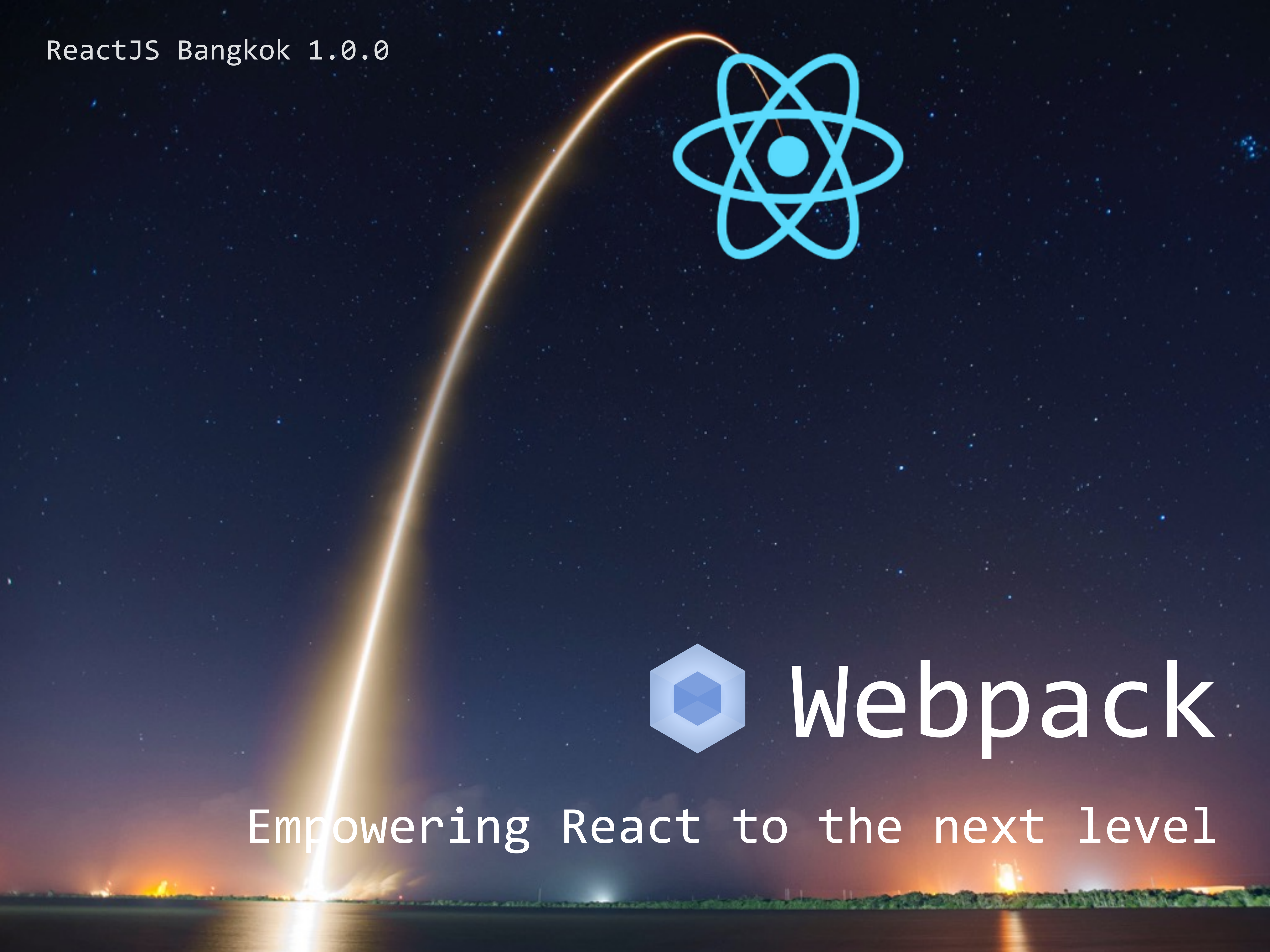
ReactJS Bangkok 1.0.0



Webpack

Empowering React to the next level

Chern

CTO at NextCover

@ranatchai
fb.com/12chg0d

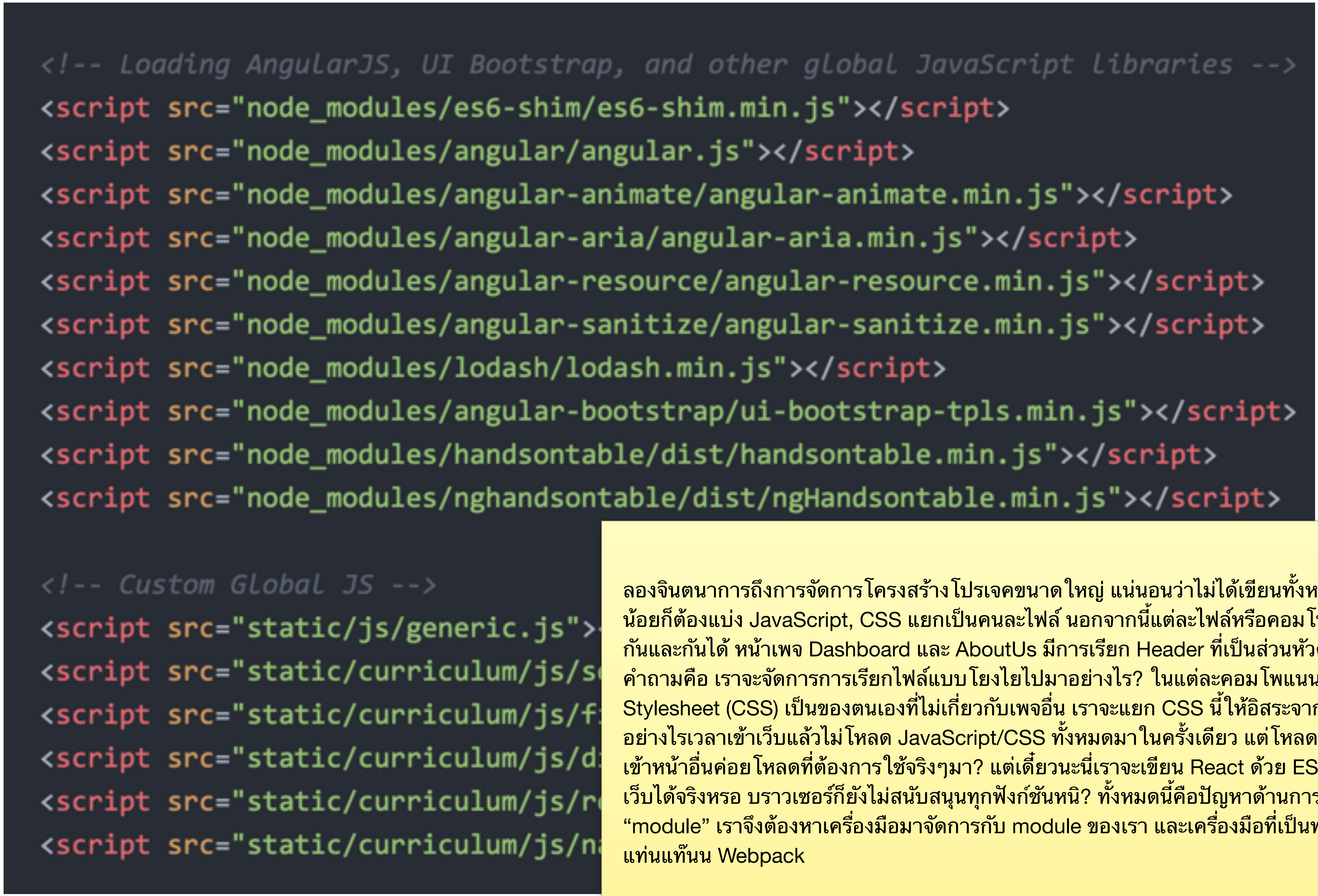
Turbo

Developer at Omise

@turboza
fb.com/turboza

We used to have these Problems

Include JavaScript

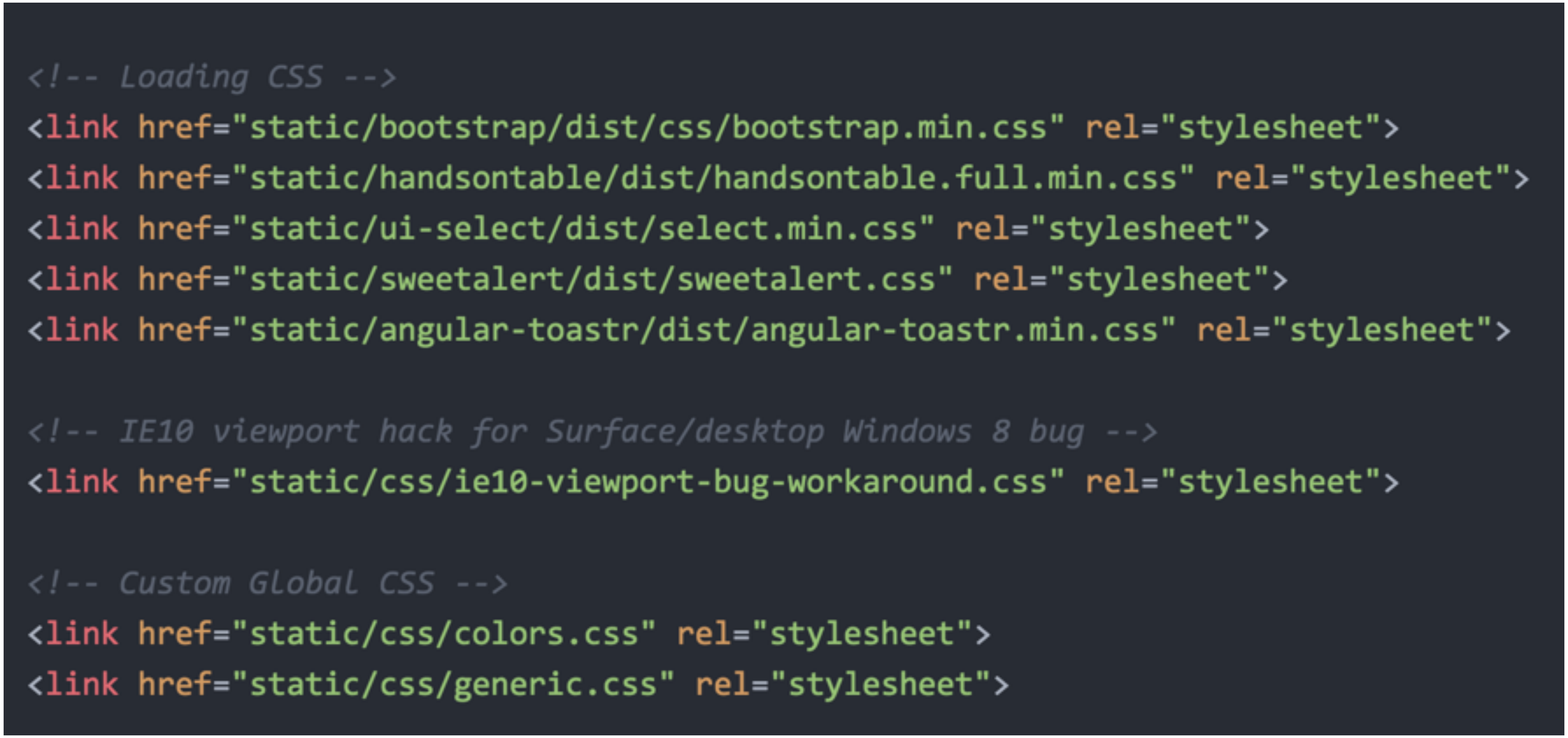


```
<!-- Loading AngularJS, UI Bootstrap, and other global JavaScript libraries -->
<script src="node_modules/es6-shim/es6-shim.min.js"></script>
<script src="node_modules/angular/angular.js"></script>
<script src="node_modules/angular-animate/angular-animate.min.js"></script>
<script src="node_modules/angular-aria/angular-aria.min.js"></script>
<script src="node_modules/angular-resource/angular-resource.min.js"></script>
<script src="node_modules/angular-sanitize/angular-sanitize.min.js"></script>
<script src="node_modules/lodash/lodash.min.js"></script>
<script src="node_modules/angular-bootstrap/ui-bootstrap-tpls.min.js"></script>
<script src="node_modules/handsontable/dist/handsontable.min.js"></script>
<script src="node_modules/nghandsontable/dist/ngHandsontable.min.js"></script>

<!-- Custom Global JS -->
<script src="static/js/generic.js">
<script src="static/curriculum/js/s
<script src="static/curriculum/js/f
<script src="static/curriculum/js/d
<script src="static/curriculum/js/r
<script src="static/curriculum/js/n
```

ลองจินตนาการถึงการจัดการโครงสร้างโปรเจคขนาดใหญ่ แน่นอนว่าไม่ได้เขียนทั้งหมดลงไฟล์เดียวแน่ อย่างน้อยก็ต้องแบ่ง JavaScript, CSS แยกเป็นคนละไฟล์ นอกจากนี้แต่ละไฟล์หรือคอมโพแนนท์ยังสามารถเรียกกันและกันได้ หน้าเพจ Dashboard และ AboutUs มีการเรียก Header ที่เป็นส่วนหัวด้านบนของทุกๆเพจ คำถามคือ เราจะจัดการการเรียกไฟล์แบบโยงไยไปมาอย่างไร? ในแต่ละคอมโพแนนท์เช่น AboutUS ก็จะมี Stylesheet (CSS) เป็นของตนเองที่ไม่เกี่ยวกับเพจอื่น เราจะแยก CSS นี้ให้อิสระจากเพจอื่นอย่างไร? จะทำอย่างไรเวลาเข้าเว็บแล้วไม่โหลด JavaScript/CSS ทั้งหมดมาในครั้งเดียว แต่โหลดเฉพาะที่ใช้ในเพจนั้น เมื่อเข้าหน้าอื่นค่อยโหลดที่ต้องการใช้จริงๆมา? แต่เดี๋ยวนะนี่เราจะเขียน React ด้วย ES2015 หนิ มันจะใช้บนเว็บได้จริงหรอ บราวเซอร์ก็ยังไม่สนับสนุนทุกฟังก์ชันหนิ? ทั้งหมดนี้คือปัญหาด้านการจัดการสิ่งที่เราเรียกว่า “module” เราจึงต้องหาเครื่องมือมาจัดการกับ module ของเรา และเครื่องมือที่เป็นพระเอกของเราก็คือ… แท่นแท๊น Webpack

Include CSS, Fonts, Image, etc.



```html
<!-- Loading CSS -->
<link href="static/bootstrap/dist/css/bootstrap.min.css" rel="stylesheet">
<link href="static/handsontable/dist/handsontable.full.min.css" rel="stylesheet">
<link href="static/ui-select/dist/select.min.css" rel="stylesheet">
<link href="static/sweetalert/dist/sweetalert.css" rel="stylesheet">
<link href="static/angular-toastr/dist/angular-toastr.min.css" rel="stylesheet">

<!-- IE10 viewport hack for Surface/desktop Windows 8 bug -->
<link href="static/css/ie10-viewport-bug-workaround.css" rel="stylesheet">

<!-- Custom Global CSS -->
<link href="static/css/colors.css" rel="stylesheet">
<link href="static/css/generic.css" rel="stylesheet">
```

browserify

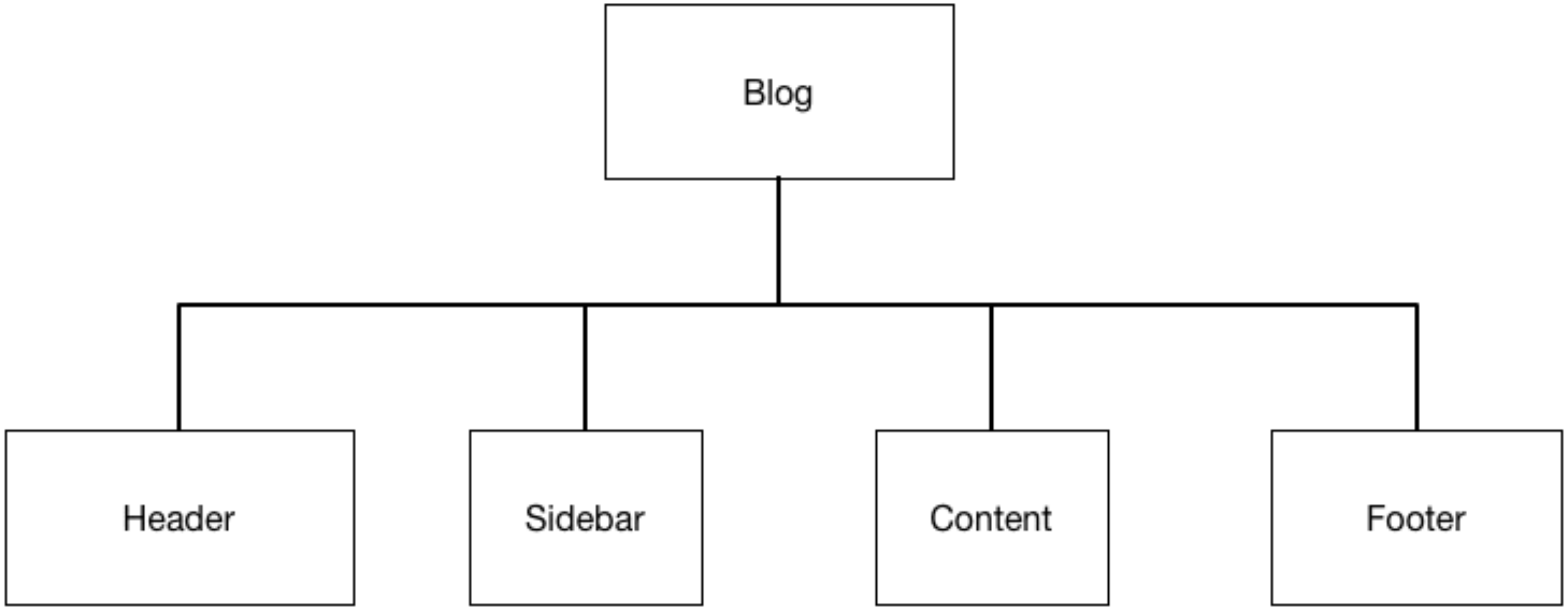
AMD &
Require.js

GRUNT

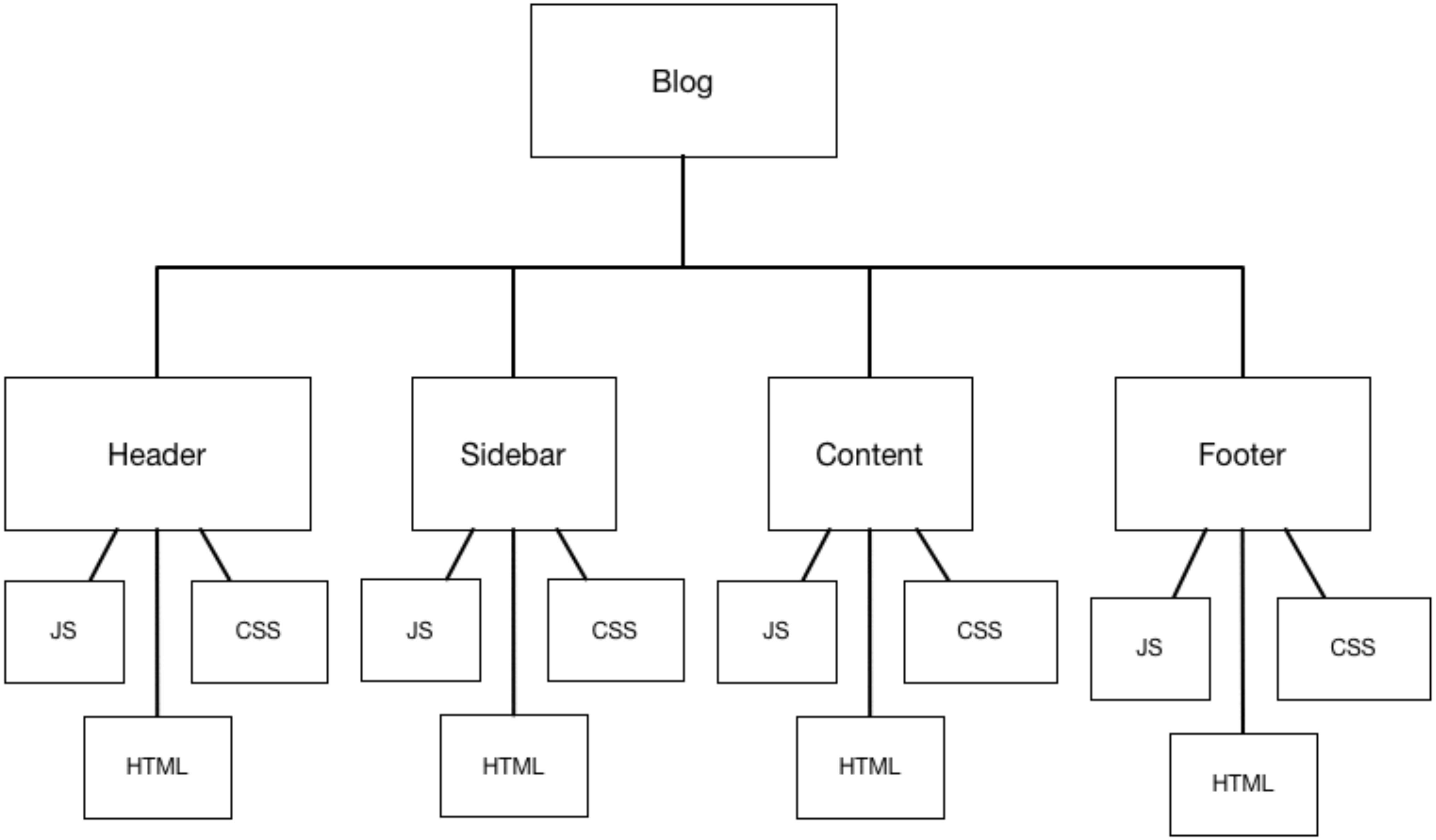
Gulp

Best Practice to
Solve Complex Application

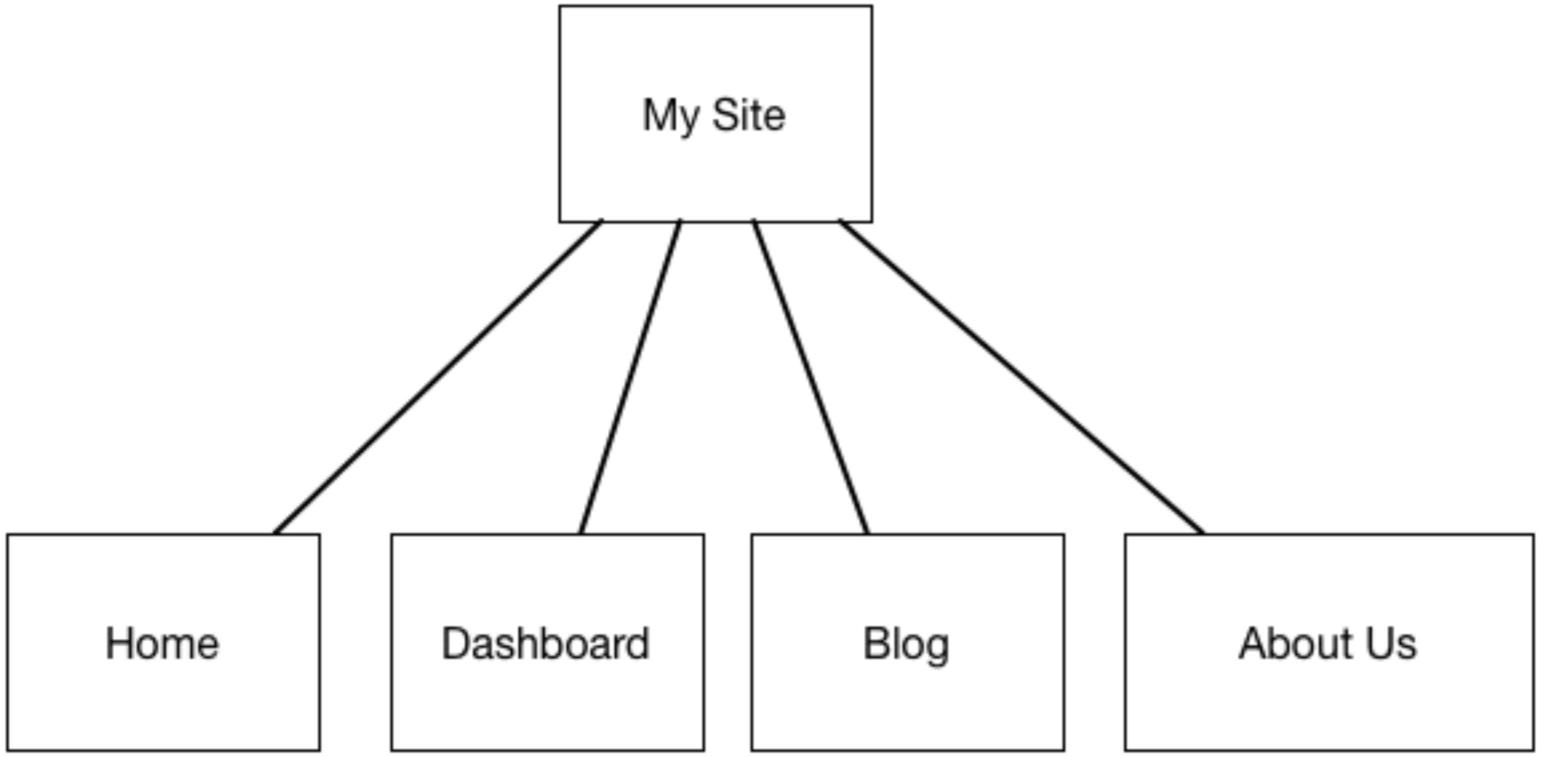
Thinking in Components



Thinking in Components (2)



Thinking in Components (3)



Source map

Live Reload

Minify

Caching

And a lot of hassle in development & production build

Uglify

Asset

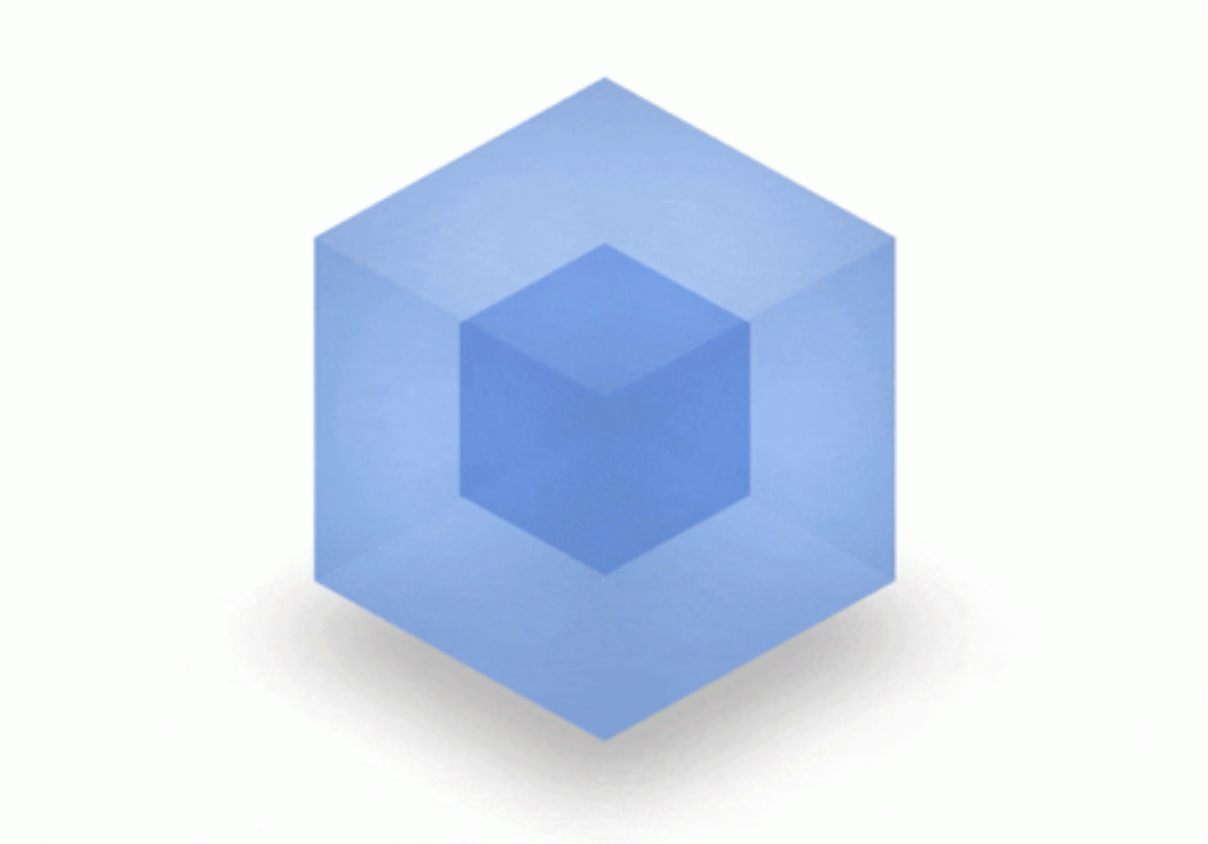
Build

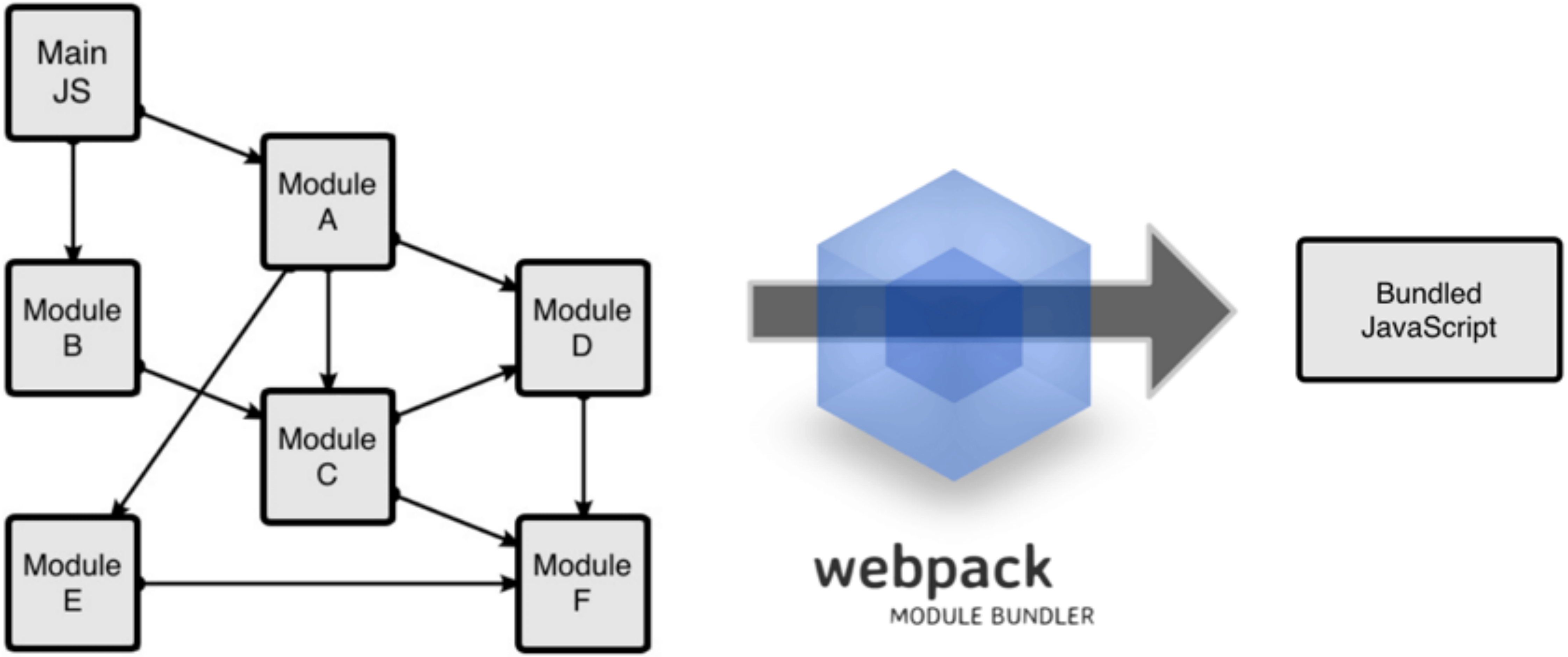
Isomorphic

Optimize

Bundle

Webpack will be our Hero!





Main JS

Module A

Module B

Module C

Module D

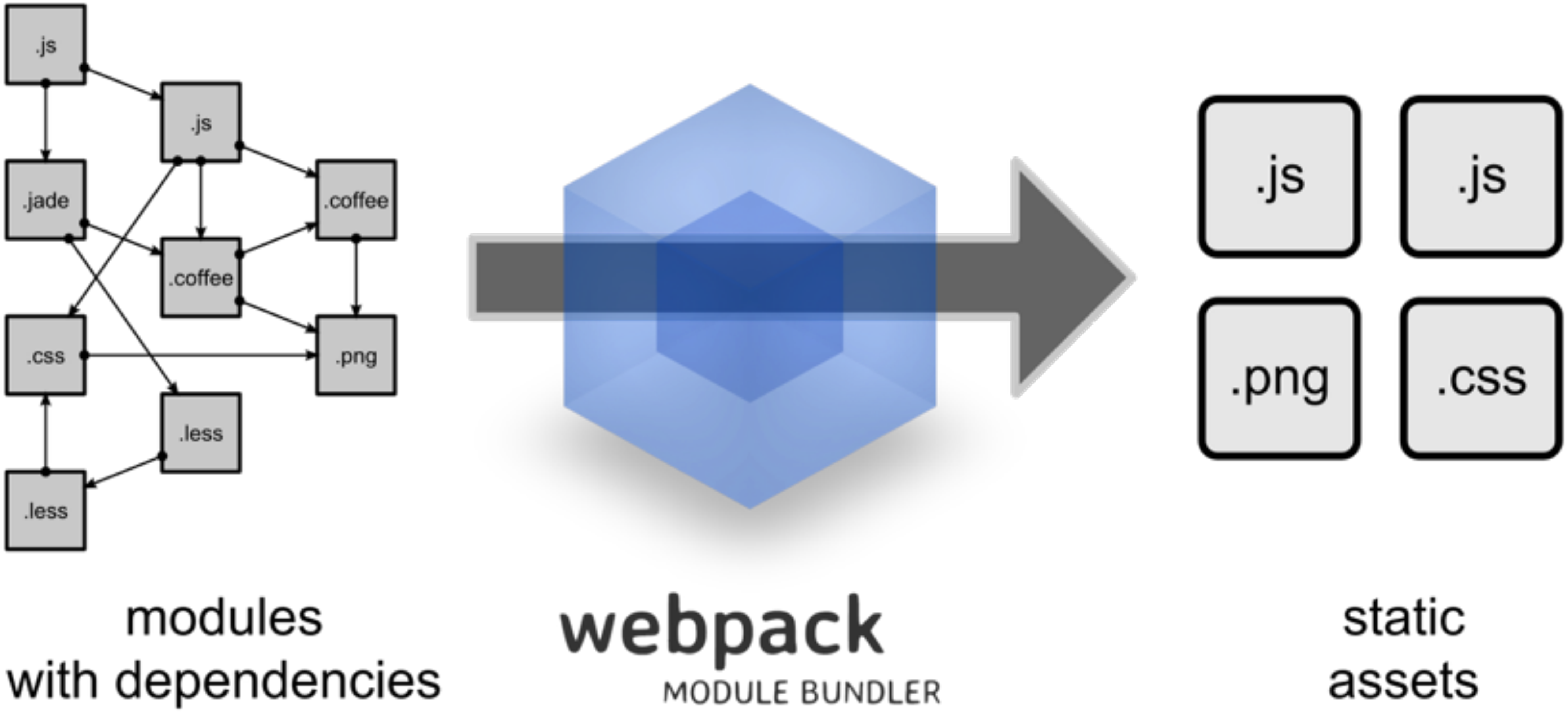
Module E

Module F

webpack

MODULE BUNDLER

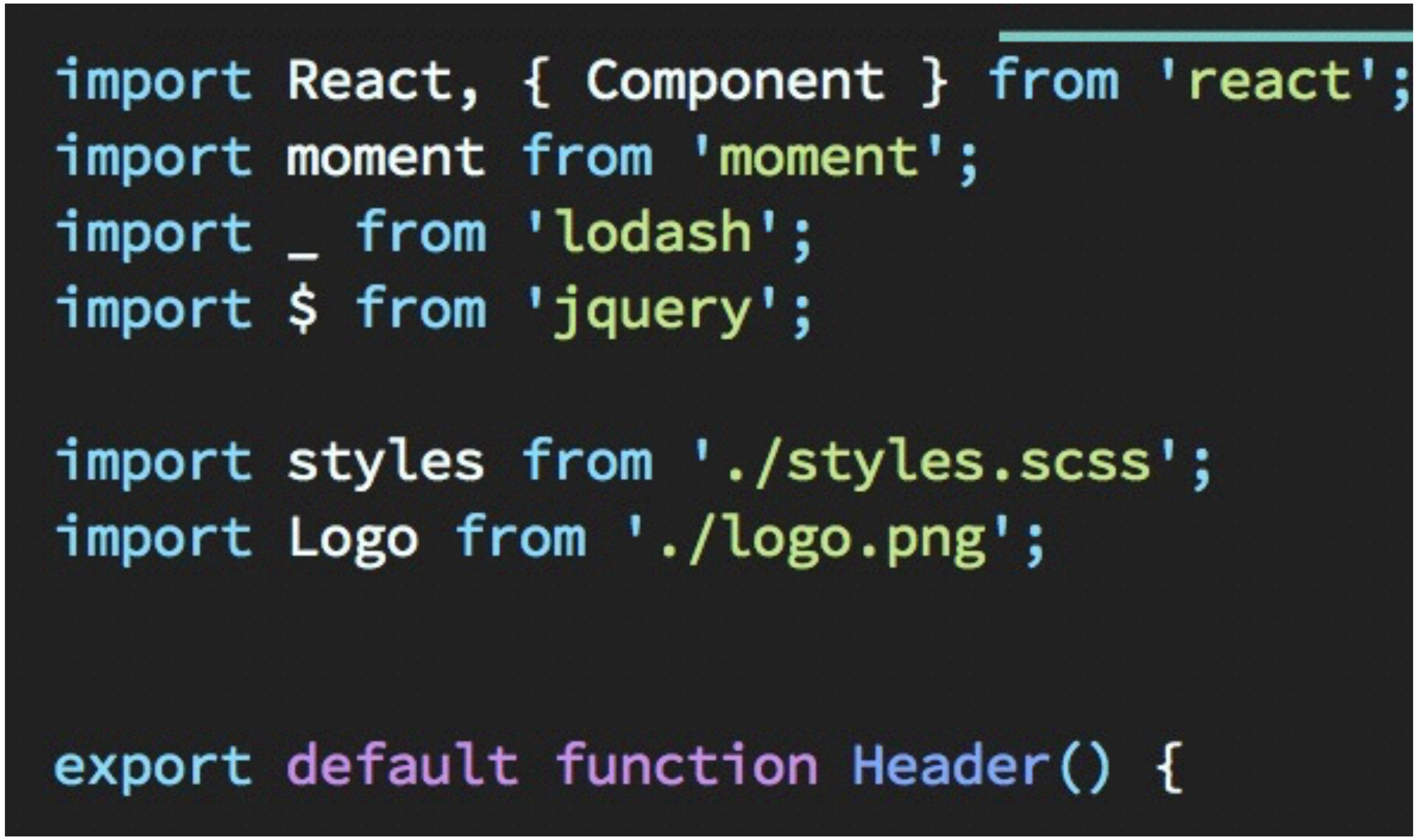
Bundled JavaScript



Including JavaScript, CSS, Font,
Image, JSON, etc.

