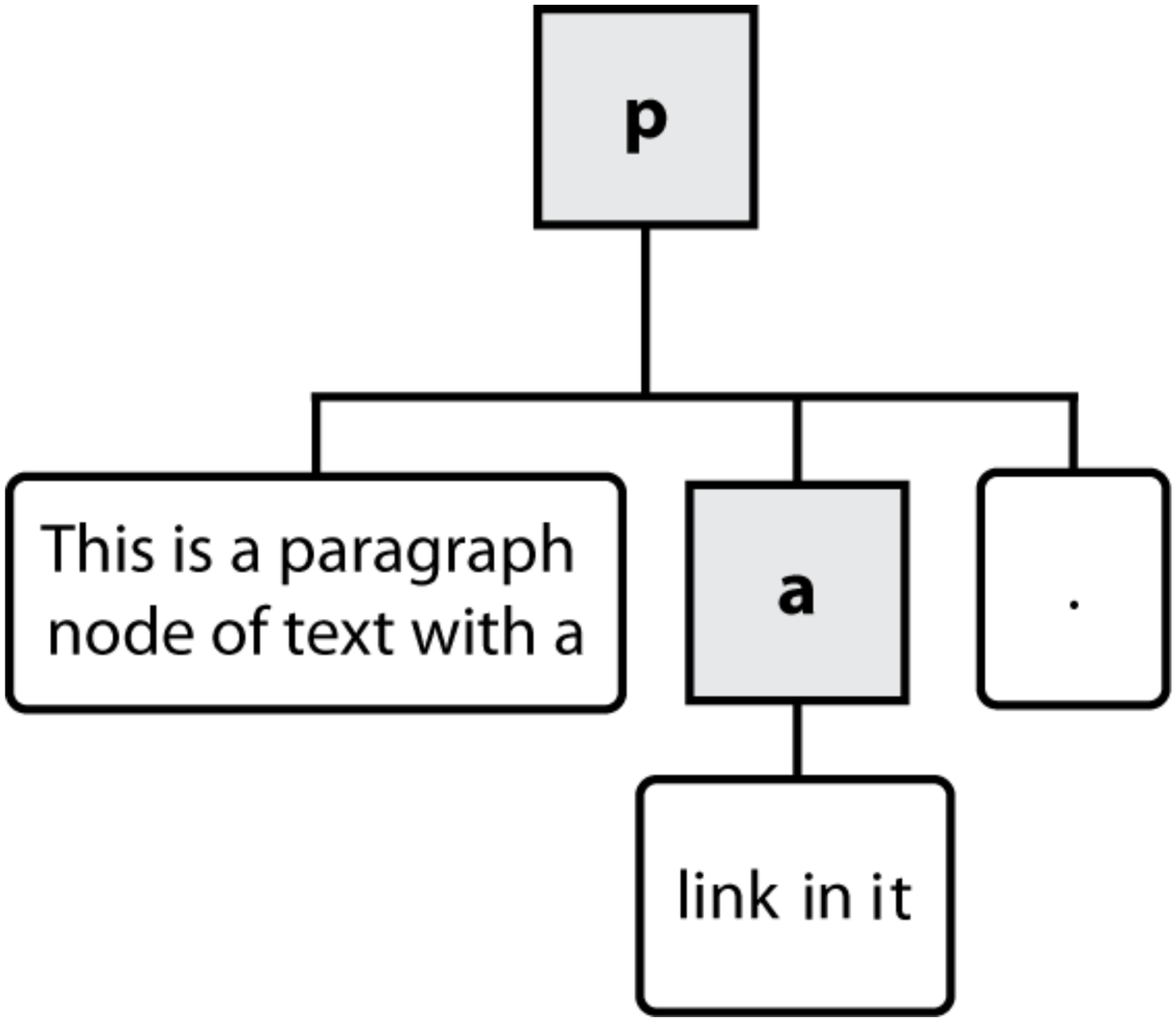
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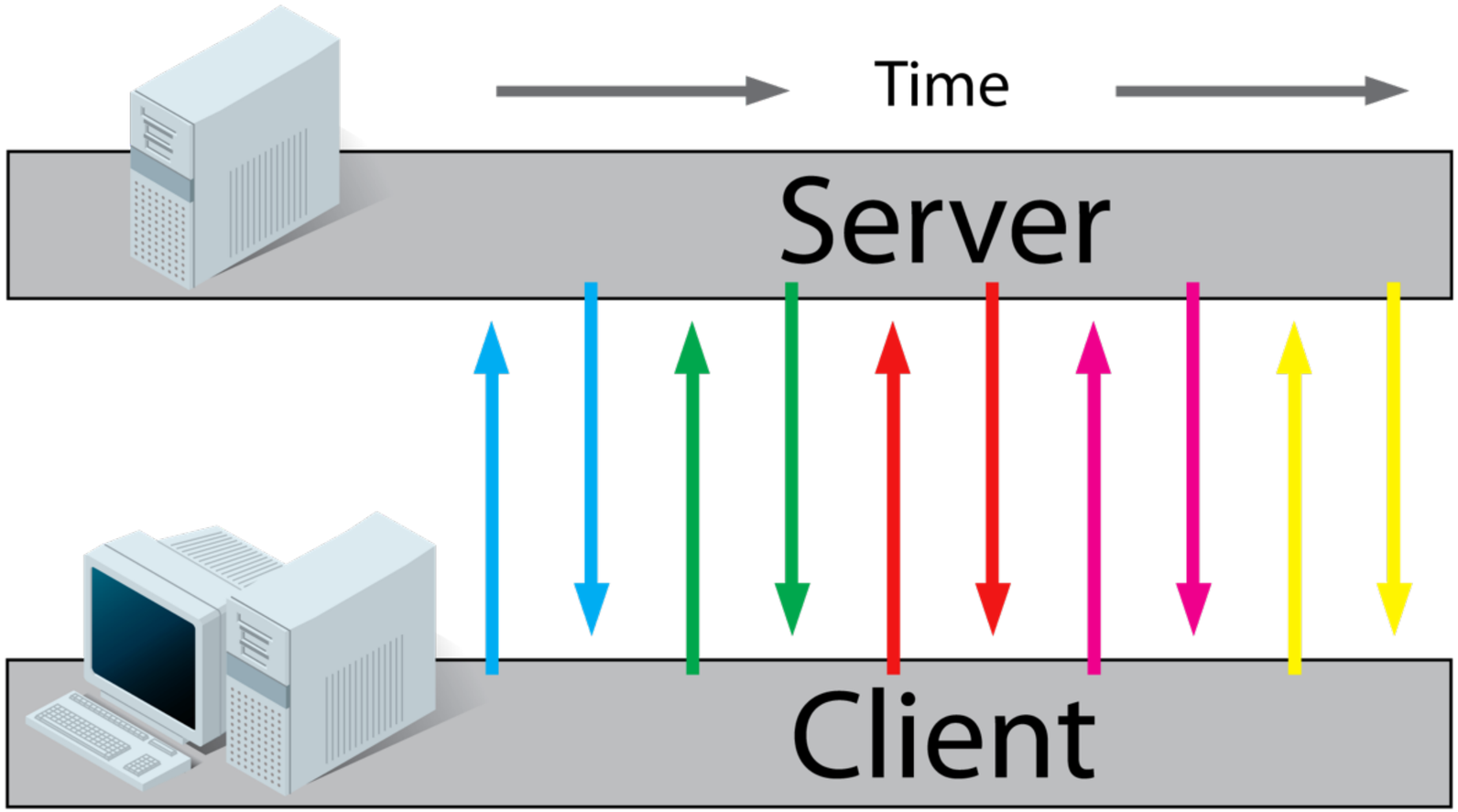
