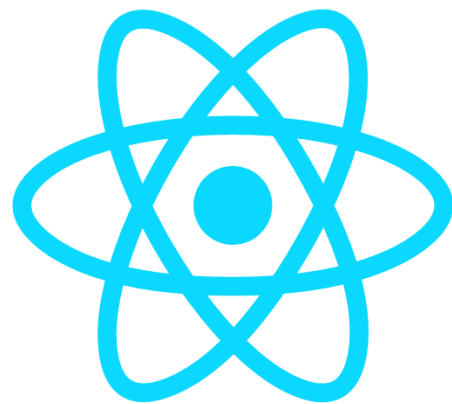PhoneGap

React

Vue.js

Frågor innan vi drar igång?

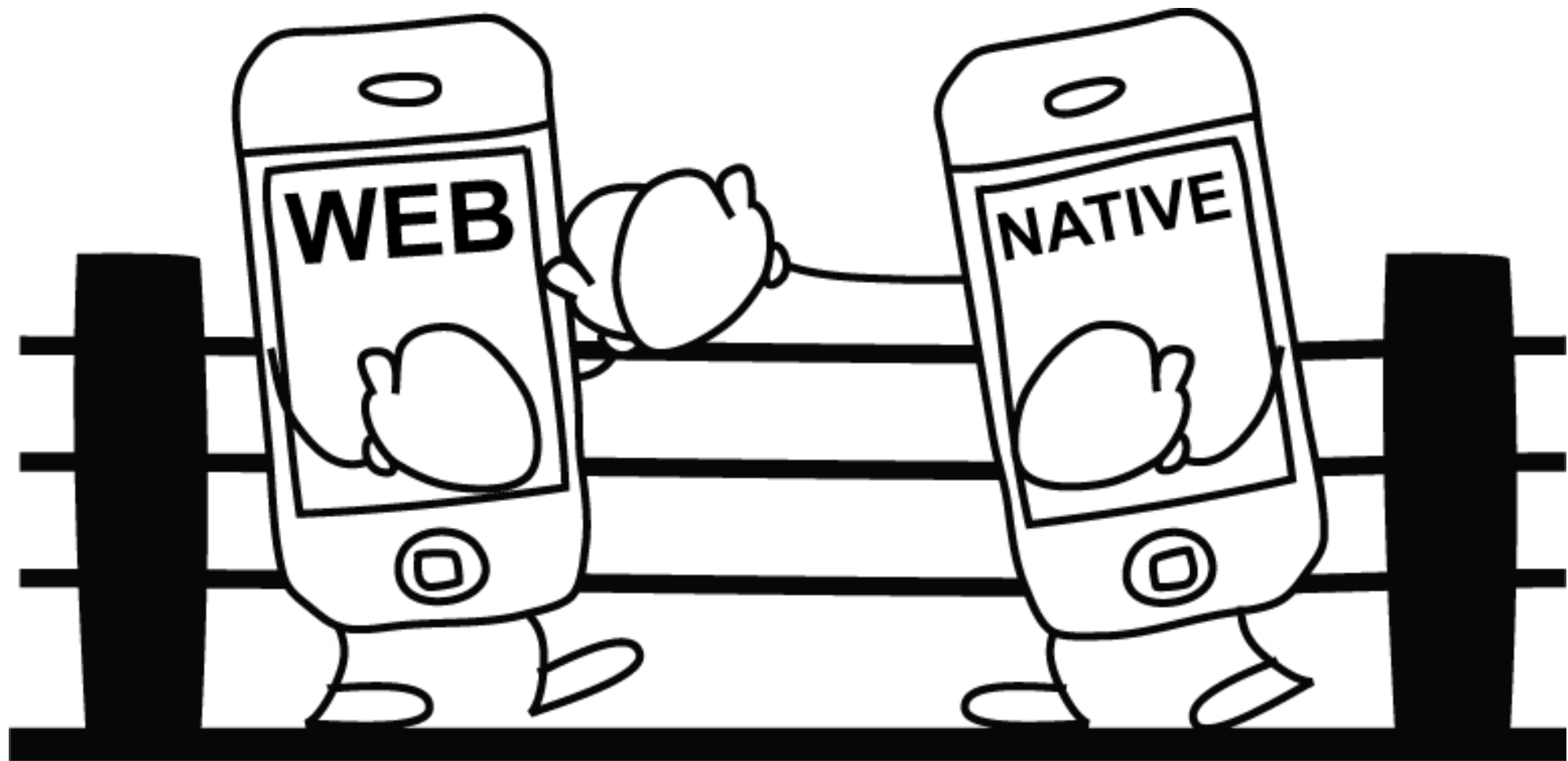# Dagens agenda

- Native vs. Webbapplikationer?
  - Hybridapplikationer
  - **PhoneGap (Cordova)**
- Moderna ramverk för webbutveckling
  - Vue.js
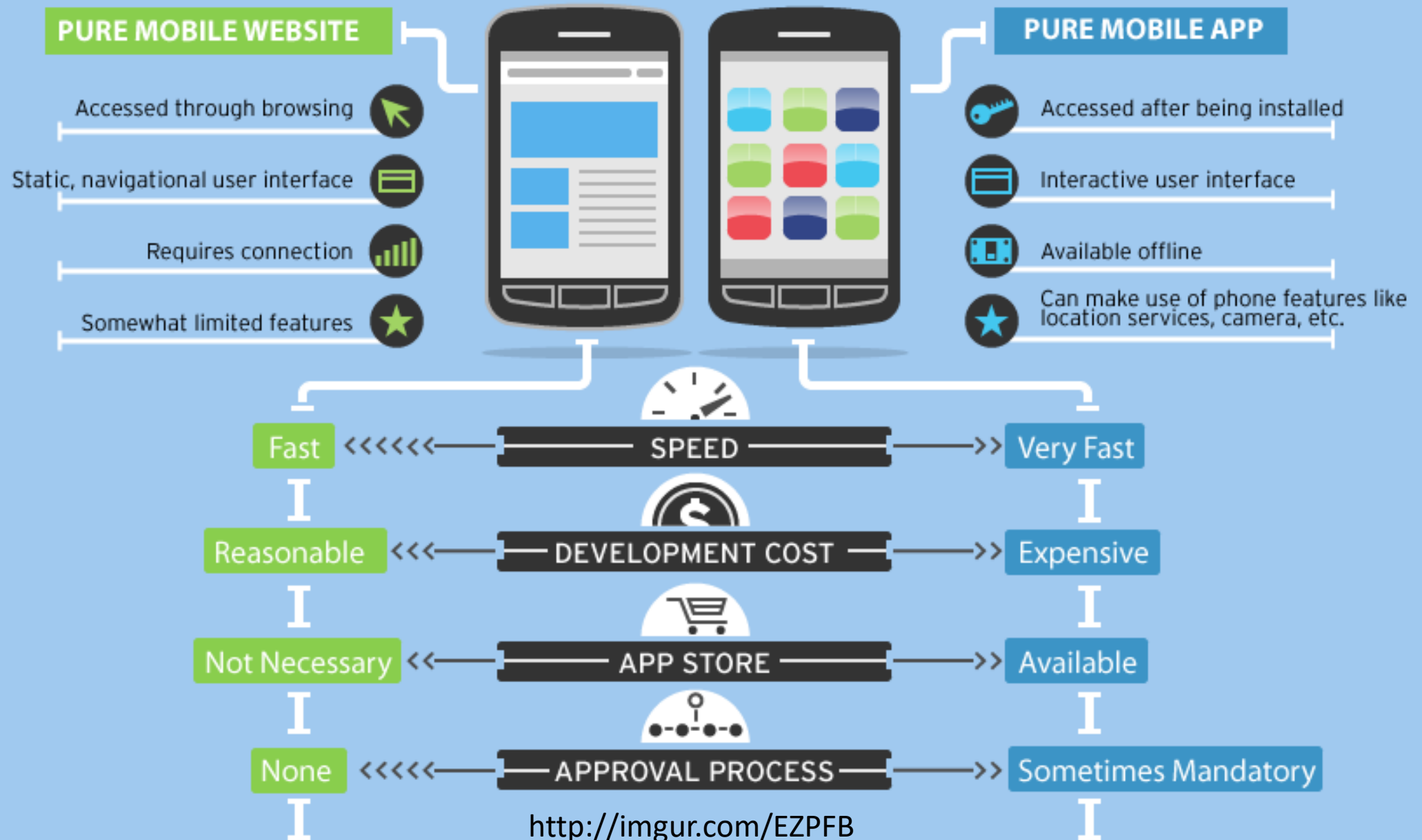 - React

Att bygga applikationer med webbtekniker

HTML / CSS / JS / m.m.

http://www.sheridan.com/sites/default/files/blogs_journals_nativevsweb_0711.png

Vilka för- och nackdelar finns det med webbapplikationer och nativa applikationer?

SOME BASIC PRINCIPLES

PURE MOBILE WEBSITE

- Accessed through browsing
- Static, navigational user interface
- Requires connection
- Somewhat limited features

PURE MOBILE APP

- Accessed after being installed
- Interactive user interface
- Available offline
- Can make use of phone features like location services, camera, etc.