มีสองสิ่งเกิดขึ้น อย่างแรกคือเราใช้ฟอร์แมต JSX สร้าง React JSX เป็น syntax ของ Reac
JavaScript ผสม HTML tag ได้ แต่น่าเสียดาย Webpack ไม่เข้าใจ JSX คืออะไร! ด้วยเหตุ
จัดการอะไรซักอย่างก่อน ในที่นี่คือหาคนกลางมาแปลง JSX ก่อนให้ Webpack ทำงานต่อไ
ว่า Loader

Everything can be imported

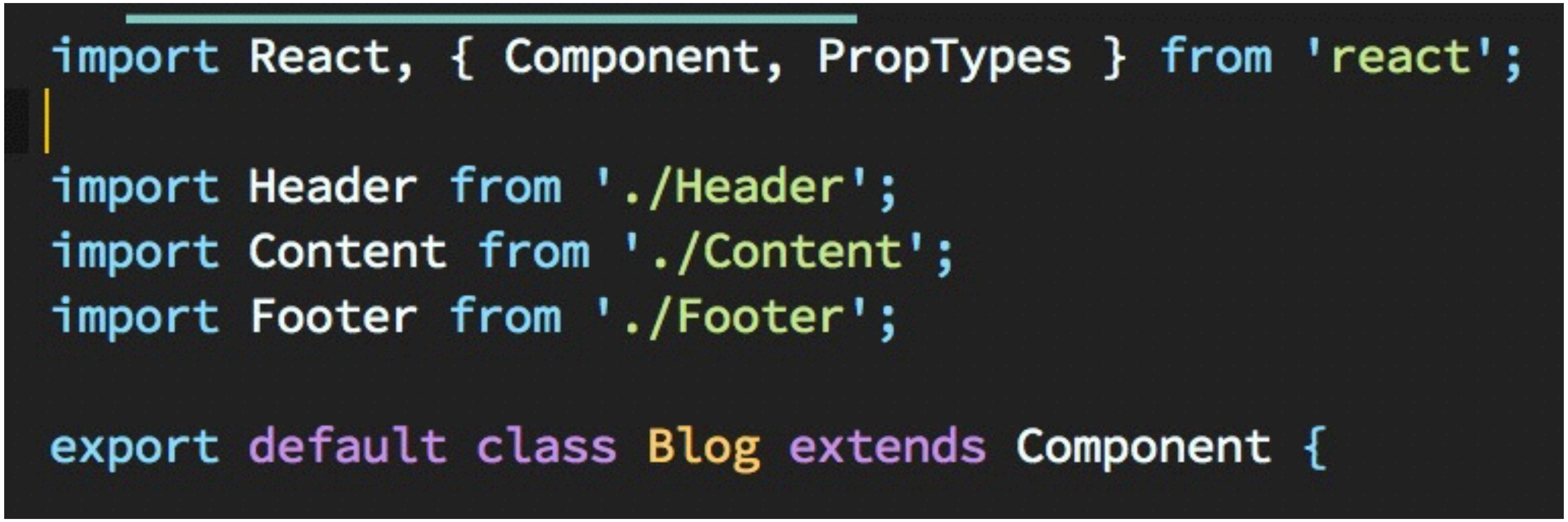


```
import React, { Component } from 'react';
import moment from 'moment';
import _ from 'lodash';
import $ from 'jquery';

import styles from './styles.scss';
import Logo from './logo.png';


export default function Header() {
```

Thinking in Components

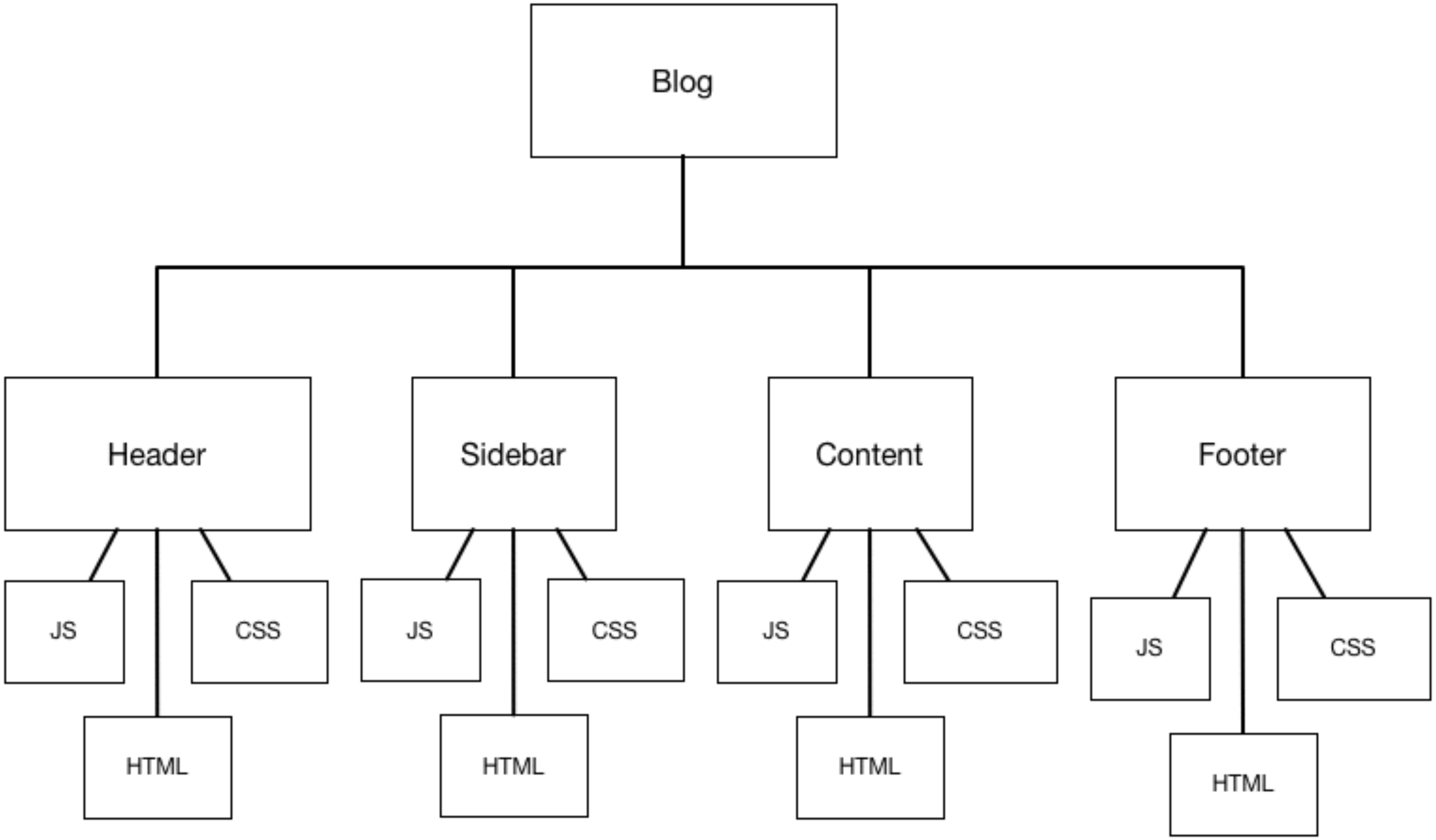


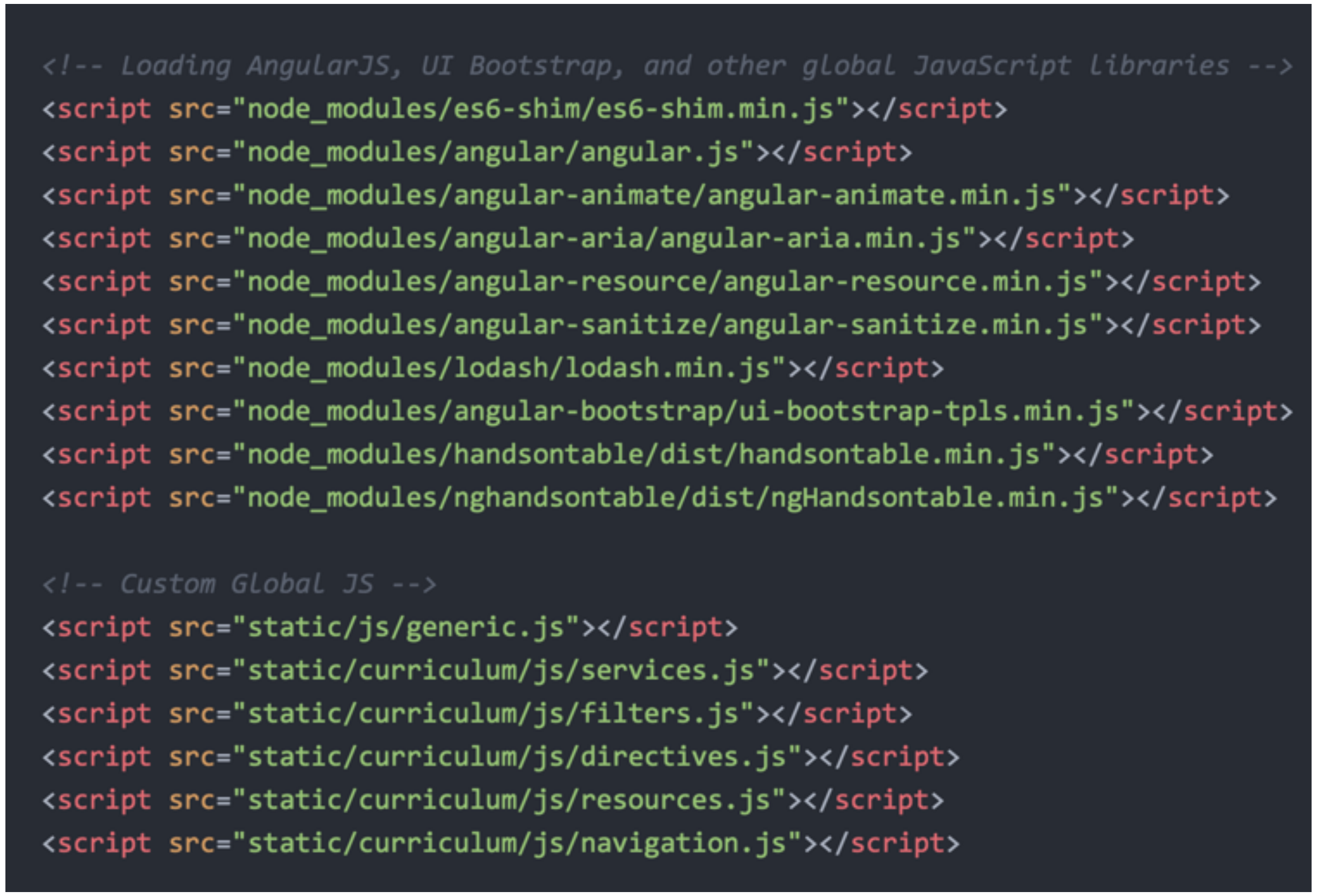
```
import React, { Component, PropTypes } from 'react';

import Header from './Header';
import Content from './Content';
import Footer from './Footer';

export default class Blog extends Component {
```

Thinking in Components (2)





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<script src="node_modules/angular-aria/angular-aria.min.js"></script>
<script src="node_modules/angular-resource/angular-resource.min.js"></script>
<script src="node_modules/angular-sanitize/angular-sanitize.min.js"></script>
<script src="node_modules/lodash/lodash.min.js"></script>
<script src="node_modules/angular-bootstrap/ui-bootstrap-tpls.min.js"></script>
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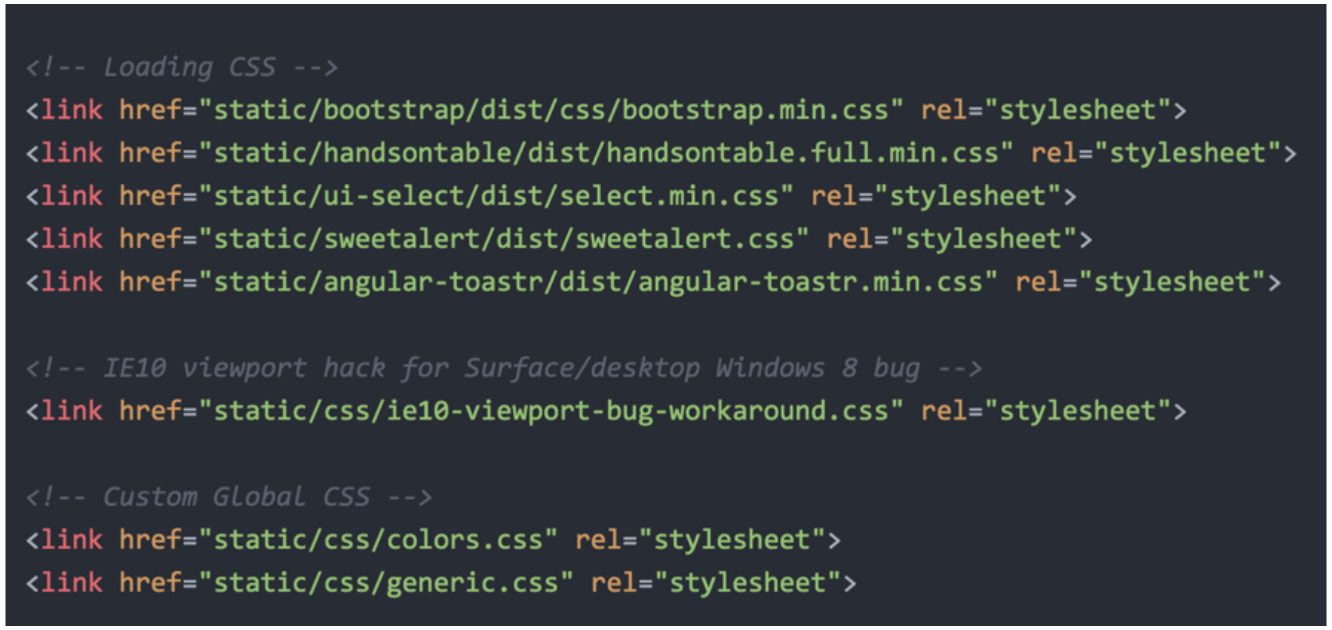
<script src="node_modules/nghandsontable/dist/ngHandsontable.min.js"></script>

<!-- Custom Global JS -->
<script src="static/js/generic.js"></script>
<script src="static/curriculum/js/services.js"></script>
<script src="static/curriculum/js/filters.js"></script>
<script src="static/curriculum/js/directives.js"></script>
<script src="static/curriculum/js/resources.js"></script>
<script src="static/curriculum/js/navigation.js"></script>
```



```html
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<link href="static/ui-select/dist/select.min.css" rel="stylesheet">
<link href="static/sweetalert/dist/sweetalert.css" rel="stylesheet">
<link href="static/angular-toastr/dist/angular-toastr.min.css" rel="stylesheet">

<!-- IE10 viewport hack for Surface/desktop Windows 8 bug -->
<link href="static/css/ie10-viewport-bug-workaround.css" rel="stylesheet">

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<link href="static/css/colors.css" rel="stylesheet">
<link href="static/css/generic.css" rel="stylesheet">
```
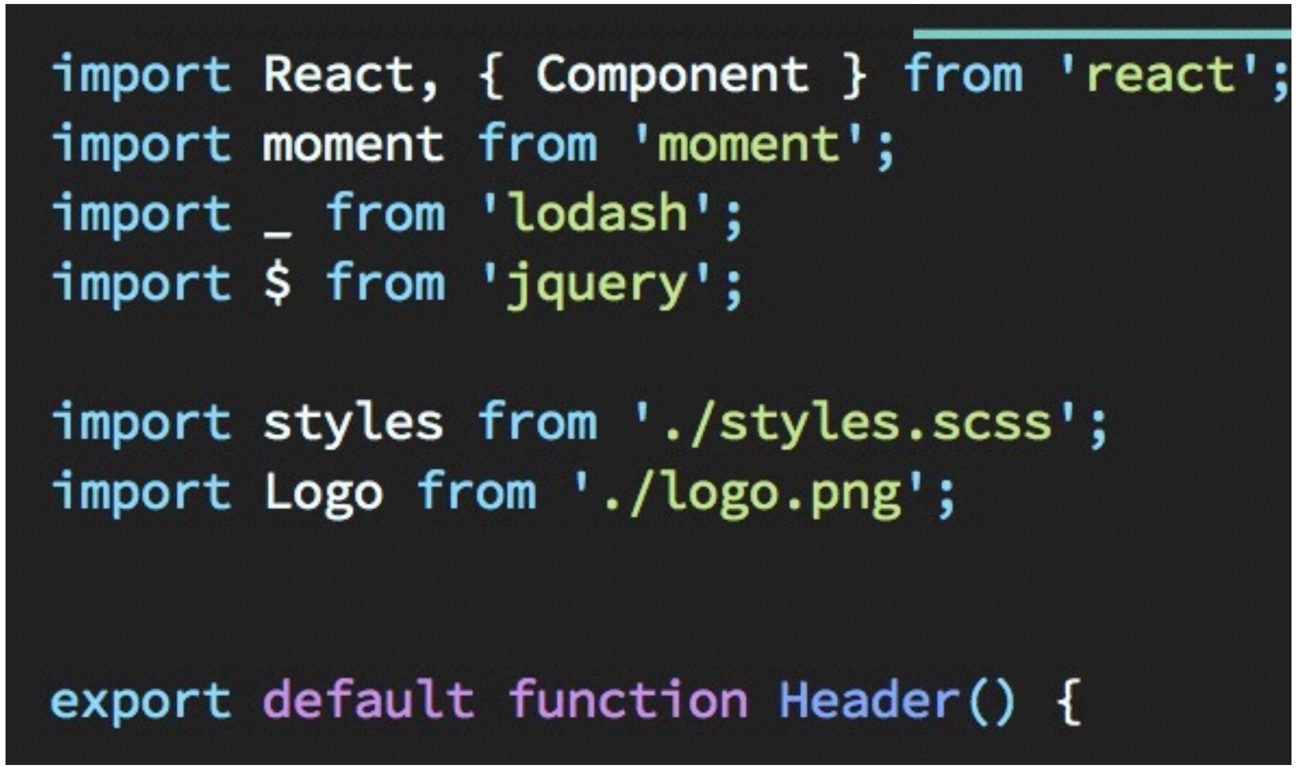
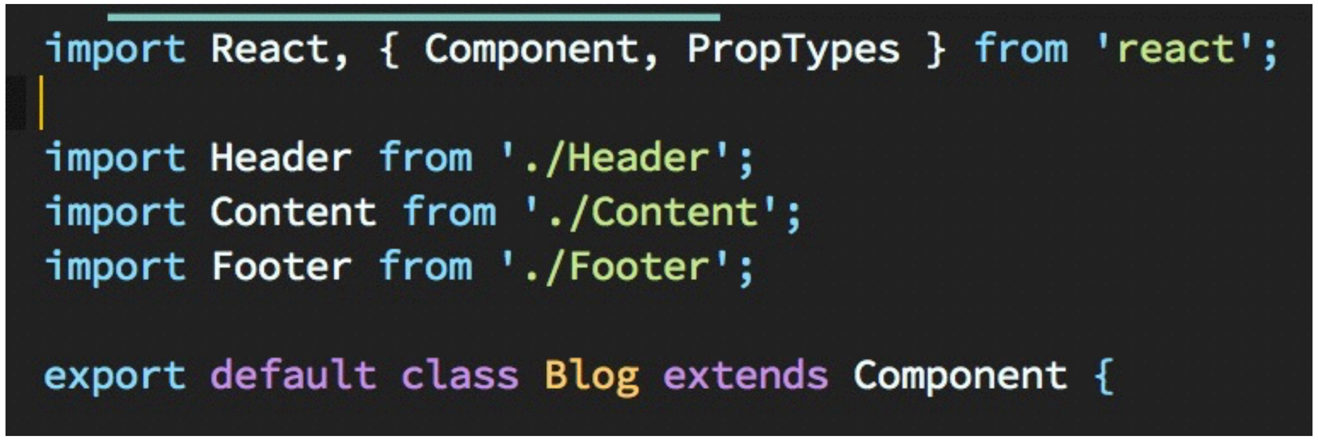
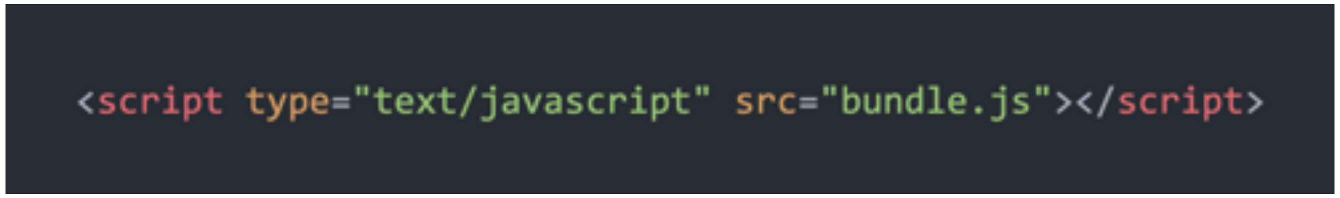



```javascript
import React, { Component } from 'react';
import moment from 'moment';
import _ from 'lodash';
import $ from 'jquery';

import styles from './styles.scss';
import Logo from './logo.png';


export default function Header() {
```



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

import Header from './Header';
import Content from './Content';
import Footer from './Footer';

export default class Blog extends Component {
```



```html
<script type="text/javascript" src="bundle.js"></script>
```

Source map

Live Reload

Caching

Minify

Webpack Plugins

Dashboard

Uglify

Hot Reload

gzip

HTML

Prefetch

What will we talk today?

Discussion topics

Webpack Basic (15 Mins)

1. Loaders: Bundle all the things
2. Webpack Dev Server: Easy local server
3. CSS Loader: Manage style like a boss
4. React Hot Loader: Sky rocket dev speed
5. Plugins: Enhance the development workflow

Discussion topics

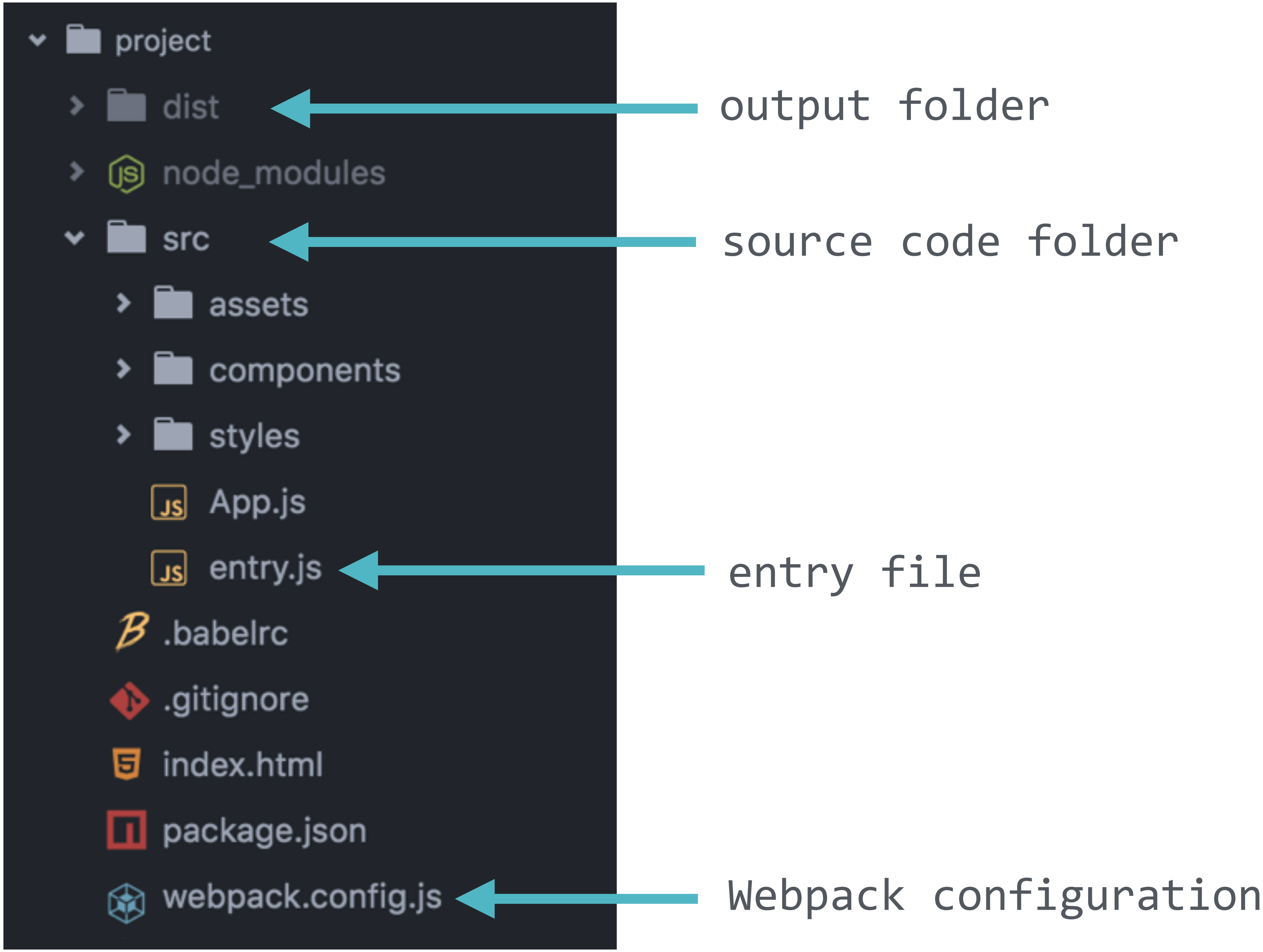
Webpack Advance (20 Mins)

6. Development Best Practice

7. Production Best Practice

0. Webpack Basic

Project Structure



```
project
  dist
  node_modules
  src
    assets
    components
    styles
    App.js
    entry.js
  .babelrc
  .gitignore
  index.html
  package.json
  webpack.config.js
```

output folder

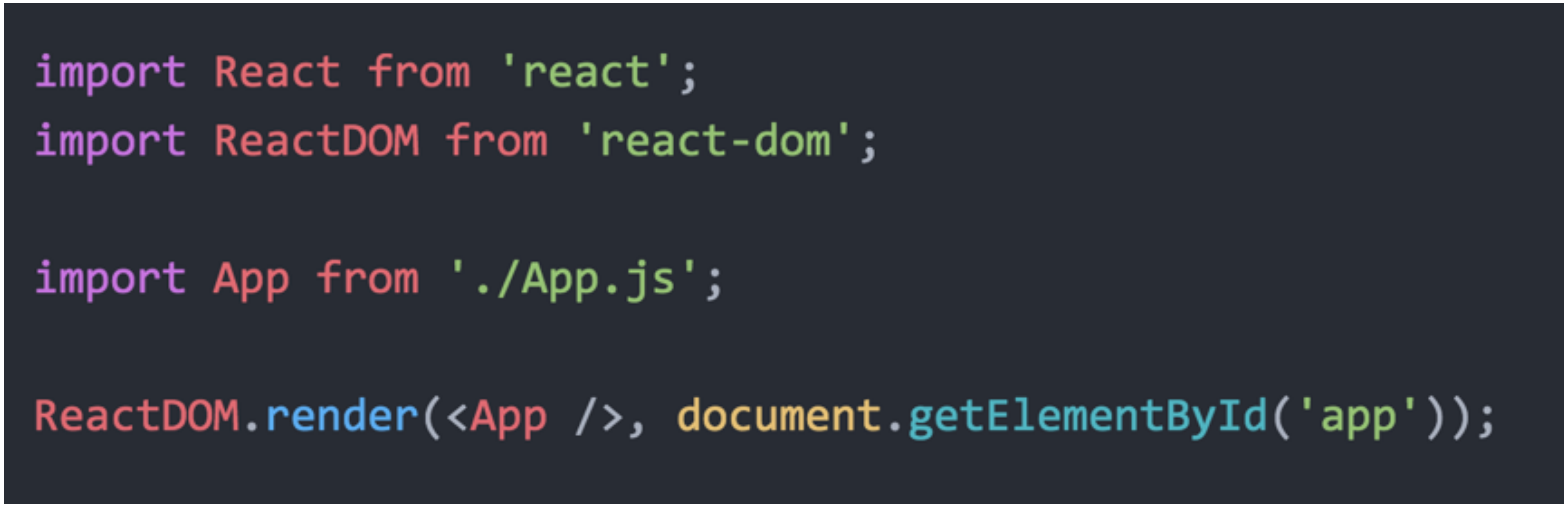
source code folder

entry file

Webpack configuration

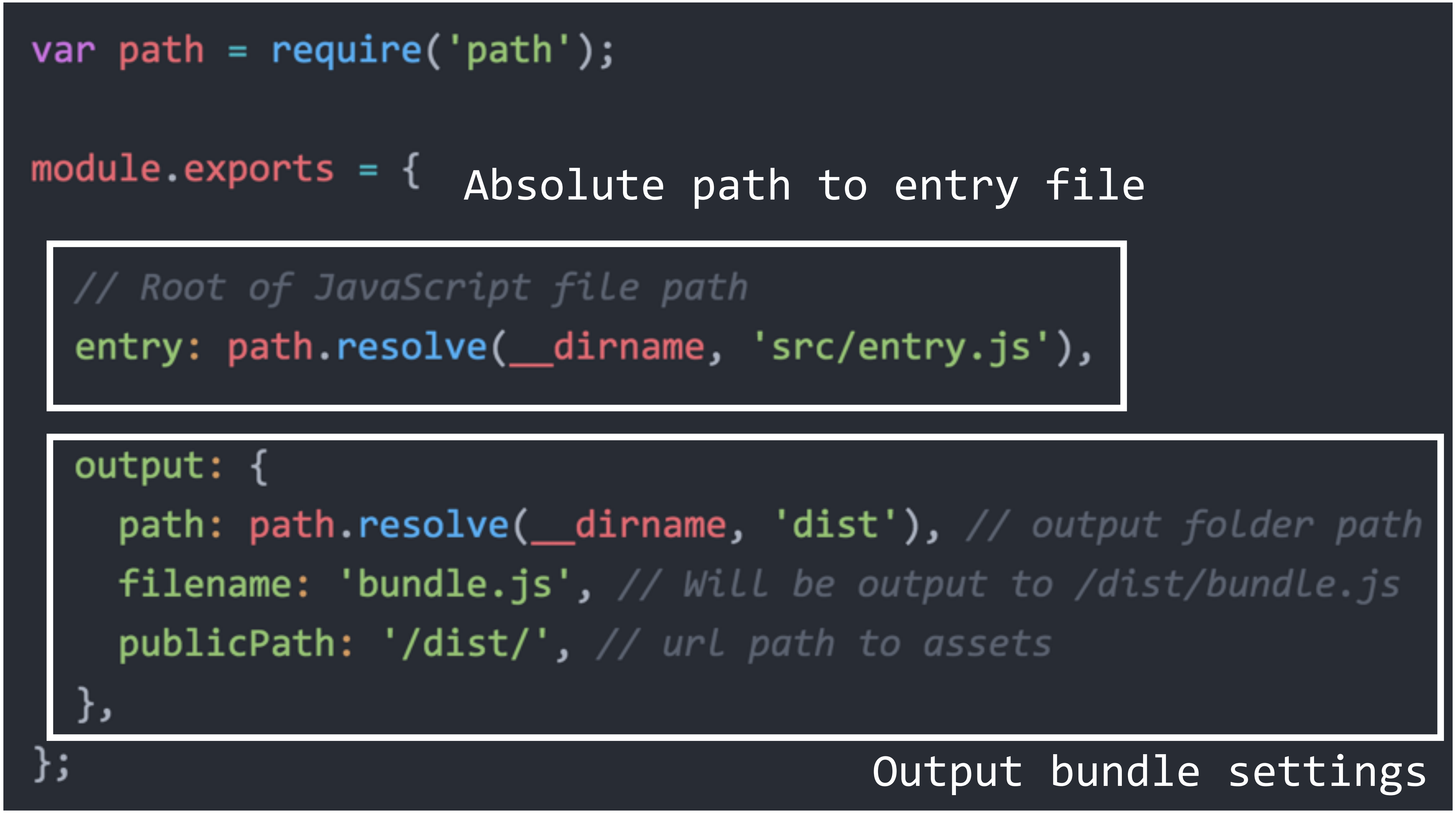
entry.js

Root of all source files



```
import React from 'react';
import ReactDOM from 'react-dom';

import App from './App.js';

ReactDOM.render(<App />, document.getElementById('app'));
```

webpack.config.js

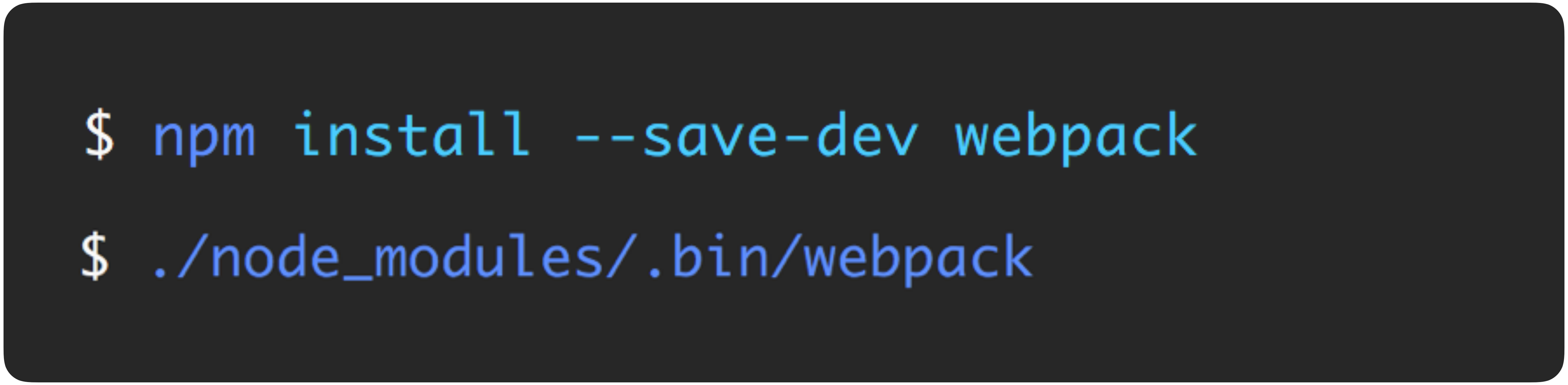


```
var path = require('path');

module.exports = {
  // Root of JavaScript file path
  entry: path.resolve(__dirname, 'src/entry.js'),
  output: {
    path: path.resolve(__dirname, 'dist'), // output folder path
    filename: 'bundle.js', // Will be output to /dist/bundle.js
    publicPath: '/dist/', // url path to assets
  },
};
```

Absolute path to entry file

Output bundle settings

Using webpack



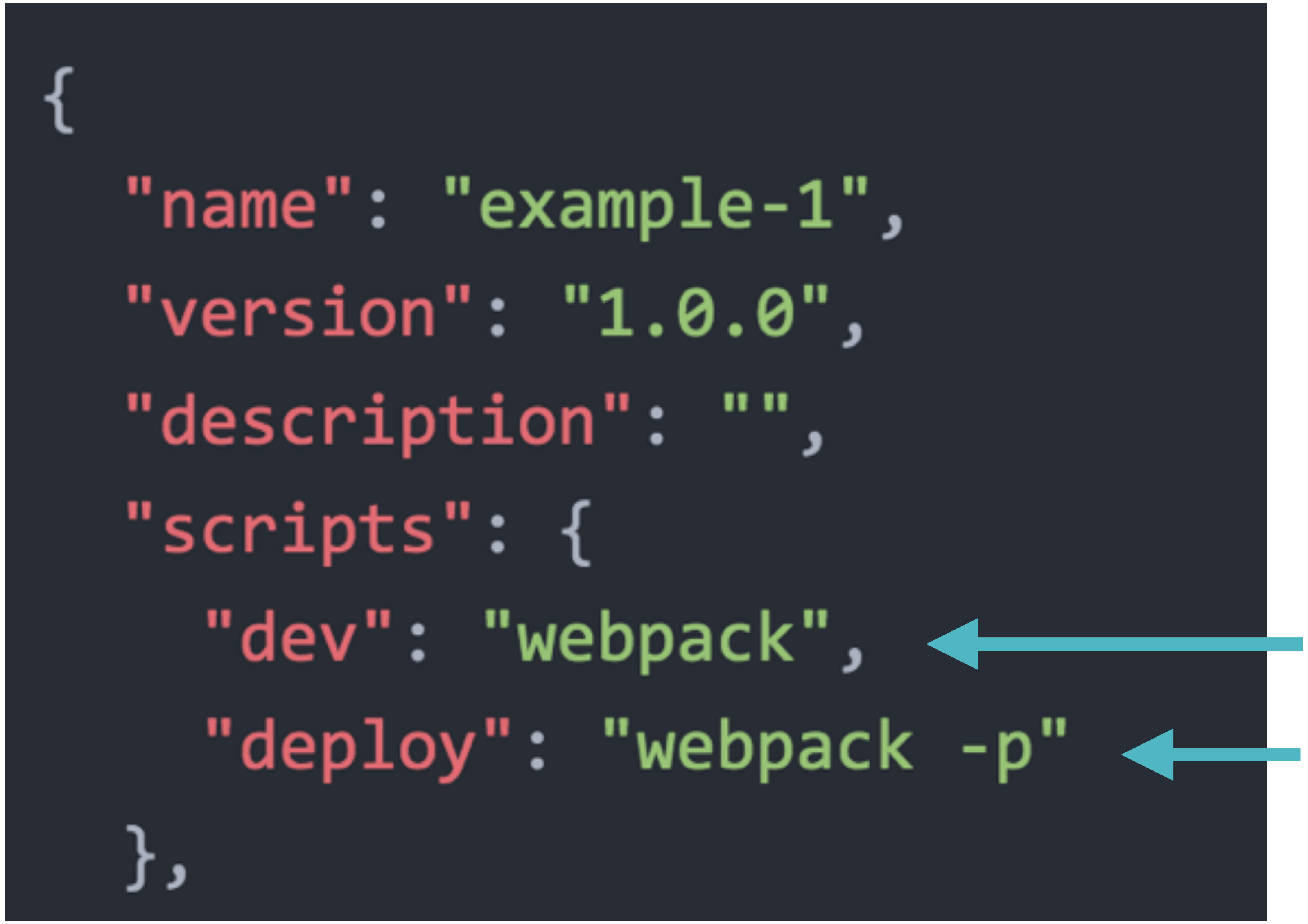
```
$ npm install --save-dev webpack

$ ./node_modules/.bin/webpack
```

Terminal command

Tips:

- We can also use `npm i webpack -D`
- No global install is better when working with team

package.json

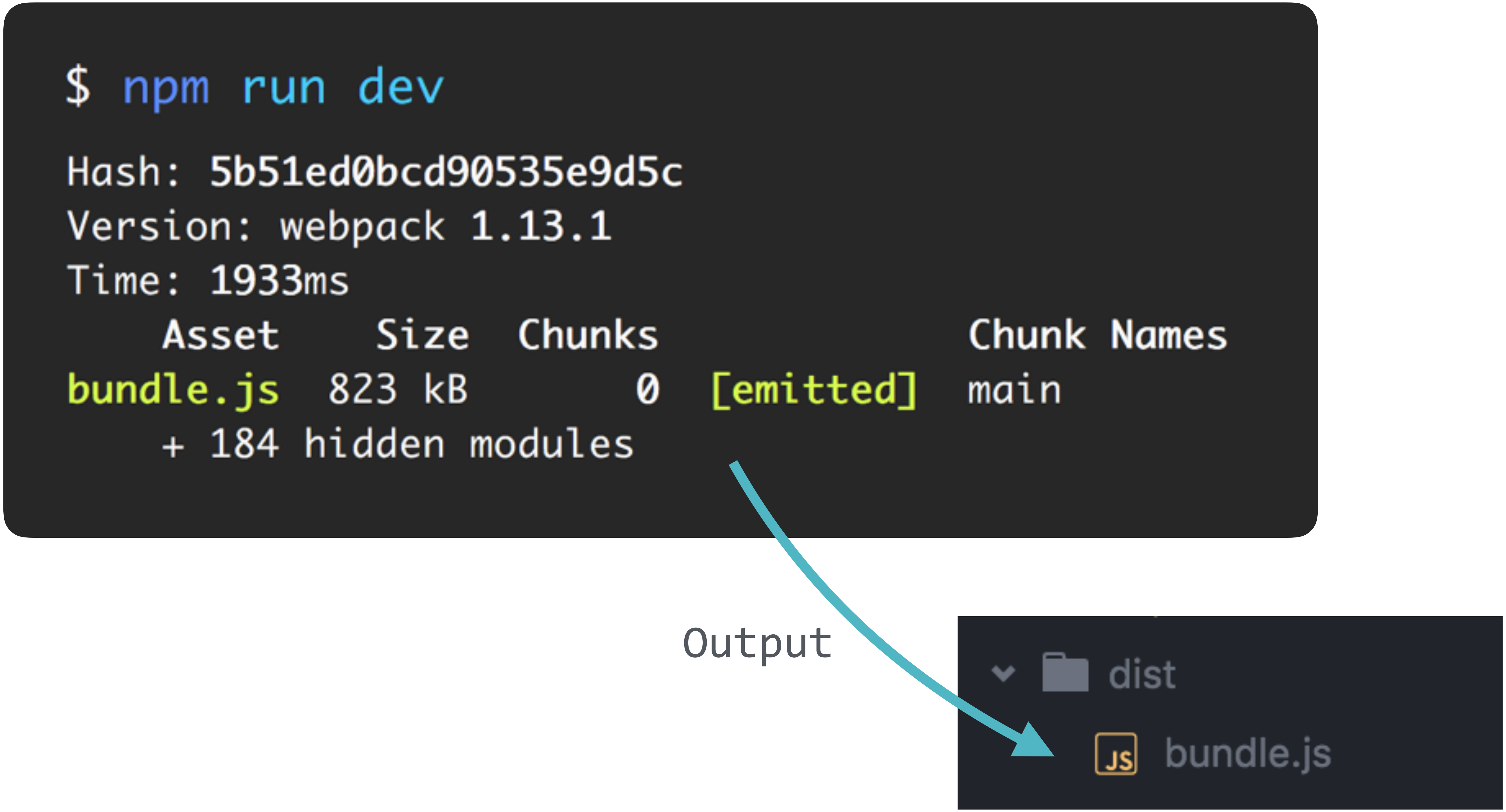


```
{
  "name": "example-1",
  "version": "1.0.0",
  "description": "",
  "scripts": {
    "dev": "webpack",
    "deploy": "webpack -p"
  },
```