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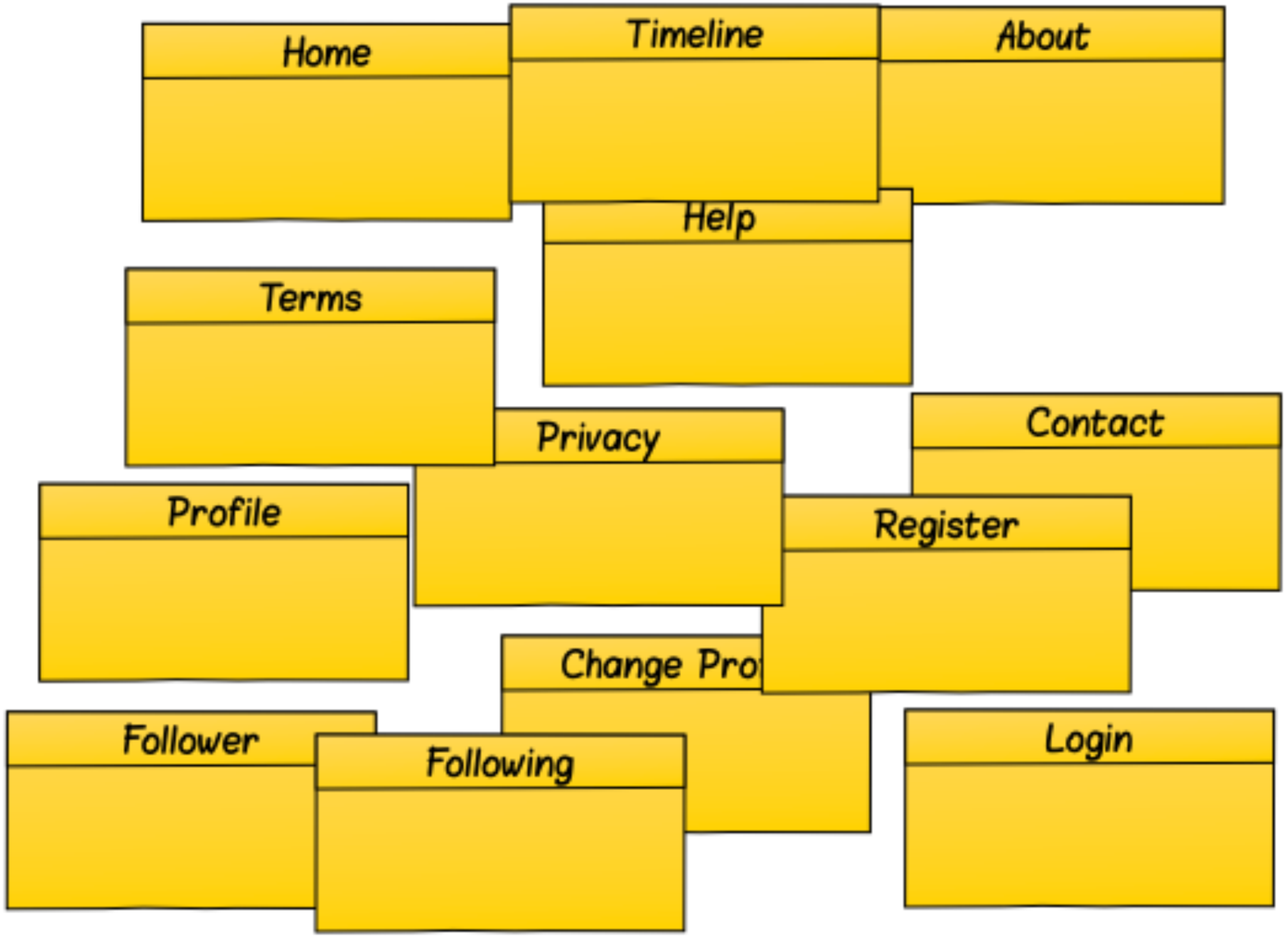
Home
Timeline
About
Help
Terms
Privacy