PURE MOBILE WEBSITE		PURE MOBILE APP
Fast <<<<<<	SPEED	>> Very Fast
Reasonable <<<	DEVELOPMENT COST	>> Expensive
Not Necessary <<	APP STORE	>> Available
None <<<<<	APPROVAL PROCESS	>> Sometimes Mandatory

http://imgur.com/EZPFB

Native Apps
86%
Average user spends
2 hrs. 19 min. /day

— VS —

Mobile Web
14%
Average user spends
22 min. /day

	Native Apps	Comparison	Mobile Web	
Pros	Not required	Internet Connection	Required	Cons
	Incorporates and works with all smartphone tools (ex. Camera, GPS, ext.)	Smartphone Tools	Does not incorporate all tools (ex. Camera, GPS, ext.)	
	Fastest & most optimum performance	Performance	Not universally compatible. May not work properly on certain devices or older devices	
	Included in app stores, which makes it easier for users to discover apps whether they were seeking it or not			
	More popular with consumers	Marketing	Not listed in app store, making discovery more difficult	
	App is downloaded to device			
Cons	Needs additional marketing strategy		One browser makes it easier to reach a wider audience faster	Pros
	High competition from other apps			
	Takes longer to develop & cost more	Cost/ Time	Typically less expensive to develop, and require less development time	

Vilka är era topp 3 applikationer?
(som inte är förinstallerade)
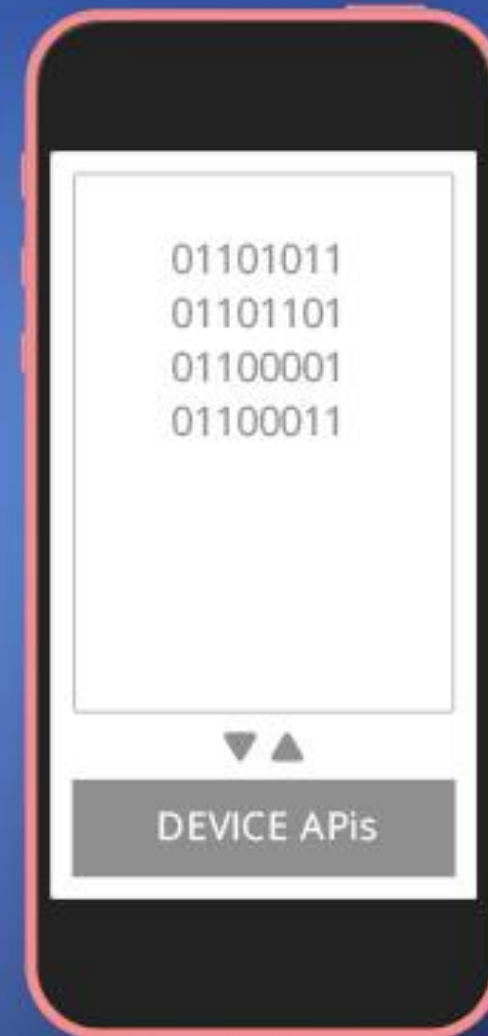
Hybrid App

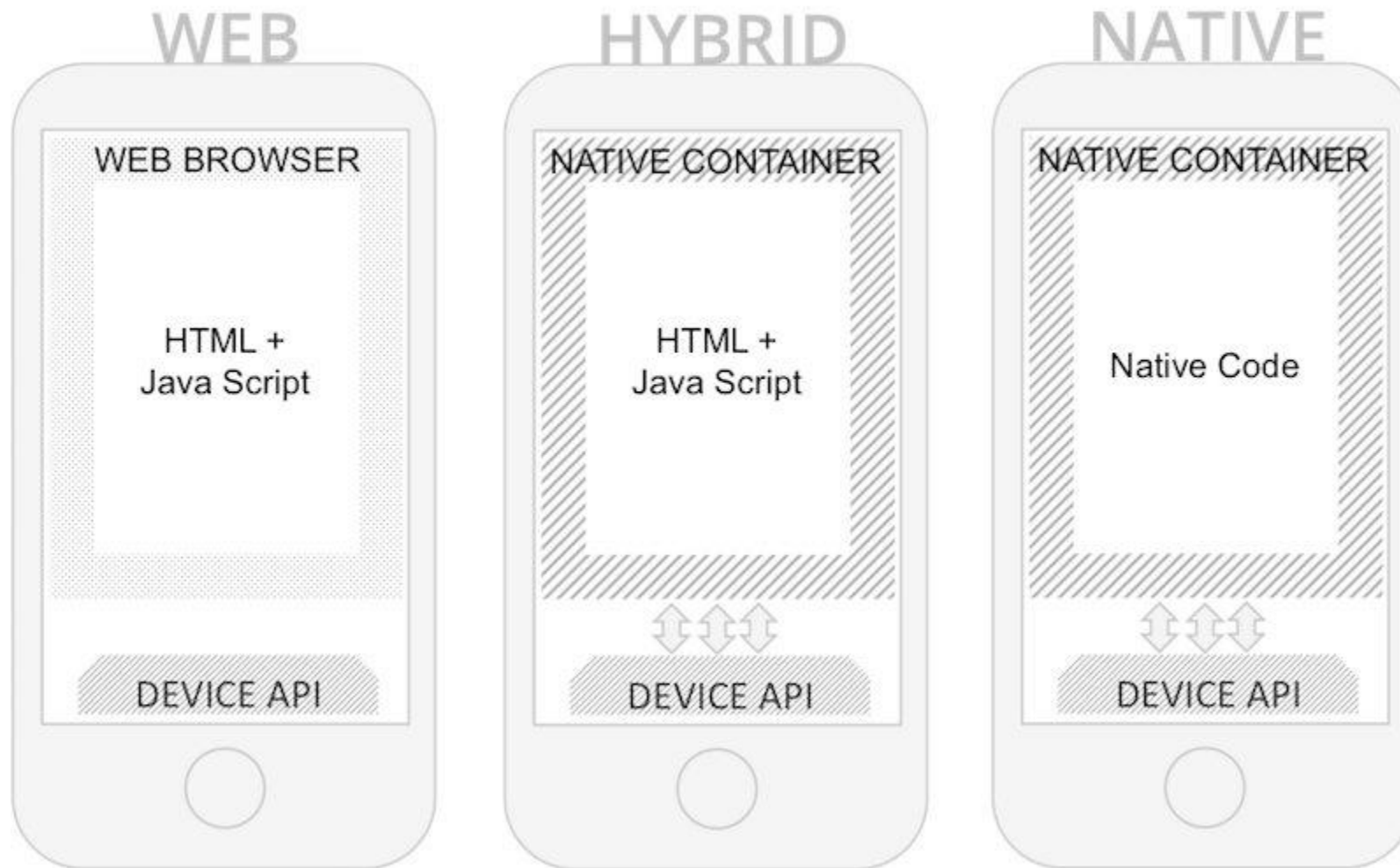https://fbombmedia.com/wp-content/uploads/2014/09/native_hybrid_web_app_development_3.jpg
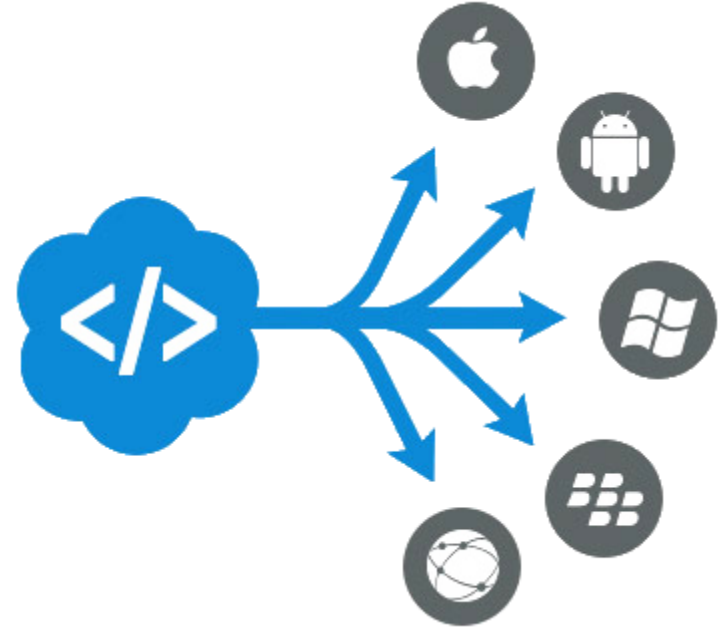
MOBILE WEB   HYBRID NATIVE   PURE NATIVE

BROWSER

```
<html>
<head>
<script src
```

DEVICE APis   PLUGINS

01101011
01101101
01100001
01100011

DEVICE APis

http://mobilenext.net/wp-content/uploads/2014/07/native_main_mini_new.jpg

WEB

WEB BROWSER

HTML +
Java Script

DEVICE API

HYBRID

NATIVE CONTAINER

HTML +
Java Script

DEVICE API

NATIVE

NATIVE CONTAINER

Native Code

DEVICE API

Development Options

FEATURE	WEB APP	HYBRID APP	NATIVE APP
Code Bases	1	1	Multiple
Server Side Updates	Yes	Yes	No
Web Technologies	Yes	Yes	Limited
Responsive Design	Yes	Yes	No
Touch Gestures	Yes	Yes	Yes
Feels Like App	No	Yes	Yes
Native Functionality	Limited	Yes	Yes
Performance	Moderate	Moderate	Fast
Offline Capability	Moderate	Yes	Yes
User Experience	Limited	Moderate	Full
Development Cost	Minimal	Moderate	High
Development Process	Fast	Moderate	Slow
Difficulty Level	Easy	Advanced	Very Difficult
App Store Deployment	No	Yes	Yes

Saker att tänka på vid hybridappar

- HTML5 is NOT better than native, but it rarely matters
- It is possible to create iOS applications without a Mac
- You need to use a HTML5 framework, and you need to choose a good one
- HTML5 (hybrid) can do EVERYTHING native can do
- The DOM is the biggest determining factor for performance
- Debugging is sometimes awesome, sometimes difficult

https://www.joshmorony.com/7-lessons-from-3-years-of-html5-mobile-application-development/

Vilka appar är hybridappar?

Verktyg för att skapa hybridappar?

Download Xamarin.

Xamarin turns you into a multi-platform mobile developer virtually overnight.

Download now

Xamarin apps look and feel native because they are.