Development build

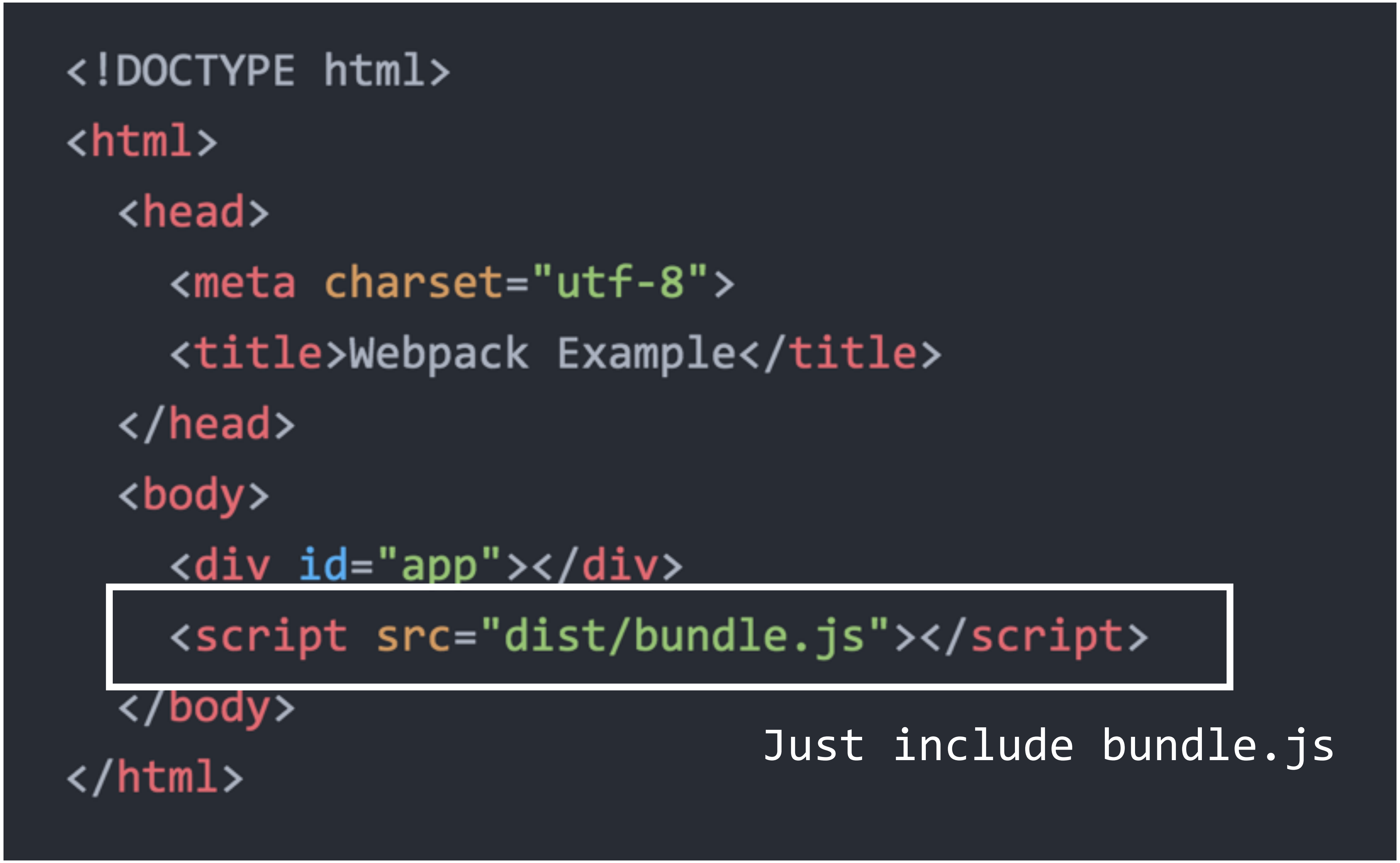
Production build

Building bundle



```
$ npm run dev

Hash: 5b51ed0bcd90535e9d5c
Version: webpack 1.13.1
Time: 1933ms
    Asset     Size  Chunks             Chunk Names
bundle.js   823 kB       0  [emitted]  main
    + 184 hidden modules
```

index.html



```html
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8">
    <title>Webpack Example</title>
  </head>
  <body>
    <div id="app"></div>
    <script src="dist/bundle.js"></script>
  </body>
</html>
```

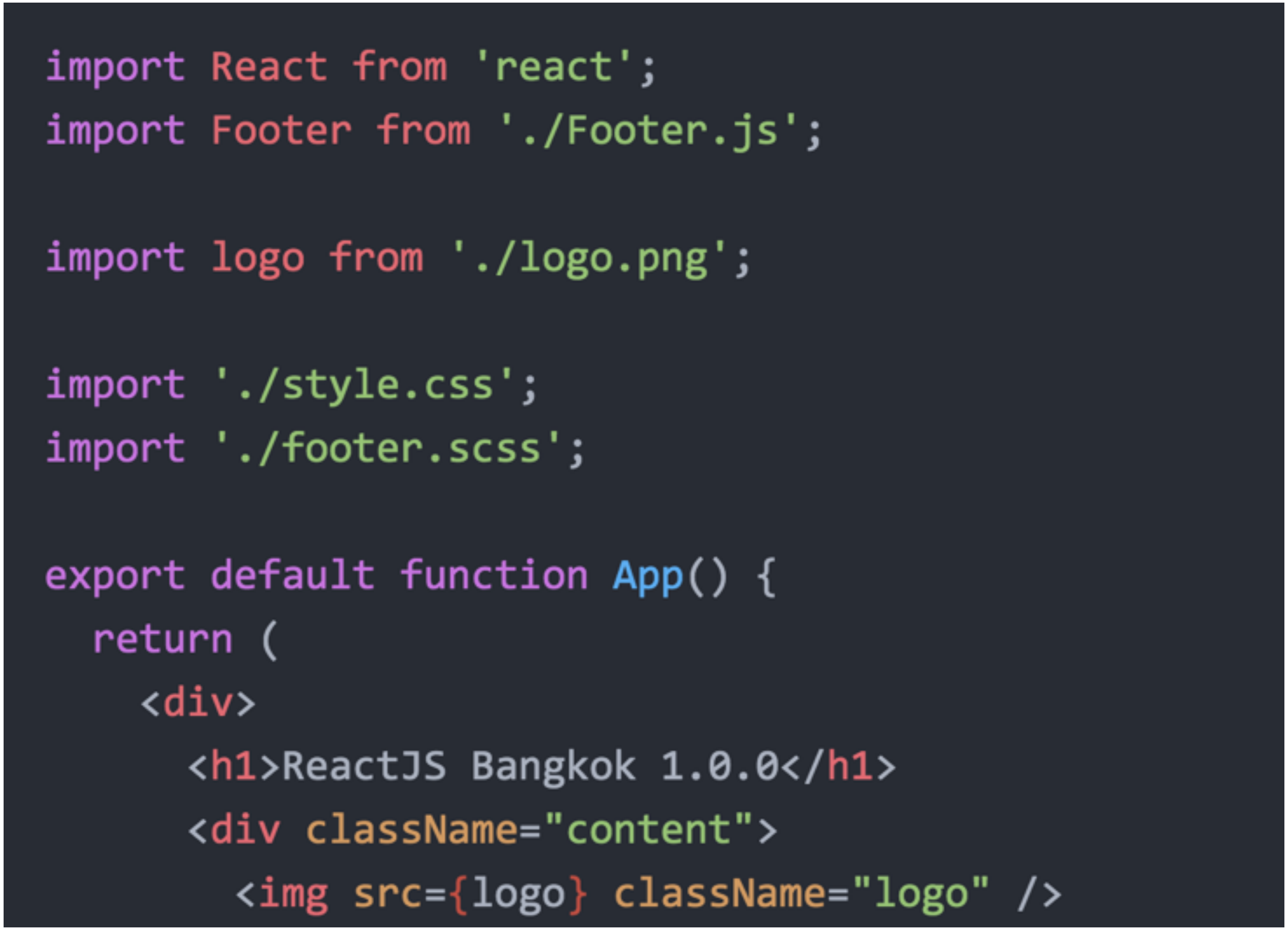
Just include bundle.js

How to work with React and other assets?

1. Loaders

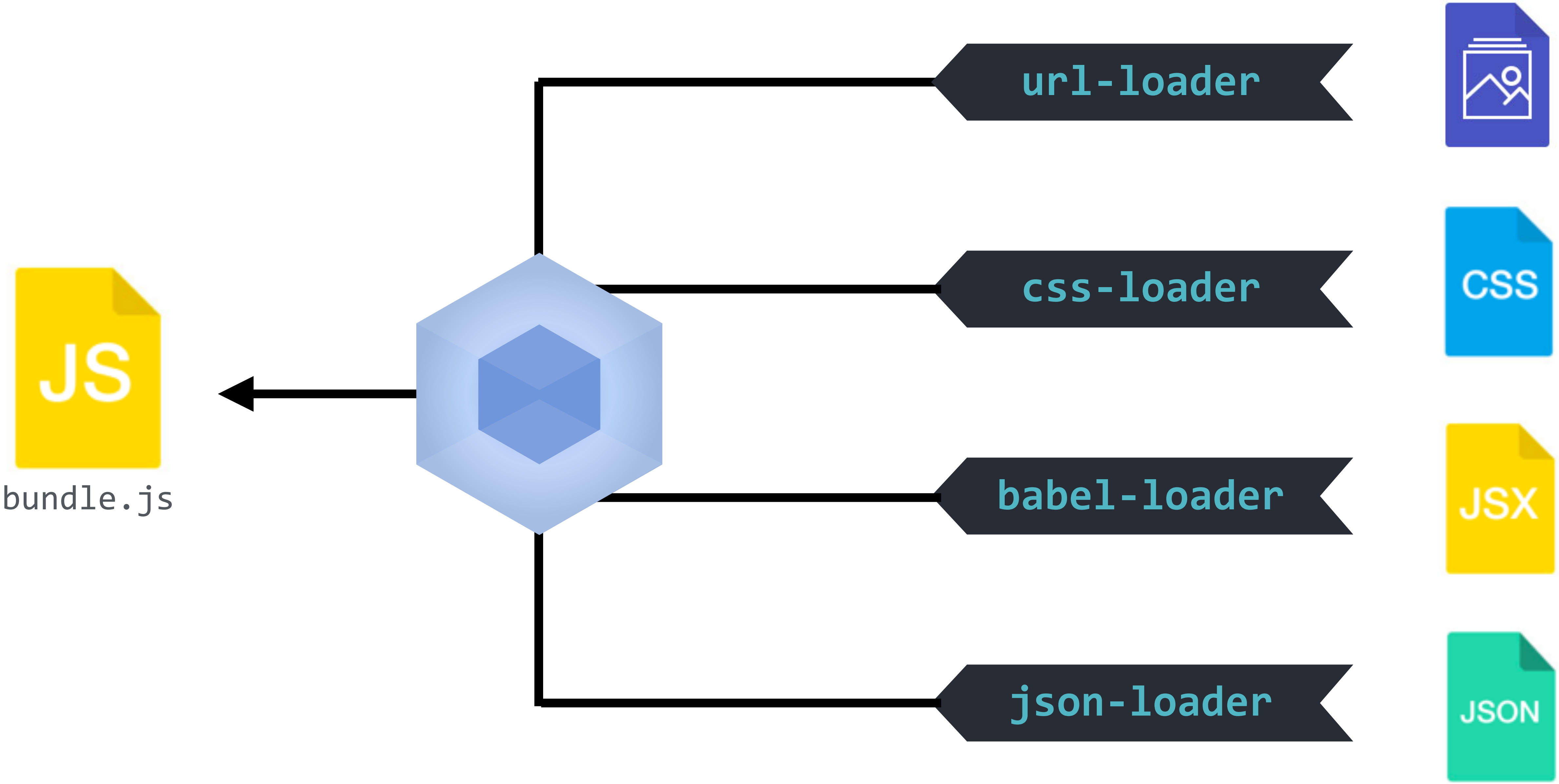
Bundle all the things

Import anything



```
import React from 'react';
import Footer from './Footer.js';

import logo from './logo.png';

import './style.css';
import './footer.scss';

export default function App() {
  return (
    <div>
      <h1>ReactJS Bangkok 1.0.0</h1>
      <div className="content">
        <img src={logo} className="logo" />
```

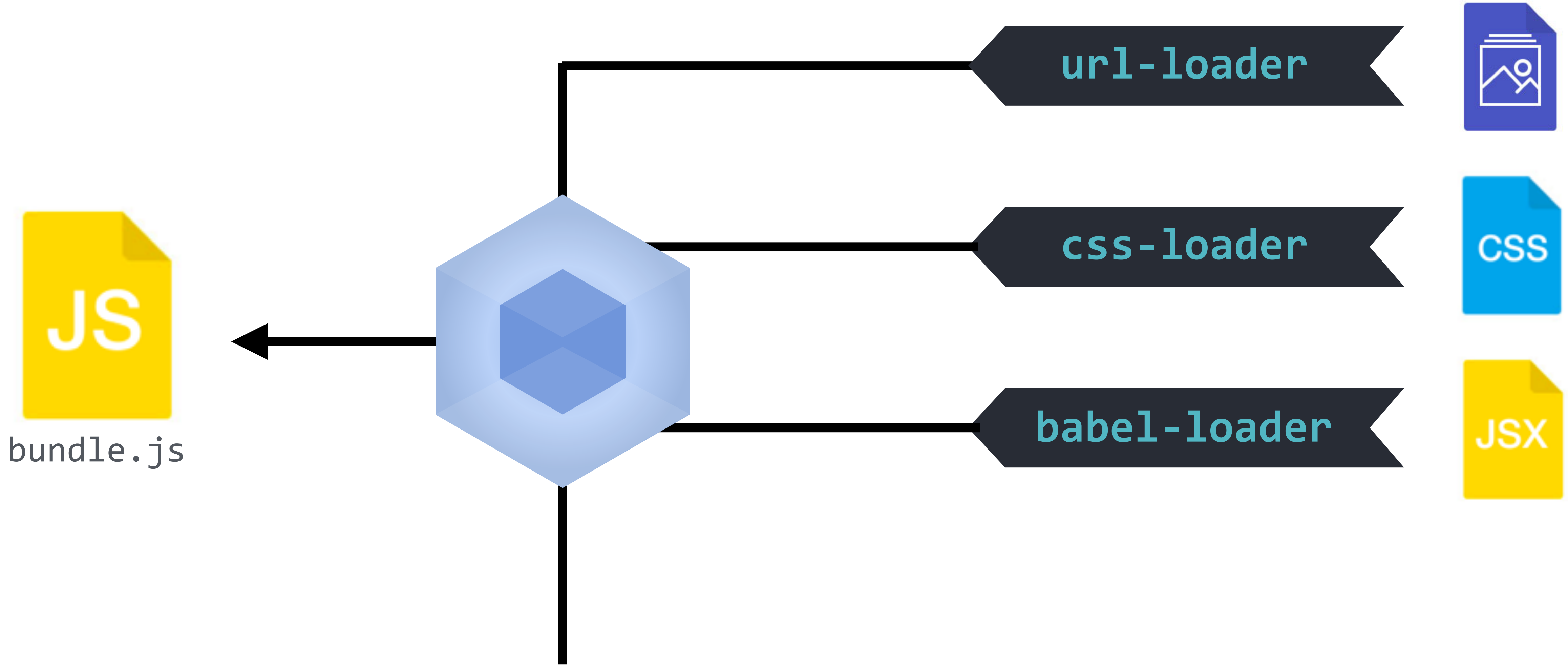
Import anything



Q: What can be bundled?

Answer: Everything if loader exists

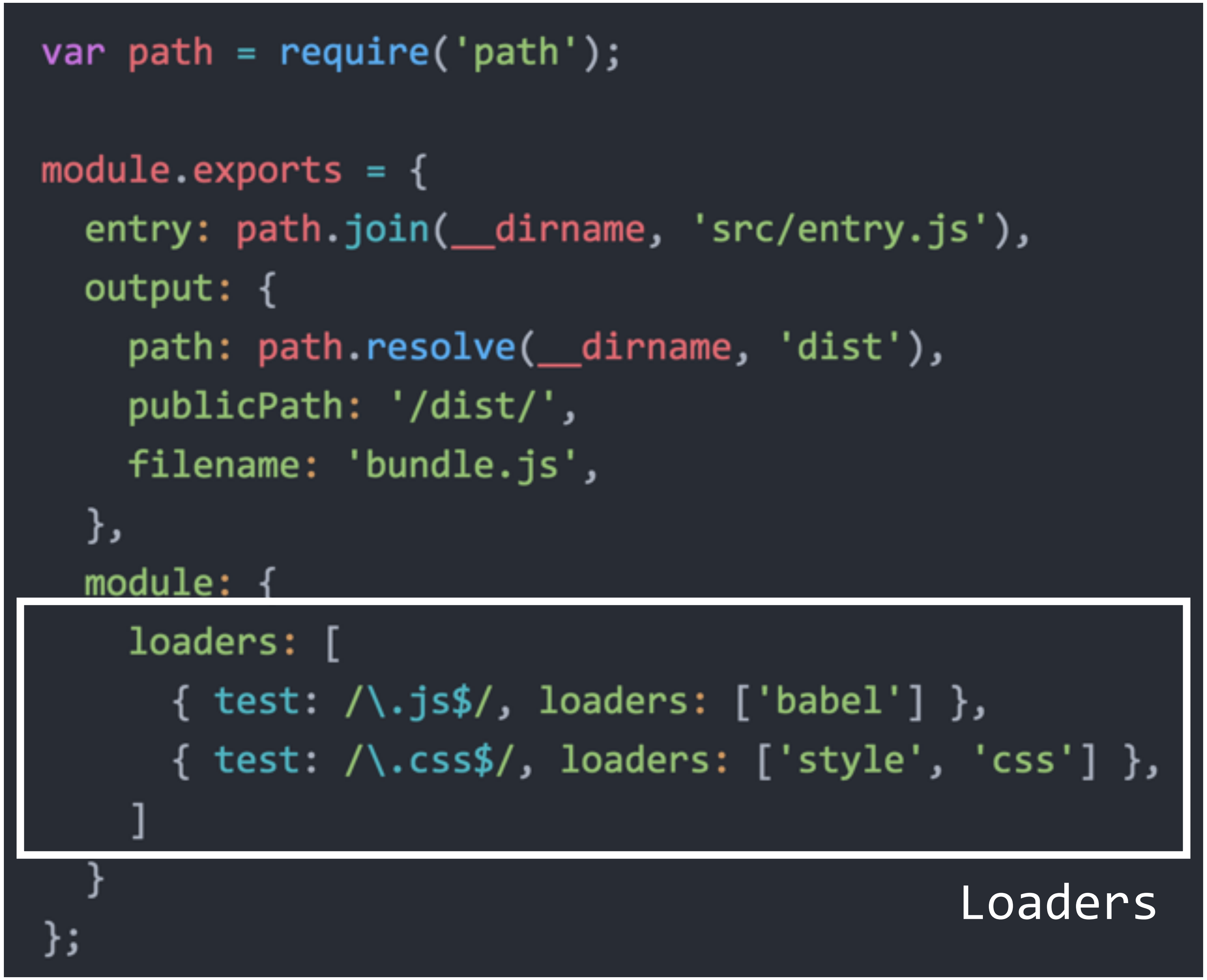
babel-loader	Load JavaScript, ES2015, JSX
style-loader	Inline css in DOM with <style> tag
css-loader	Load css with resolved import
url-loader	Convert file to base64 or url
json-loader	Load JSON file



~ 200 Loaders from webpack site

Ref: http://webpack.github.io/docs/list-of-loaders.html

Using Webpack & Loaders

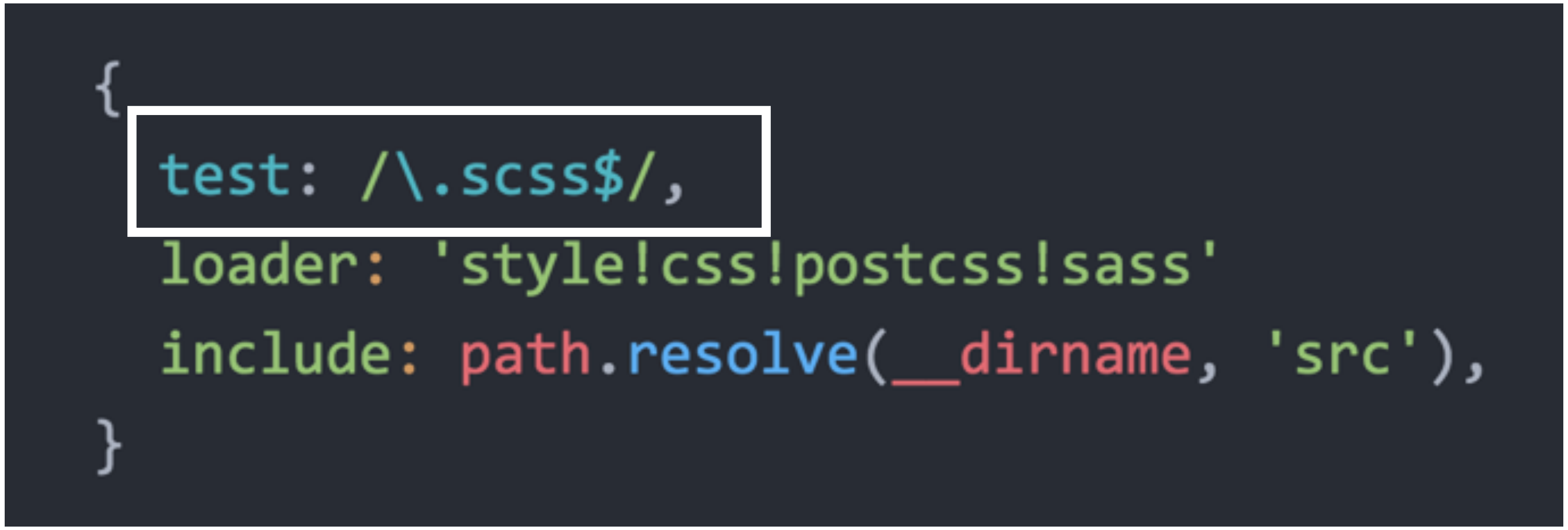


```
var path = require('path');

module.exports = {
  entry: path.join(__dirname, 'src/entry.js'),
  output: {
    path: path.resolve(__dirname, 'dist'),
    publicPath: '/dist/',
    filename: 'bundle.js',
  },
  module: {
    loaders: [
      { test: /\.js$/, loaders: ['babel'] },
      { test: /\.css$/, loaders: ['style', 'css'] },
    ]
  }
};
```

Loaders

webpack.config.js

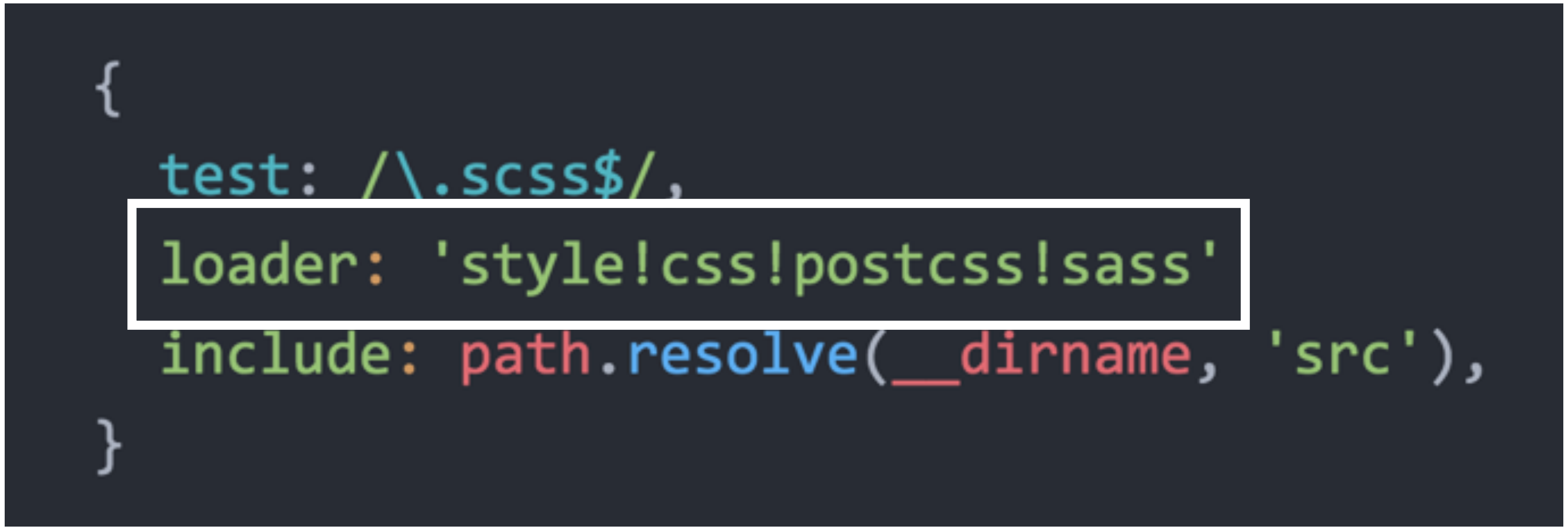
Anatomy of Loader (1)



```
{
  test: /\.scss$/,
  loader: 'style!css!postcss!sass'
  include: path.resolve(__dirname, 'src'),
}
```

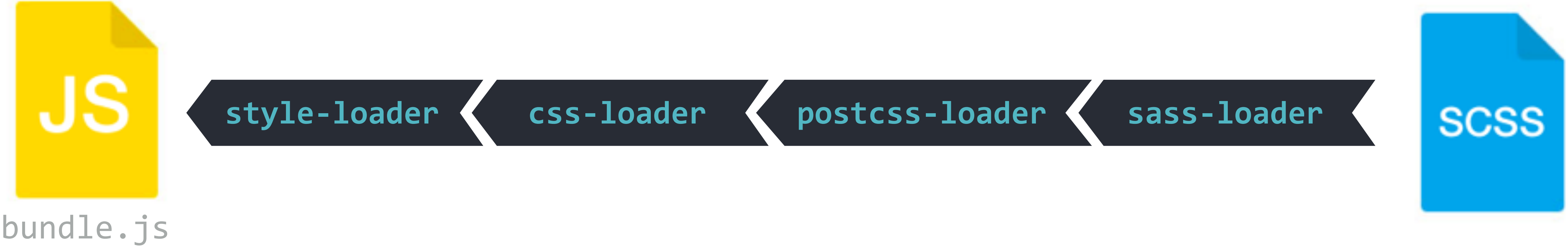
test = regex to match file to transform with loader

Anatomy of Loader (2)



```
{
  test: /\.scss$/,
  loader: 'style!css!postcss!sass'
  include: path.resolve(__dirname, 'src'),
}
```

loader = asset transformer which can be chained



JS

style-loader

css-loader

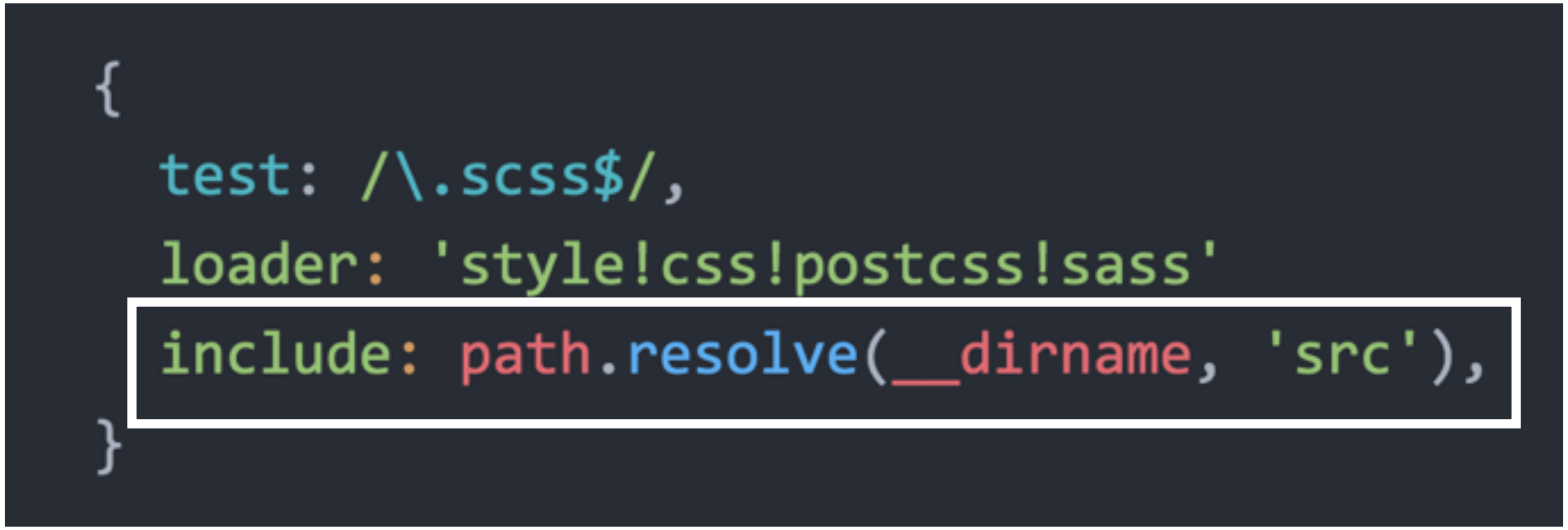
postcss-loader

sass-loader

SCSS

bundle.js

Anatomy of Loader (3)

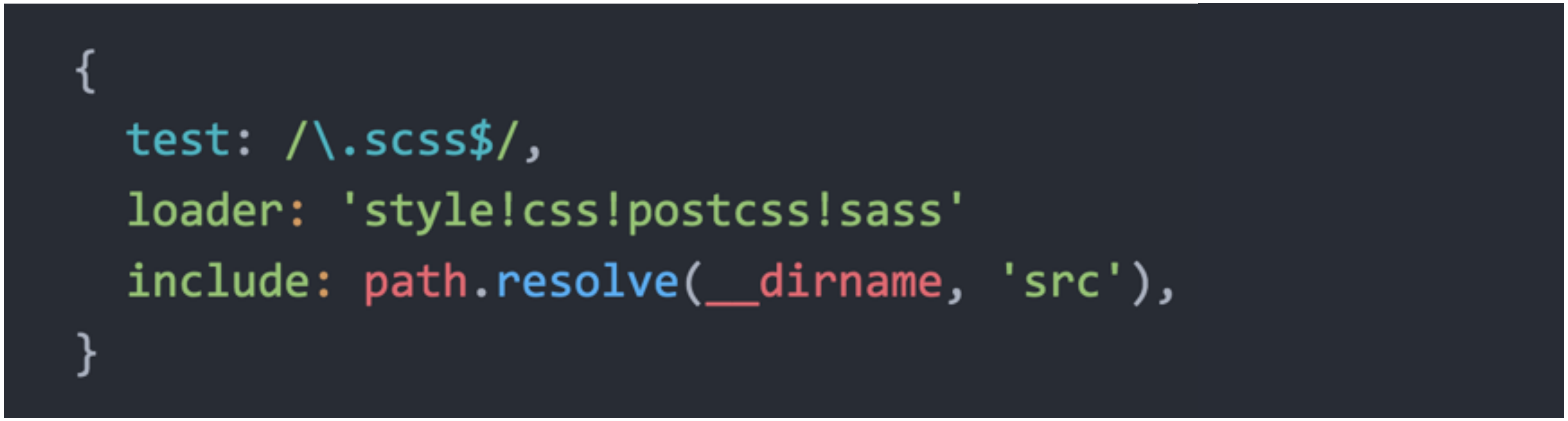


```
{
  test: /\.scss$/,
  loader: 'style!css!postcss!sass'
  include: path.resolve(__dirname, 'src'),
}
```

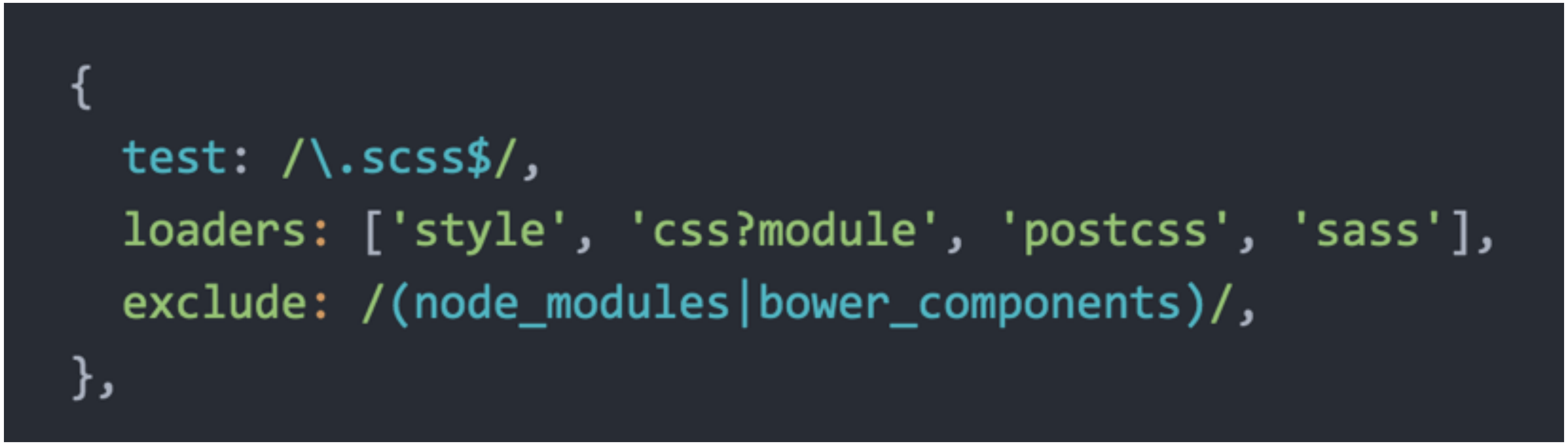
include/exclude = specify scope of matching

Good scope reduces build time a lot

Alternative way of Loader



```
{
  test: /\.scss$/,
  loader: 'style!css!postcss!sass'
  include: path.resolve(__dirname, 'src'),
}
```



```
{
  test: /\.scss$/,
  loaders: ['style', 'css?module', 'postcss', 'sass'],
  exclude: /(node_modules|bower_components)/,
},
```

Ex1 Loader Demo

Get Example Code at

bit.ly/reactbkk-webpack-ex1

2. Webpack Dev Server

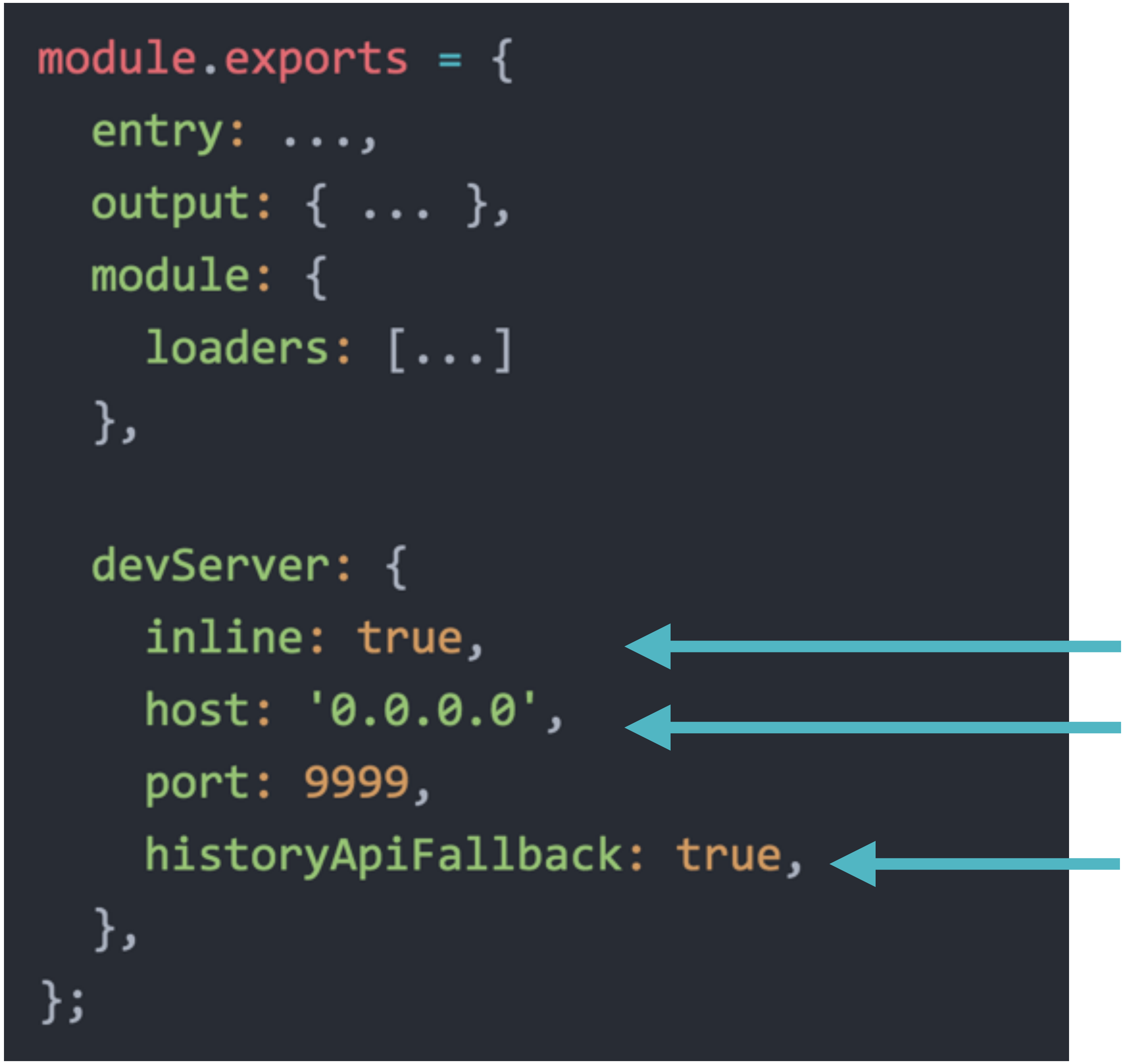
Easy & Lightweight local development server

Why we have to build every time we change files?

Video Demo
https://youtu.be/7yA4gEXRZ5I

Webpack Dev Server - Live reload Demo

Configuring



```
module.exports = {
  entry: ...,
  output: { ... },
  module: {
    loaders: [...]
  },

  devServer: {
    inline: true,
    host: '0.0.0.0',
    port: 9999,
    historyApiFallback: true,
  },
};
```

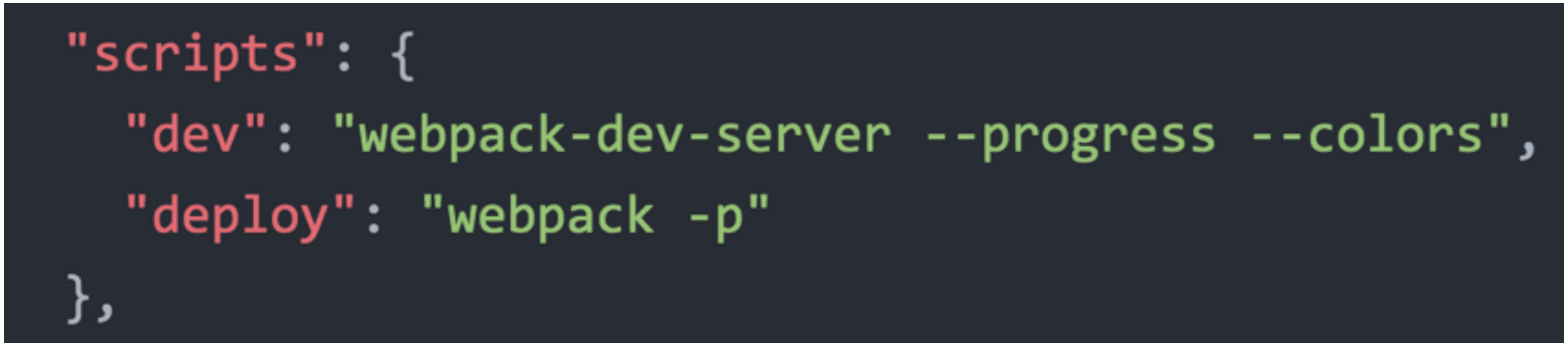
webpack.config.js

Enable Auto reload

Use 0.0.0.0 to access from other devices

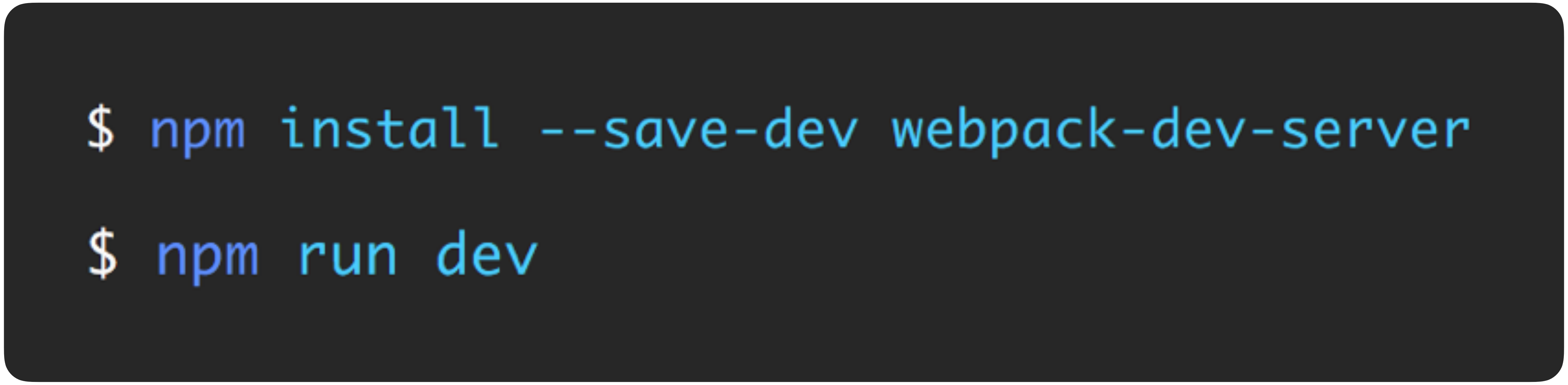
Rewrite url to always go to /index.html

Running



```
"scripts": {
  "dev": "webpack-dev-server --progress --colors",
  "deploy": "webpack -p"
},
```

package.json



```
$ npm install --save-dev webpack-dev-server

$ npm run dev
```

Terminal

Get Example Code at

bit.ly/reactbkk-webpack-ex2

3. CSS-Loader

Manage style like a boss!