Contact
Profile
Register
Change Pro
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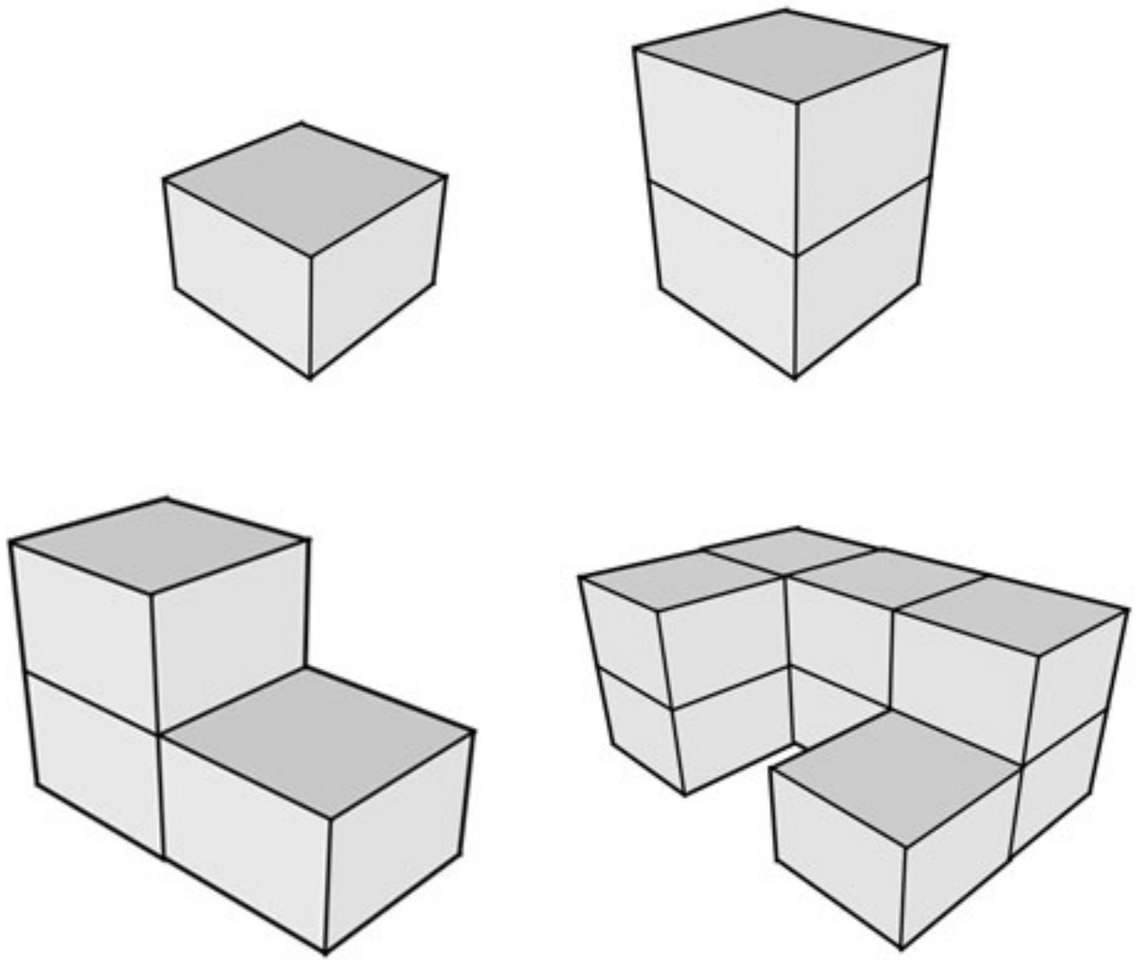
Login



