

# Bundling

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# Why Bundle?



**CommonJS doesn't work in web browsers**

**Package project into file(s)**

**Improve Node performance**



Here's the plan



**Module formats**

**Bundlers**

**Implement ES6 modules and bundling**



# Select a Module Format

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# 5 Module Formats

IIFE

Asynchronous  
Module Definition  
(AMD)

CommonJS  
(CJS)

Universal Module  
Definition  
(UMD)

ES6 Modules



```
myGlobal;
```

◀ Global

```
(function() {  
    //my code here  
})();
```

◀ IIFE

```
define(['jq'], function(jq) {});
```

◀ AMD

```
var jquery = require('jquery')
```

◀ CommonJS

```
import jQuery from 'jquery'
```

◀ ES6 Module

The past



# Why Use ES6 Modules?



**Standardized**

**Statically analyzable**

- Improved autocomplete
- Intelligent refactoring
- Fails fast
- Tree shaking

**Easy to read**

- Named imports
- Default exports



# Selecting a Bundler

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# The First Popular Bundler...



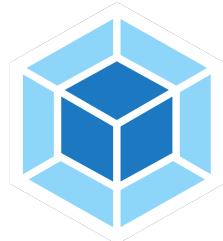
**First popular bundler**  
**Popularized the AMD pattern**



# Bundlers



Browserify



Webpack



Rollup



Parcel



Snowpack



# Browserify



**The first bundler to reach mass adoption**  
**Bundle npm packages for the web**  
**Large plugin ecosystem**



# Webpack



**Bundles more than just JS**

**Import CSS, images, etc like JS**

**Built in hot-reloading web server**



# Rollup



**Tree shaking**  
**Faster loading production code**  
**Great for library authors**



# Parcel



**Logical defaults**

**Get started quickly**

**Code splitting**

**Asset bundling**

**Fast**





# Snowpack

- Near Instant startup**
- Instant refresh on save**
- Build once, cache forever**
- Built in support for TS, React, CSS, etc.**
- Plugin ecosystem**
- Frontend focused**



# Bundlers



**Browserify**  
**Simple**



**Parcel**  
**No config**



**Webpack**  
**Comprehensive**



**Rollup**  
**Performant libraries**



**Snowpack**  
**Instant front-end builds**



# Why Webpack?



**Much more than just JS**

- CSS
- Images
- Fonts
- HTML

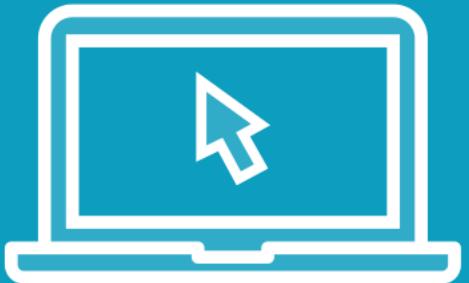
**Bundle splitting**

**Hot module reloading**

**Tree shaking**



Demo



**Set up Webpack**



# Sourcemaps

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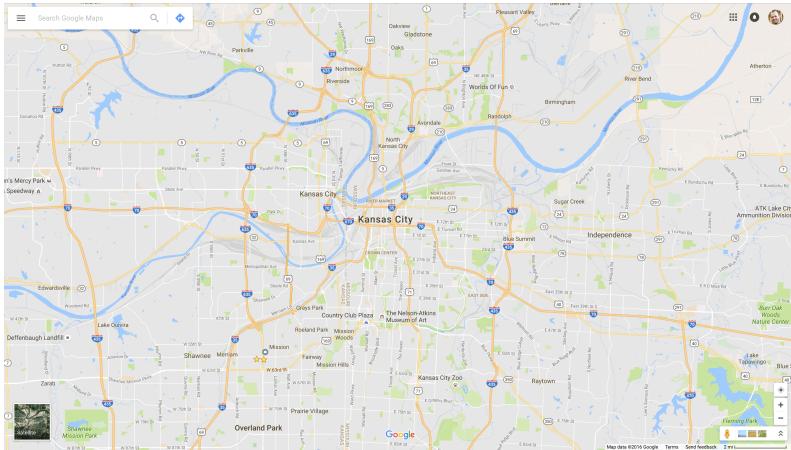


“How do I debug transpiled and  
bundled code?”

- Dev who hasn't seen the beauty of sourcemaps



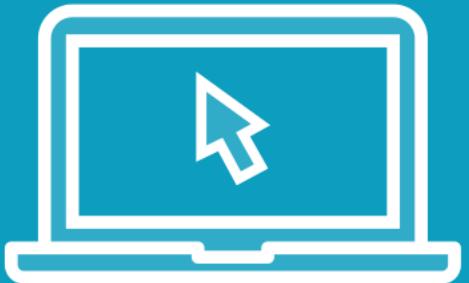
# Sourcemaps



**Maps code back to original source**  
**Part of our build**  
**Downloaded if you open developer tools**



Demo



## Debugging via Sourcemaps



# Wrap Up



## Module formats

- IIFE, AMD, UMD, CommonJS, ES

## Bundlers

- Browserify, Webpack, Rollup...

## Implement ES modules and bundling

## Debug via sourcemap

**Next up: Linting**