Native User Interfaces

Xamarin apps are built with standard, native user interface controls. Apps not only look the way the end user expects, they behave that way too.

Native API Access

Xamarin apps have access to the full spectrum of functionality exposed by the underlying platform and device, including platform-specific capabilities like iBeacons and Android Fragments.

Native Performance

Xamarin apps leverage platform-specific hardware acceleration, and are compiled for native performance. This can't be achieved with solutions that interpret code at runtime.

Build great mobile experiences faster

Native apps. Mobile APIs. Real-time analytics. **One Platform**.

Start for free with email

Go or

The Appcelerator Platform

Everything you need to create great, native mobile apps—all from a single JavaScript code base.

Sencha

Get Ext JS

Build feature-rich cross-platform web apps for desktop, tablets, and smartphones. Take advantage of powerful features in Ext JS Premium including Pivot Grid, D3 Adapter, Calendar, and Exporter.

LEARN MORE   BUY NOW

Rapidly build data-intensive, cross-platform web applications

TriNet
Ambitions realized™

CISCO

FICO

Lilly

OppenheimerFunds™

Microsoft Dynamics

intel

NTT Communications

more

EXPLORE THE SENCHA PLATFORM

Design   Develop   Test

Adobe PhoneGap

Build amazing mobile apps powered by open web tech.

START NOW   LEARN MORE
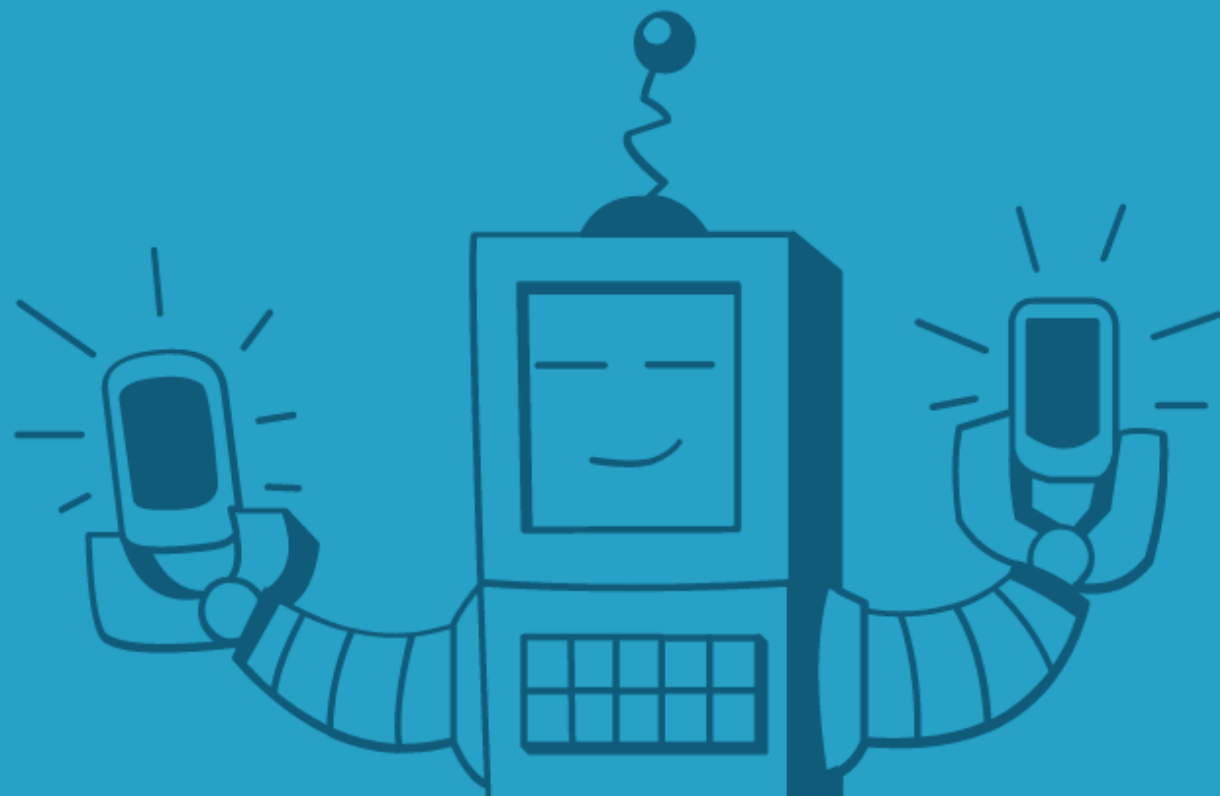
Create your app with PhoneGap

Reuse existing web development skills to quickly make hybrid applications built with HTML, CSS and JavaScript. Create experiences for multiple platforms with a single codebase so you can reach your audience no matter their device.

Package your app in the cloud

PhoneGap Build takes the pain out of compiling PhoneGap apps. Get app-store ready apps without the headache of maintaining native SDKs. Our PhoneGap Build service does the work for you by compiling in the cloud.

Friends don't
let friends
write native
code.

PhoneGap
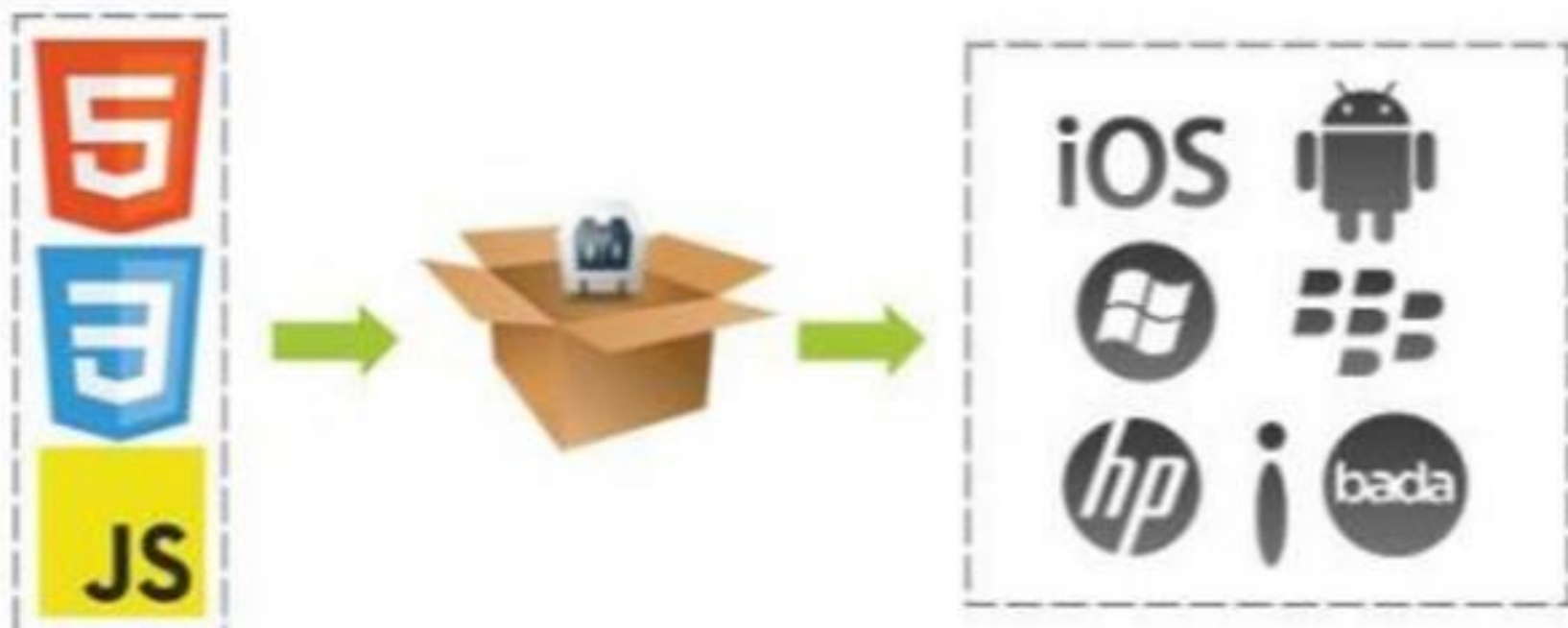
Att komma åt "native" API hos enheten