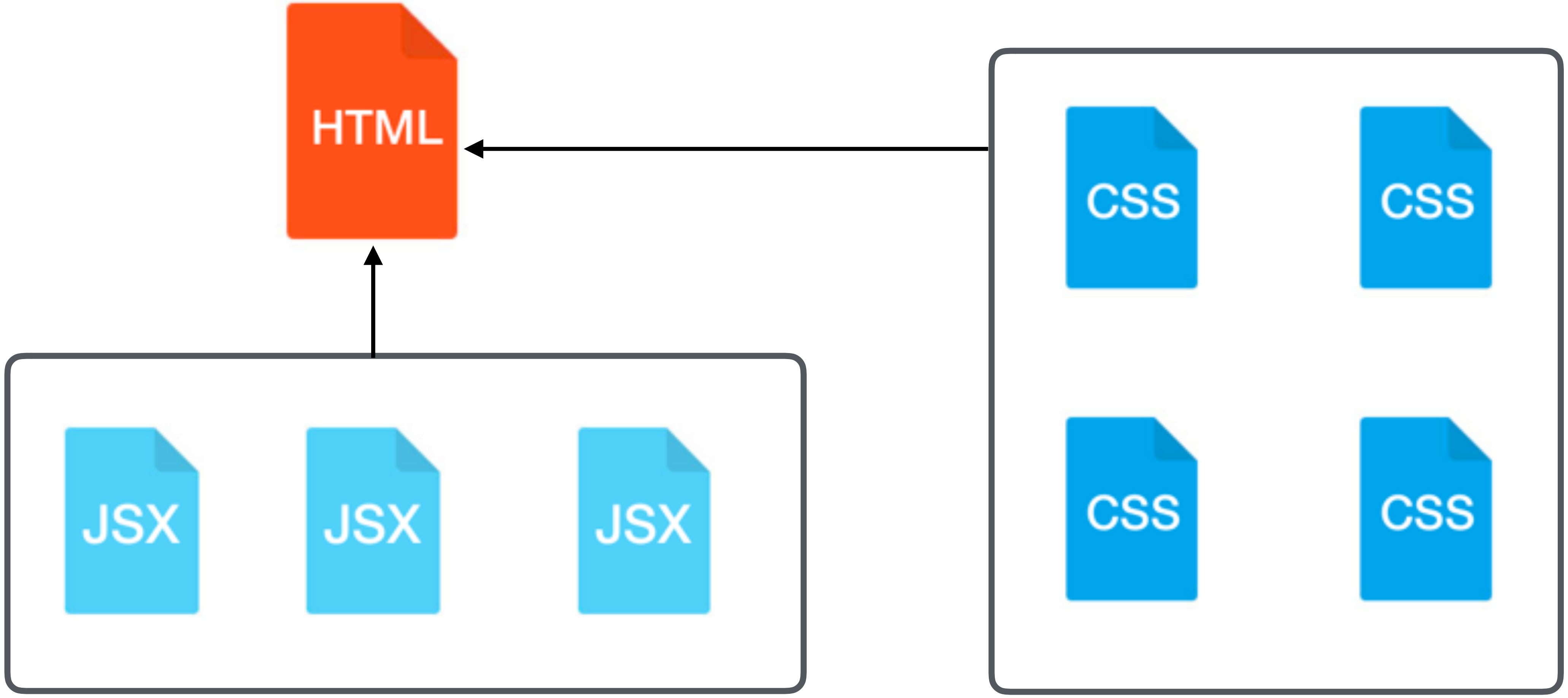
Common CSS Problems

1. Scattered files between html and style

2. Conflict in class name

3. Cross-Browser compatibility

1. Scattered files

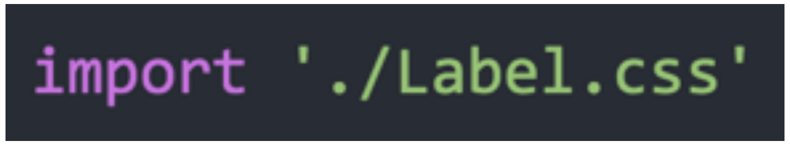


Sometimes, we need to edit many many places

Solution:

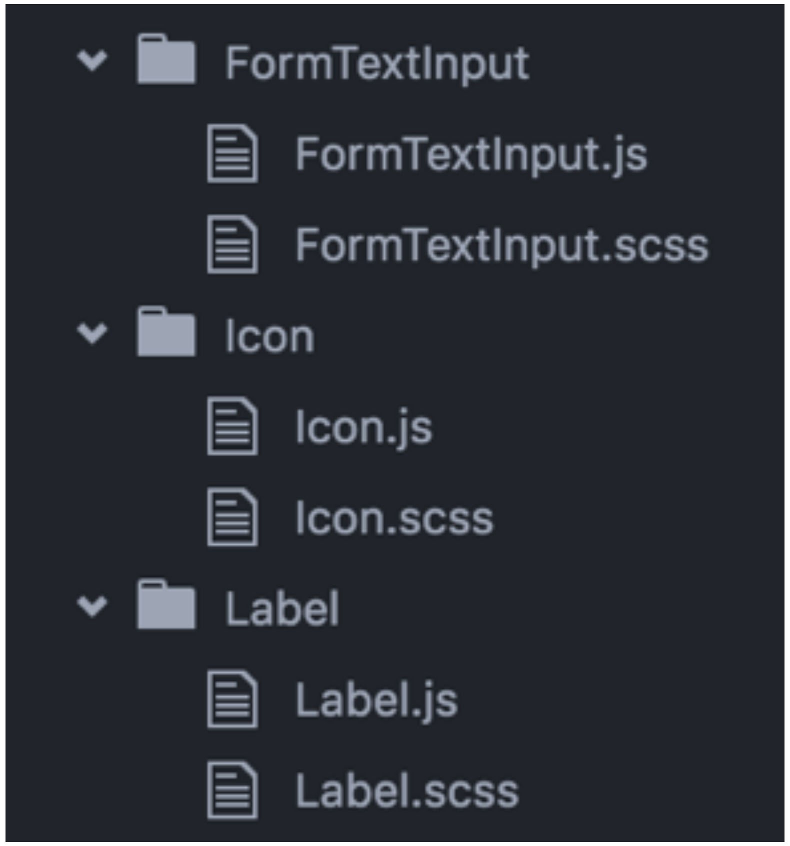
Component-owned style

Using component-owned styles



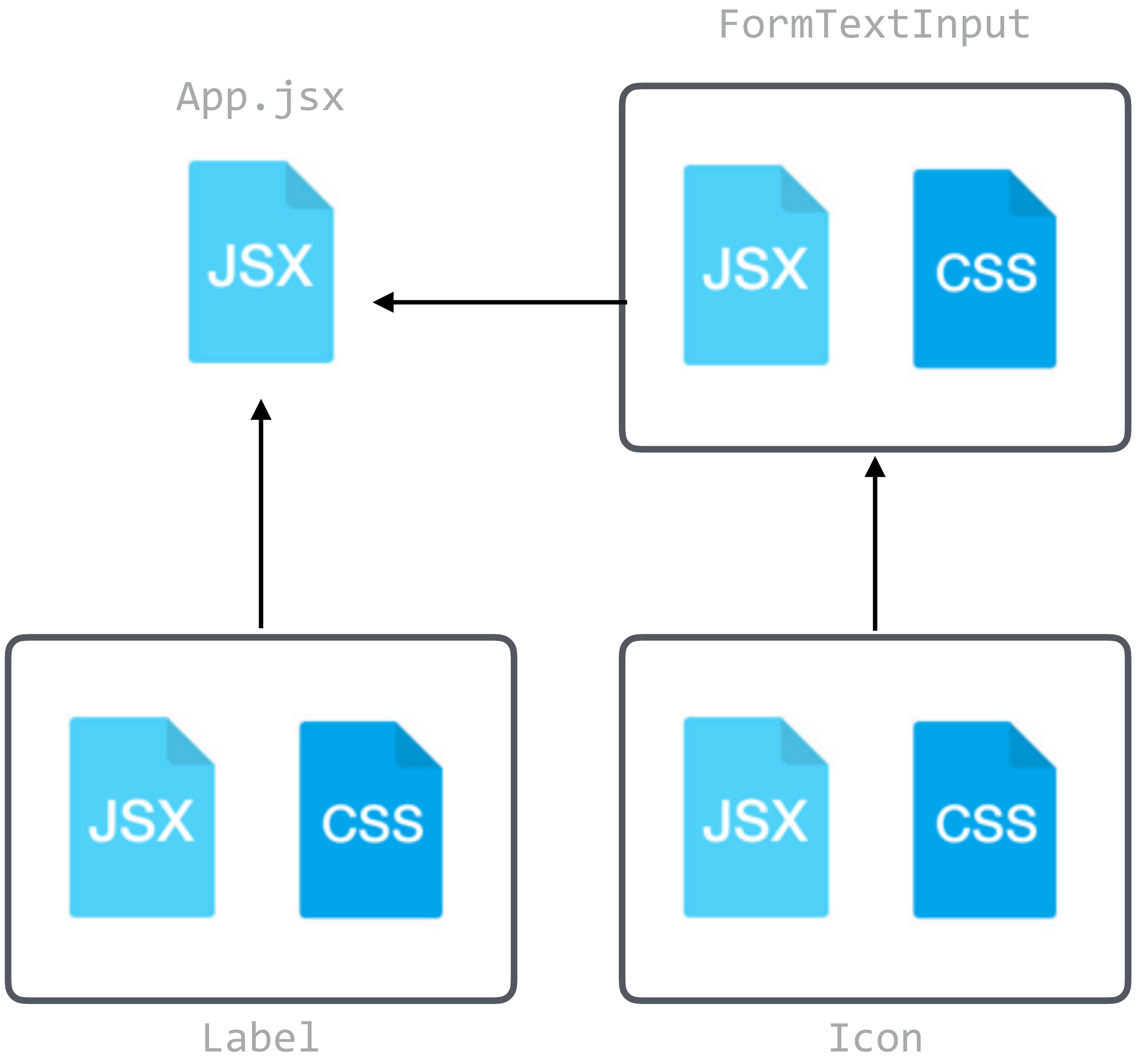
```
import './Label.css'
```

Label.js

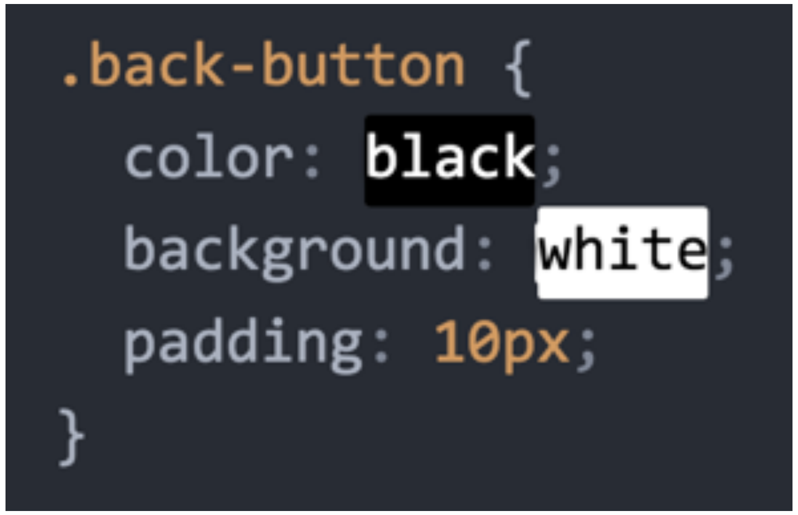


```
⌄ FormTextInput
    FormTextInput.js
    FormTextInput.scss
⌄ Icon
    Icon.js
    Icon.scss
⌄ Label
    Label.js
    Label.scss
```

Project Structure

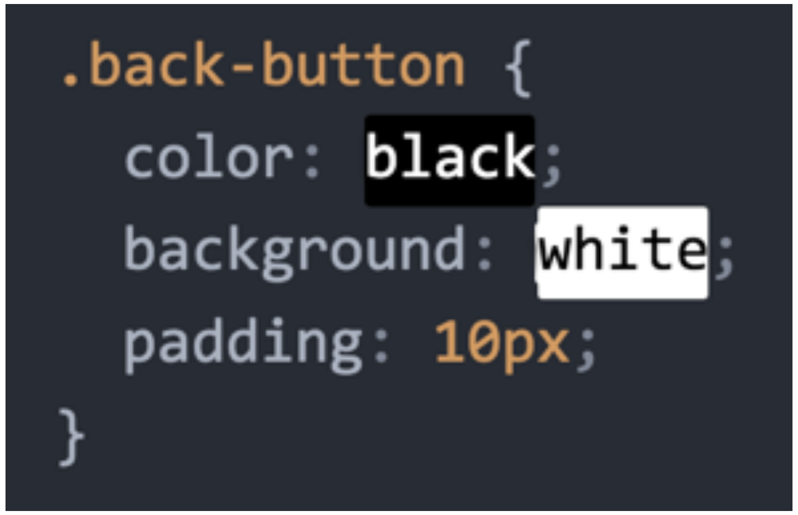


2. Name Conflict



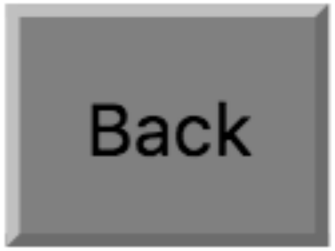
```
.back-button {
  color: black;
  background: white;
  padding: 10px;
}
```

2. Name Conflict



```
.back-button {
  color: black;
  background: white;
  padding: 10px;
}
```

→

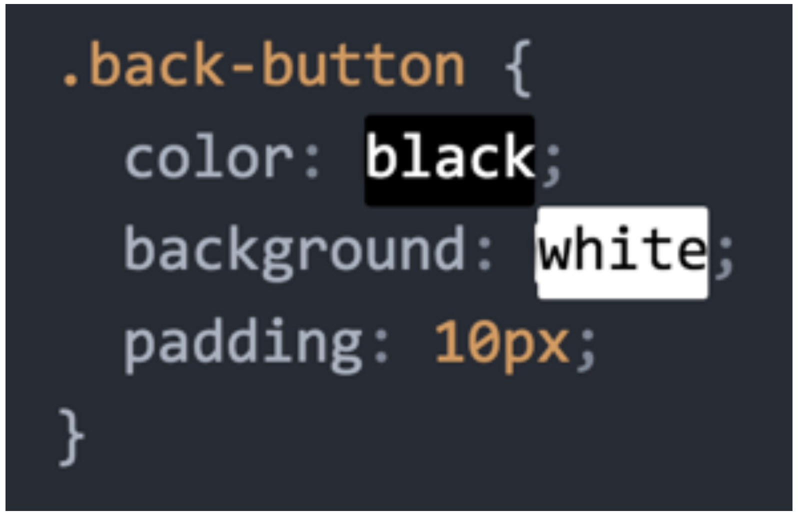


😨😨😨

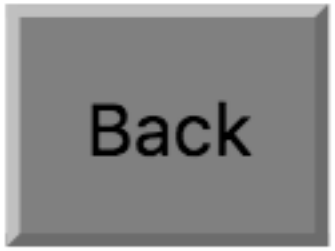
2. Name Conflict

CSS

home.css

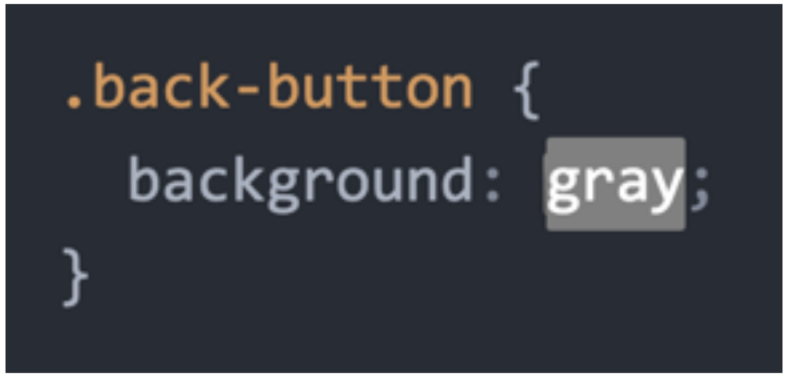


```css
.back-button {
  color: black;
  background: white;
  padding: 10px;
}
```



CSS

profile.css

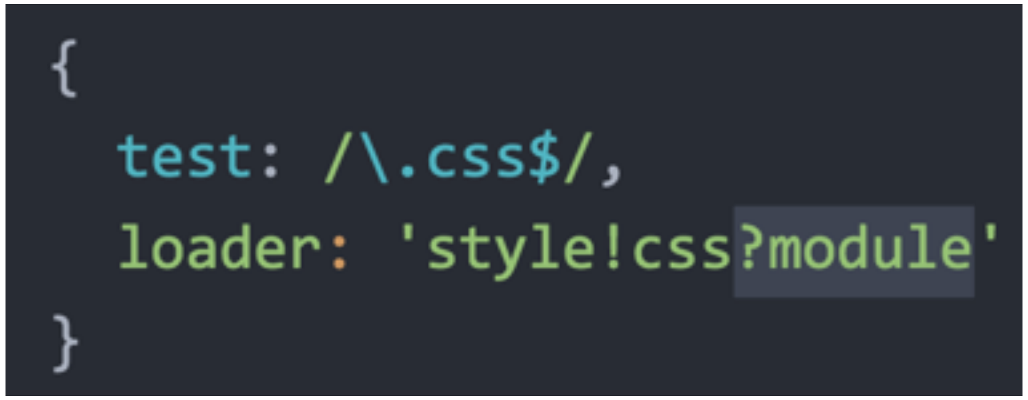


```css
.back-button {
  background: gray;
}
```

Solution:

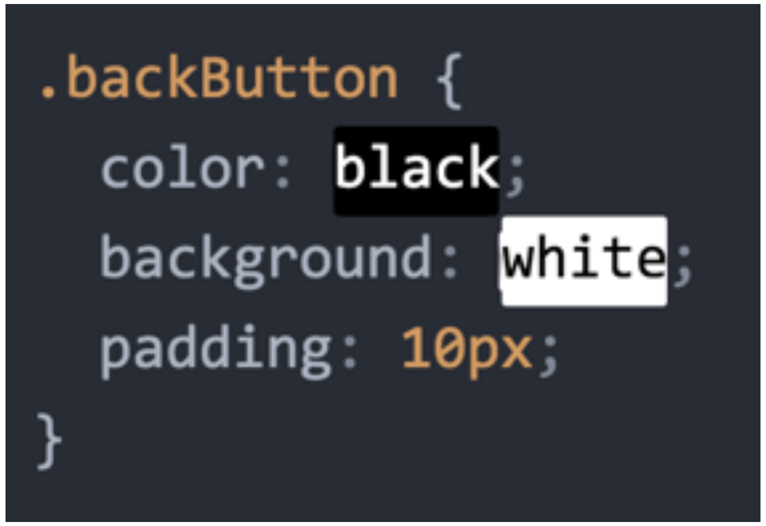
CSS Local Scope

Using CSS Local Scope



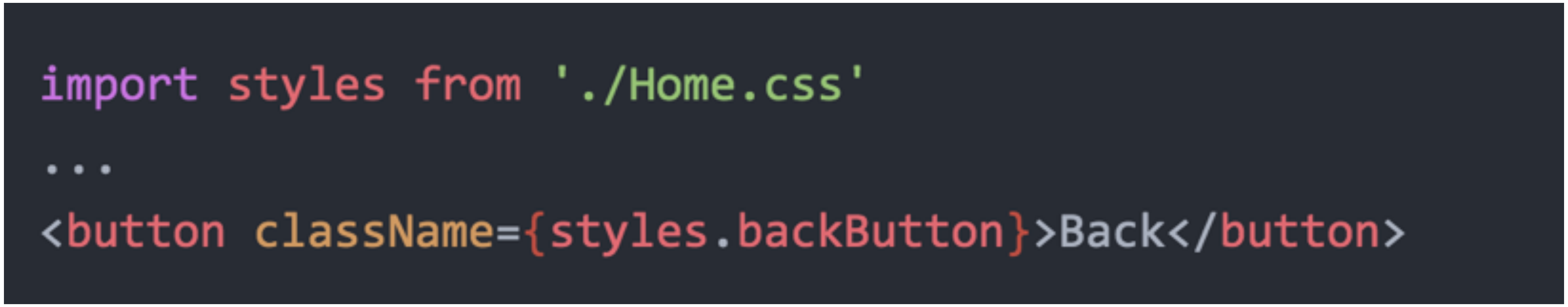
```
{
  test: /\.css$/,
  loader: 'style!css?module'
}
```

webpack.config.js



```
.backButton {
  color: black;
  background: white;
  padding: 10px;
}
```

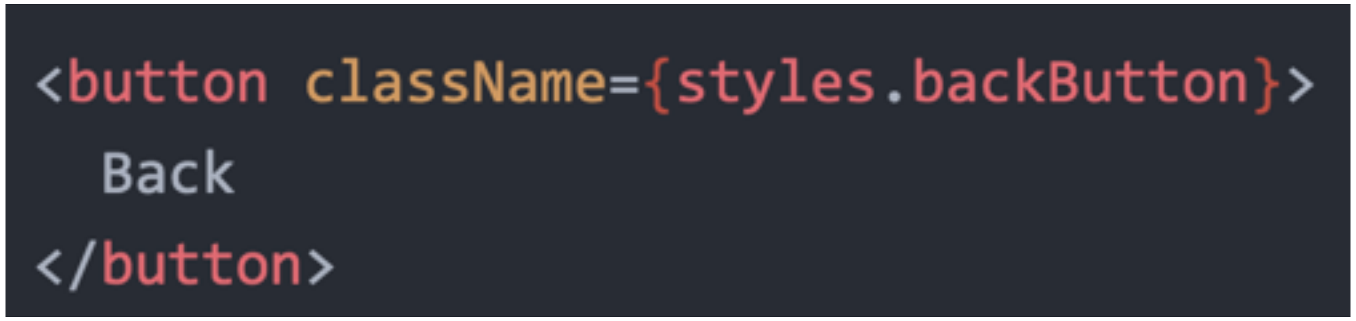
Home.css



```
import styles from './Home.css'
...
<button className={styles.backButton}>Back</button>
```

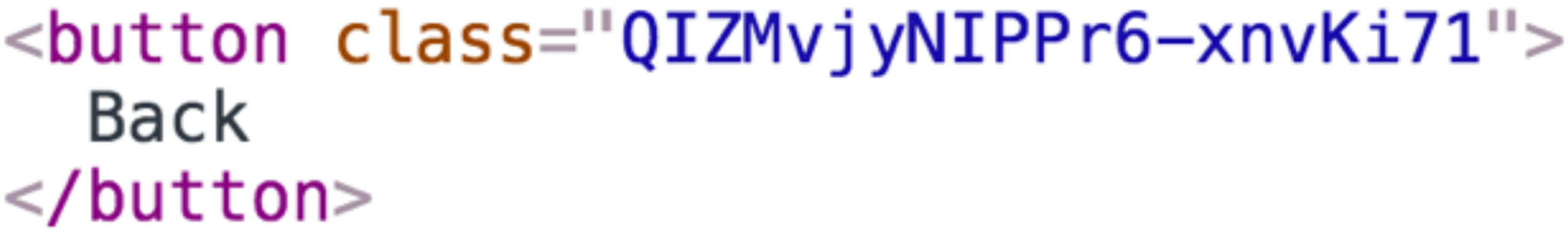
Home.jsx

Result



```
<button className={styles.backButton}>
  Back
</button>
```

↓

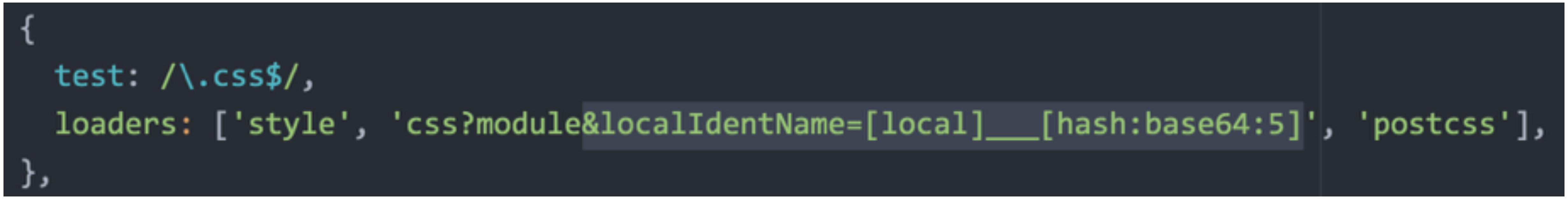


```
<button class="QIZMvjyNIPPr6-xnvKi71">
  Back
</button>
```

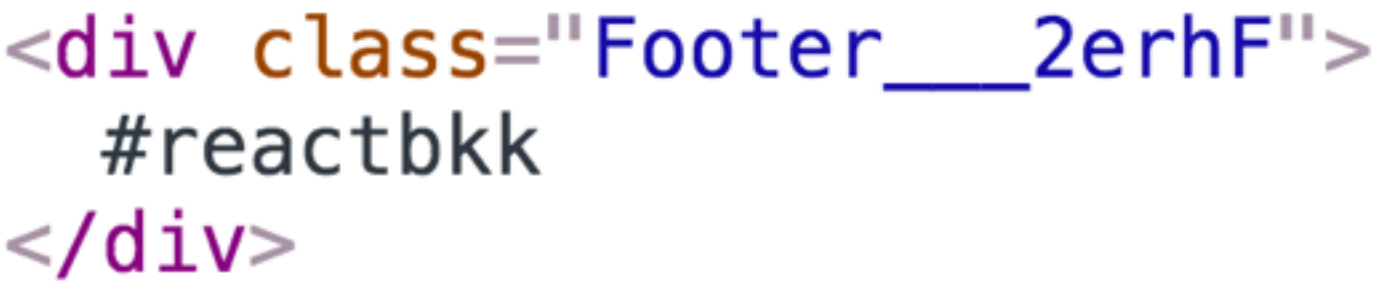
Class name will not conflict anymore

Tips

Use this in development for easier debugging



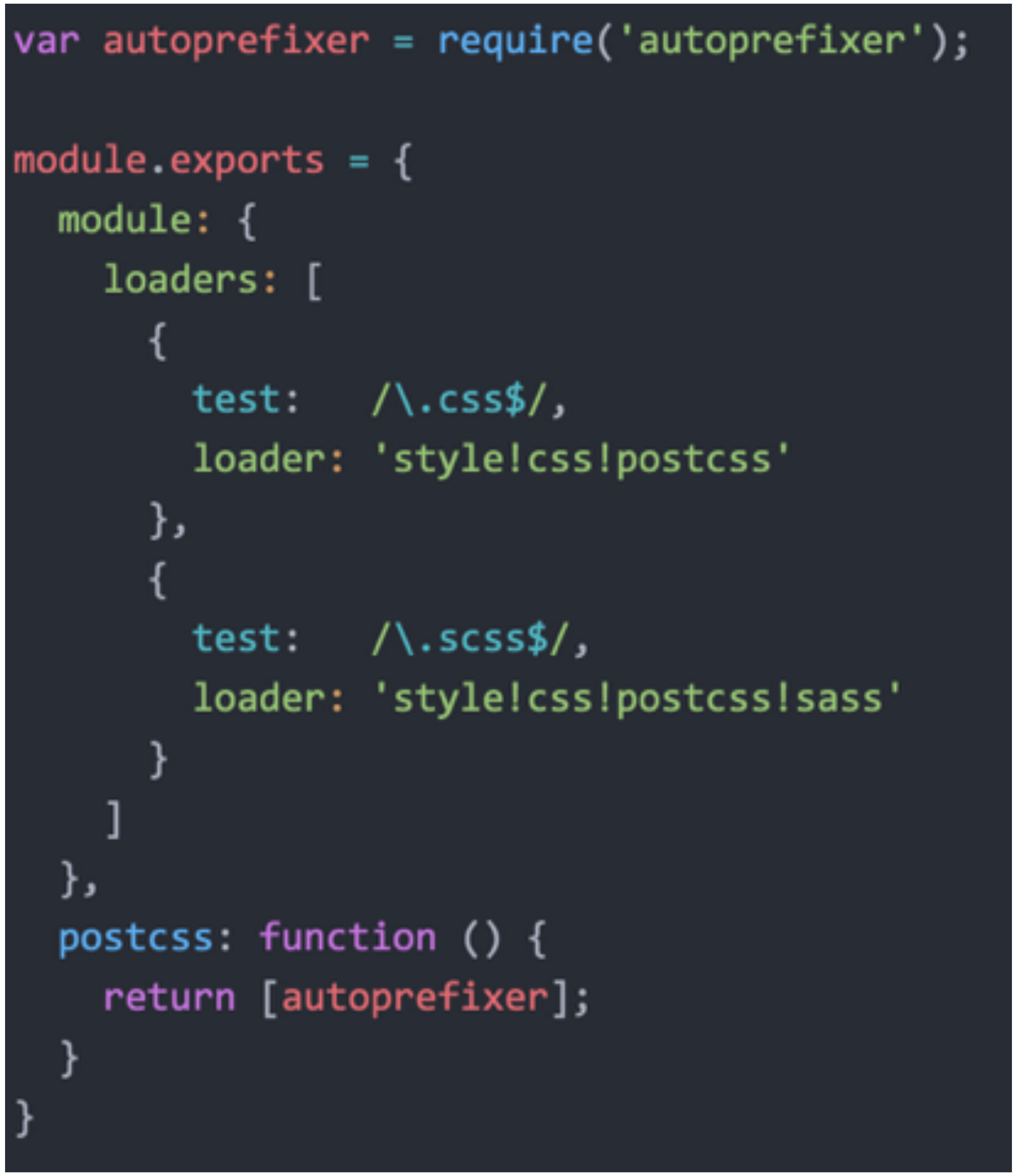
```
{
  test: /\.css$/,
  loaders: ['style', 'css?module&localIdentName=[local]___[hash:base64:5]', 'postcss'],
},
```



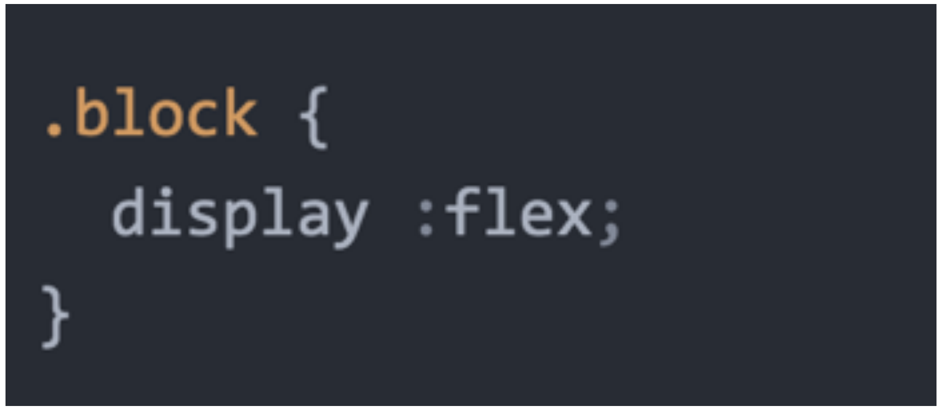
```
<div class="Footer___2erhF">
  #reactbkk
</div>
```

3. Browser Compatibility

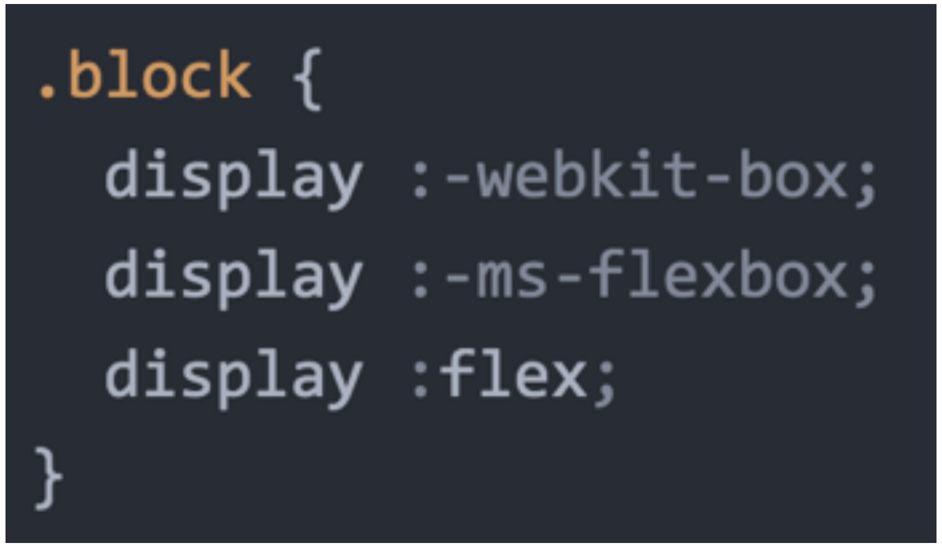
Use Autoprefix to automate prefixing



```
var autoprefixer = require('autoprefixer');

module.exports = {
  module: {
    loaders: [
      {
        test:   /\.css$/,
        loader: 'style!css!postcss'
      },
      {
        test:   /\.scss$/,
        loader: 'style!css!postcss!sass'
      }
    ]
  },
  postcss: function () {
    return [autoprefixer];
  }
}
```



```
.block {
  display :flex;
}
```



```
.block {
  display :-webkit-box;
  display :-ms-flexbox;
  display :flex;
}
```

Get Example Code at

bit.ly/reactbkk-webpack-ex3

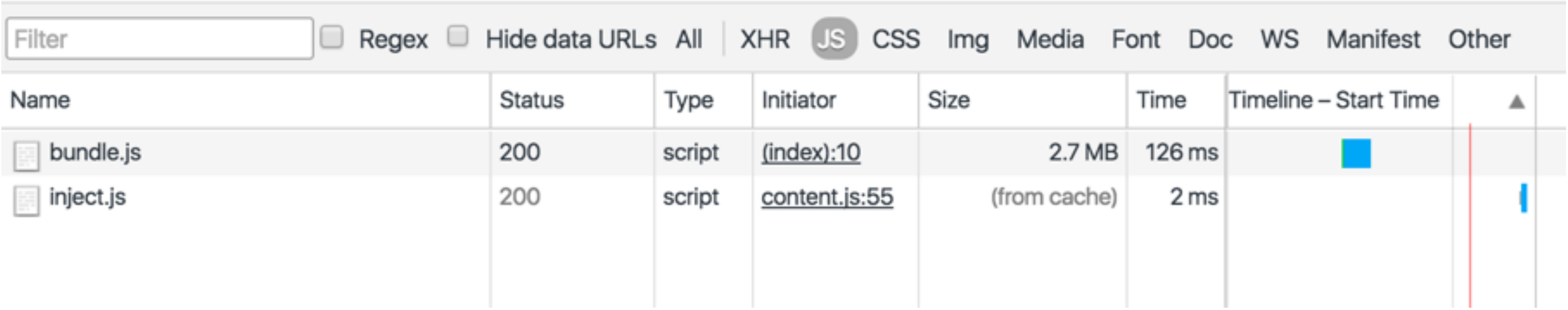
4. React Hot Loader

Sky rocket the
development speed

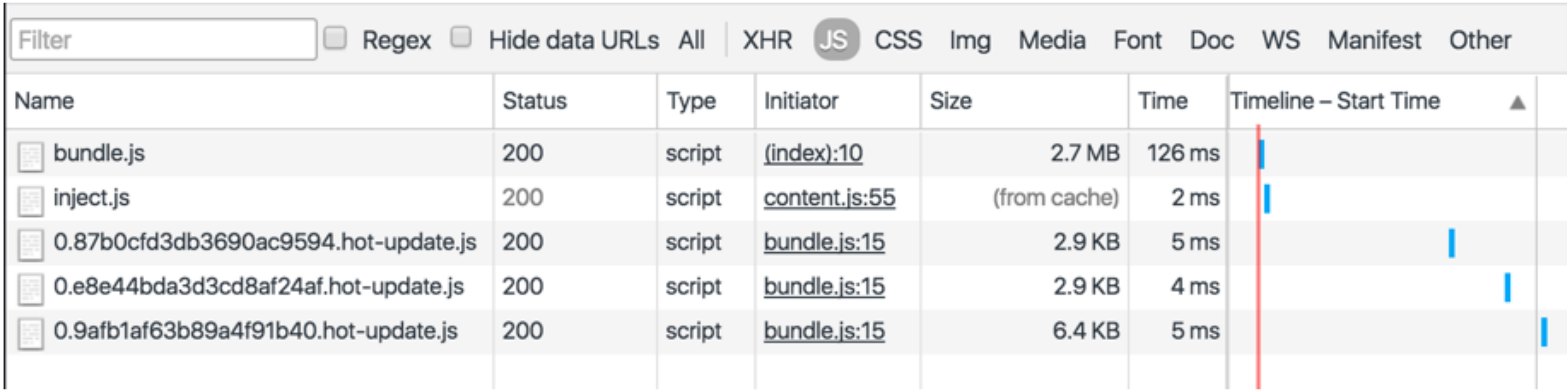
Video Demo Available at
https://youtu.be/_L7zjxCbs7M

Webpack React Hot Loader Demo

How it works?



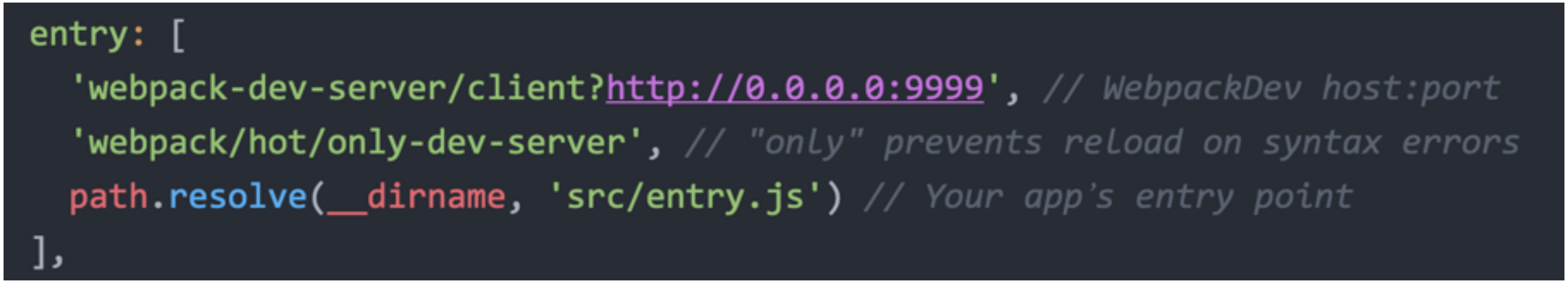
Name	Status	Type	Initiator	Size	Time	Timeline – Start Time
bundle.js	200	script	(index):10	2.7 MB	126 ms	
inject.js	200	script	content.js:55	(from cache)	2 ms	



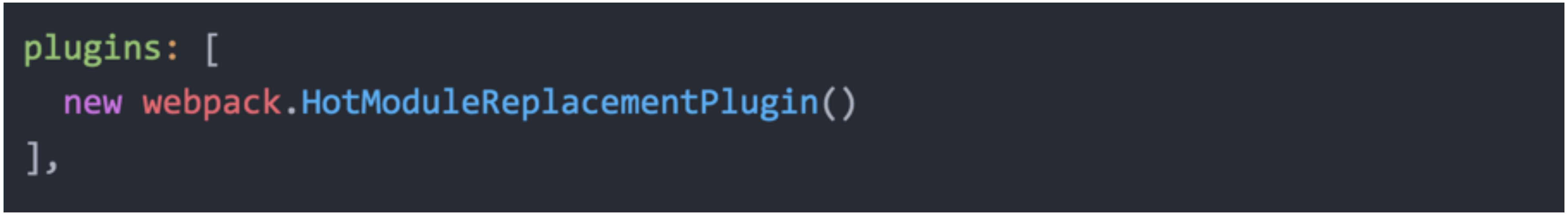
Name	Status	Type	Initiator	Size	Time	Timeline – Start Time
bundle.js	200	script	(index):10	2.7 MB	126 ms	
inject.js	200	script	content.js:55	(from cache)	2 ms	
0.87b0cfd3db3690ac9594.hot-update.js	200	script	bundle.js:15	2.9 KB	5 ms	
0.e8e44bda3d3cd8af24af.hot-update.js	200	script	bundle.js:15	2.9 KB	4 ms	
0.9afb1af63b89a4f91b40.hot-update.js	200	script	bundle.js:15	6.4 KB	5 ms	

Hot loader will patch when updating code

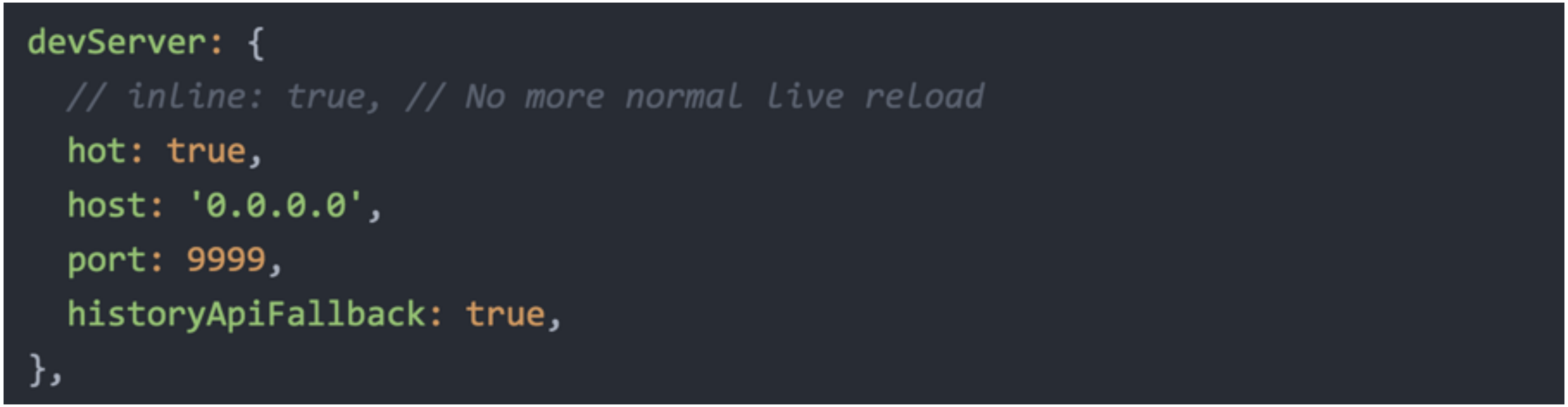
Configuring



```
entry: [
  'webpack-dev-server/client?http://0.0.0.0:9999', // WebpackDev host:port
  'webpack/hot/only-dev-server', // "only" prevents reload on syntax errors
  path.resolve(__dirname, 'src/entry.js') // Your app's entry point
],
```



```
plugins: [
  new webpack.HotModuleReplacementPlugin()
],
```



```
devServer: {
  // inline: true, // No more normal live reload
  hot: true,
  host: '0.0.0.0',
  port: 9999,
  historyApiFallback: true,
},
```

Get Full Code at bit.ly/reactbkk-webpack-ex4

5. Plugins (Development)

Enhance the development workflow

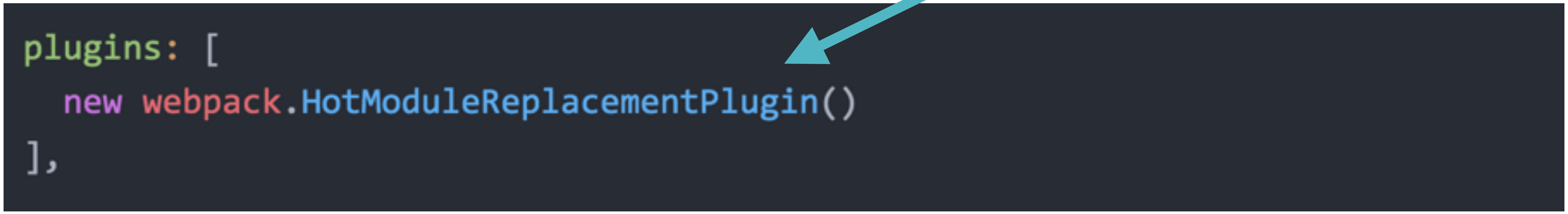
What is plugin?