SERIOUS SOFTWARE IS SERIOUS

- Must be easily understood.
- Must be easily maintained.
- Must scale.
- Must work.

“Let’s put the day’s hotels on the DOM node”

Cowboy Coder, 2010

ember

BACKBONE.JS

APPLICATION FRAMEWORK

- Provides generic functionality and environment.
- Establishes reusable patterns and architecture.
- Allows focus on product-specific code.
- Suggests solutions to platform's major problems.

SO EVERYTHING IS OKAY FOREVER, RIGHT?

NOPE!

- **Problems we face**
  - Portability & reusability
  - Performance
  - Managing state and a-synchronicity

PORTABILITY & REUSABILITY

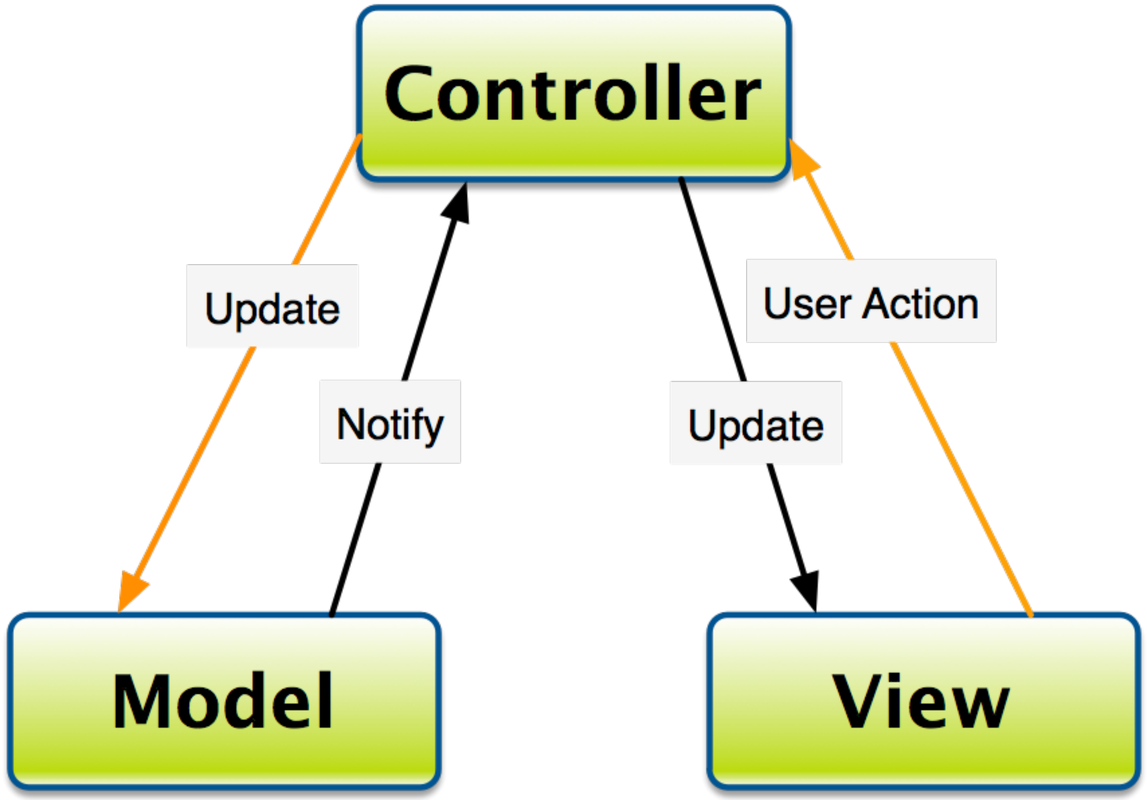
- Code written within a specific framework often has to conform to that framework and/or use domain-specific languages that aren't portable outside that framework
- Difficult to move and re-use existing code when technologies change
- Here in internet-town, technologies change a lot, and quickly!

PERFORMANCE

- Technically speaking, the DOM never imagined that web apps would get this big
- Consequently, mutating the DOM is an expensive operation - each interaction requires things like re-draws, stylesheet recalculation, etc
- User interfaces for web apps need to change the DOM, sometimes a lot

STATE

- Most web frameworks up until recently have been built on the MVC pattern
- The introduction of shared mutable state makes the state of your application difficult to predict
- Existing patterns of data-binding in the DOM can make reacting to a change difficult to predict