Använd native APIs

This is your user interface.
It is a web browser instance.
100% width & 100% height.
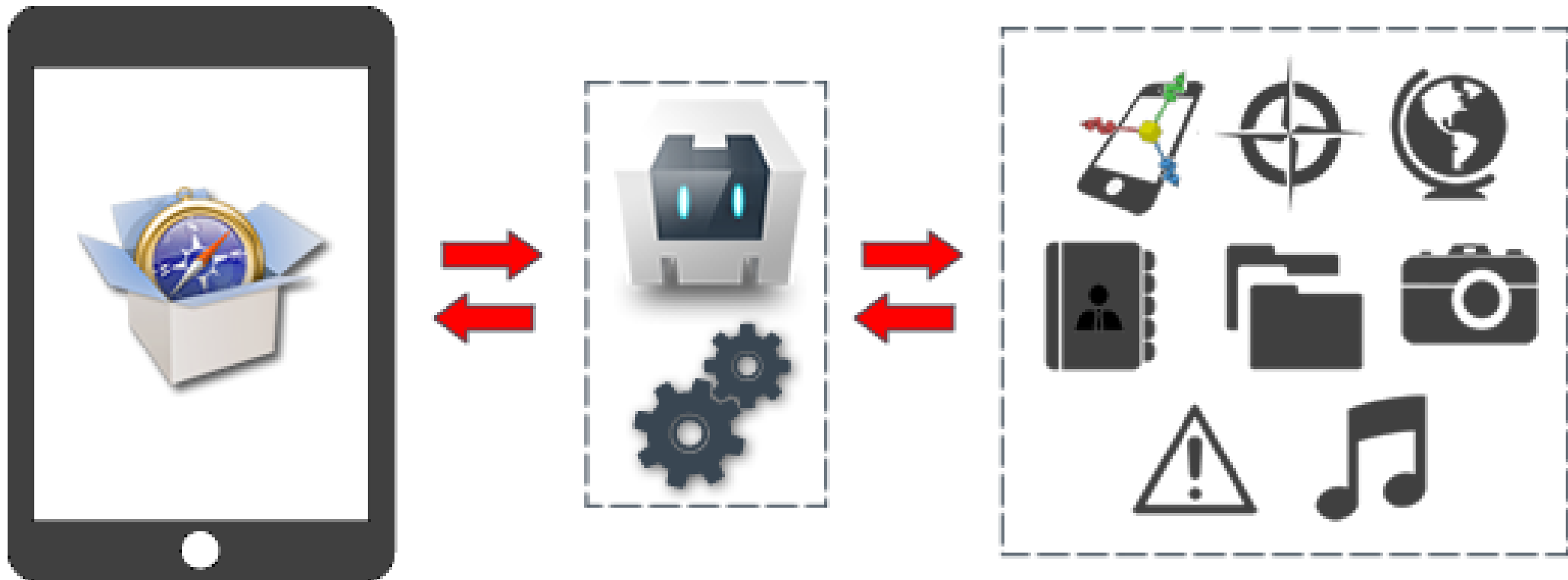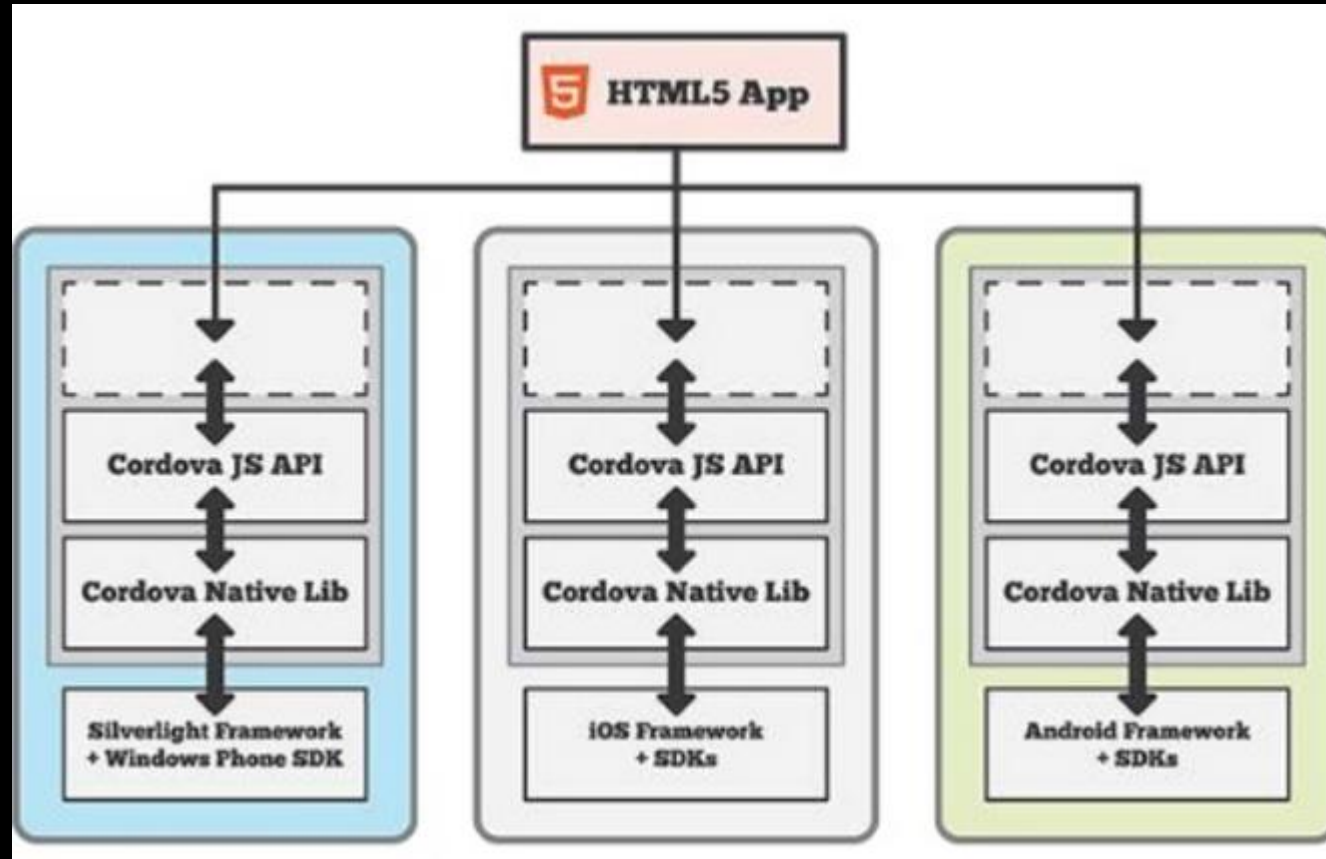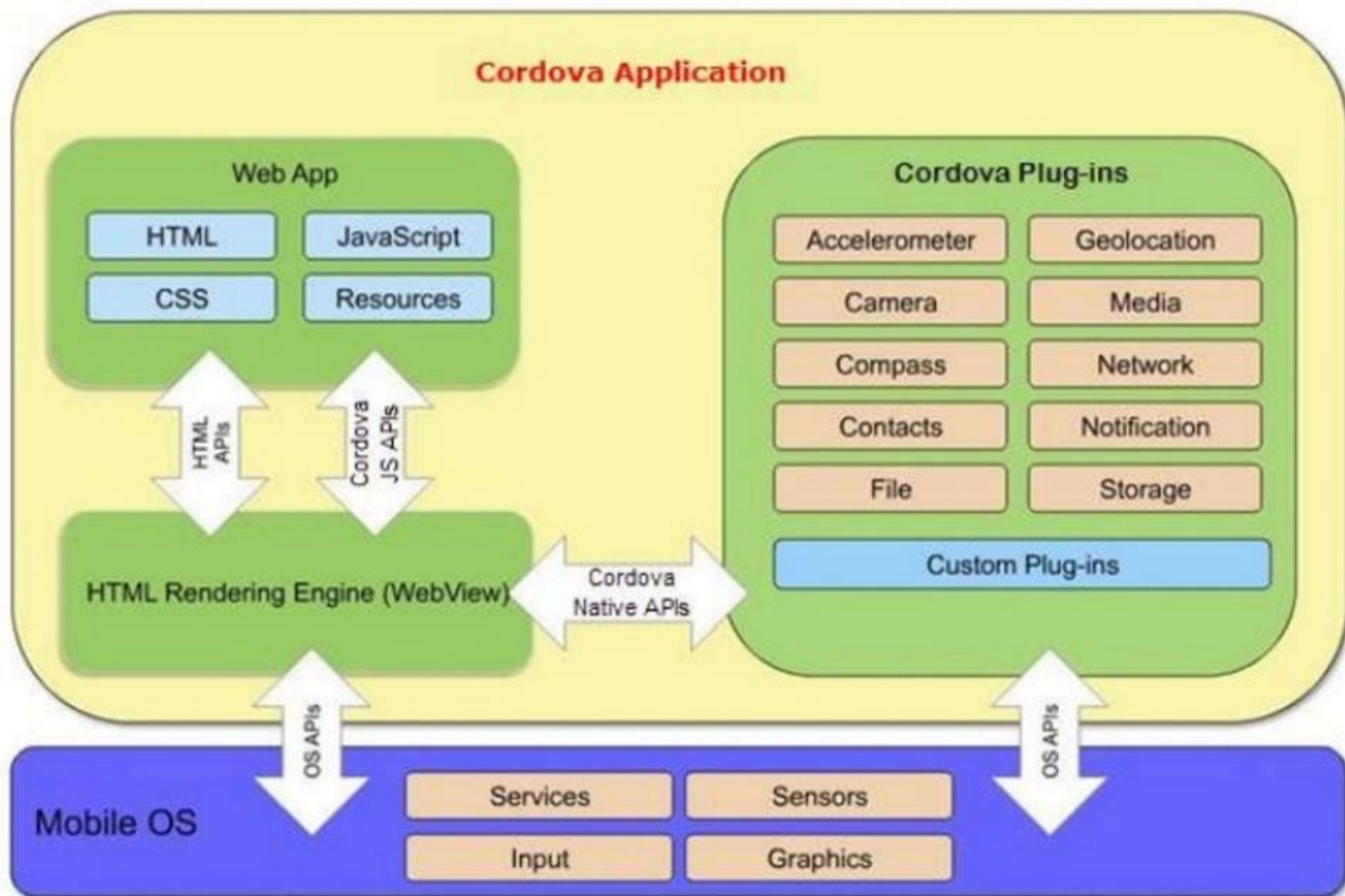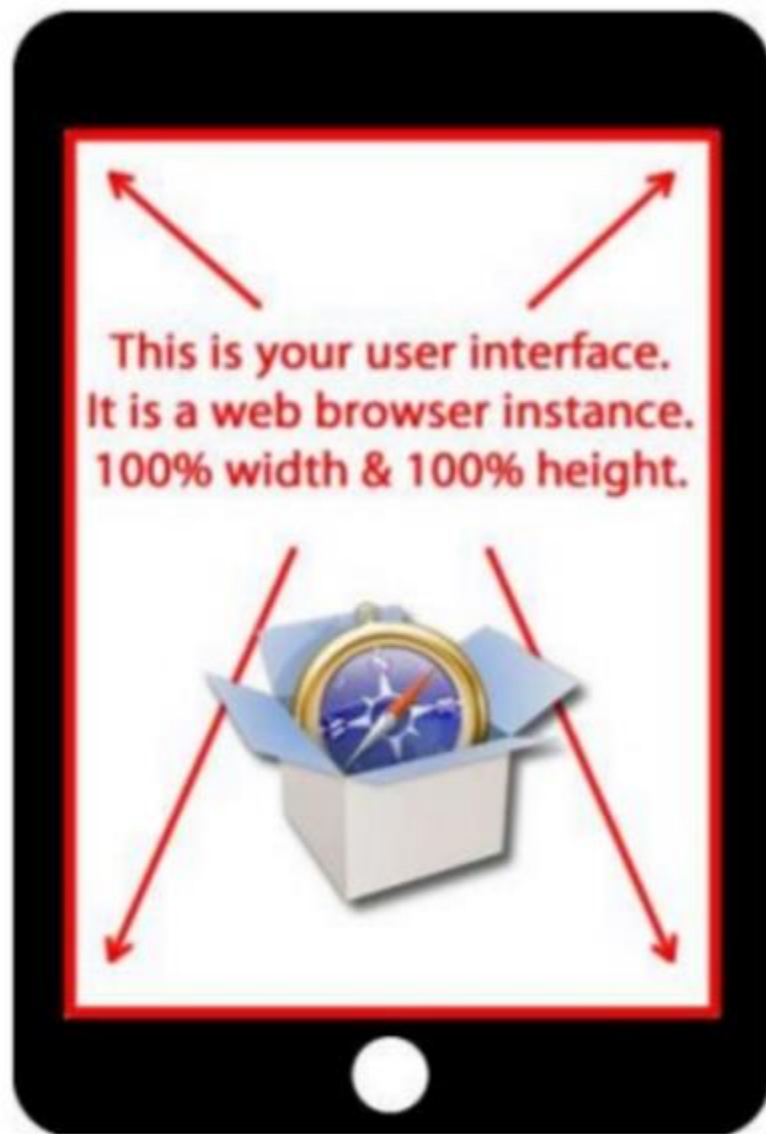
Exempelarkitektur