Answer:

Anything that is not loaders!

Clean, Minify, Uglify, CommonChunk, etc.

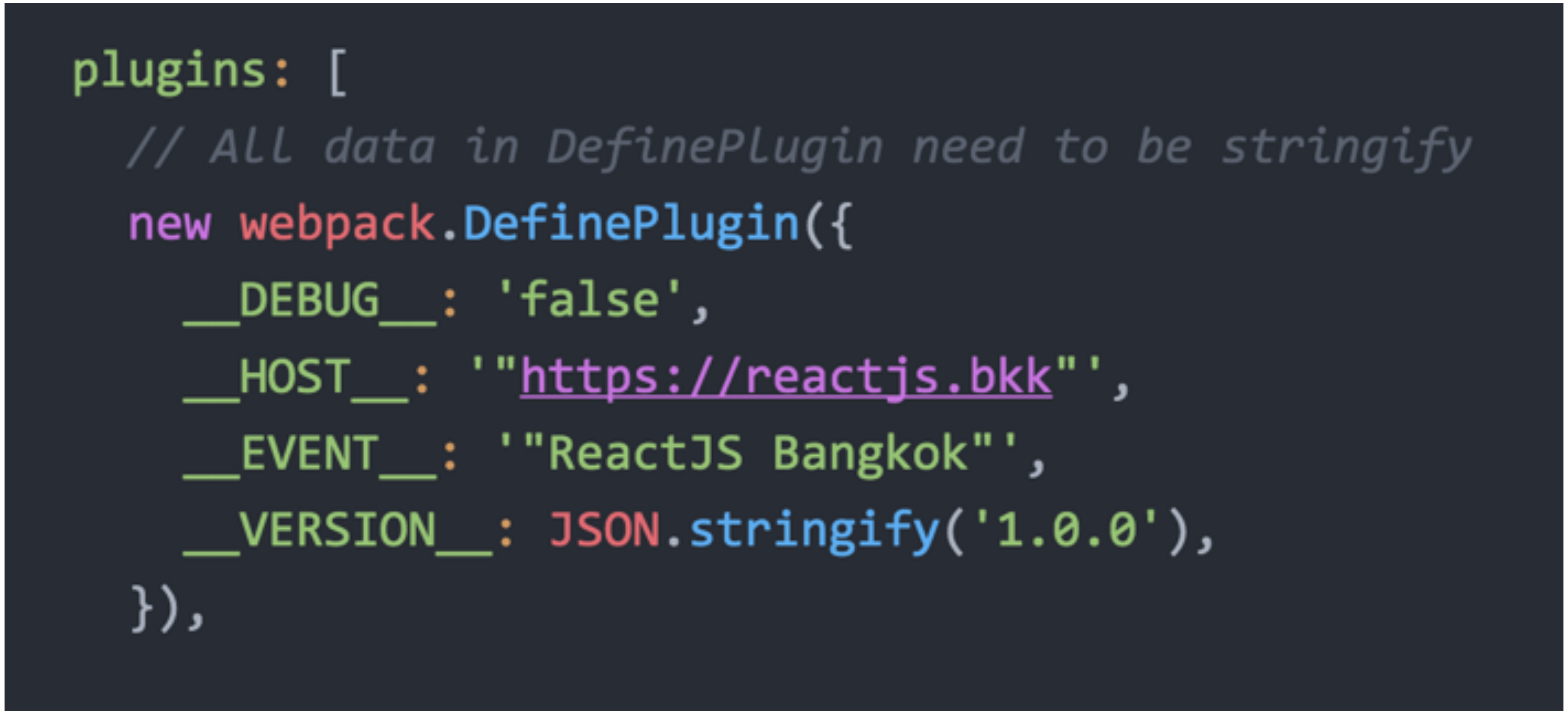
This is plugin too



```
plugins: [
  new webpack.HotModuleReplacementPlugin()
],
```

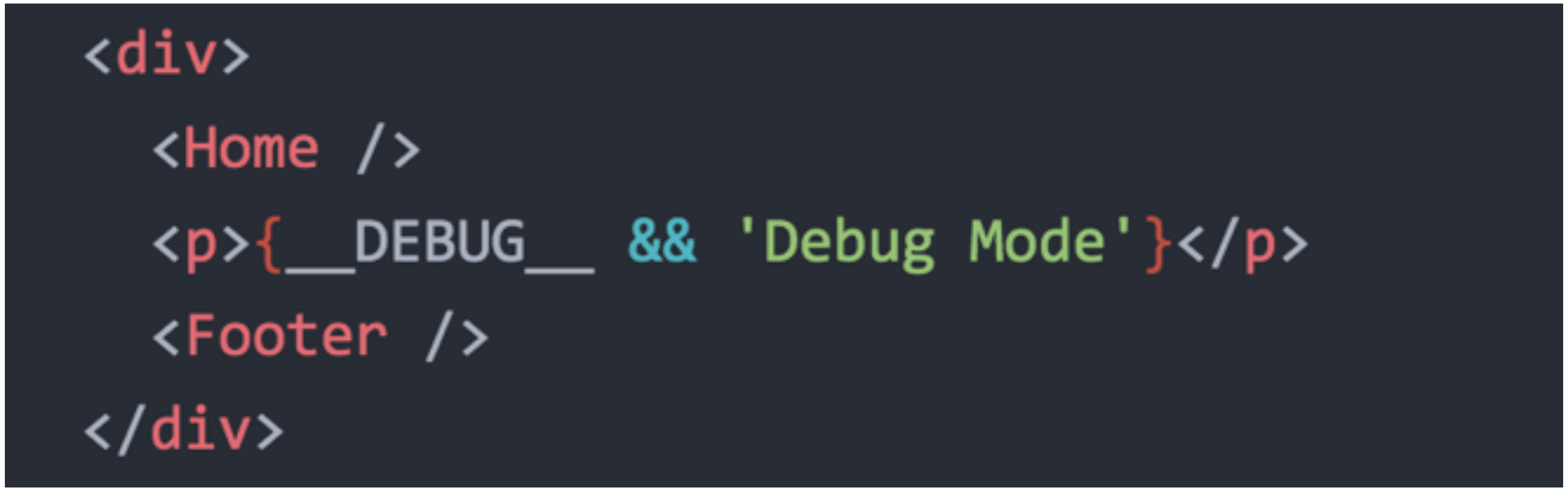
5.1 Define Plugin

- How to define constant to use all over app?
- Where to put app version?
- Where to put DEBUG flag?
- How to simulate NODE_ENV?

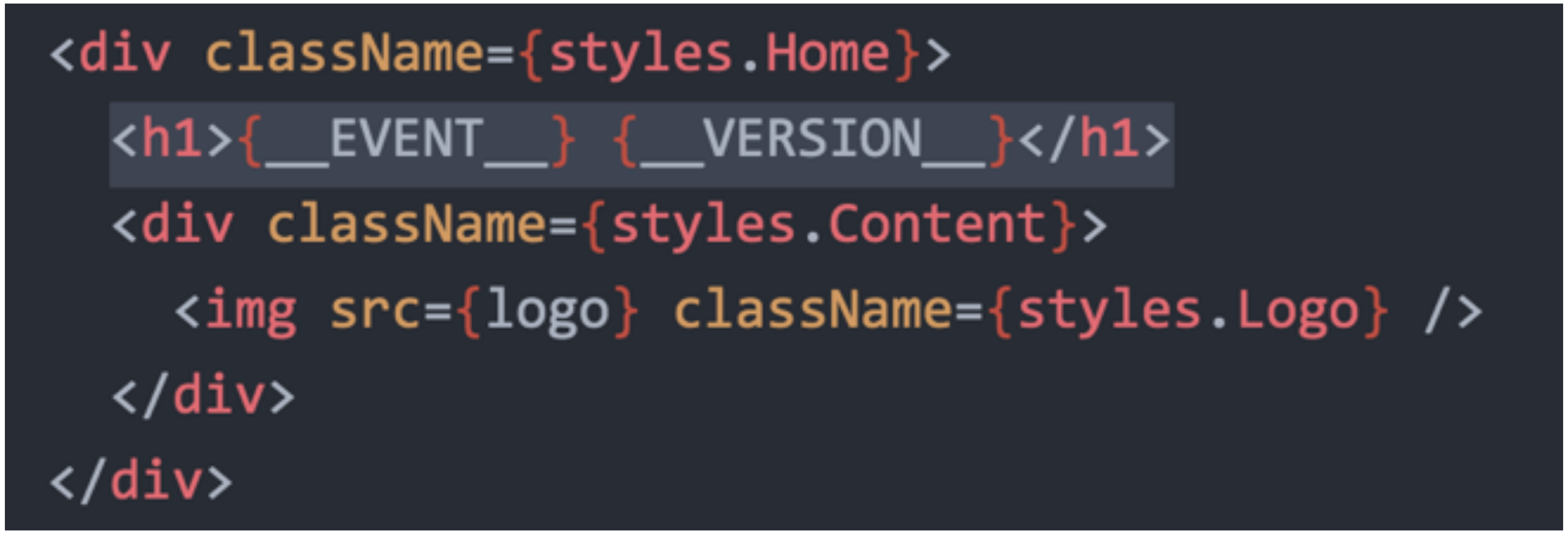


```
plugins: [
  // All data in DefinePlugin need to be stringify
  new webpack.DefinePlugin({
    __DEBUG__: 'false',
    __HOST__: '"https://reactjs.bkk"',
    __EVENT__: '"ReactJS Bangkok"',
    __VERSION__: JSON.stringify('1.0.0'),
  }),
```

5.1 Define Plugin



```
<div>
  <Home />
  <p>{__DEBUG__ && 'Debug Mode'}</p>
  <Footer />
</div>
```

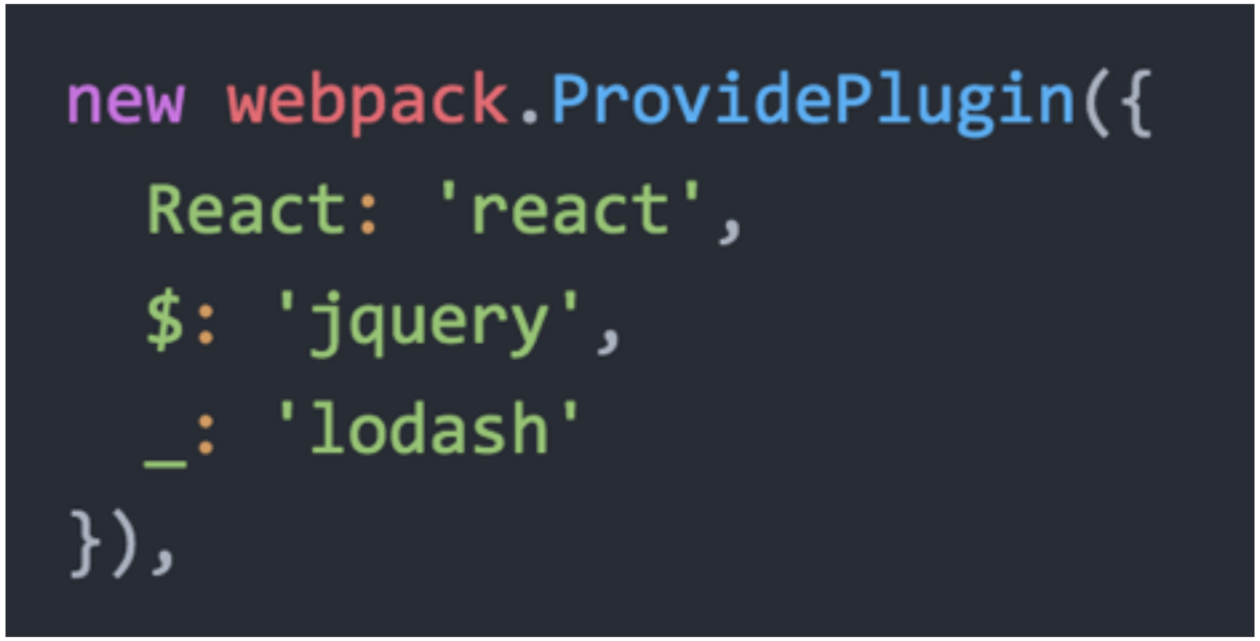


```
<div className={styles.Home}>
  <h1>{__EVENT__} {__VERSION__}</h1>
  <div className={styles.Content}>
    <img src={logo} className={styles.Logo} />
  </div>
</div>
```

Variables will be injected in code if not already defined.

5.2 Provide Plugin

Why I have to import React in every file?

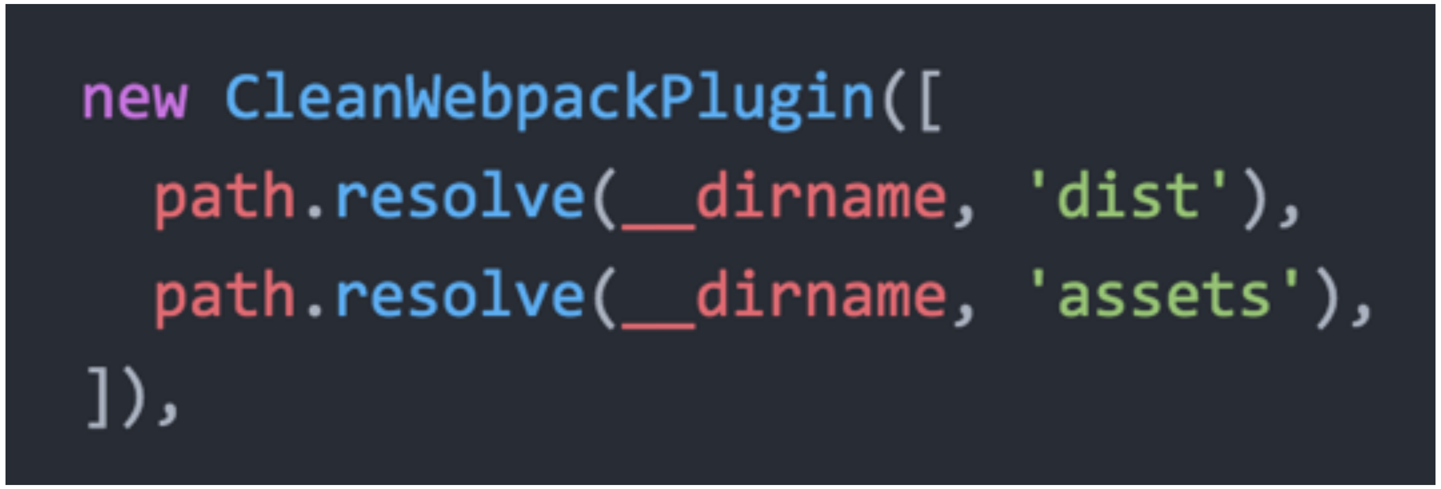


```
new webpack.ProvidePlugin({
  React: 'react',
  $: 'jquery',
  _: 'lodash'
}),
```

These libs will be automatically imported

5.3 Clean Webpack Plugin

How to automate deleting build or temp file?

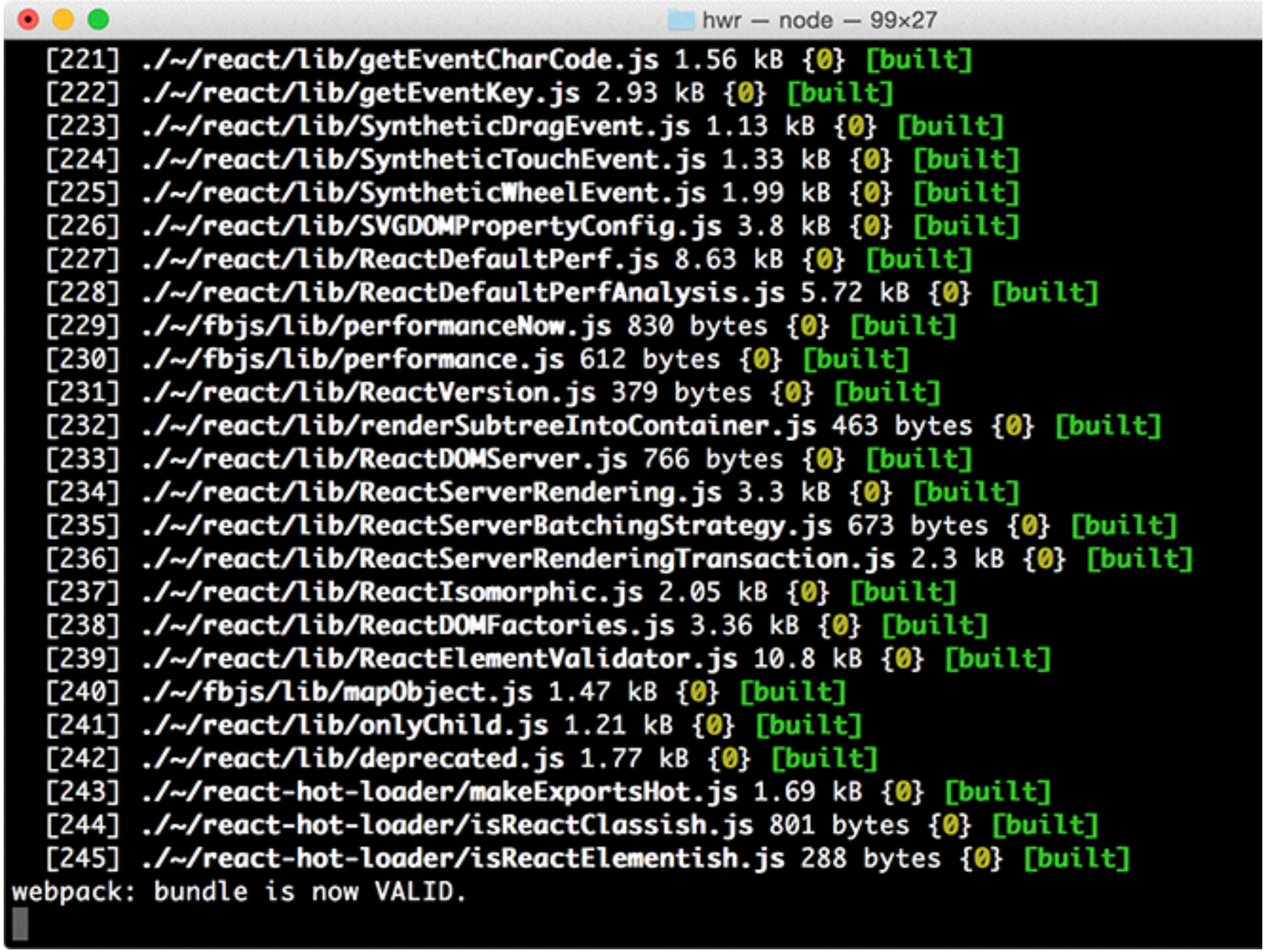


```
new CleanWebpackPlugin([
  path.resolve(__dirname, 'dist'),
  path.resolve(__dirname, 'assets'),
]),
```

Note: 3rd party plugin, need to install

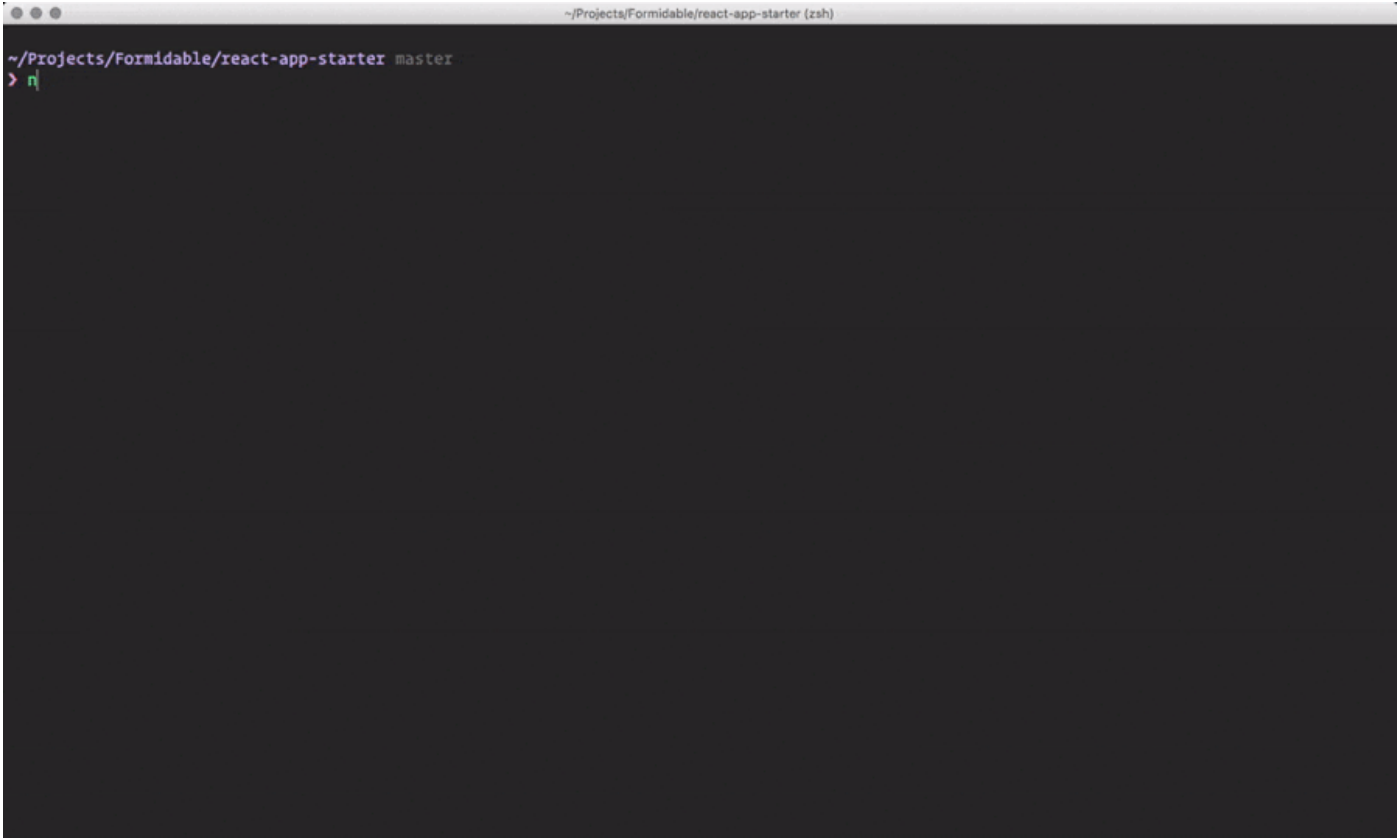
Plugin will automatically delete folders in path array every time webpack is run.

5.4 Webpack Dashboard Plugin



```
   [221] ./~/react/lib/getEventCharCode.js 1.56 kB {0} [built]
   [222] ./~/react/lib/getEventKey.js 2.93 kB {0} [built]
   [223] ./~/react/lib/SyntheticDragEvent.js 1.13 kB {0} [built]
   [224] ./~/react/lib/SyntheticTouchEvent.js 1.33 kB {0} [built]
   [225] ./~/react/lib/SyntheticWheelEvent.js 1.99 kB {0} [built]
   [226] ./~/react/lib/SVGDOMPropertyConfig.js 3.8 kB {0} [built]
   [227] ./~/react/lib/ReactDefaultPerf.js 8.63 kB {0} [built]
   [228] ./~/react/lib/ReactDefaultPerfAnalysis.js 5.72 kB {0} [built]
   [229] ./~/fbjs/lib/performanceNow.js 830 bytes {0} [built]
   [230] ./~/fbjs/lib/performance.js 612 bytes {0} [built]
   [231] ./~/react/lib/ReactVersion.js 379 bytes {0} [built]
   [232] ./~/react/lib/renderSubtreeIntoContainer.js 463 bytes {0} [built]
   [233] ./~/react/lib/ReactDOMServer.js 766 bytes {0} [built]
   [234] ./~/react/lib/ReactServerRendering.js 3.3 kB {0} [built]
   [235] ./~/react/lib/ReactServerBatchingStrategy.js 673 bytes {0} [built]
   [236] ./~/react/lib/ReactServerRenderingTransaction.js 2.3 kB {0} [built]
   [237] ./~/react/lib/ReactIsomorphic.js 2.05 kB {0} [built]
   [238] ./~/react/lib/ReactDOMFactories.js 3.36 kB {0} [built]
   [239] ./~/react/lib/ReactElementValidator.js 10.8 kB {0} [built]
   [240] ./~/fbjs/lib/mapObject.js 1.47 kB {0} [built]
   [241] ./~/react/lib/onlyChild.js 1.21 kB {0} [built]
   [242] ./~/react/lib/deprecated.js 1.77 kB {0} [built]
   [243] ./~/react-hot-loader/makeExportsHot.js 1.69 kB {0} [built]
   [244] ./~/react-hot-loader/isReactClassish.js 801 bytes {0} [built]
   [245] ./~/react-hot-loader/isReactElementish.js 288 bytes {0} [built]
webpack: bundle is now VALID.
```

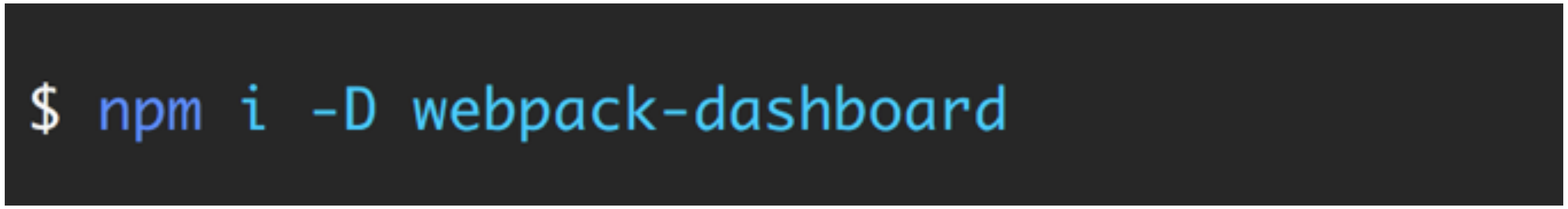
5.4 Webpack Dashboard Plugin



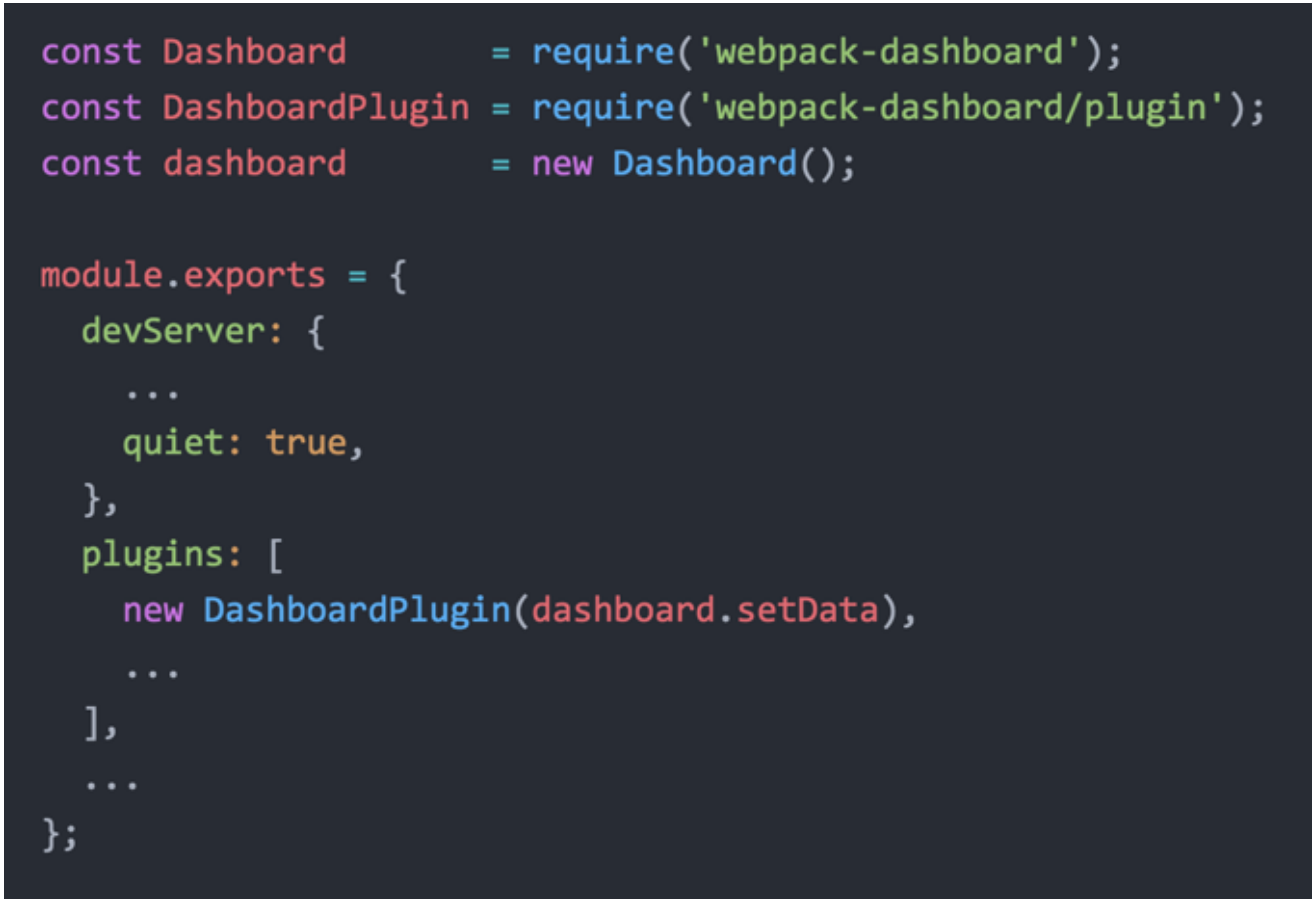
~/Projects/Formidable/react-app-starter (zsh)

```
~/Projects/Formidable/react-app-starter master
❯ n
```

Configuring Webpack Dashboard



```
$ npm i -D webpack-dashboard
```



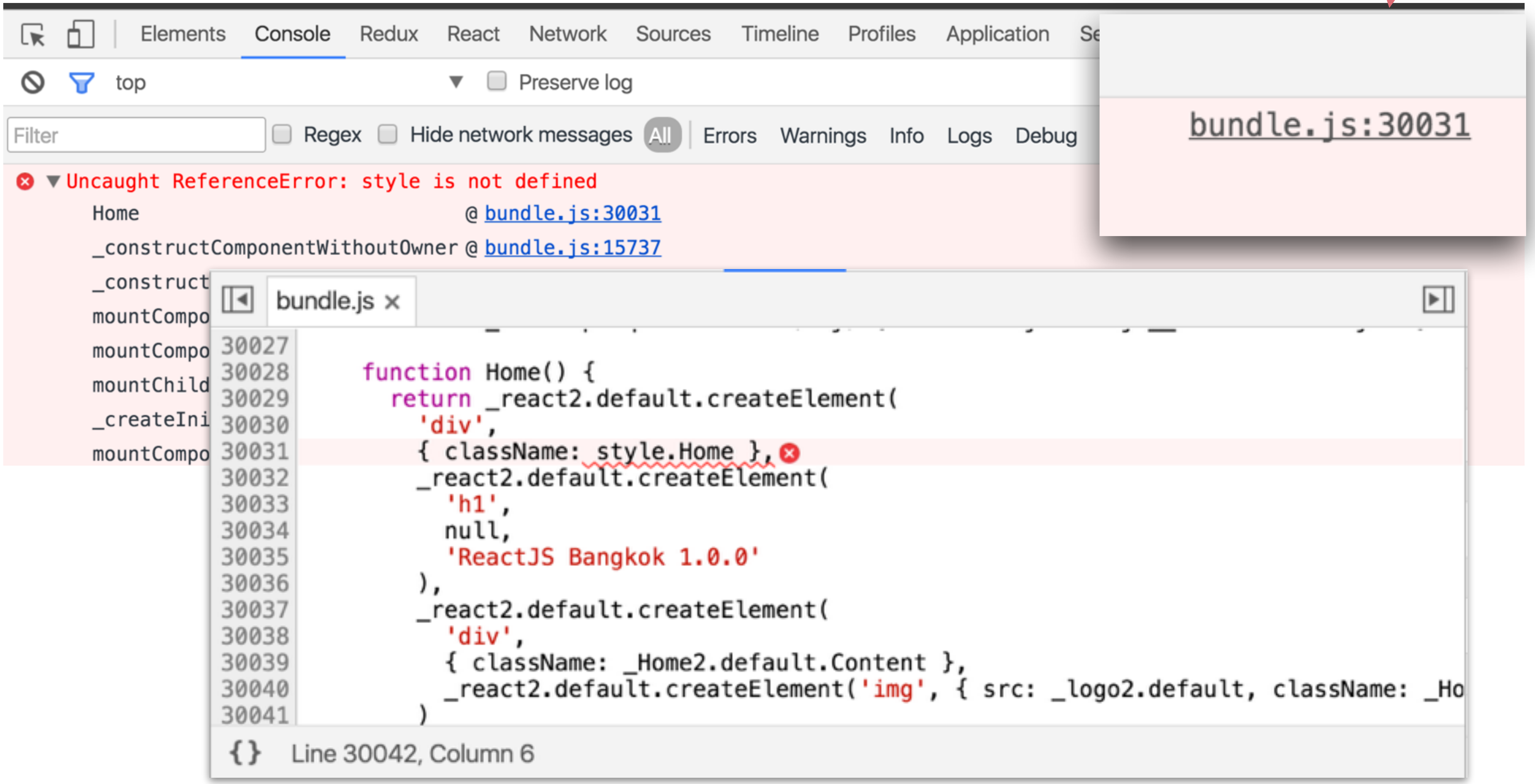
```
const Dashboard       = require('webpack-dashboard');
const DashboardPlugin = require('webpack-dashboard/plugin');
const dashboard       = new Dashboard();

module.exports = {
  devServer: {
    ...
    quiet: true,
  },
  plugins: [
    new DashboardPlugin(dashboard.setData),
    ...
  ],
  ...
};
```

6. Development Best Practice

6.1 Devtool

When you get an error

WHAT!!?