Controller
Update
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User Action
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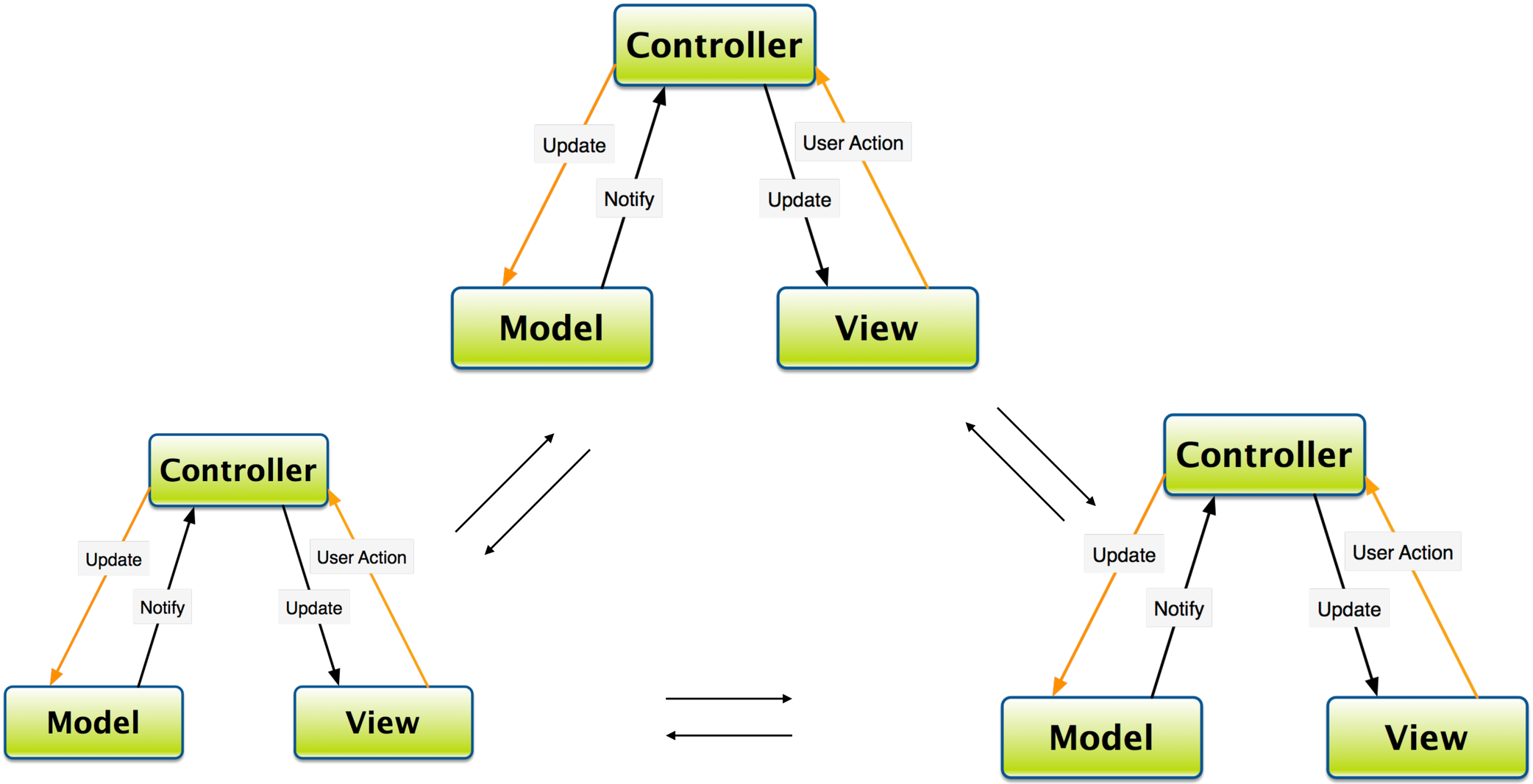
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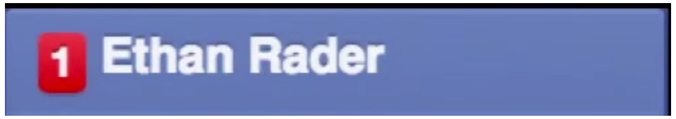
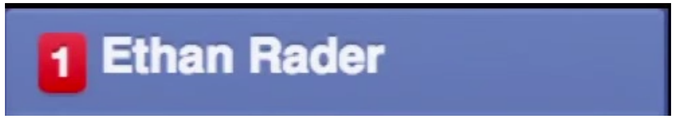