Core Plugins

The most current version of the Cordova Core Plugin APIs are found in their respective GitHub repositories linked to below:

- Battery Status
- Camera
- Contacts
- Device Info
- Device Motion (accelerometer)
- Device Orientation (compass)
- Dialogs (notification)
- File
- File Transfer
- Geolocation
- Globalization
- InAppBrowser
- Media
- Media Capture
- Network Information
- Splash Screen
- Status Bar
- Whitelist
- Vibration

Cordova Plugins

Search 1599 plugins...

What is a Cordova plugin?

A plugin is a bit of add-on code that provides JavaScript interface to native components. They allow your app to use native device capabilities beyond what is available to pure web apps.

✚ Contribute Plugins   ❓ Plugin Help

Must Support Platform(s):   1599 result(s) found

| Android | iOS | Windows | Blackberry | Ubuntu | Firefox OS |
| macOS | WP8 | Browser |

Sort: Downloads▾

---

ionic-plugin-keyboard   v2.2.1 by **tlancina**

Ionic Keyboard Plugin

Apache

86 438 downloads last month

Last updated **92 days ago**

---

cordova-plugin-crosswalk-webview   v2.2.0 by **fujunwei**

Changes the default WebView to CrossWalk

Apache

19 367 downloads last month

Last updated **110 days ago**

---

phonegap-template-hello-world   v4.0.3 by **stevegill**

> A Hello World template built with PhoneGap

Apache-2.0

15 373 downloads last month

Kom igång med PhoneGap

http://phonegap.com/getstarted/

Getting Started

This guide is geared to helping people new to PhoneGap get up and running as quickly as possible with the least amount of setup and time.

STEP 1:
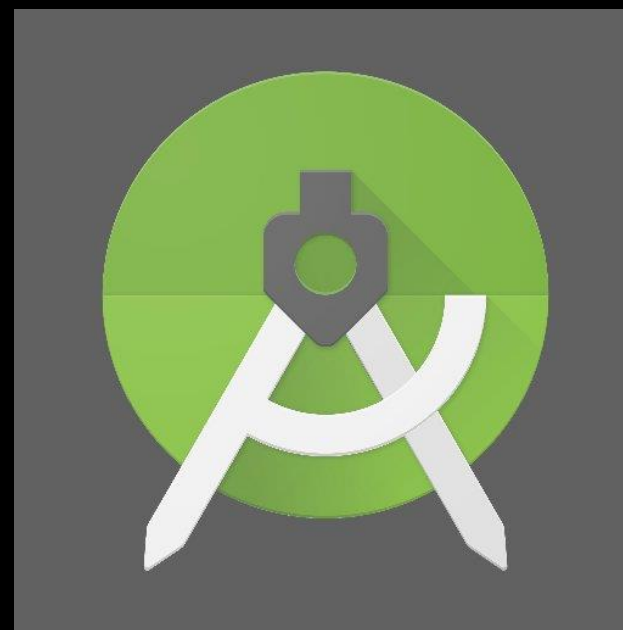## Install PhoneGap

STEP 2:
Install Mobile App

STEP 3:
Create Your App

STEP 4:
Preview Your App

STEP 5:
Going Further

Kom igång med PhoneGap

http://phonegap.com/getstarted/

ANDROID APP ON

Google™ play
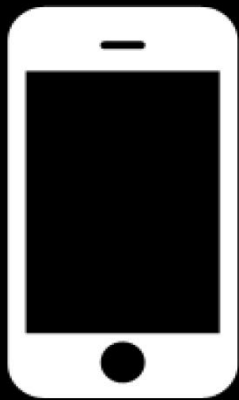
Available on the

App Store

App Showcase

Ever wondered who is building amazing apps using PhoneGap?

Narrow by platform: ☑ IOS   ☑ ANDROID   ☑ WINDOWS

FanReact
by FanReact

Localeur
by Localeur

snowbuddy
by We Make Awesome Sh

Sworkit
by Nexercise Inc

BrowserQuest
by Mads & Peter Sandberg Brun

My Heart Camera
by ANDG CO., LTD.

Yoga+Travel
by Velkat IT Solutions Inc. / Yoga By Allison

TripCase
by Sabre

HealthTap - find doctors and free answers
by HealthTap

Untappd
by Untappd LLC

Hockey Community
by Oki Technologies Inc.

Bit Timer
by Peiter Buick

INSTALLING THINGS HAS GOTTEN SO FAST AND PAINLESS.

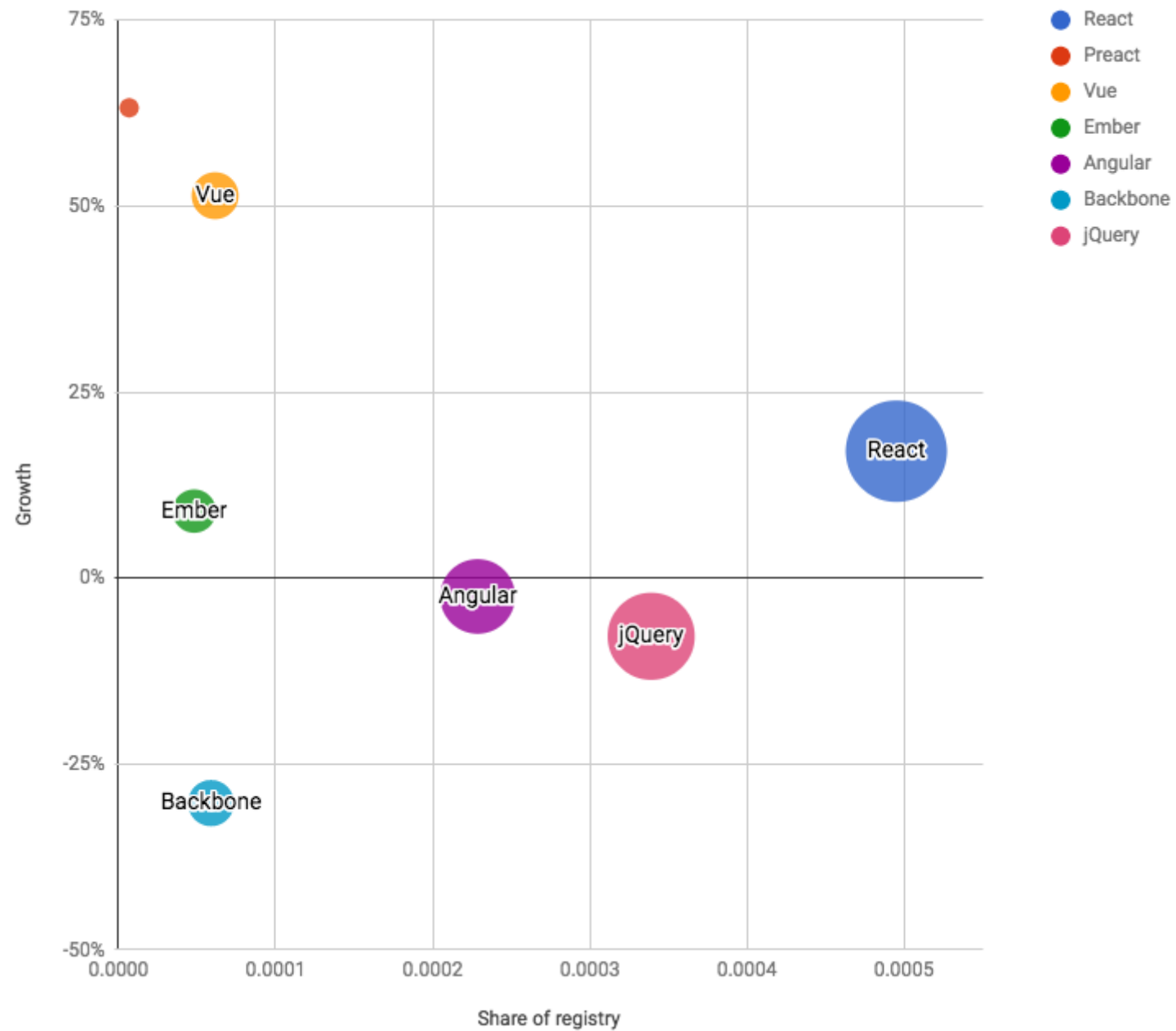WHY NOT SKIP IT ENTIRELY, AND MAKE A PHONE THAT HAS EVERY APP "INSTALLED" ALREADY AND JUST DOWNLOADS AND RUNS THEM ON THE FLY?
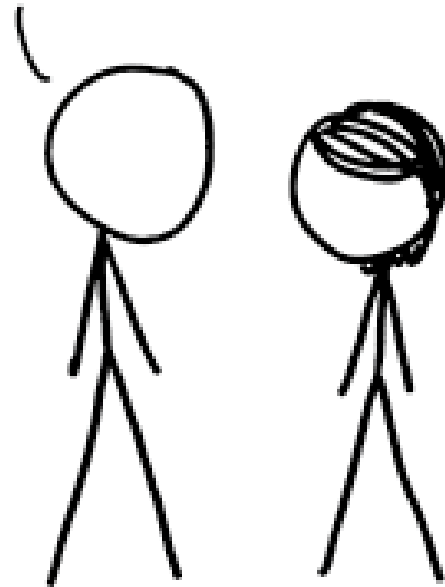
I FELT PRETTY CLEVER UNTIL I REALIZED I'D INVENTED WEBPAGES.