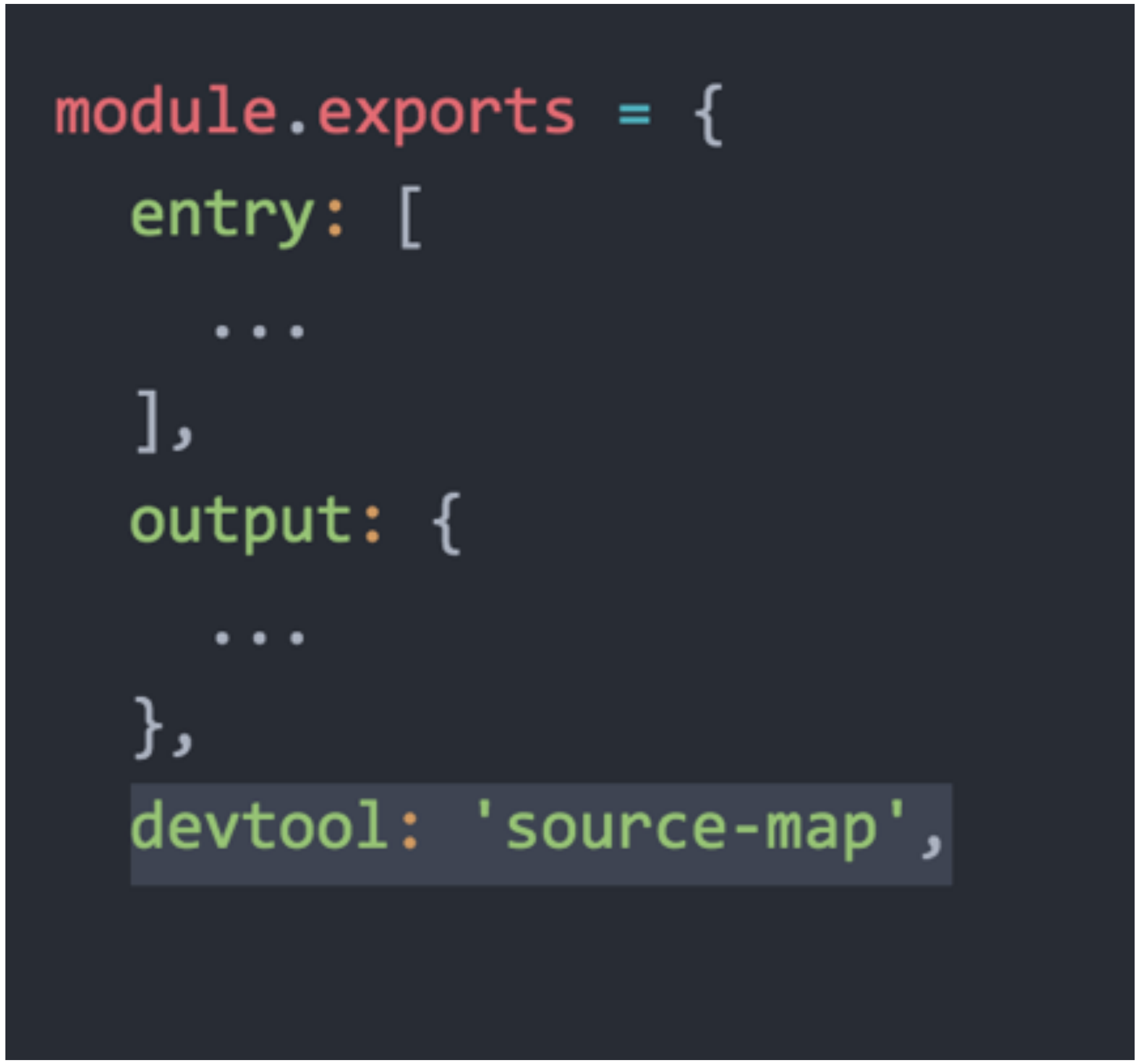
```
Uncaught ReferenceError: style is not defined
    Home                               @ bundle.js:30031
    _constructComponentWithoutOwner @ bundle.js:15737
    _construct
    mountCompo
    mountCompo
    mountChild
    _createIni
    mountCompo
```

bundle.js:30031

```

    function Home() {
      return _react2.default.createElement(
        'div',
        { className: style.Home },
        _react2.default.createElement(
          'h1',
          null,
          'ReactJS Bangkok 1.0.0'
        ),
        _react2.default.createElement(
          'div',
          { className: _Home2.default.Content },
          _react2.default.createElement('img', { src: _logo2.default, className: _Ho
        )
```

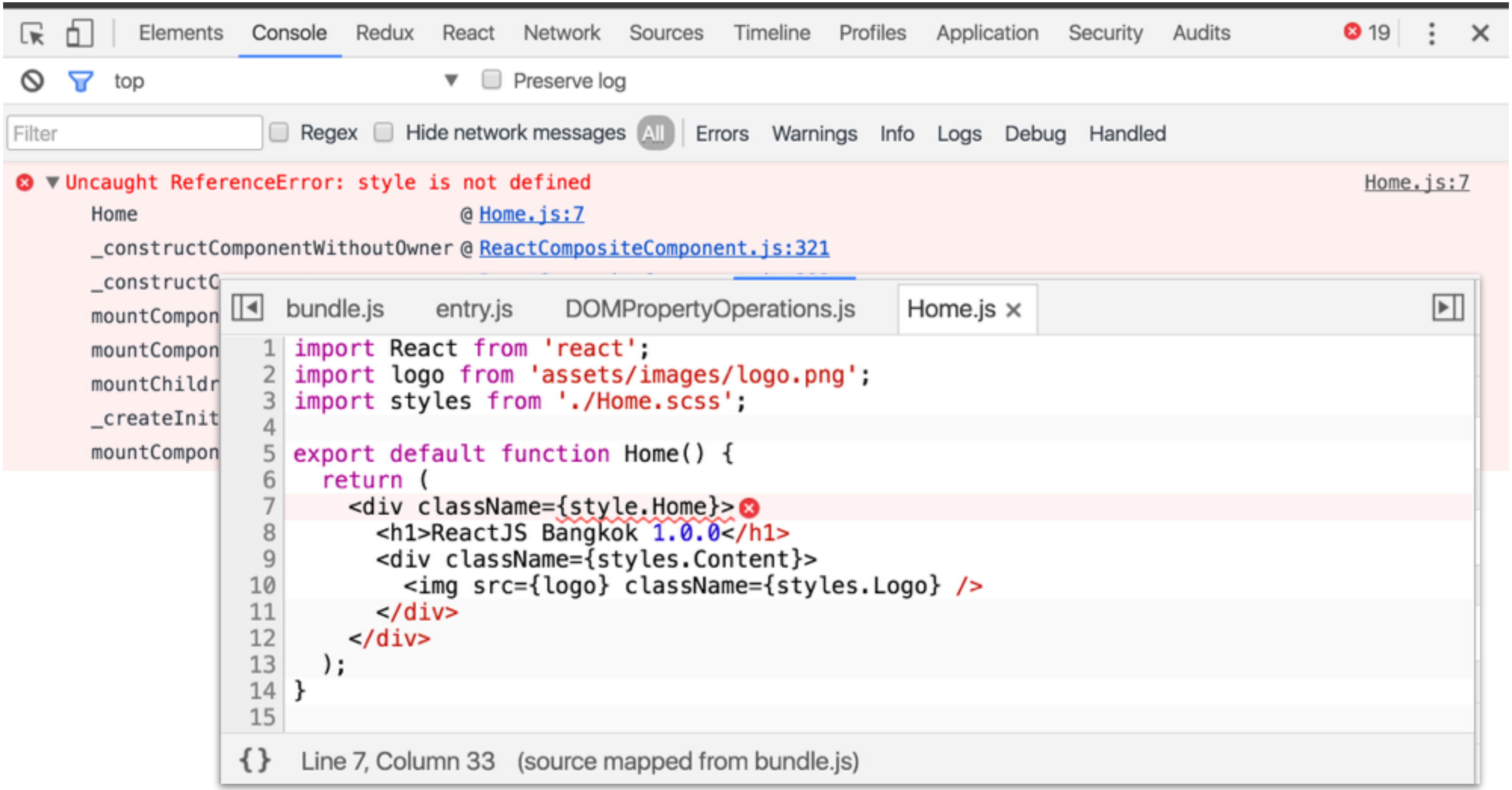
Line 30042, Column 6

Add Webpack devtool to help generate source map



```
module.exports = {
  entry: [
    ...
  ],
  output: {
    ...
  },
  devtool: 'source-map',
```

Get a lot better debugging info

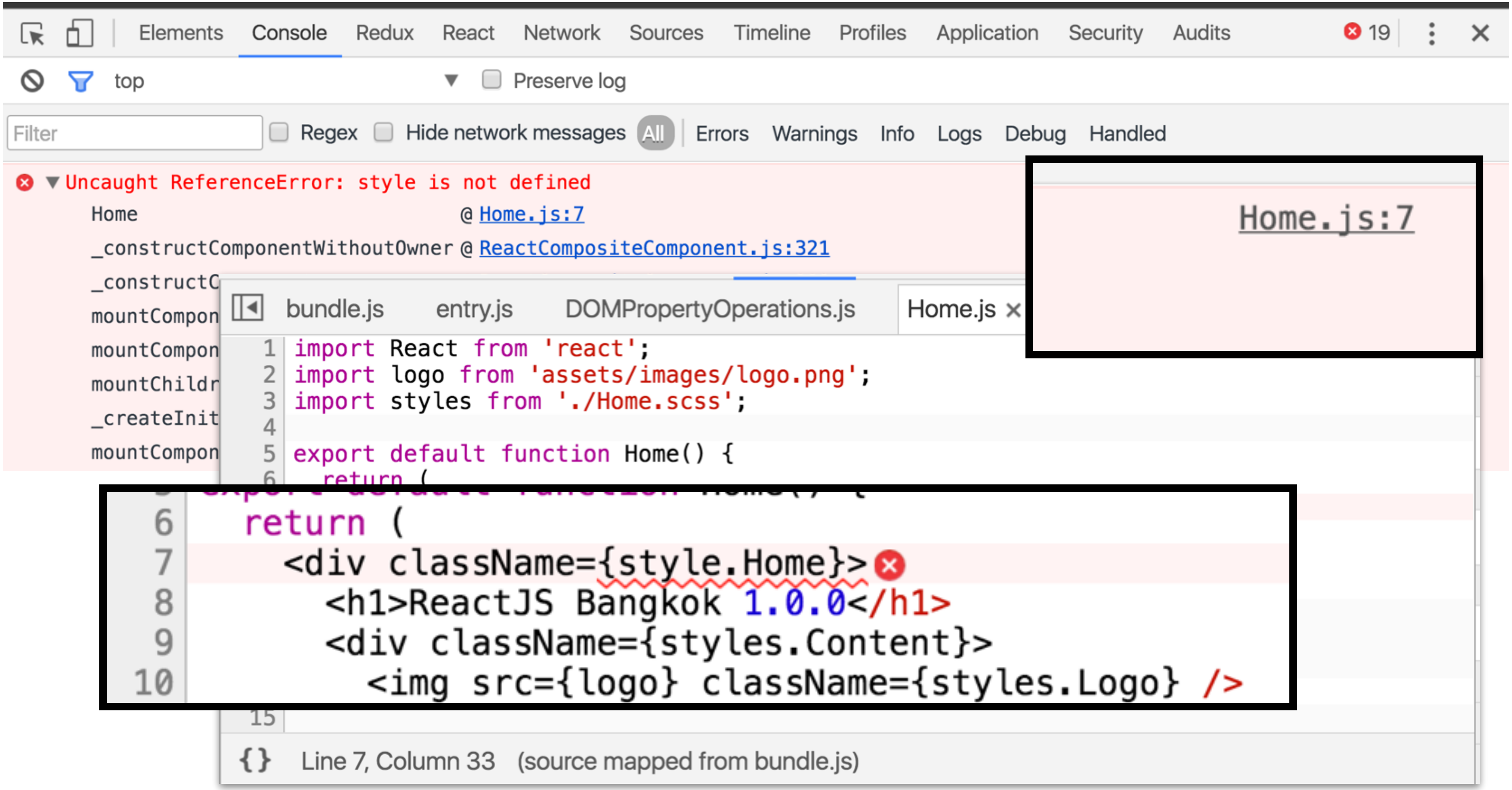


```
Uncaught ReferenceError: style is not defined                    Home.js:7
    Home                           @ Home.js:7
    _constructComponentWithoutOwner @ ReactCompositeComponent.js:321
    _constructC
    mountCompon
    mountCompon
    mountChildr
    _createInit
    mountCompon
```

```
 1  import React from 'react';
 2  import logo from 'assets/images/logo.png';
 3  import styles from './Home.scss';
 4
 5  export default function Home() {
 6    return (
 7      <div className={style.Home}>
 8        <h1>ReactJS Bangkok 1.0.0</h1>
 9        <div className={styles.Content}>
10          <img src={logo} className={styles.Logo} />
11        </div>
12      </div>
13    );
14  }
15
```

Line 7, Column 33 (source mapped from bundle.js)

Get a lot better debugging info 👍👍👍



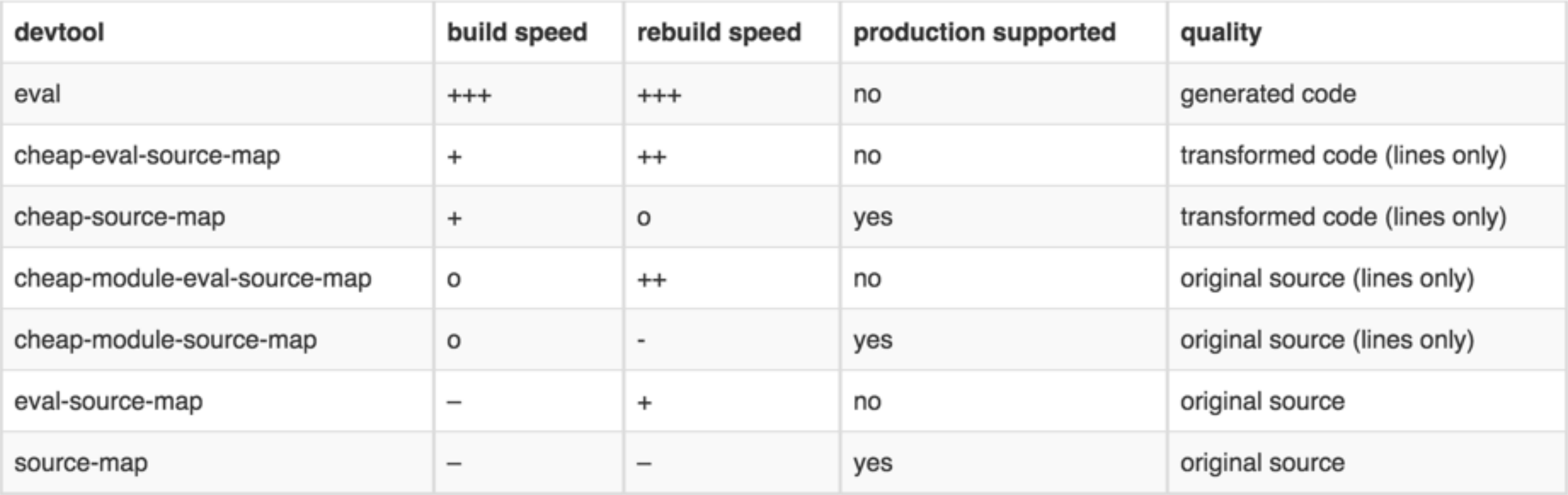
```
Uncaught ReferenceError: style is not defined
    Home                              @ Home.js:7
    _constructComponentWithoutOwner @ ReactCompositeComponent.js:321
    _constructC
    mountCompon
    mountCompon
    mountChildr
    _createInit
    mountCompon
```

Home.js:7

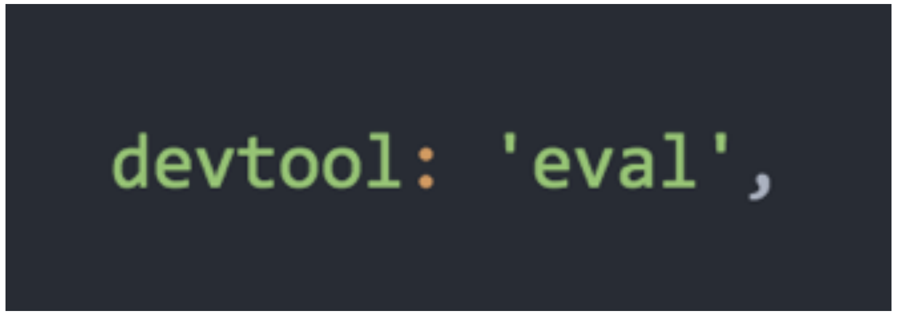
```
import React from 'react';
import logo from 'assets/images/logo.png';
import styles from './Home.scss';

export default function Home() {
  return (
    <div className={style.Home}>
      <h1>ReactJS Bangkok 1.0.0</h1>
      <div className={styles.Content}>
        <img src={logo} className={styles.Logo} />
```

{} Line 7, Column 33 (source mapped from bundle.js)

There are many devtool to choose



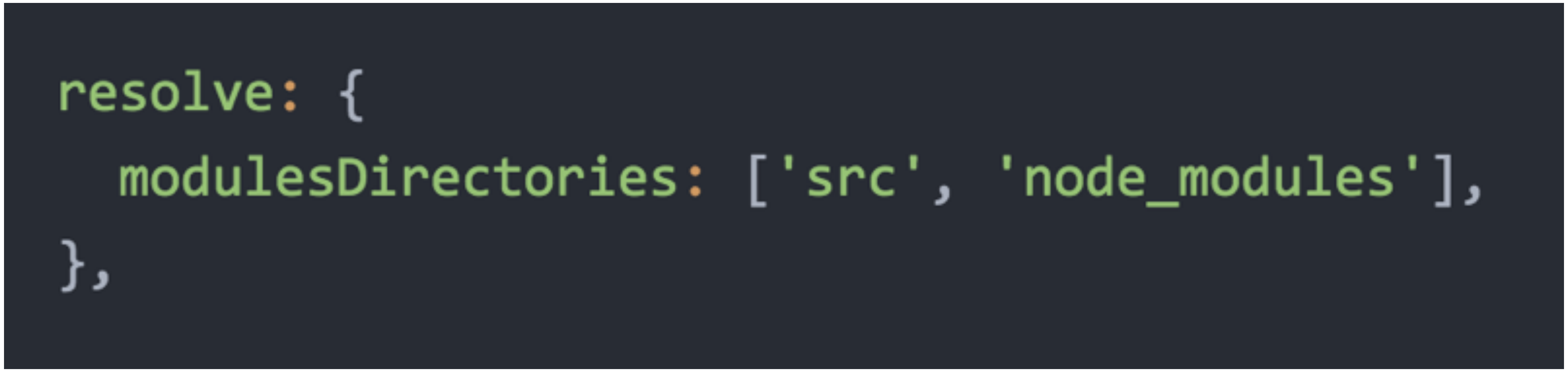
devtool	build speed	rebuild speed	production supported	quality
eval	+++	+++	no	generated code
cheap-eval-source-map	+	++	no	transformed code (lines only)
cheap-source-map	+	o	yes	transformed code (lines only)
cheap-module-eval-source-map	o	++	no	original source (lines only)
cheap-module-source-map	o	-	yes	original source (lines only)
eval-source-map	–	+	no	original source
source-map	–	–	yes	original source



```
devtool: 'eval',
```

Suggestion: Use ‘eval’ until you feel like it’s not enough

6.2 Resolve Files

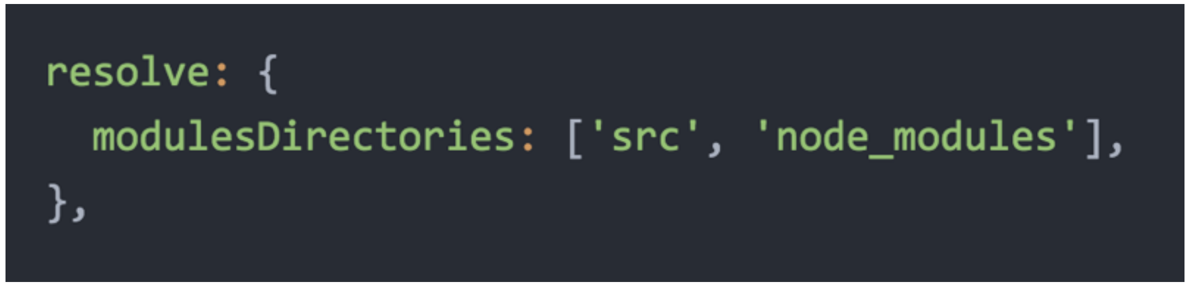


```
resolve: {
  modulesDirectories: ['src', 'node_modules'],
},
```

webpack.config.js

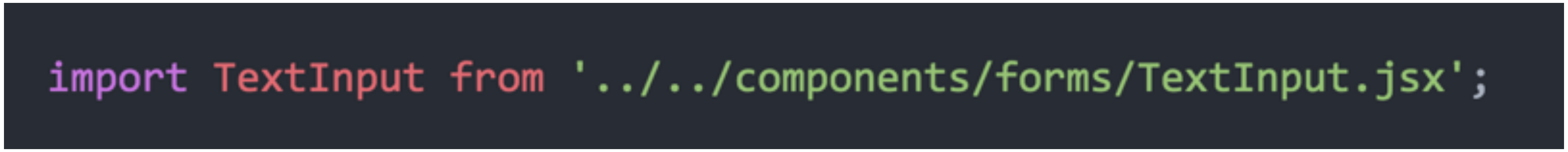
```
src
 |
 • - containers
 |    |
 |    • - Home
 |         |
 |         • - Home.jsx
 |
 • - components
      |
      • - forms
           |
           • - TextInput.jsx
```

We are in this file

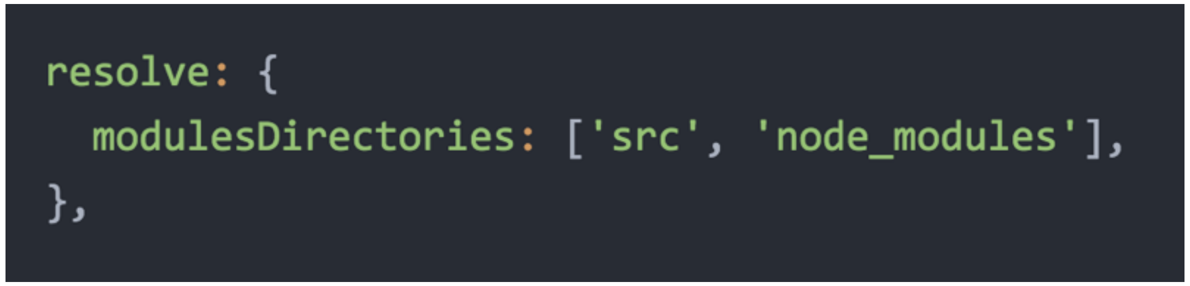


```
resolve: {
  modulesDirectories: ['src', 'node_modules'],
},
```

webpack.config.js



```
import TextInput from '../../components/forms/TextInput.jsx';
```

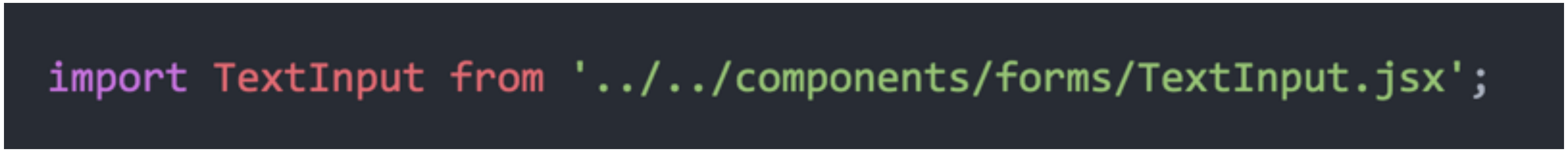


```
resolve: {
  modulesDirectories: ['src', 'node_modules'],
},
```

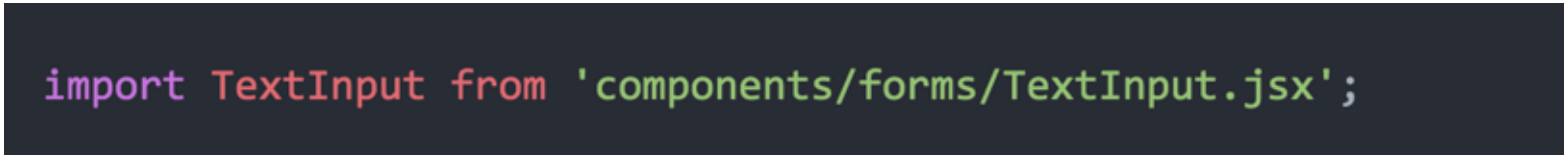
webpack.config.js

```
src
 |
 • - containers
 |    |
 |    • - Home
 |         |
 |         • - Home.jsx
 |
 • - components
      |
      • - forms
           |
           • - TextInput.jsx
```

We are in this file

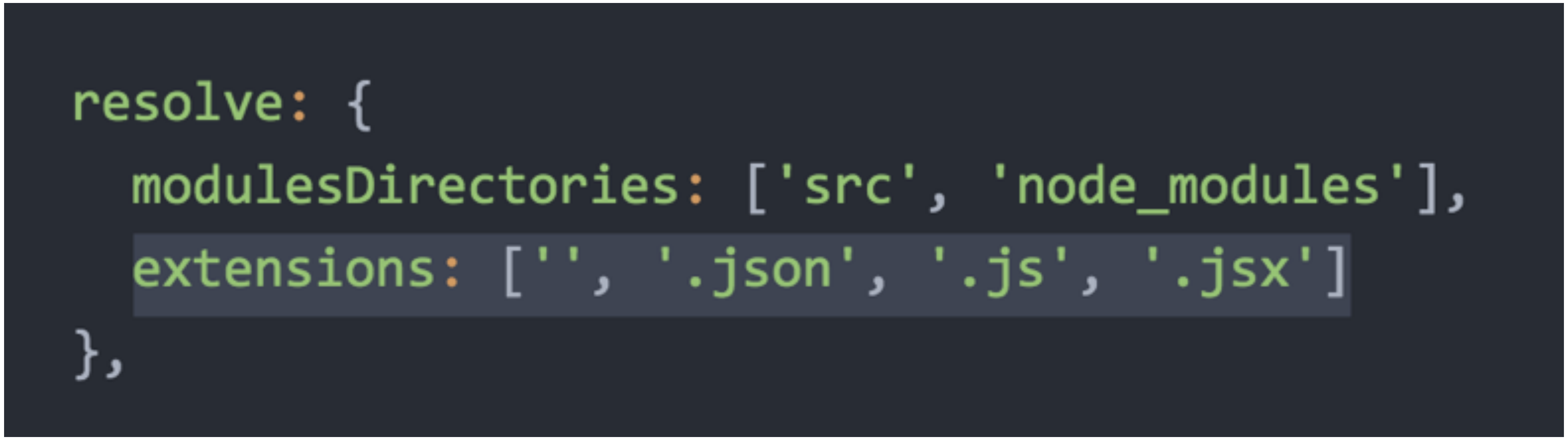


```
import TextInput from '../../components/forms/TextInput.jsx';
```



```
import TextInput from 'components/forms/TextInput.jsx';
```

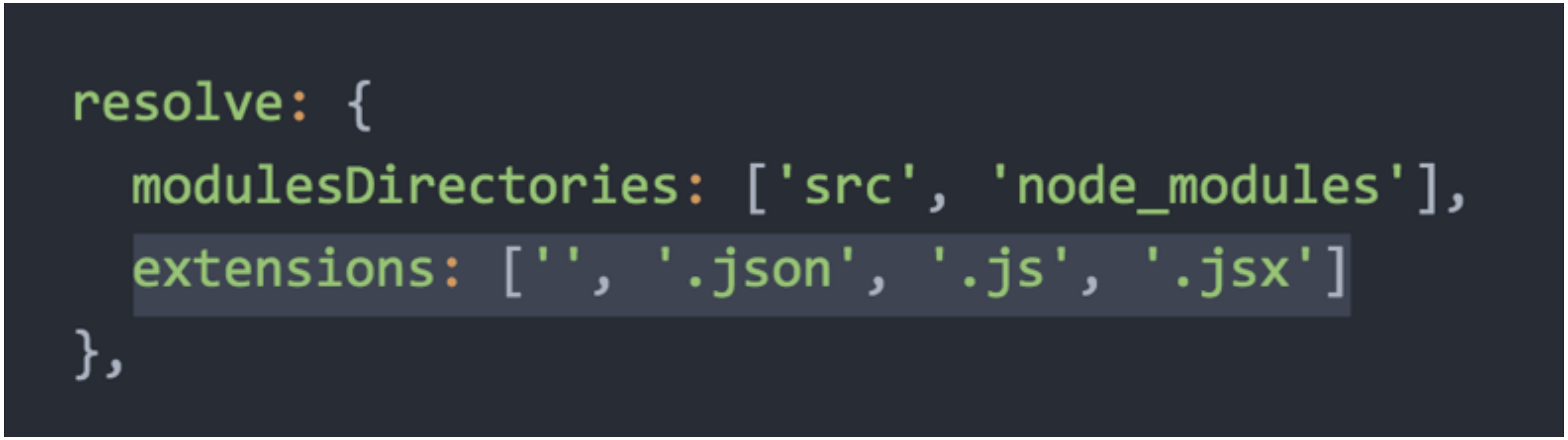
Add extensions resolve



```
resolve: {
  modulesDirectories: ['src', 'node_modules'],
  extensions: ['', '.json', '.js', '.jsx']
},
```

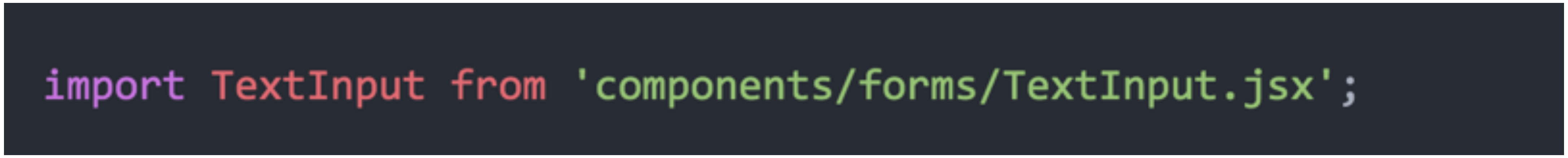
webpack.config.js

Add extensions resolve



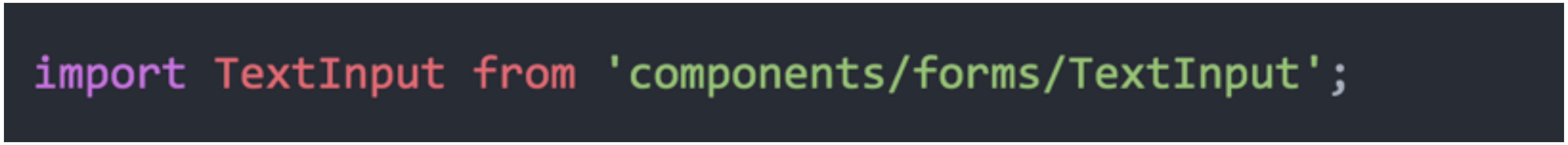
```
resolve: {
  modulesDirectories: ['src', 'node_modules'],
  extensions: ['', '.json', '.js', '.jsx']
},
```

webpack.config.js



```
import TextInput from 'components/forms/TextInput.jsx';
```

↓



```
import TextInput from 'components/forms/TextInput';
```

6.3 Eslint Workflow

```
const y = ‘hello’
```

```
const y = “hello”
```

6.3 Eslint Workflow

```
var t = 20
```

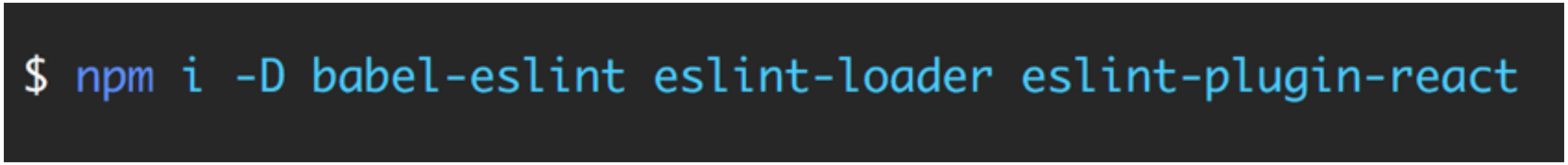
```
let t = 20
```

6.3 Eslint Workflow

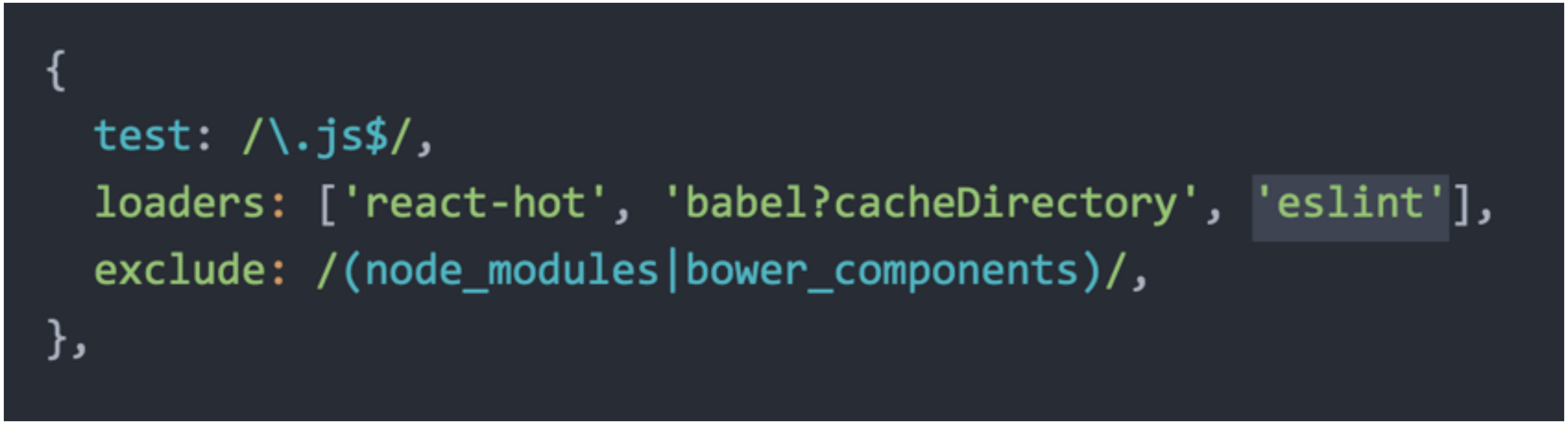
```
<div className=“caret”></div>
```

```
<div className=“caret”/>
```

Configuring eslint



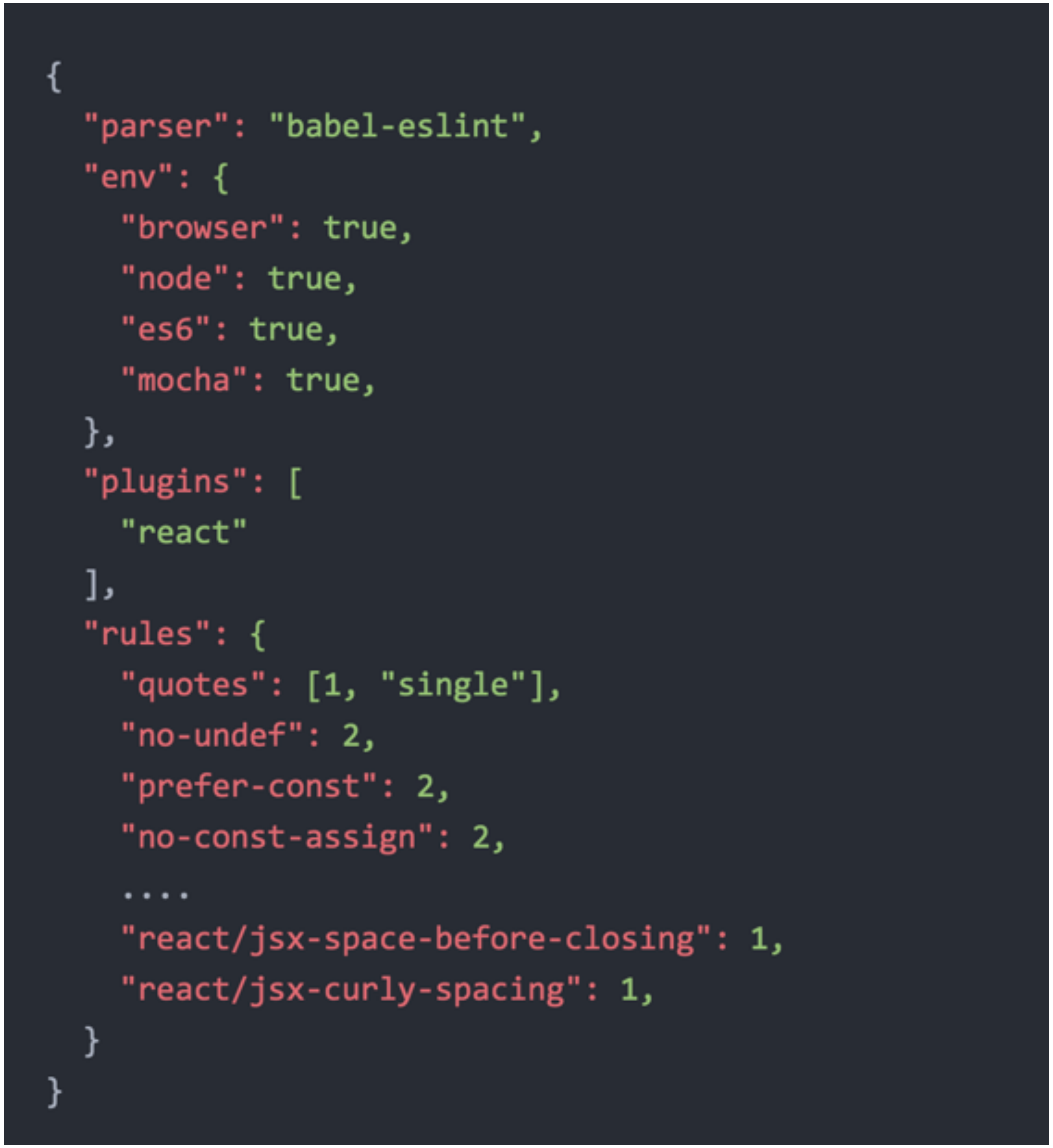
```
$ npm i -D babel-eslint eslint-loader eslint-plugin-react
```



```
{
  test: /\.js$/,
  loaders: ['react-hot', 'babel?cacheDirectory', 'eslint'],
  exclude: /(node_modules|bower_components)/,
},
```

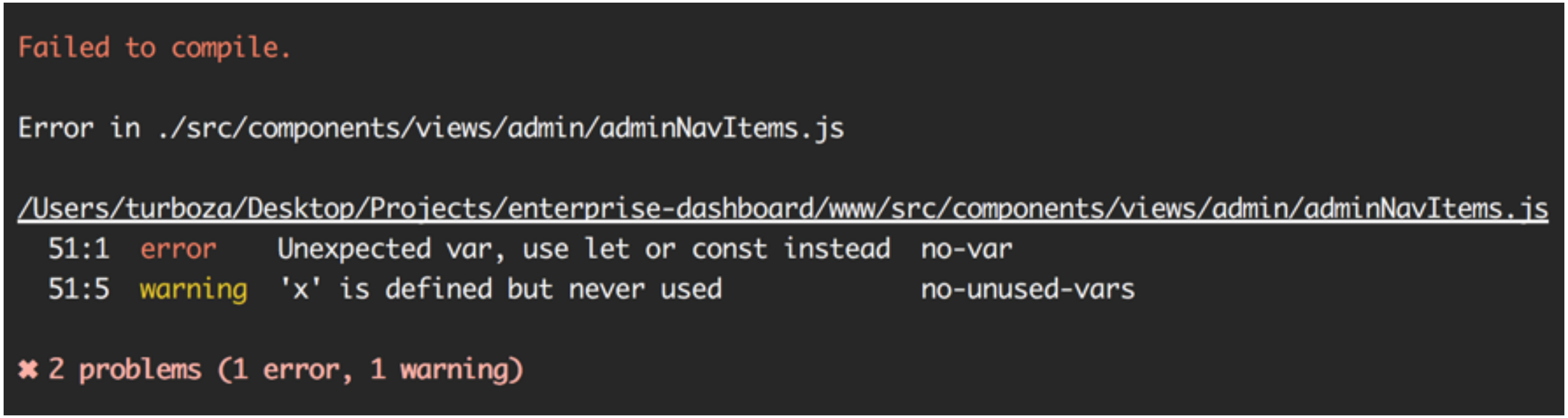
Note: Always put on the rightmost to lint first

Add .eslintrc



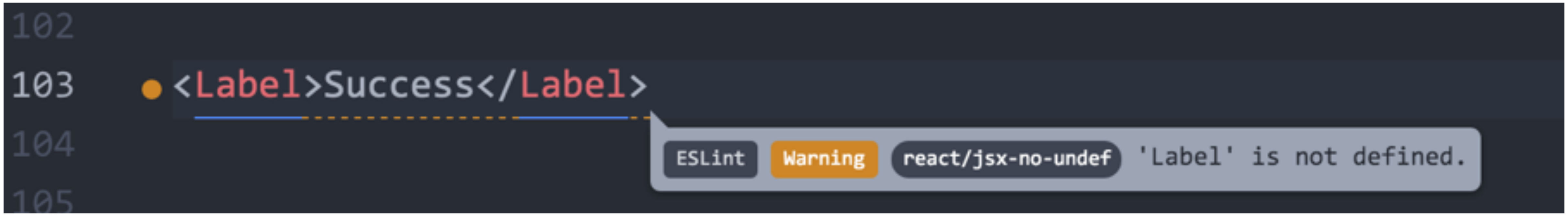
```
{
  "parser": "babel-eslint",
  "env": {
    "browser": true,
    "node": true,
    "es6": true,
    "mocha": true,
  },
  "plugins": [
    "react"
  ],
  "rules": {
    "quotes": [1, "single"],
    "no-undef": 2,
    "prefer-const": 2,
    "no-const-assign": 2,
    ....
    "react/jsx-space-before-closing": 1,
    "react/jsx-curly-spacing": 1,
  }
}
```

Webpack will show the error when build



```
Failed to compile.

Error in ./src/components/views/admin/adminNavItems.js

/Users/turboza/Desktop/Projects/enterprise-dashboard/www/src/components/views/admin/adminNavItems.js
  51:1  error    Unexpected var, use let or const instead  no-var
  51:5  warning  'x' is defined but never used             no-unused-vars

✖ 2 problems (1 error, 1 warning)
```

We can also config to show in Editor ex. Sublime, Atom



```
  ● <Label>Success</Label>
```

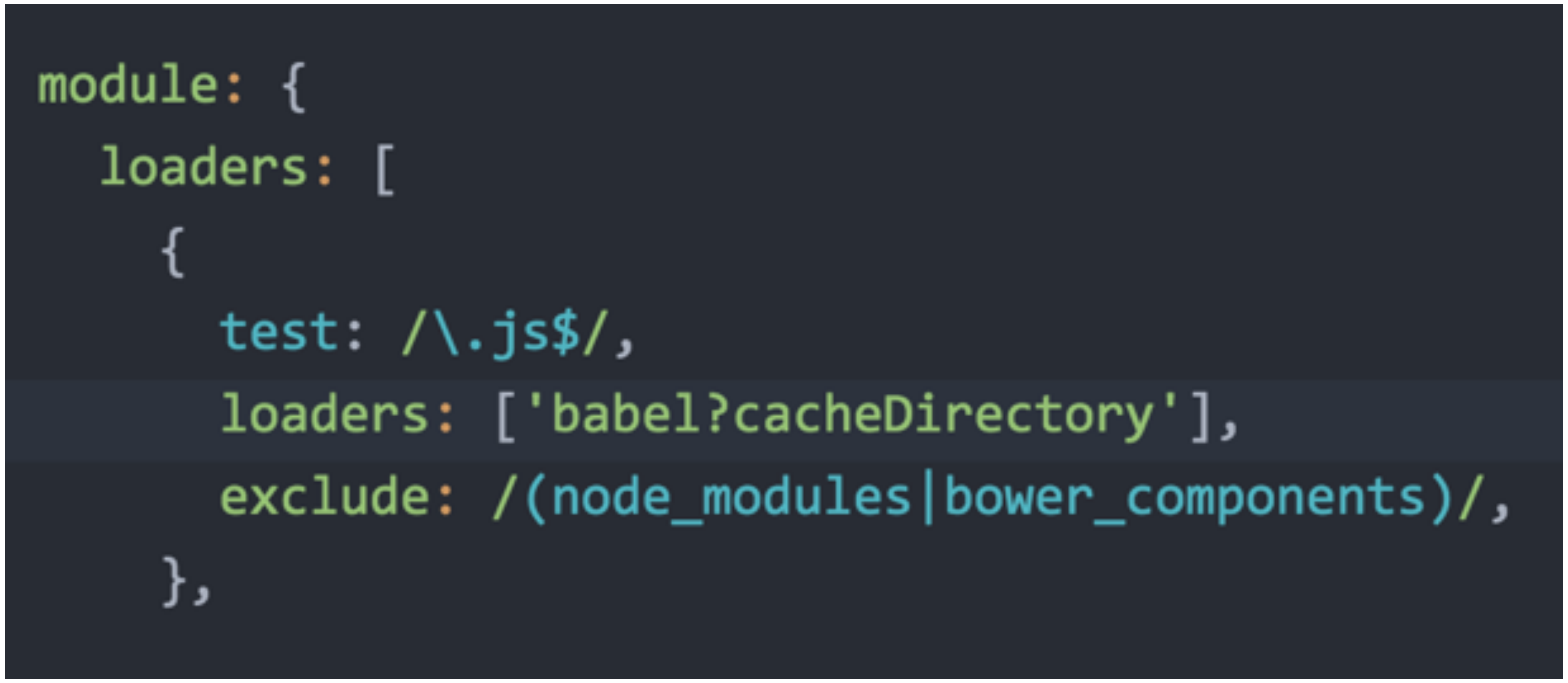
ESLint Warning react/jsx-no-undef 'Label' is not defined.