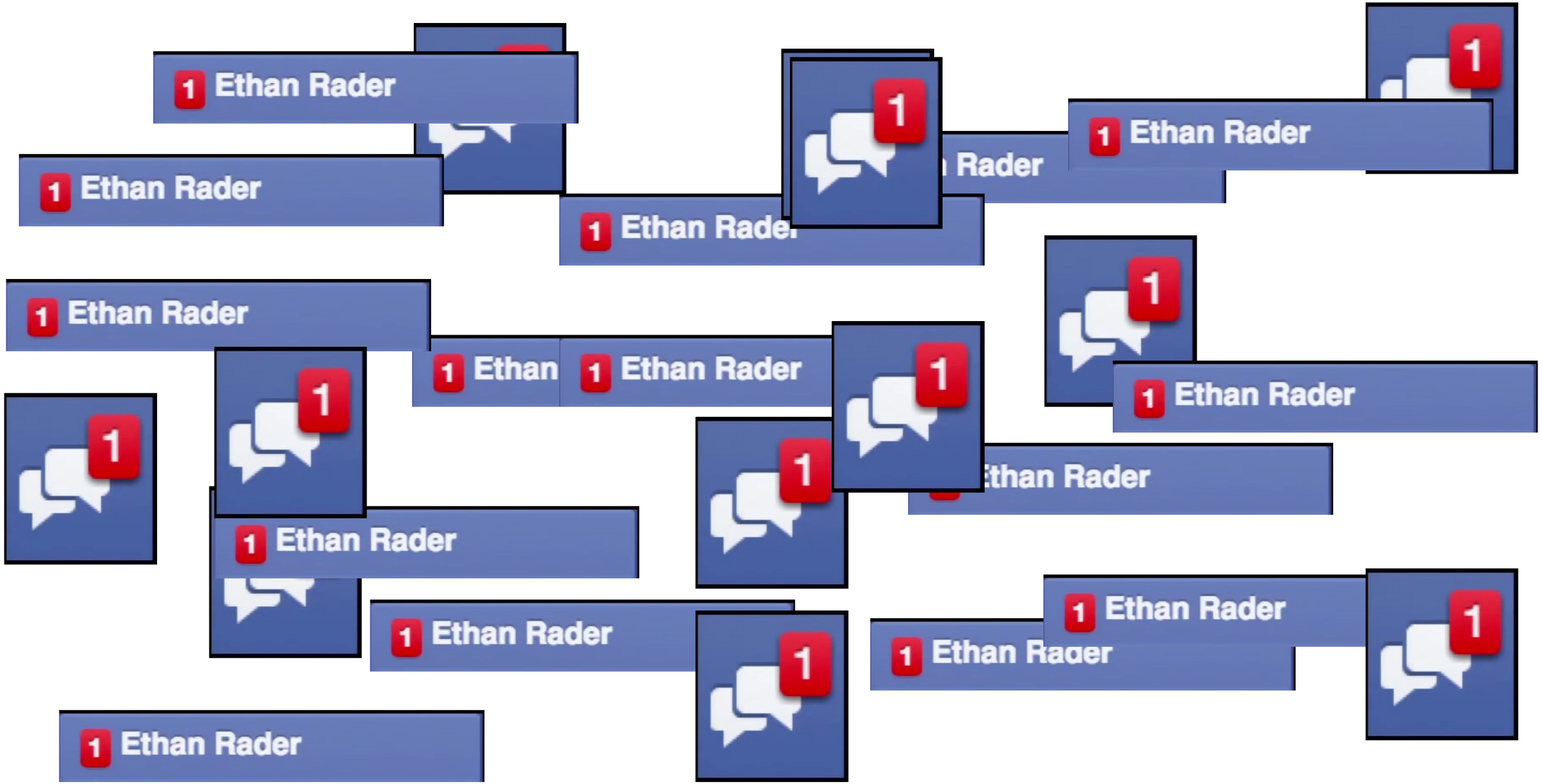



```
var unreadMessageCounts = {};
function onNewMessage(msg) {
  var unreadCount = ++unreadMessageCounts[msg.threadId];
  $('#messageCount' + msg.threadId).text(unreadCount);
}
```



```
var unreadMessageCounts = {};
var unreadThreadCount = 0;

function onNewMessage(msg) {