En snabb demo?

Populära JS-ramverk idag

https://medium.com/javascript-scene/top-javascript-libraries-tech-to-learn-in-2018-c38028e028e6

Popularity and growth of web frameworks, 2016-2017

1	Vue.js	+40.0k ★
	🤘 A progressive, incrementally-adoptable JavaScript framewo…	
2	React	+27.8k ★
	A declarative, efficient, and flexible JavaScript library for buildi…	
3	Angular	+12.2k ★
	One framework. Mobile & desktop.	
4	Preact	+10.4k ★
	⚛️ Fast 3kB React alternative with the same modern API. Com…	
5	Hyperapp	+8.1k ★
	1 KB JavaScript library for building web applications.	
6	dva	+5.3k ★
	🌱 React and redux based, lightweight and elm-style framework…	
7	Inferno	+4.6k ★
	An extremely fast, React-like JavaScript library for building mod…	
8	Moon	+3.7k ★
	🌙 ⚡ A minimal, blazing fast UI library.	
9	Angular 1	+3.6k ★
	AngularJS - HTML enhanced for web apps!	
10	Rax	+2.6k ★
	A universal React-compatible render engine.	

In the job listings...
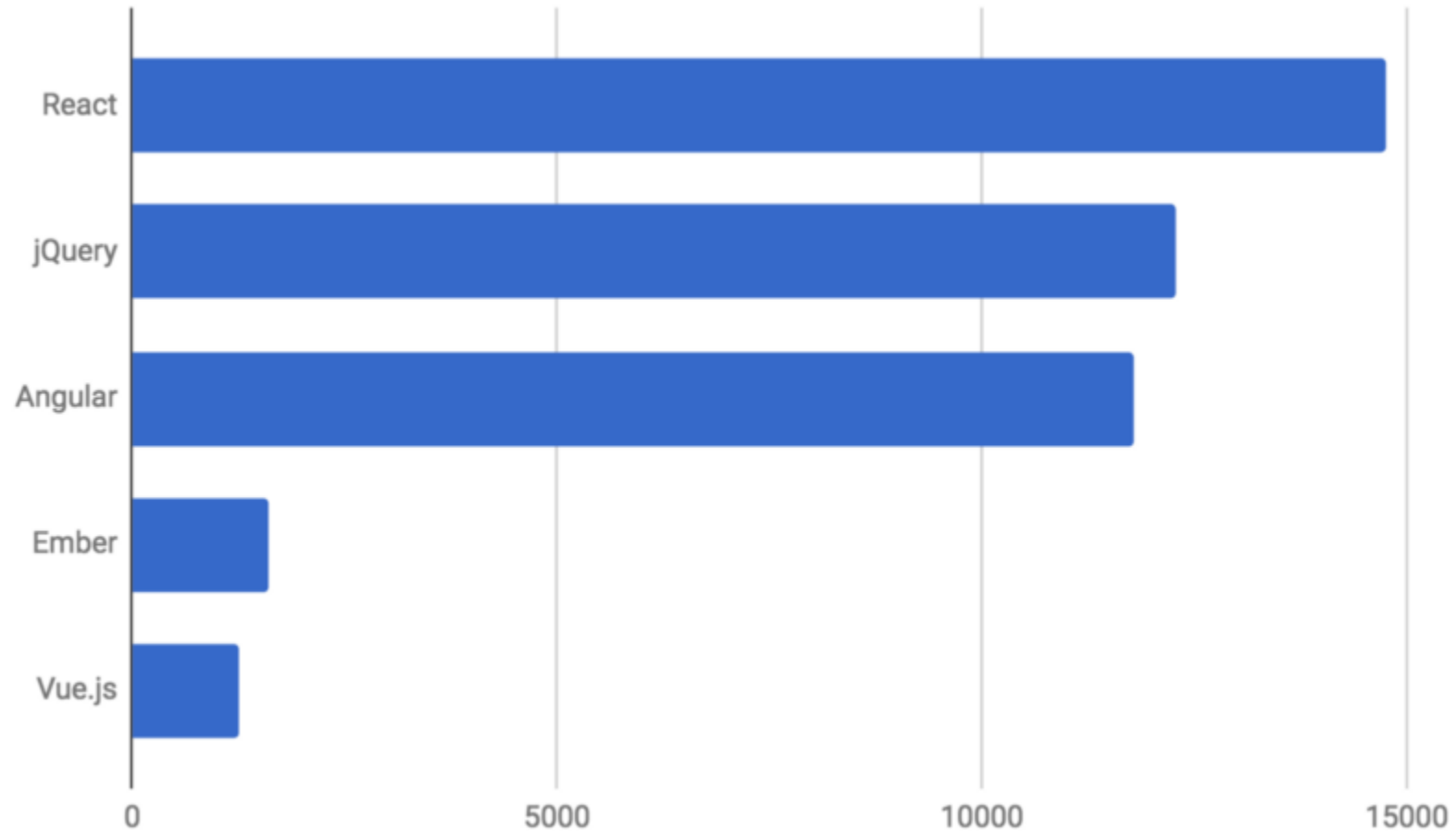
Case

Min att-se-lista för filmer

Lägg till film [_____] **Lägg till**

Filmer att se

Lady Bird
The Post
The Shape of Water

Case

Min att-se-lista för filmer

Lägg till film [   ] **Lägg till**

Filmer att se

| Lady Bird |
| The Post |
| The Shape of Water |

Tankesätt

1. - Vi utgår att våra filmer sparas i en array
2. Strukturera upp bra HTML-kod
3. Ange id:n för de element som vi behöver
   1. Textfältet för ny filmtitel
      - `#new-movie`
   2. Knappen för att lägga till en ny film
      - `#add-movie`
   3. Listan för att visa upp alla filmerna
      - `#movies`
4. Skriv funktionerna i JavaScript
   1. `$("#add-movie").on("click", function() { ... });`
   2. `renderMovies();`

Min att-se-lista för filmer

Lägg till film [   ] Lägg till

Filmer att se

Lady Bird

The Post

The Shape of Water

HTML

```html
<!doctype html>
<html lang="en">

<head>
  <!-- Required meta tags -->
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">

  <!-- Bootstrap CSS -->
  <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0/css/bootstrap.min.c
    crossorigin="anonymous">

  <title>Hello, world!</title>
</head>

<body>
  <div class="container">
    <h1>Min att-se-lista för filmer</h1>
    <div class="form-inline">
      <label for="new-movie" class="mb-2 mr-sm-2">Lägg till film</label>
      <input type="text" class="form-control mb-2 mr-sm-2" id="new-movie">
      <input type="button" class="btn btn-success mb-2 mr-sm-2" value="Lägg till" id="add-movie">
    </div>

    <hr>

    <h2>Filmer att se</h2>
    <ul class="list-group" id="movies"></ul>
  </div>

  <script src="http://code.jquery.com/jquery-3.3.1.min.js" integrity="sha256-FgpCb/KJQlLNfOu91ta32
  <script src="script.js"></script>
</body>

</html>
```

JS

```javascript
var movies = ["Lady Bird", "The Post", "The Shape of Water"];

$("#add-movie").on("click", function () {
    var movieTitle = $("#new-movie").val();
    movies.push(movieTitle);
    renderMovies();
});

function renderMovies() {
    var movieUL = $("#movies");
    movieUL.html(""); // Reset the list
    $.each(movies, function (i, movie) {
        movieUL.append(`<li class="list-group-item">${movie}</li>`)
    });
}

renderMovies();
```

Hi I'm

Swizec Teller

I build things and write about it to help coders become engineers.