See more rules at

https://github.com/airbnb/javascript

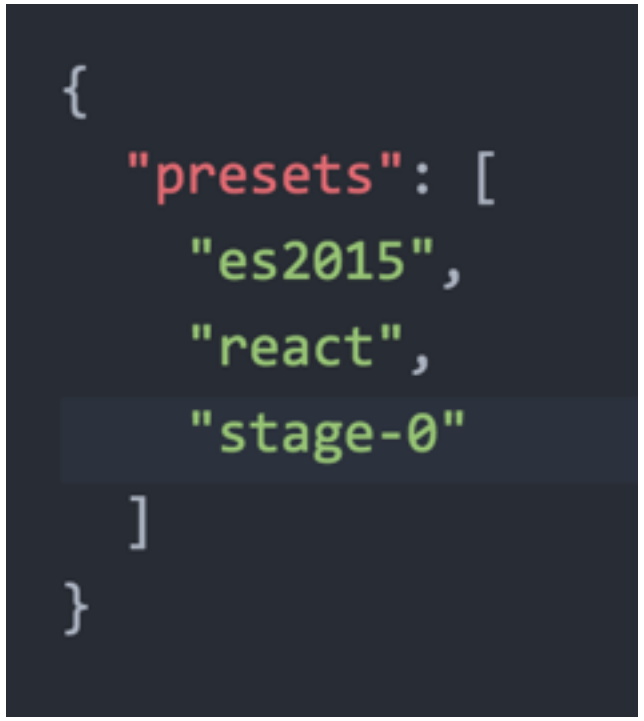
http://eslint.org/docs/rules/

6.4 Enable Babel Stage-0



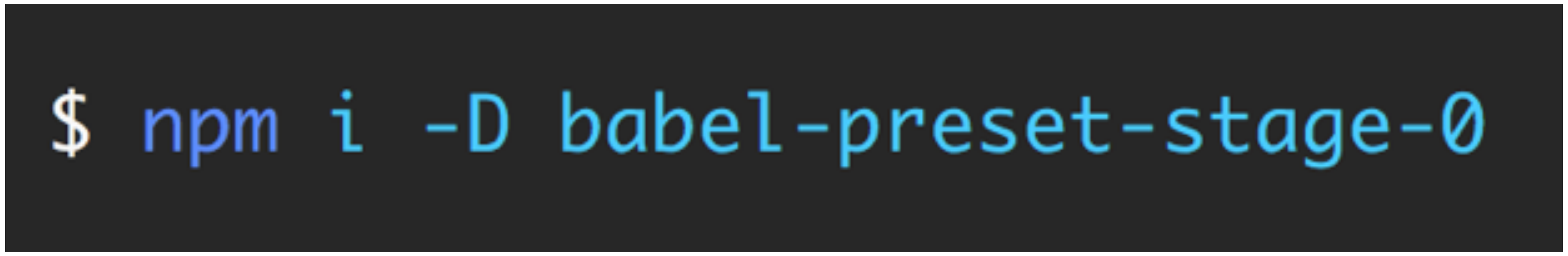
```
module: {
  loaders: [
    {
      test: /\.js$/,
      loaders: ['babel?cacheDirectory'],
      exclude: /(node_modules|bower_components)/,
    },
```

webpack.config.js



```
{
  "presets": [
    "es2015",
    "react",
    "stage-0"
  ]
}
```

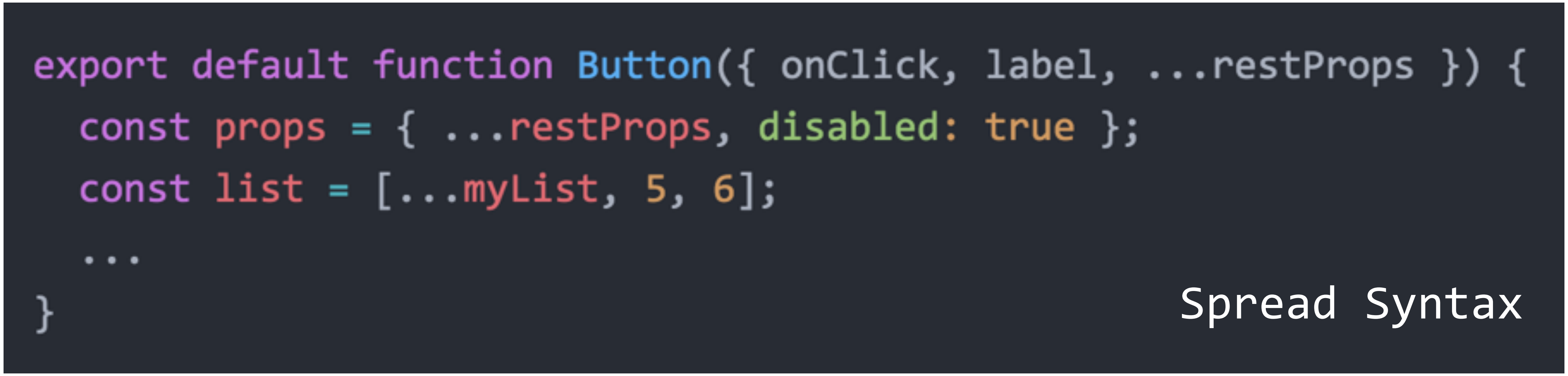
.babelrc



```
$ npm i -D babel-preset-stage-0
```

Terminal

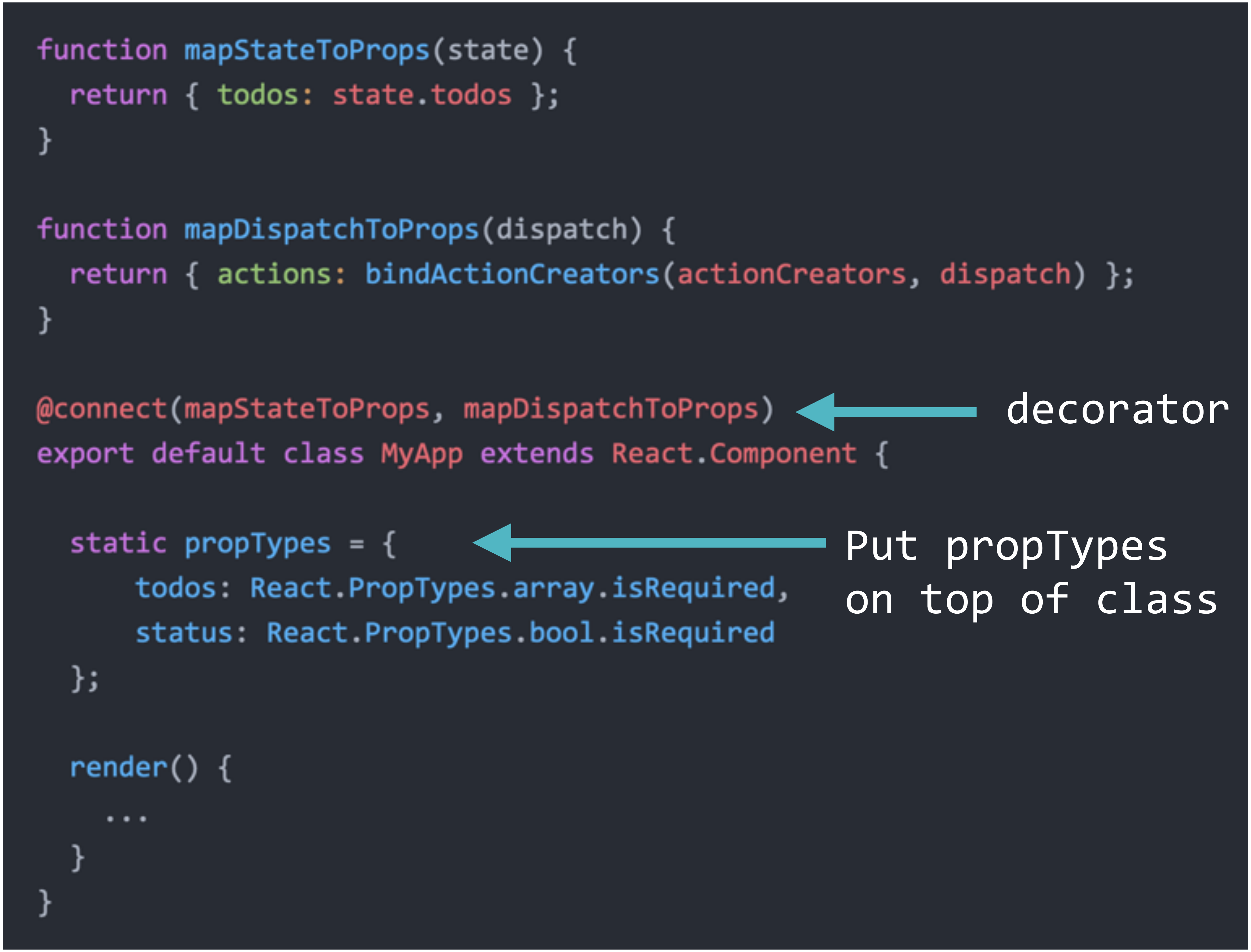
More elegant way to write React + Redux



```
export default function Button({ onClick, label, ...restProps }) {
  const props = { ...restProps, disabled: true };
  const list = [...myList, 5, 6];
  ...
}
```

Spread Syntax

More elegant way to write React + Redux

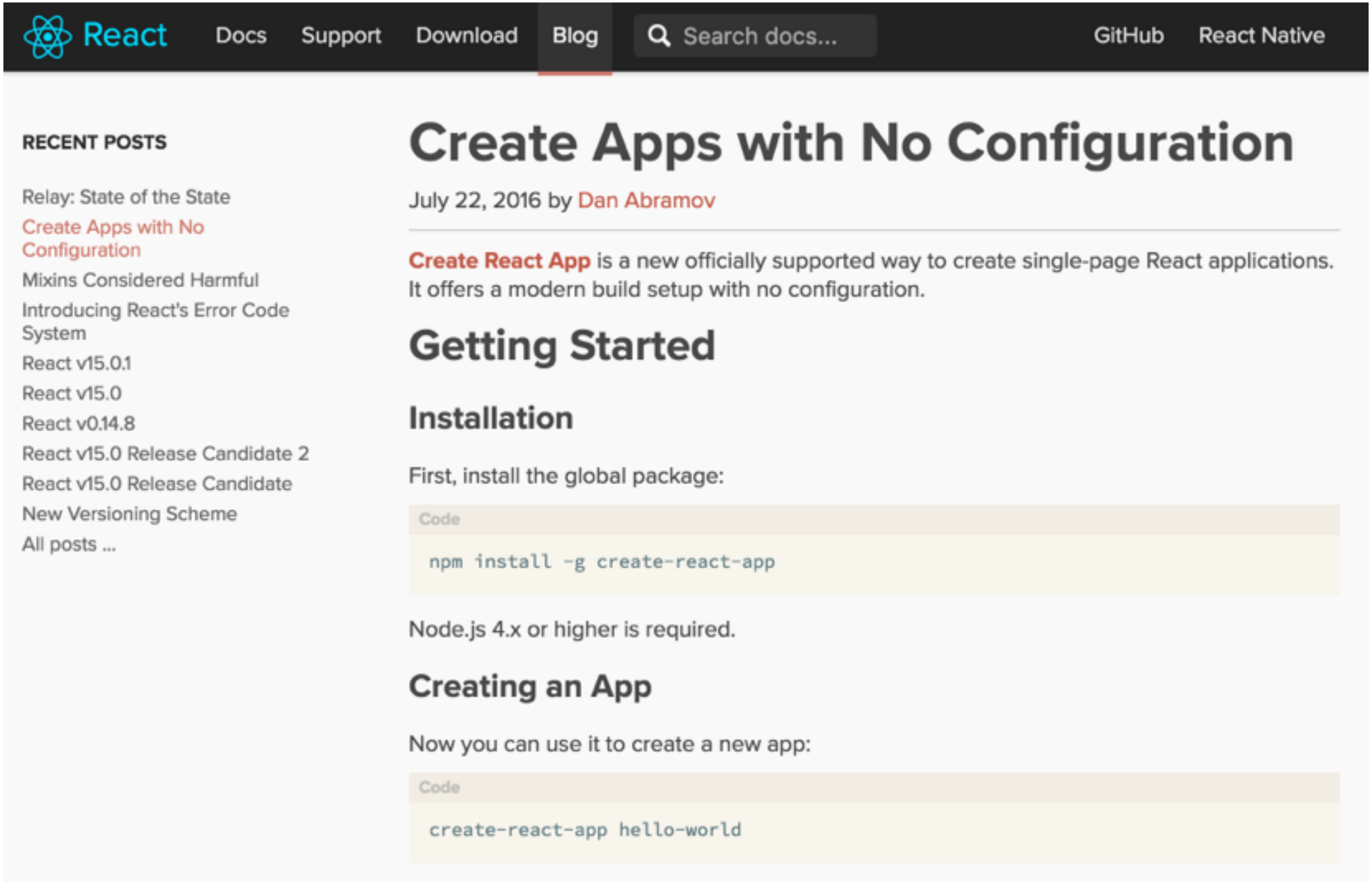


```
function mapStateToProps(state) {
  return { todos: state.todos };
}

function mapDispatchToProps(dispatch) {
  return { actions: bindActionCreators(actionCreators, dispatch) };
}

@connect(mapStateToProps, mapDispatchToProps)
export default class MyApp extends React.Component {

  static propTypes = {
      todos: React.PropTypes.array.isRequired,
      status: React.PropTypes.bool.isRequired
  };

  render() {
    ...
  }
}
```

decorator

Put propTypes
on top of class

6.5 Boilerplate?



RECENT POSTS

Relay: State of the State
Create Apps with No Configuration
Mixins Considered Harmful
Introducing React's Error Code System
React v15.0.1
React v15.0
React v0.14.8
React v15.0 Release Candidate 2
React v15.0 Release Candidate
New Versioning Scheme
All posts ...

Create Apps with No Configuration

July 22, 2016 by Dan Abramov

Create React App is a new officially supported way to create single-page React applications. It offers a modern build setup with no configuration.

Getting Started

Installation

First, install the global package:

Code

```
npm install -g create-react-app
```

Node.js 4.x or higher is required.

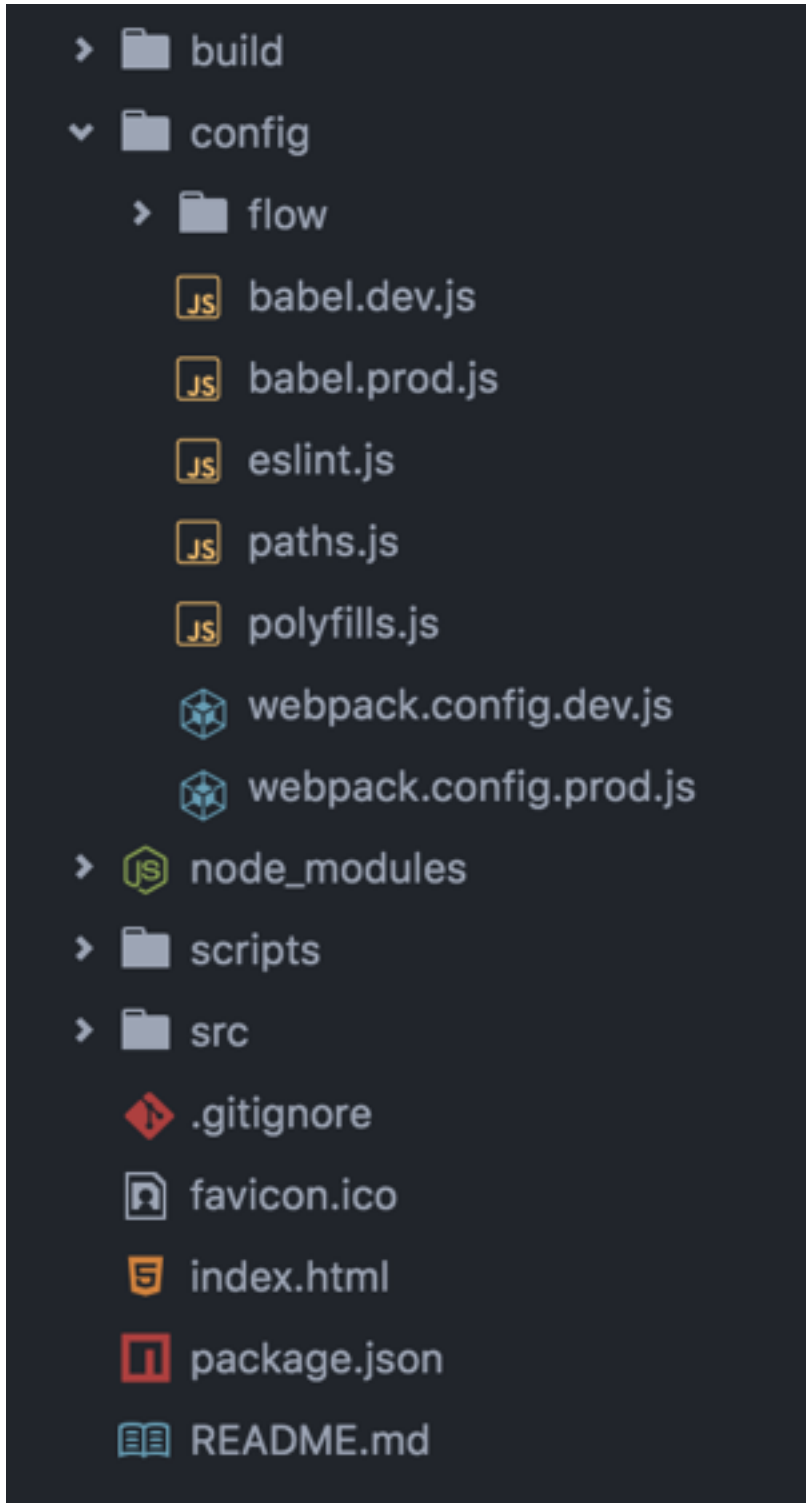
Creating an App

Now you can use it to create a new app:

Code

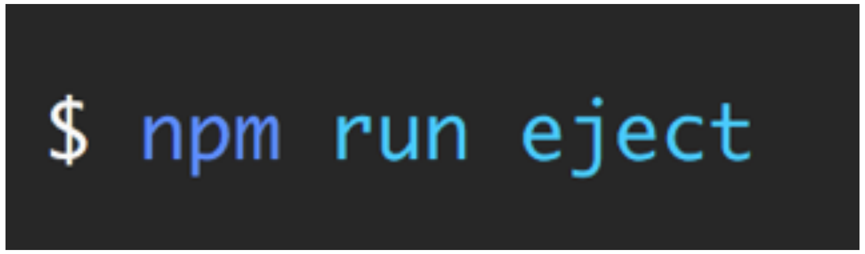
```
create-react-app hello-world
```

Facebook’s “create-react-app”



```
> build
v config
    > flow
      babel.dev.js
      babel.prod.js
      eslint.js
      paths.js
      polyfills.js
      webpack.config.dev.js
      webpack.config.prod.js
> node_modules
> scripts
> src
  .gitignore
  favicon.ico
  index.html
  package.json
  README.md
```

- Good place to get a quick start without config
- Can learn good practice on webpack configuration



```
$ npm run eject
```

Note: eject to see webpack & other config inside

Dev Best Practice

1. Use **Devtool** to get source-map for easier debugging.“eval” is recommended.

2. Use **Resolve** to have cleaner import syntax and more prone to file move error

3. Use **Eslint** to improve collaboration and reduce bugs.

4. Use **Babel Stage-0** to get the cutting-edge JavaScript syntax

5. Use **Facebook’s React-create-app** and eject to learn good practice or customize to use

7. Production Best Practice

Do we really need to use the same config between Dev & Prod?

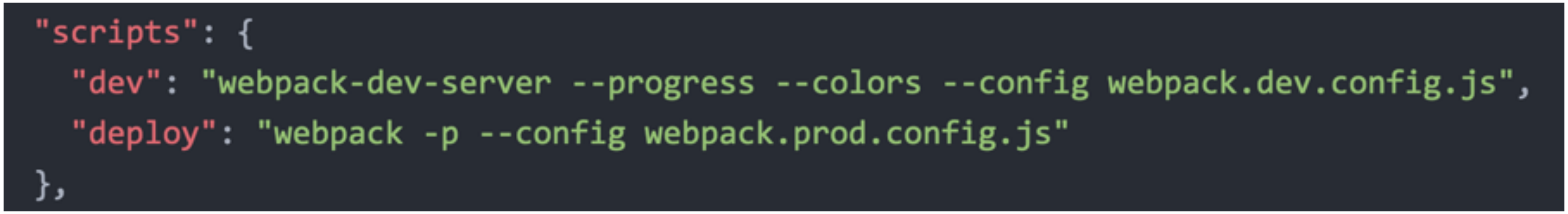
7.1

Separating Dev & Prod Config

Separating config

webpack.dev.config.js

webpack.prod.config.js

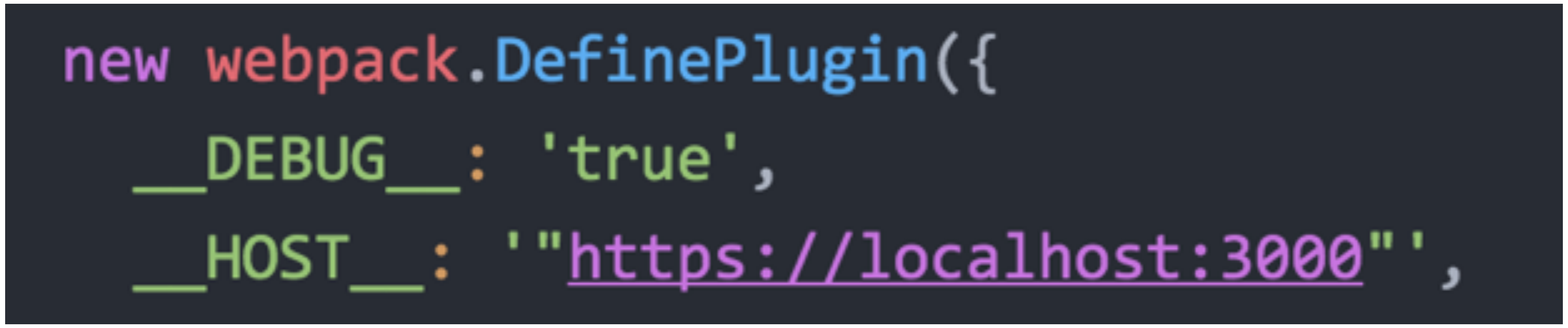


```
"scripts": {
  "dev": "webpack-dev-server --progress --colors --config webpack.dev.config.js",
  "deploy": "webpack -p --config webpack.prod.config.js"
},
```

package.json

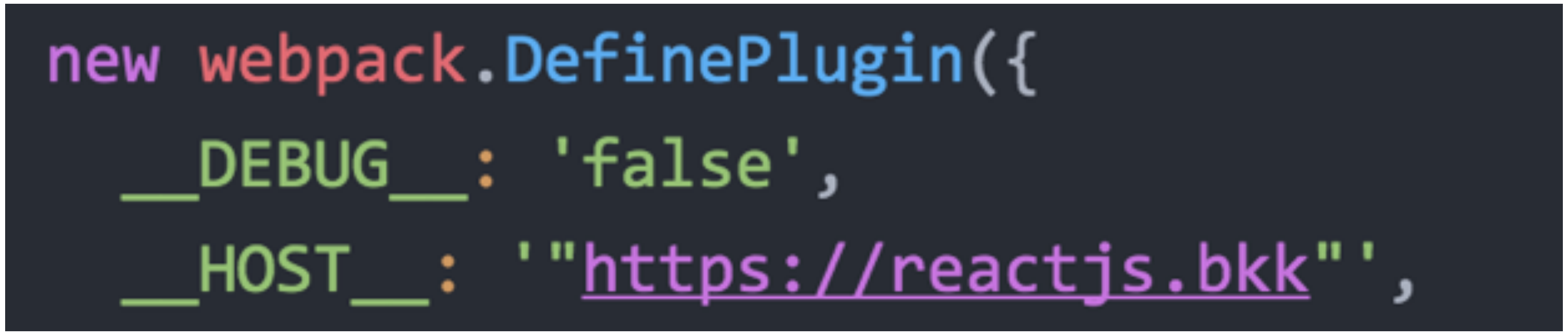
Difference Sample (1)

Webpack Dev



```
new webpack.DefinePlugin({
  __DEBUG__: 'true',
  __HOST__: '"https://localhost:3000"',
```

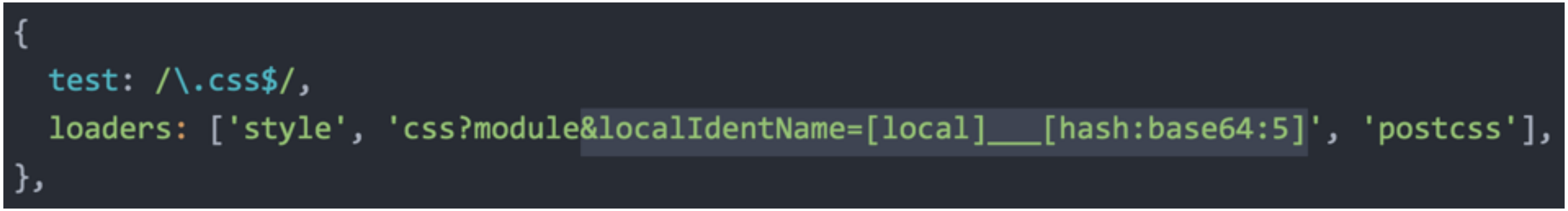
Webpack Prod



```
new webpack.DefinePlugin({
  __DEBUG__: 'false',
  __HOST__: '"https://reactjs.bkk"',
```

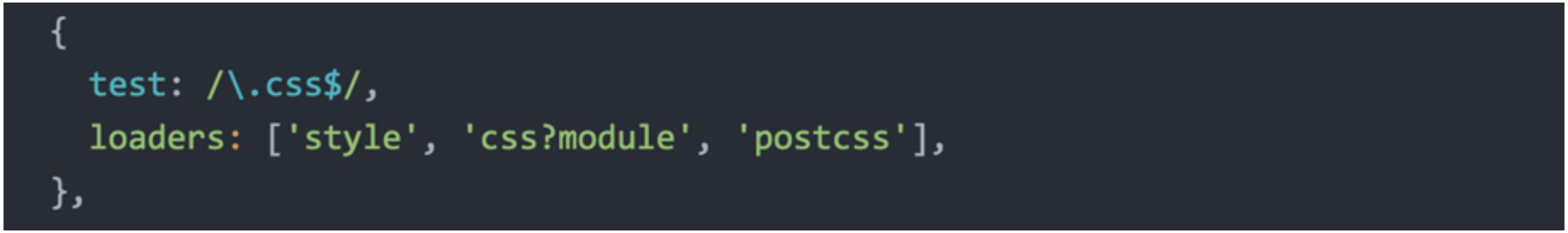
Difference Sample (2)

Webpack Dev



```
{
  test: /\.css$/,
  loaders: ['style', 'css?module&localIdentName=[local]___[hash:base64:5]', 'postcss'],
},
```

Webpack Prod



```
  {
    test: /\.css$/,
    loaders: ['style', 'css?module', 'postcss'],
  },
```

Difference Sample (3)

- Prod has no Hot reload & dev server

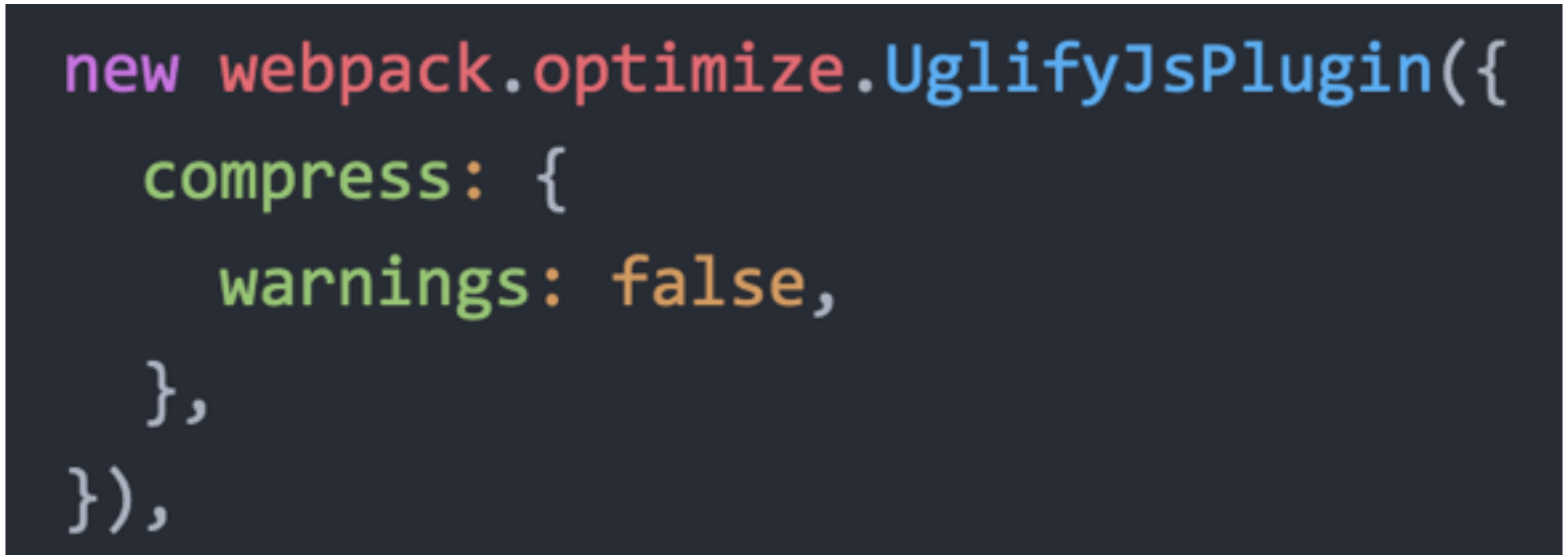
- Different set of plugins

- Different Sourcemap

7.2

Make bundle smaller!

I. Minifying



```
new webpack.optimize.UglifyJsPlugin({
  compress: {
    warnings: false,
  },
}),
```

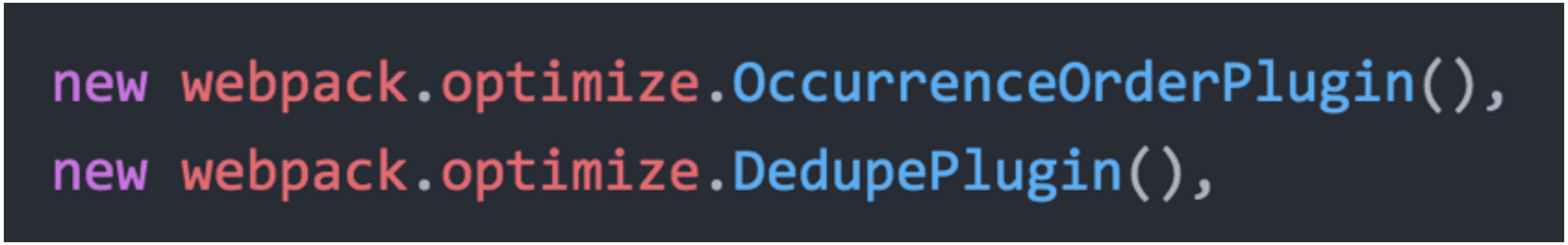
Reduce test file size from

9,970 KB -> 3,882 KB

(61% reduction)

Note: Tested with webpack without “-p”

II. Remove redundant



```
new webpack.optimize.OccurrenceOrderPlugin(),
new webpack.optimize.DedupePlugin(),
```

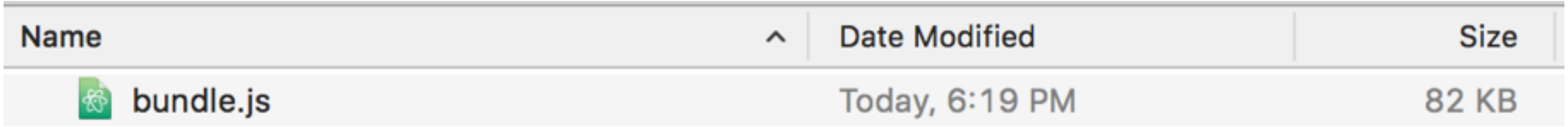
Reduce test file size from

3,882 KB -> 3,872 KB
(0.26% reduction)

Note: Tested with webpack without “-p”

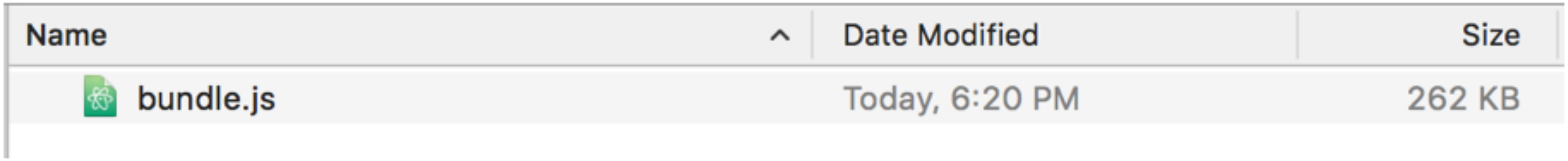
III. Change Source map

No devtool



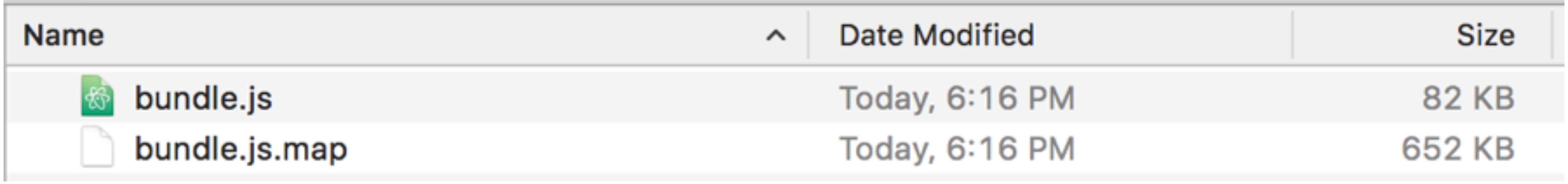
Name	Date Modified	Size
bundle.js	Today, 6:19 PM	82 KB

devtool: ‘eval’ (NO production support)



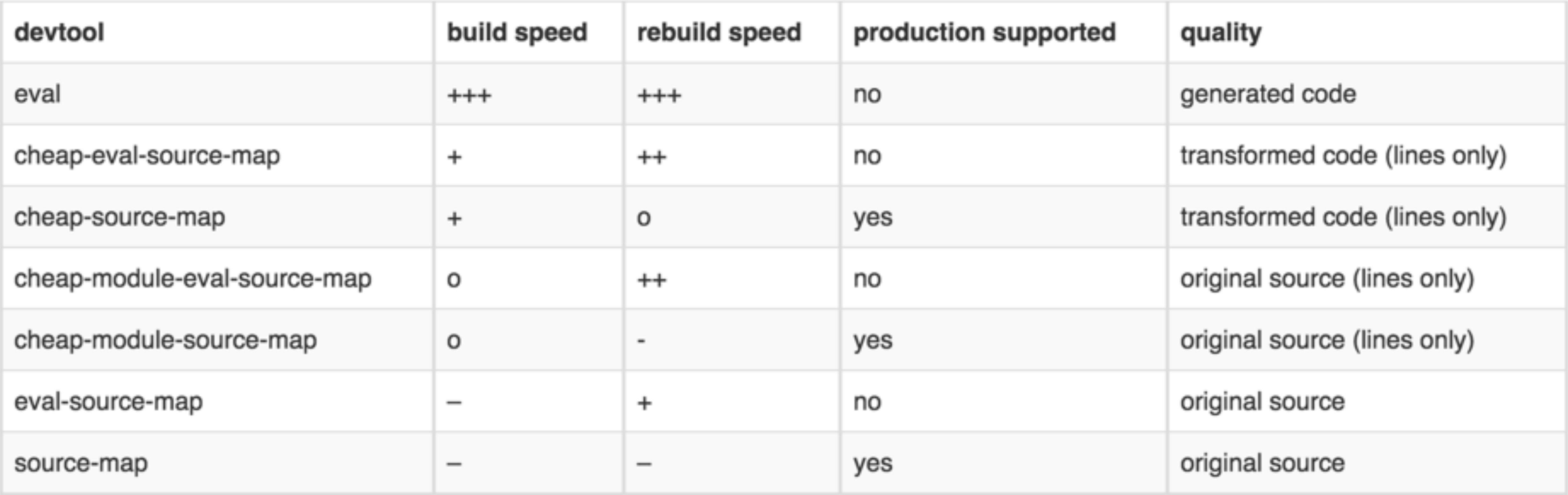
Name	Date Modified	Size
bundle.js	Today, 6:20 PM	262 KB

devtool: ‘source-map’ (production support)



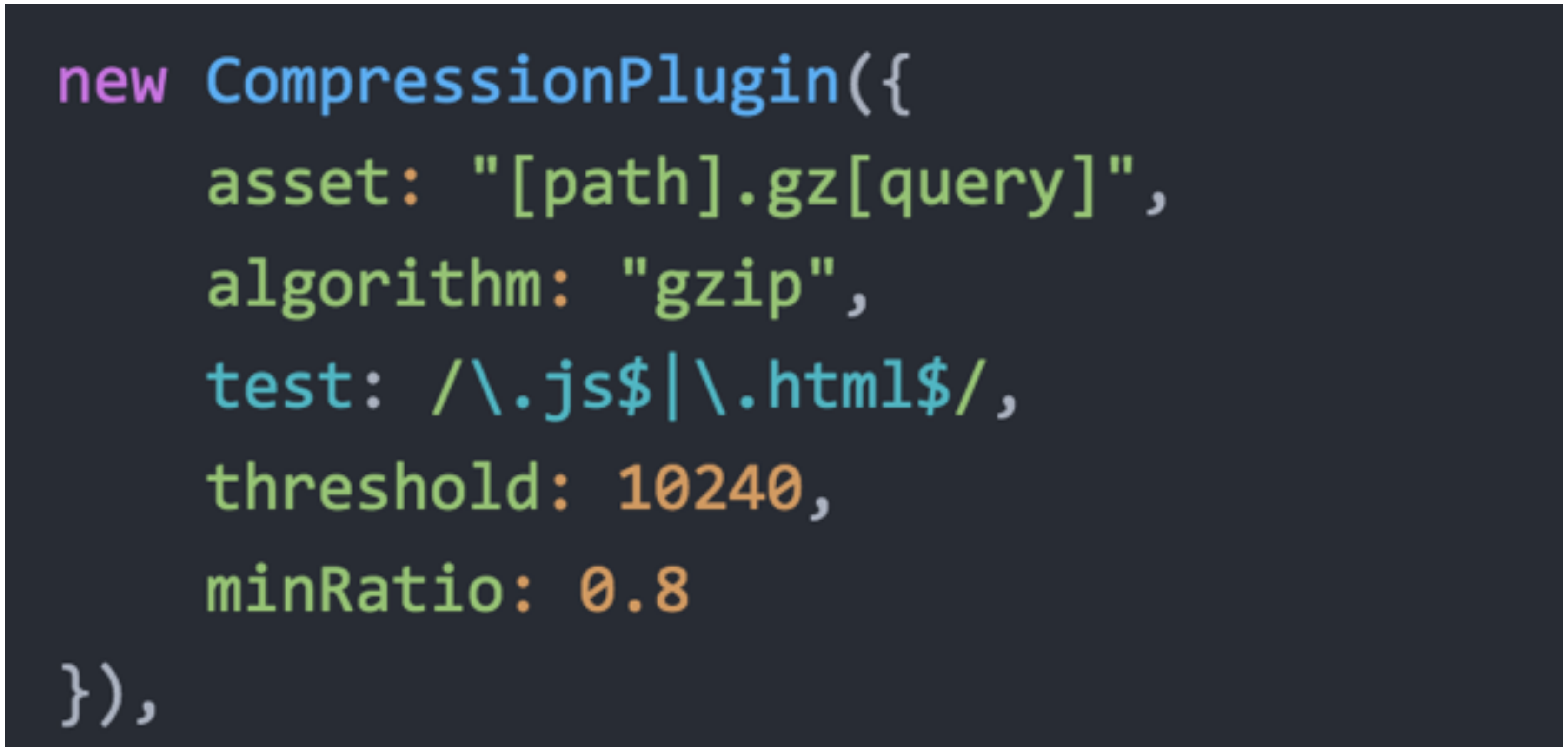
Name	Date Modified	Size
bundle.js	Today, 6:16 PM	82 KB
bundle.js.map	Today, 6:16 PM	652 KB

Pick the devtool that has production support



devtool	build speed	rebuild speed	production supported	quality
eval	+++	+++	no	generated code
cheap-eval-source-map	+	++	no	transformed code (lines only)
cheap-source-map	+	o	yes	transformed code (lines only)
cheap-module-eval-source-map	o	++	no	original source (lines only)
cheap-module-source-map	o	-	yes	original source (lines only)
eval-source-map	–	+	no	original source
source-map	–	–	yes	original source

IV. It’s not small enough gzip it!



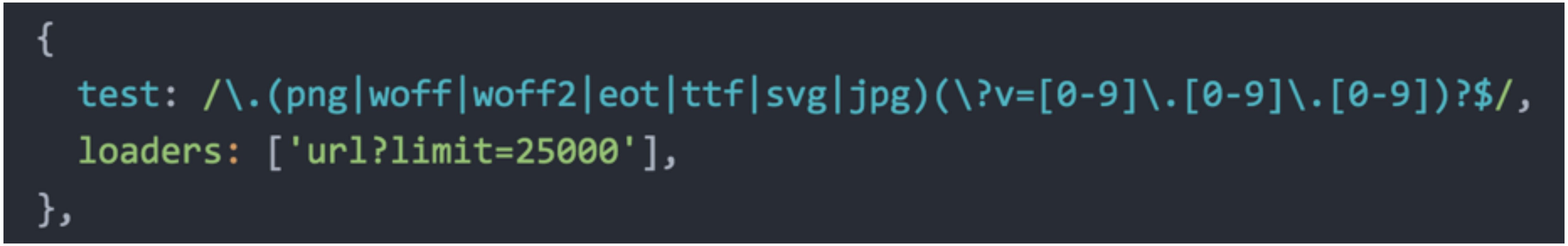
```
new CompressionPlugin({
    asset: "[path].gz[query]",
    algorithm: "gzip",
    test: /\.js$|\.html$/,
    threshold: 10240,
    minRatio: 0.8
}),
```

3,995 KB -> 1,029 KB

(74% reduction!)