  var unreadCount = ++unreadMessageCounts[msg.threadId];
  if (unreadCount === 1) {
    unreadThreadCount++;
    $('#unreadThreads').text(unreadThreadCount);
  }
  $('#messageCount' + msg.threadId).text(unreadCount);
}
```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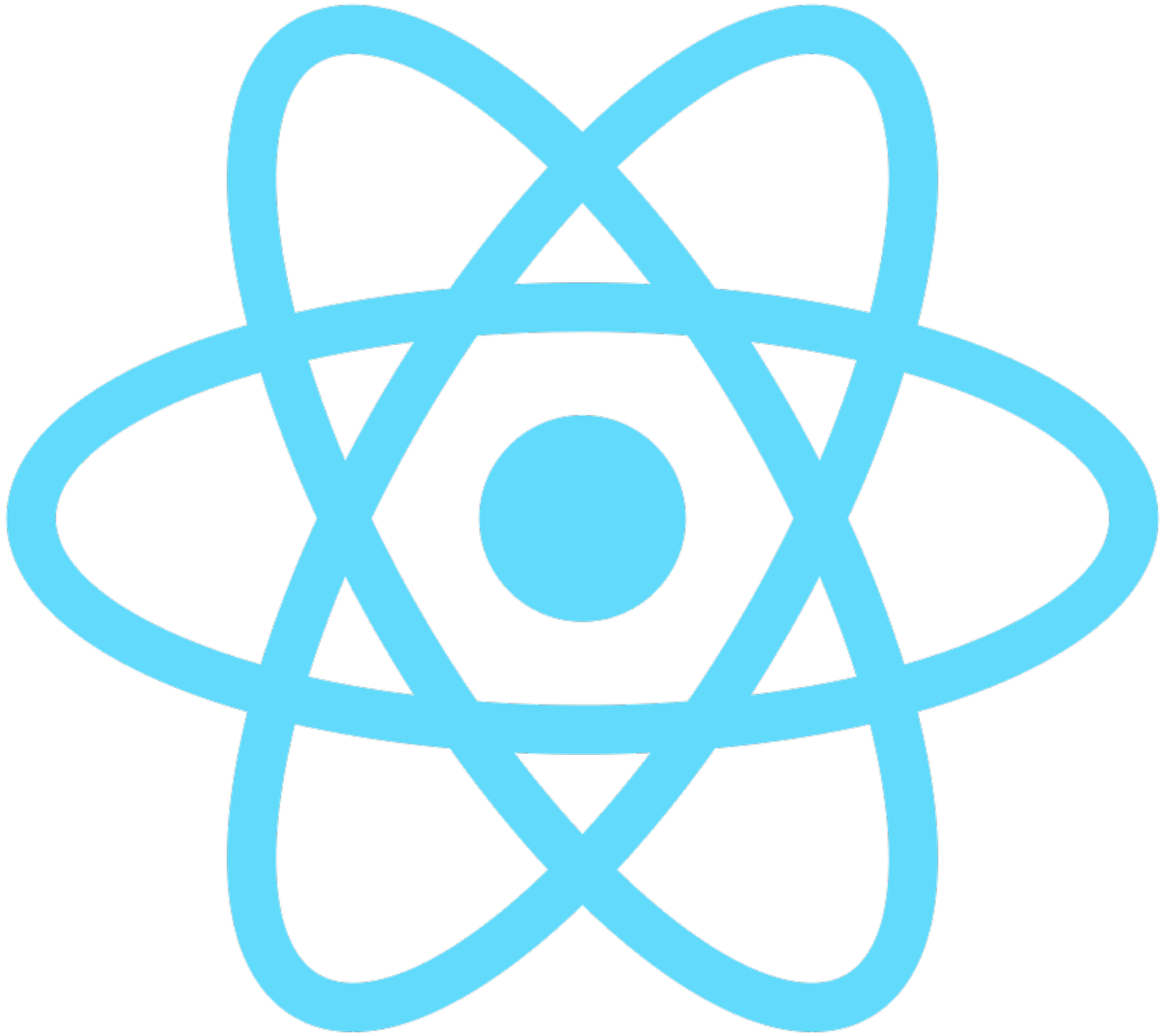