Over the years I've helped over **10,000 engineers** hone their craft. Engineers have used my books, articles, and talks to improve their technical skills, get promotions, change jobs, and ship their products faster.
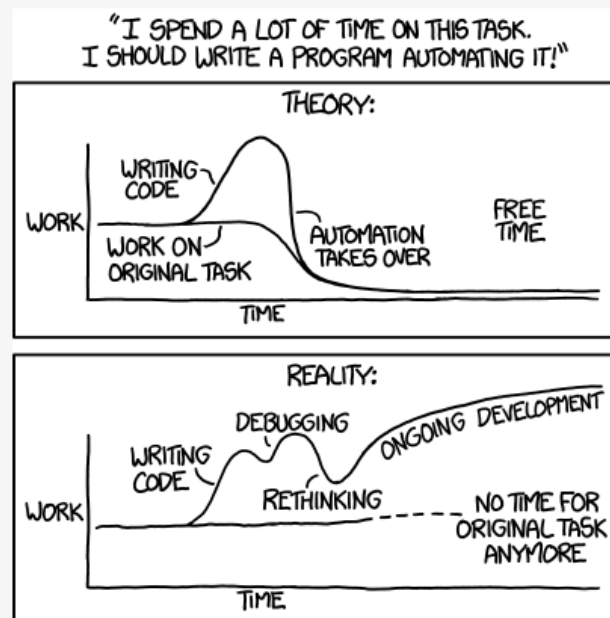
More about me

A geek with a hat

React+Flux can do in just 137 lines what jQuery can do in 10

XKCD Automation

I waste almost 15 minutes a week on an annoying little task. Every email I send to an email list gets a link that says, "*Click here to share with a friend.*"

Clicking the link opens a filled-in email message. Add an address or

💌 **Become a better Frontend Engineer.**

Varför Vue eller React – jQuery funkar ju!

- Snabb rendering av sidor genom **virtuell DOM**
- Komponentbaserat
- Rendering på serversidan
- Enkla integrationer med olika routing-verktyg
- Stort community och mycket support
- Bättre struktur för större projekt

The Progressive
JavaScript Framework

▶ **WHY VUE.JS?**   **GET STARTED**   ◯ **GITHUB**

Special Sponsors

‹stdlib›   Function as a Service Platform and Library

bit   The fastest way to share code

Approachable

Already know HTML, CSS and JavaScript? Read the guide and start building things in no time!

Versatile

An incrementally adoptable ecosystem that scales between a library and a full-featured framework.

Performant

20KB min+gzip Runtime Blazing Fast Virtual DOM Minimal Optimization Efforts

Vue.js

- Ett JavaScript-ramverk för att bygga grafiska gränssnitt

- Fokuserar på "View"-lagret (man pratat ofta om **MVC**)
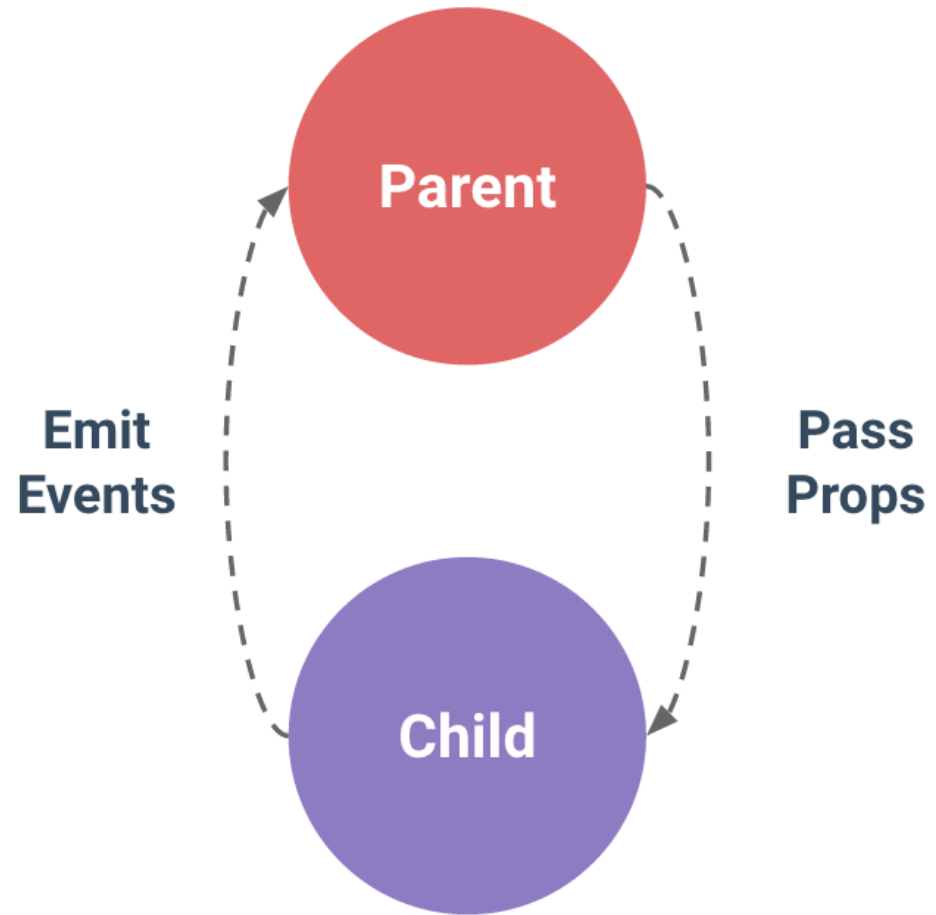
- Enkelt att integrera med andra bibliotek

Fördelar

- Enkelt att lära sig!
- Lättviktigt
- Snabbt
- Reaktivt
- Virtuell DOM
- Komponentbaserat
- Mycket anpassningsbart, t.ex. med andra ramverk / bibliotek

Komponenter?

Komponenter i vårt exempel

HTML

```html
<!doctype html>
<html lang="en">

<head>
    <!-- Required meta tags -->
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">

    <!-- Bootstrap CSS -->
    <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0/css/bootstrap.min.css" integrit
        crossorigin="anonymous">

    <title>Hello, world!</title>
</head>

<body>
    <div class="container" id="app">
        <h1>Min att-se-lista för filmer</h1>
        <div class="form-inline">
            <label for="new-movie" class="mb-2 mr-sm-2">Lägg till film</label>
            <input type="text" class="form-control mb-2 mr-sm-2" v-model="newMovie">
            <input type="button" class="btn btn-success mb-2 mr-sm-2" value="Lägg till" v-on:click="addMovie">
        </div>

        <hr>

        <h2>Filmer att se</h2>
        <ul class="list-group">
            <movie v-for="movie in movies" v-bind:title="movie" v-bind:key="movie"></movie>
        </ul>
    </div>

    <script src="https://cdn.jsdelivr.net/npm/vue"></script>
    <script src="script.js"></script>
</body>

</html>
```

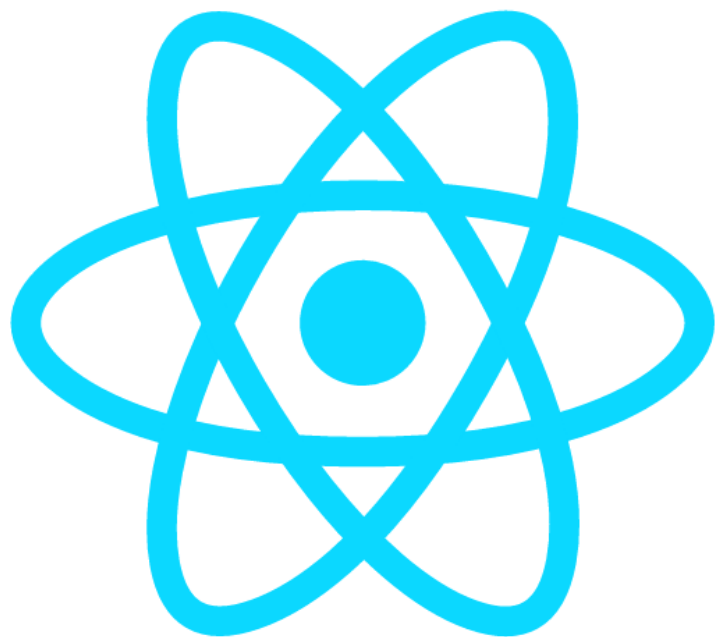# JS

```js
Vue.component('movie', {
    props: ['title'],
    template: '<li class="list-group-item">{{ title }}</li>'
});

var app = new Vue({
    el: '#app',
    data: {
        movies: ["Lady Bird", "The Post", "The Shape of Water"],
        newMovie: ""
    },
    methods: {
        addMovie: function () {
            this.movies.push(this.newMovie);
        }
    }
});
```

React

A JavaScript library for building user interfaces

Get Started   Take the Tutorial ›

Declarative

React makes it painless to create interactive UIs. Design simple views for each state in your application, and React will efficiently update and render just the right components when your data changes.

Declarative views make your code more

Component-Based

Build encapsulated components that manage their own state, then compose them to make complex UIs.

Since component logic is written in JavaScript instead of templates, you can easily pass rich data through your app and keep state out of the DOM.

Learn Once, Write Anywhere

We don't make assumptions about the rest of your technology stack, so you can develop new features in React without rewriting existing code.

React can also render on the server using Node and power mobile apps using React Native.