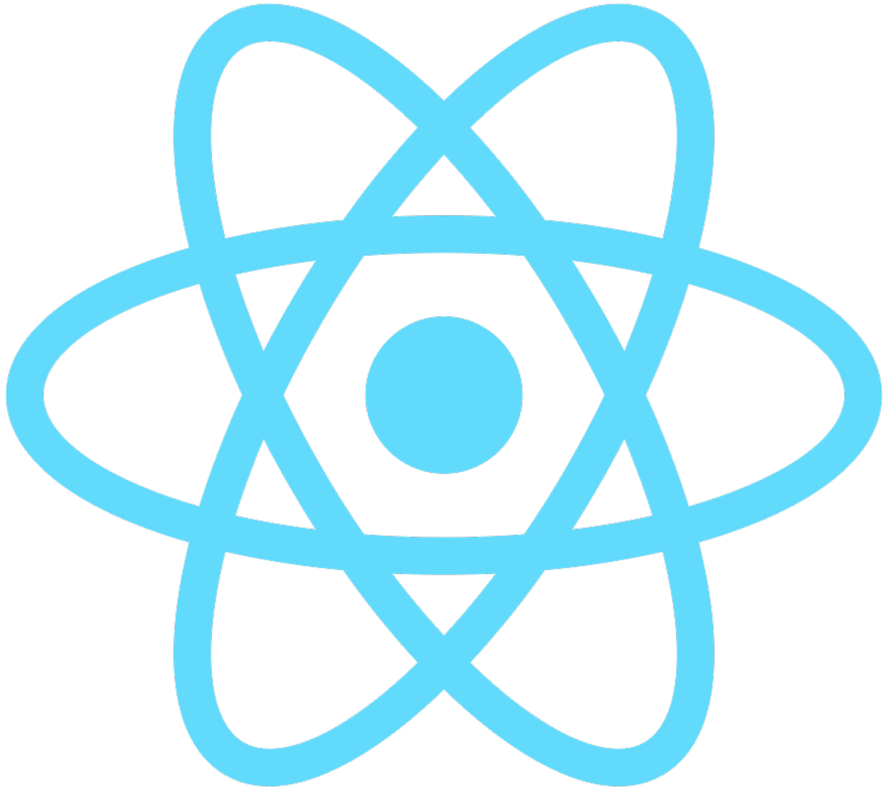


REACT

- No data-binding: instead, data flows in one direction
- Just like a 90's era web page…only just for your client!
- state => view
- Minimize DOM manipulation by rendering to a Virtual DOM before rendering to the Real DOM

GETTING STARTED WITH REACT