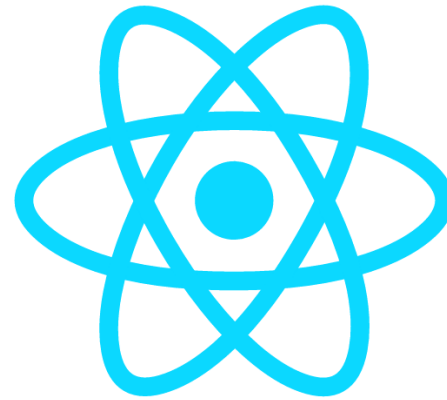# React

- Ett JavaScript-ramverk för att bygga grafiska gränssnitt

- Fokuserar på "View"-lagret (man pratat ofta om **MVC**)
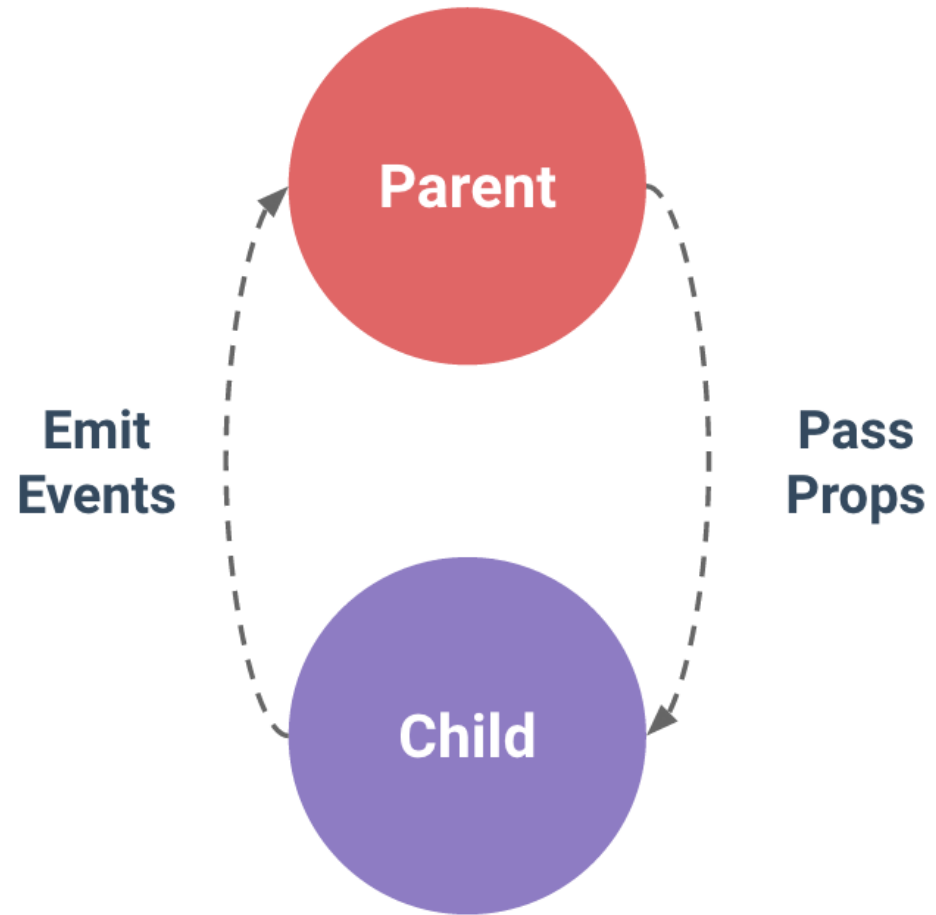
- Har ett stort ekosystem av komponenter

Fördelar

- Snabbt
- Reaktivt
- JavaScript-drivet
- JSX
- Virtuell DOM
- Komponentbaserat
- Bra för stora projekt
- Syskon med React Native
- Mycket stort ekosystem

Komponenter?

Komponenter i vårt exempel

HTML

```html
1  <!doctype html>
2  <html lang="en">
3
4  <head>
5      <!-- Required meta tags -->
6      <meta charset="utf-8">
7      <meta name="viewport" content="width=
8
9      <!-- Bootstrap CSS -->
10     <link rel="stylesheet" href="https://
11         crossorigin="anonymous">
12
13     <title>Hello, world!</title>
14 </head>
15
16 <body>
17     <div id="root"></div>
18
19     <script crossorigin src="https://unp
20     <script crossorigin src="https://unp
21     <script src="https://cdnjs.cloudflar
22     <script type="text/babel">
23         /* Se kod till höger i slide */
24     </script>
25 </body>
26
27 </html>
```

JS

```javascript
24  const Movie = props => <li className="list-group-item">{ props.title }</li>;
25
26  class MovieList extends React.Component {
27
28      constructor(props) {
29          super(props);
30          this.state =  {
31              movies: ["Lady Bird", "The Post", "The Shape of Water"],
32              input: ""
33          };
34          this.addMovie = this.addMovie.bind(this);
35          this.updateInput = this.updateInput.bind(this);
36      }
37
38      addMovie(e) {
39          this.setState({
40              movies: [...this.state.movies, this.state.input]
41          });
42      }
43
44      updateInput(e) {
45          this.setState({
46              input: e.target.value
47          });
48      }
49
50      render () {
51          console.log(this.state);
52
53          return (
54              <div className="container">
55                  <h1>Min att-se-lista för filmer</h1>
56                  <div className="form-inline">
57                      <label htmlFor="new-movie" className="mb-2 mr-sm-2">Lägg till film</label>
58                      <input type="text" className="form-control mb-2 mr-sm-2" id="newMovie" onChange={this.updateInput} />
59                      <input type="button" className="btn btn-success mb-2 mr-sm-2" value="Lägg till" onClick={this.addMovie} />
60                  </div>
61
62                  <hr />
63
64                  <h2>Filmer att se</h2>
65                  {this.state.movies.map(movie => <Movie title={movie} key={movie} />)}
66              </div>
67          );
68      }
69  }
70
71  ReactDOM.render(<MovieList />, document.getElementById('root'));
```
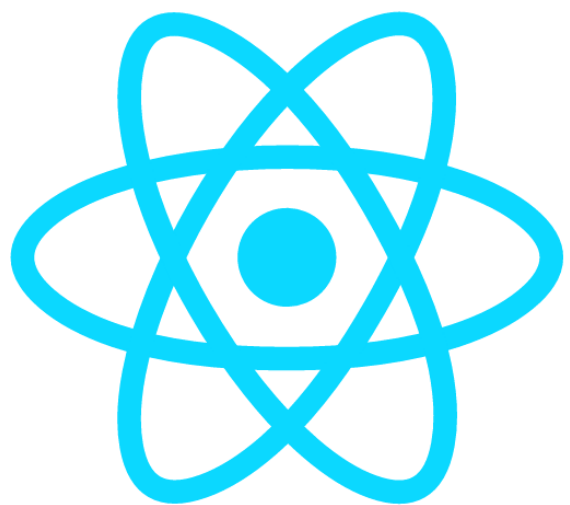
React

Att arbeta med react "på riktigt"

Att komma igång…

1. Installera NPM: https://www.npmjs.com/get-npm
2. Installera ett paket som skapar ett react-projekt
   - `npm install -g create-react-app`
3. Skapa ett projekt
   - `create-react-app my-app`
4. Navigera in till projekt-mappen
   - `cd my-app`
5. Starta en utveckling-server (miljön)
   - `npm start`

Såhär kan det se ut...

```
Windows PowerShell                                              —   □   ✕

PS C:\Projects\React> create-react-app my-app

Creating a new React app in C:\Projects\React\my-app.

Installing packages. This might take a couple of minutes.
Installing react, react-dom, and react-scripts...

> uglifyjs-webpack-plugin@0.4.6 postinstall C:\Projects\React\my-app\node_modules\uglifyjs-webpack-plugin
> node lib/post_install.js

my-app@0.1.0 C:\Projects\React\my-app
+-- react@16.2.0
| +-- fbjs@0.8.16
| | +-- core-js@1.2.7
| | +-- isomorphic-fetch@2.2.1
| | | `-- node-fetch@1.7.3
| | |     +-- encoding@0.1.12
| | |     `-- is-stream@1.1.0
| | +-- promise@7.3.1
| | +-- setimmediate@1.0.5
| | `-- ua-parser-js@0.7.17
| +-- loose-envify@1.3.1
| | `-- js-tokens@3.0.2
| +-- object-assign@4.1.1
| `-- prop-types@15.6.0
+-- react-dom@16.2.0
`-- react-scripts@1.1.1
  +-- autoprefixer@7.1.6
  | +-- browserslist@2.11.3
  | | `-- electron-to-chromium@1.3.34
  | +-- caniuse-lite@1.0.30000810
  | +-- normalize-range@0.1.2
  | +-- num2fraction@1.2.2
  | +-- postcss@6.0.19
  | | +-- chalk@2.3.1
  | | +-- source-map@0.6.1
  | | `-- supports-color@5.2.0
  | |     `-- has-flag@3.0.0
  | `-- postcss-value-parser@3.3.0
  +-- babel-core@6.26.0
  | +-- babel-code-frame@6.26.0
  | +-- babel-generator@6.26.1
  | | +-- detect-indent@4.0.0
  | | | `-- repeating@2.0.1
  | | |     `-- is-finite@1.0.2
```

```
         +-- camelcase@3.0.0
         +-- cliui@3.2.0
         +-- os-locale@1.4.0
         +-- read-pkg-up@1.0.1
         | +-- find-up@1.1.2
         | | `-- path-exists@2.1.0
         | `-- read-pkg@1.1.0
         |   +-- load-json-file@1.1.0
         |   | `-- strip-bom@2.0.0
         |   |   `-- is-utf8@0.2.1
         |   `-- path-type@1.1.0
         +-- string-width@1.0.2
         | +-- code-point-at@1.1.0
         | `-- is-fullwidth-code-point@1.0.0
         |   `-- number-is-nan@1.0.1
         +-- which-module@1.0.0
         `-- yargs-parser@4.2.1
  +-- webpack-manifest-plugin@1.3.2
  | `-- fs-extra@0.30.0
  |   +-- jsonfile@2.4.0
  |   `-- klaw@1.3.1
  `-- whatwg-fetch@2.0.3


Success! Created my-app at C:\Projects\React\my-app
Inside that directory, you can run several commands:

  npm start
    Starts the development server.

  npm run build
    Bundles the app into static files for production.

  npm test
    Starts the test runner.

  npm run eject
    Removes this tool and copies build dependencies, configuration files
    and scripts into the app directory. If you do this, you can't go back!

We suggest that you begin by typing:

  cd my-app
  npm start

Happy hacking!
PS C:\Projects\React>
```