With server config for serving static gzip.
This can help reduce server load.

V. URL Limit

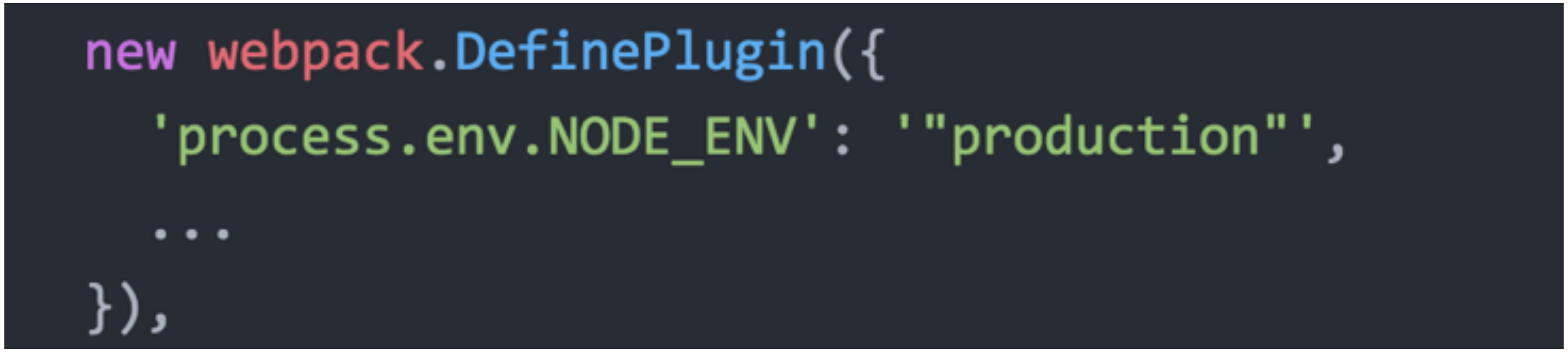


```
{
  test: /\.(png|woff|woff2|eot|ttf|svg|jpg)(\?v=[0-9]\.[0-9]\.[0-9])?$/,
  loaders: ['url?limit=25000'],
},
```

Convert file into base64 only if the size
is less than 25,000 Byte (25KB)

Recommended limit is around 25-100 KB

VI. Tell library that we are building for Production



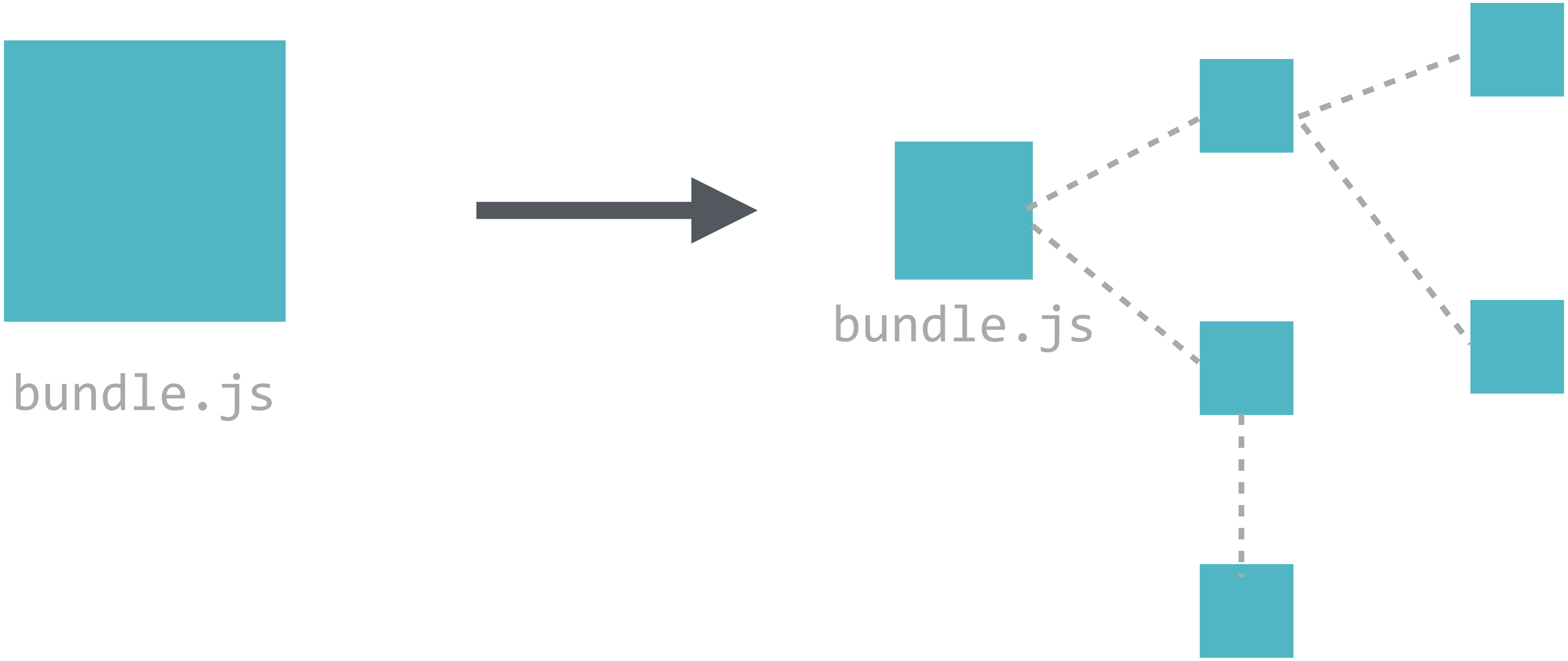
```
new webpack.DefinePlugin({
  'process.env.NODE_ENV': '"production"',
  ...
}),
```

Force some lib to use minified version

ex. React, Redux

VII. Code Splitting & Async Load (with React-router)

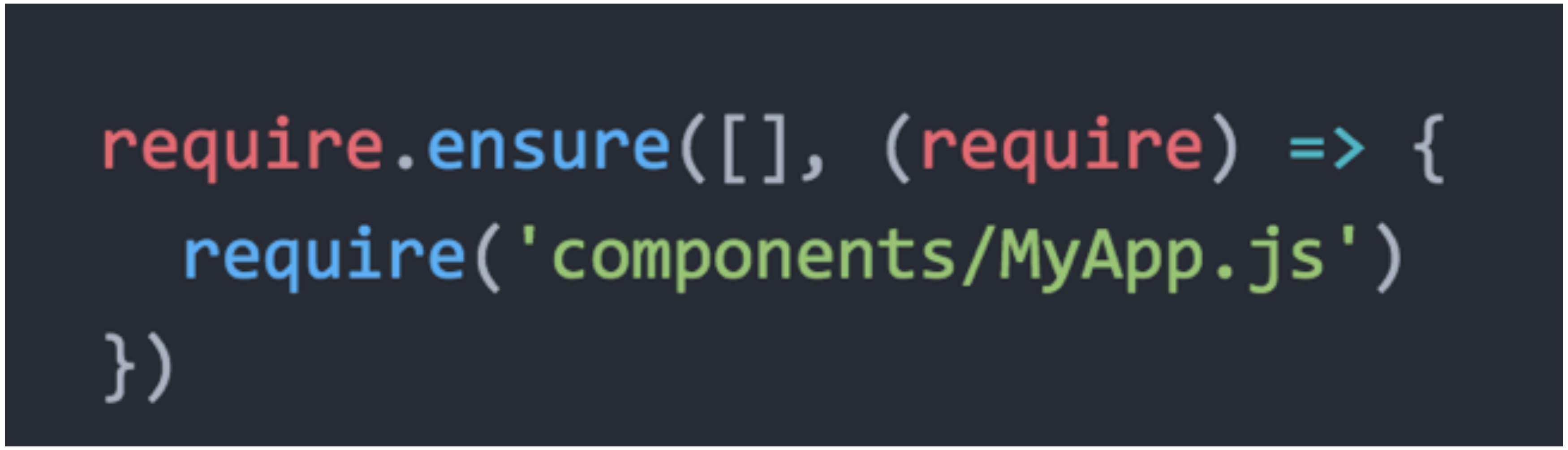
Instead of bundling into 1 files, just split it off and load on demand.



Video Demo

https://youtu.be/zPKSu67OWVw

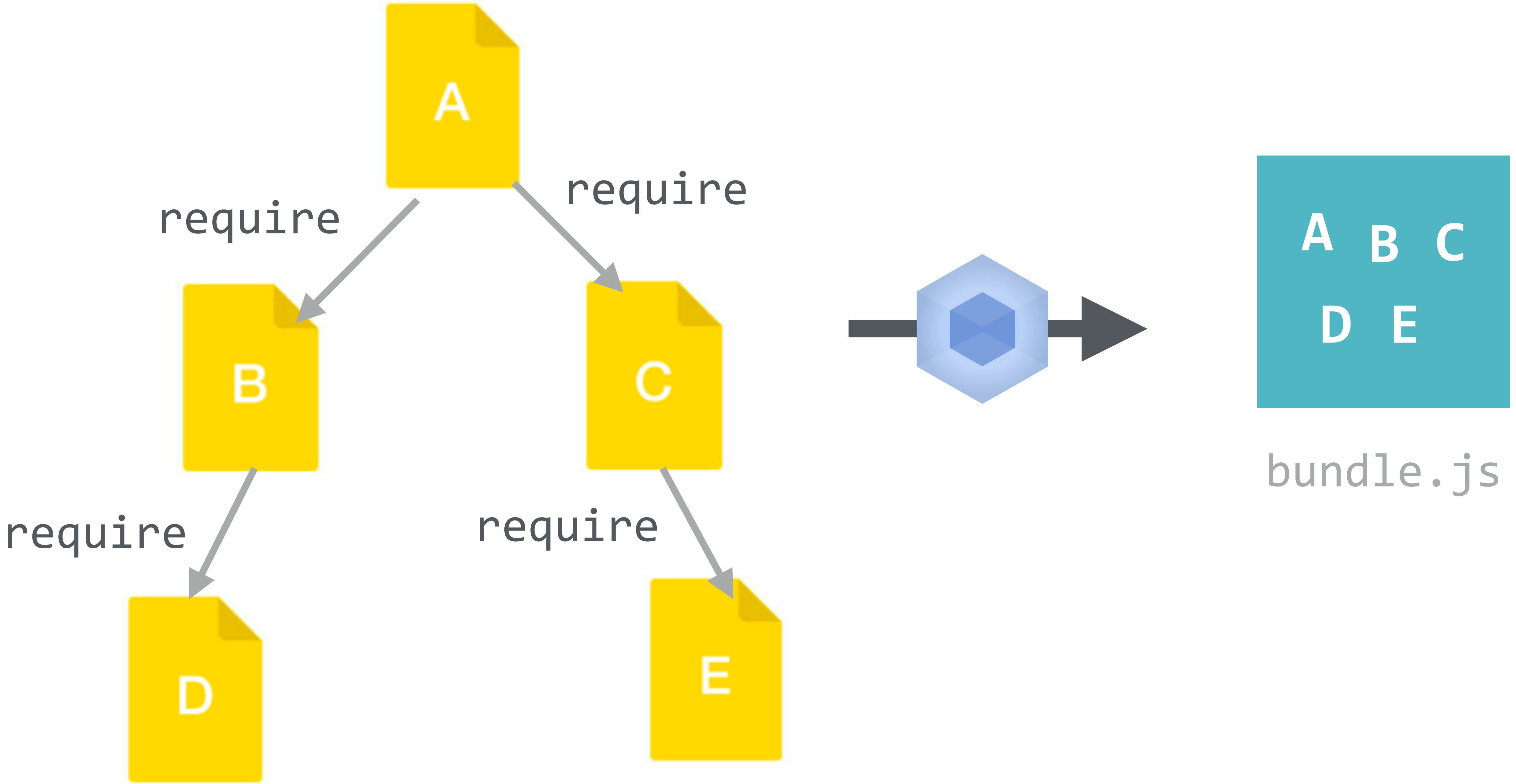
How webpack split code? (1)



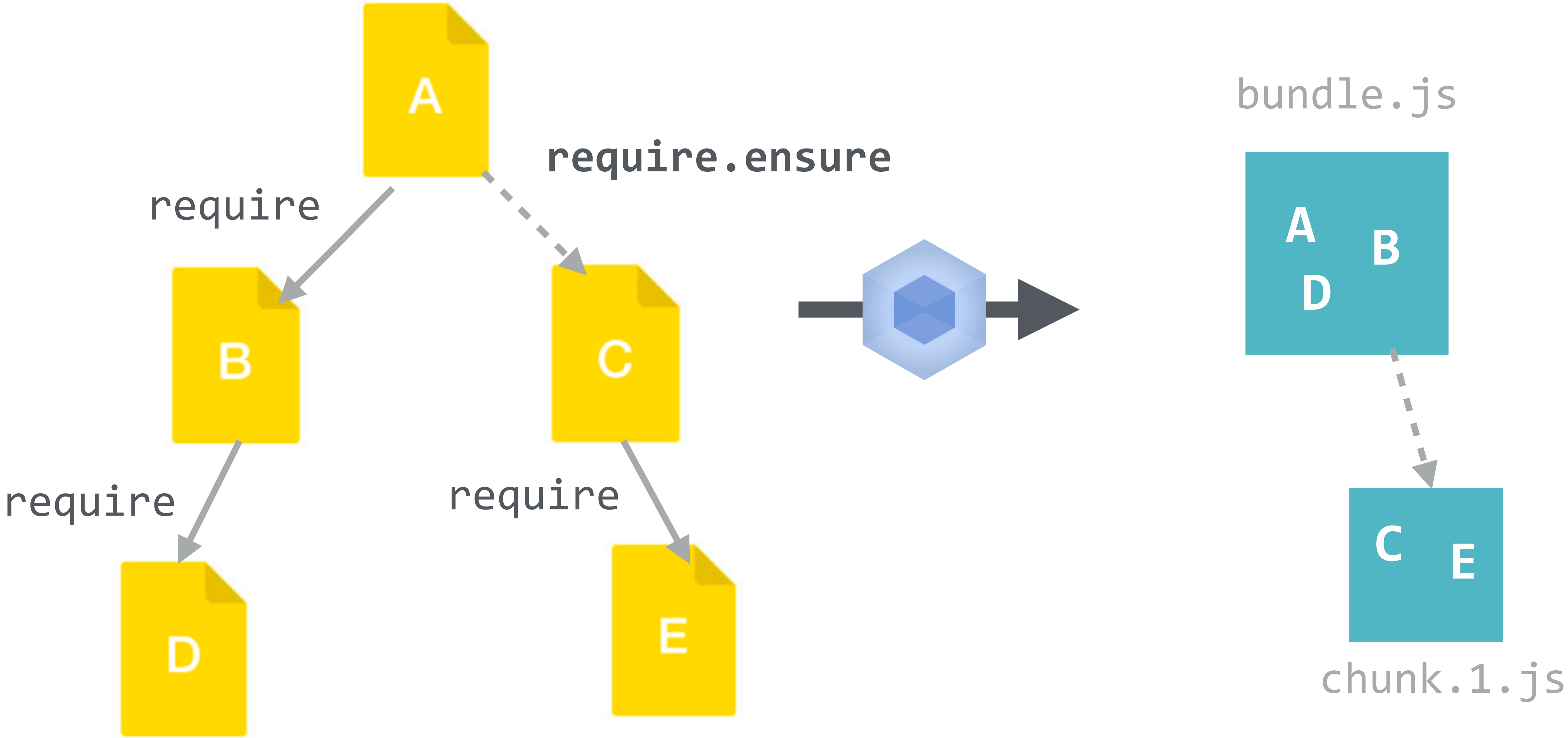
```
require.ensure([], (require) => {
  require('components/MyApp.js')
})
```

Webpack will define split point from require.ensure

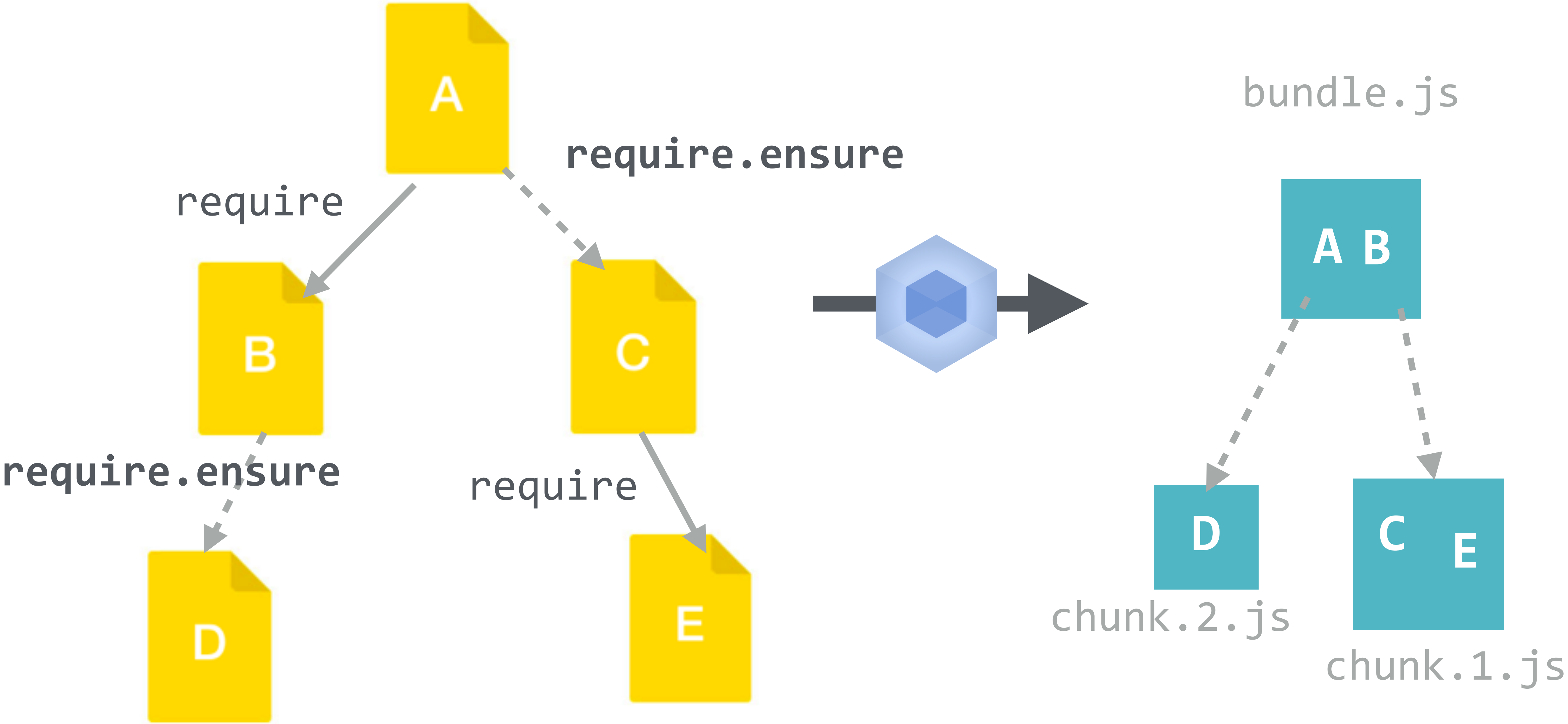
How webpack split code? (2)



How webpack split code? (3)

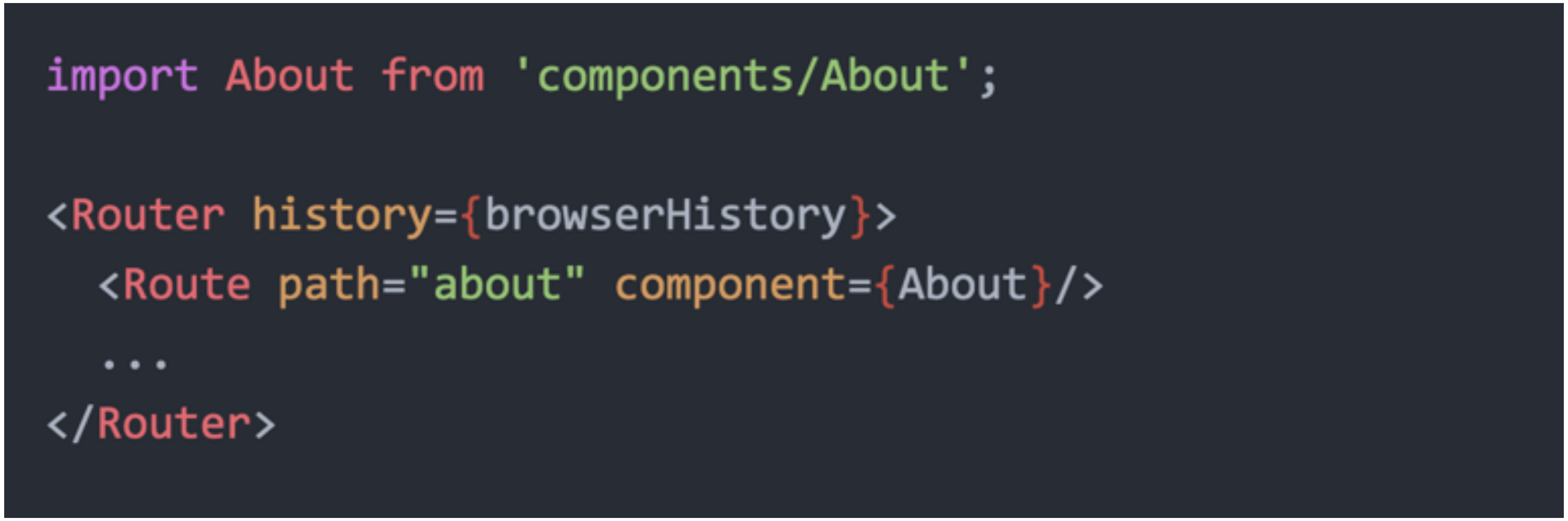


How webpack split code? (4)

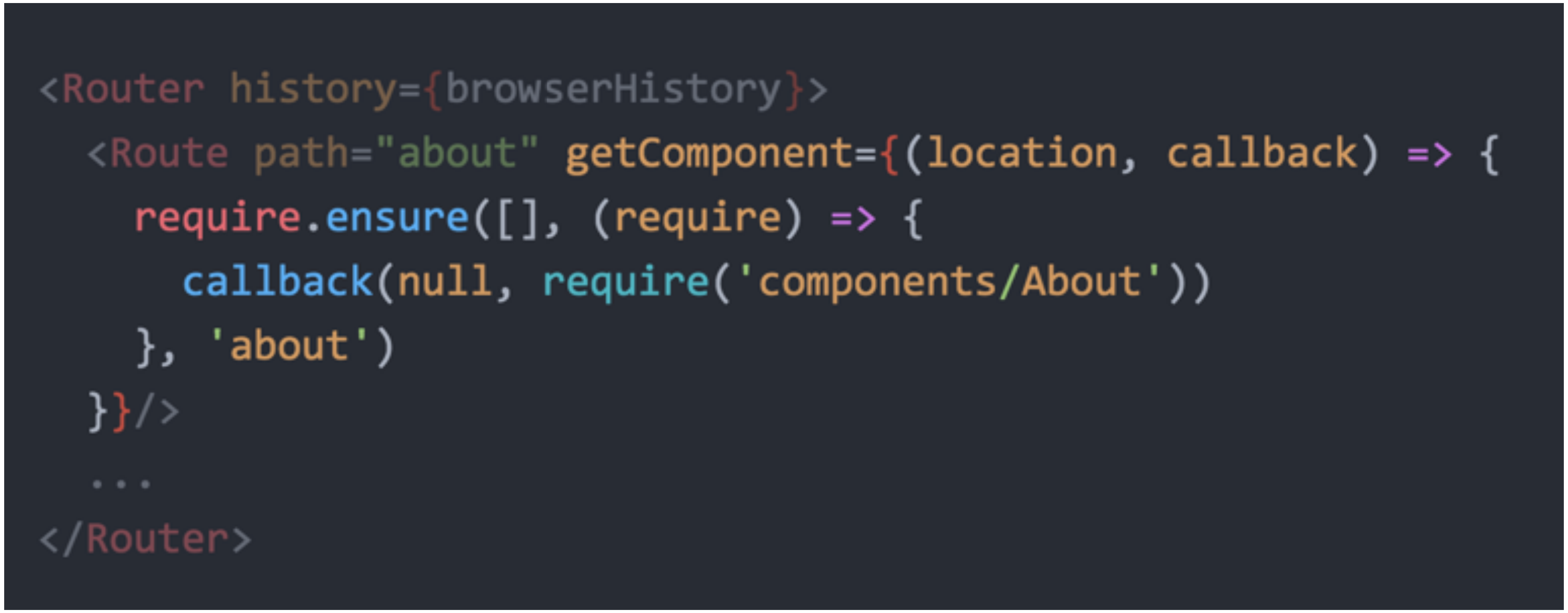


Hand-on code-spitting with Async Loading

1. Split the route by converting to dynamic routing

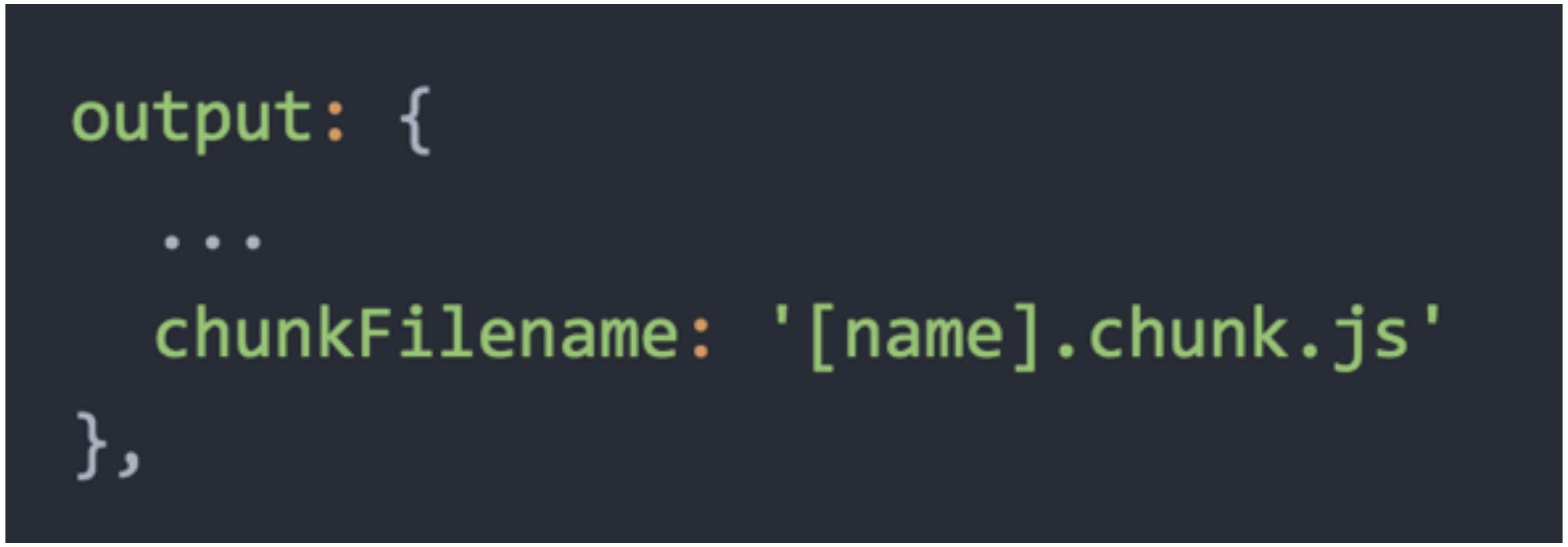


```
import About from 'components/About';

<Router history={browserHistory}>
  <Route path="about" component={About}/>
  ...
</Router>
```



```
<Router history={browserHistory}>
  <Route path="about" getComponent={(location, callback) => {
    require.ensure([], (require) => {
      callback(null, require('components/About'))
    }, 'about')
  }}/>
  ...
</Router>
```

2. Config chunkFileName to show chunk name when build



```
output: {
  ...
  chunkFilename: '[name].chunk.js'
},
```

Done! Easy 😎

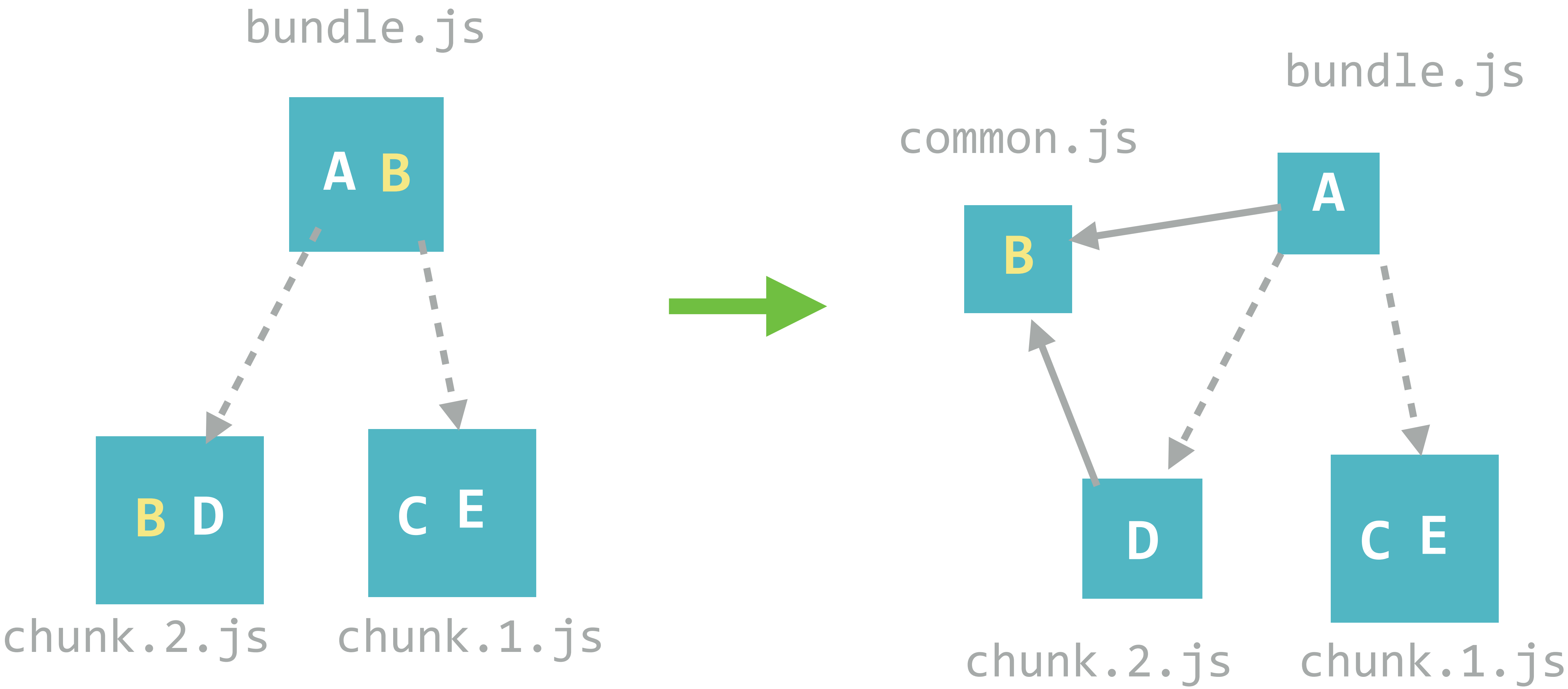
Good tutorial:

http://blog.mxstbr.com/2016/01/react-apps-with-pages/

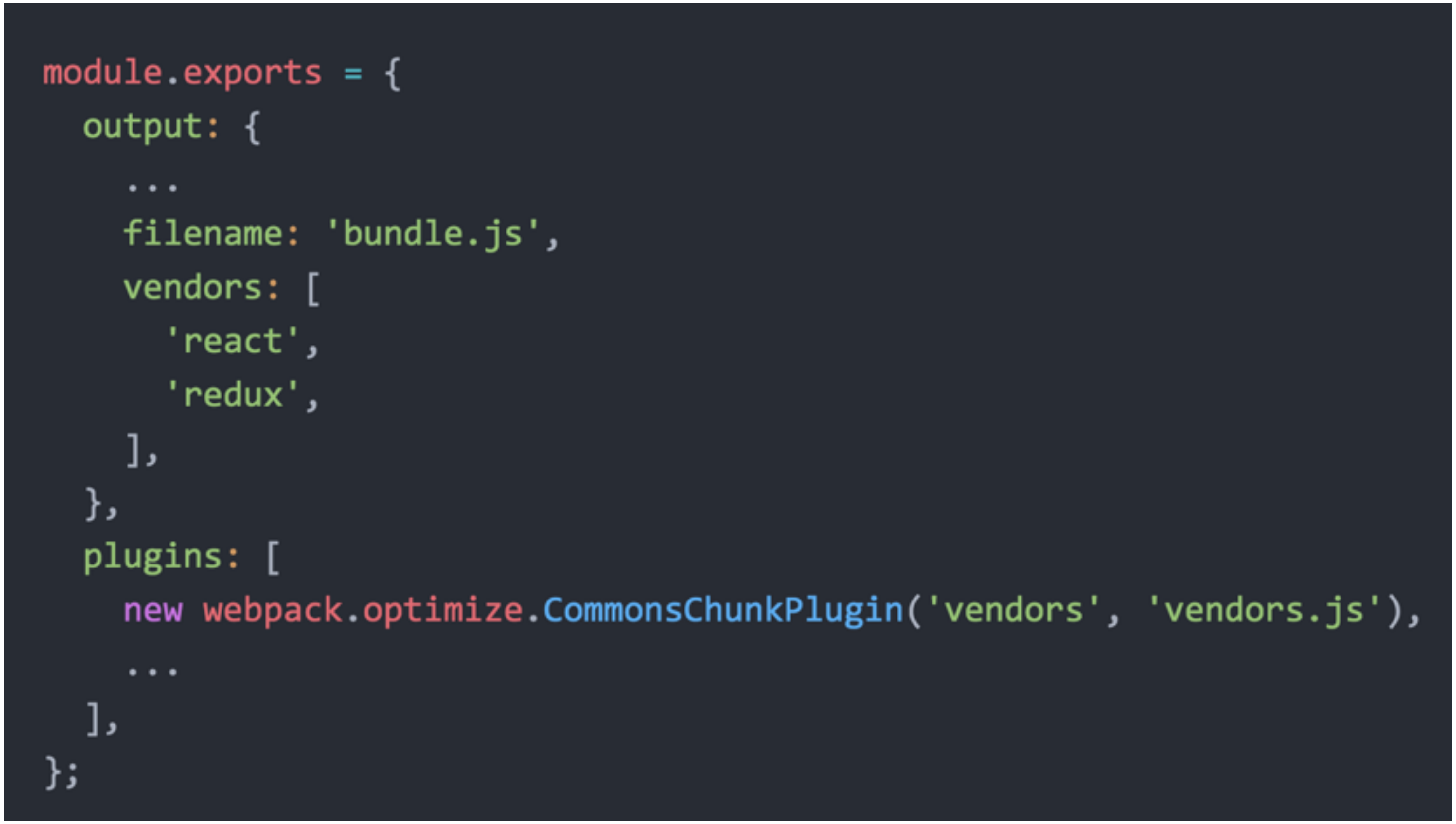
Example from react-router:

https://github.com/reactjs/react-router/tree/master/examples/huge-apps

VIII. CommonChunk



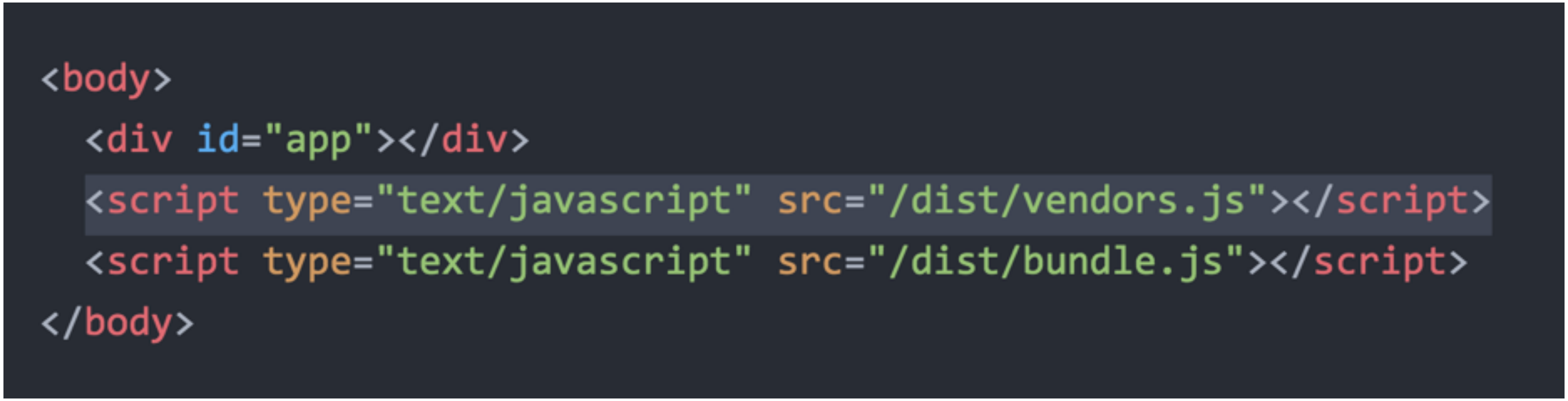
VIII. CommonChunk



```
module.exports = {
  output: {
    ...
    filename: 'bundle.js',
    vendors: [
      'react',
      'redux',
    ],
  },
  plugins: [
    new webpack.optimize.CommonsChunkPlugin('vendors', 'vendors.js'),
    ...
  ],
};
```

webpack.any.config.js

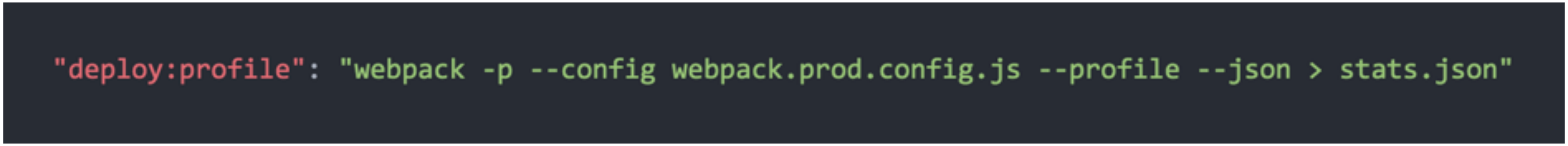
VIII. CommonChunk



```html
<body>
  <div id="app"></div>
  <script type="text/javascript" src="/dist/vendors.js"></script>
  <script type="text/javascript" src="/dist/bundle.js"></script>
</body>
```

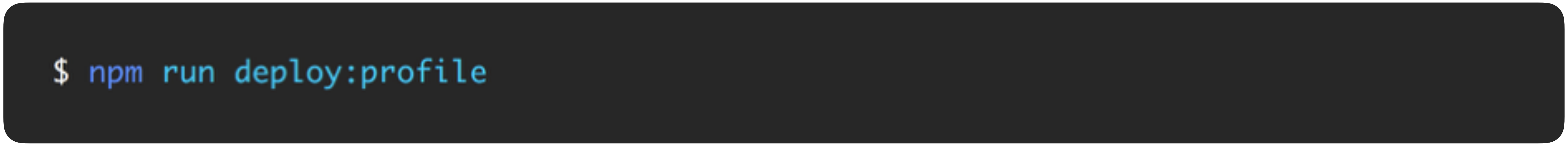
index.html

IV. Webpack Analyse Tool



```
"deploy:profile": "webpack -p --config webpack.prod.config.js --profile --json > stats.json"
```

package.json



```
$ npm run deploy:profile
```

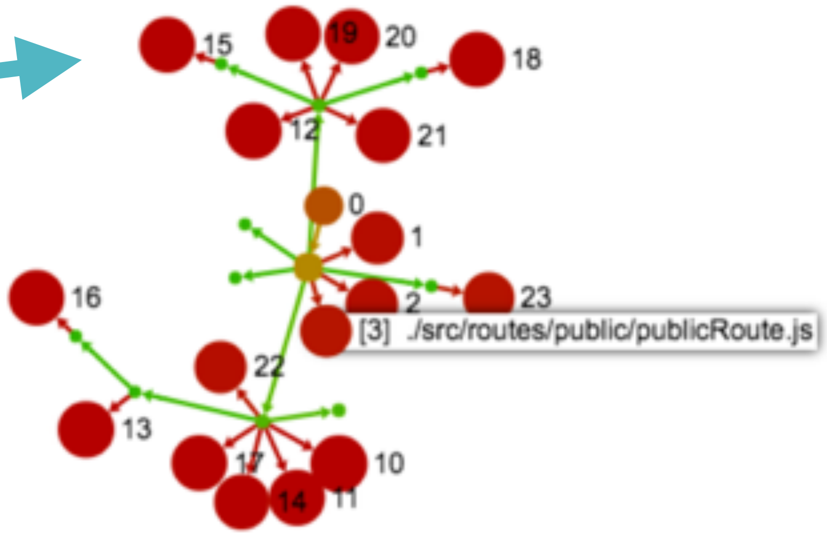
Terminal

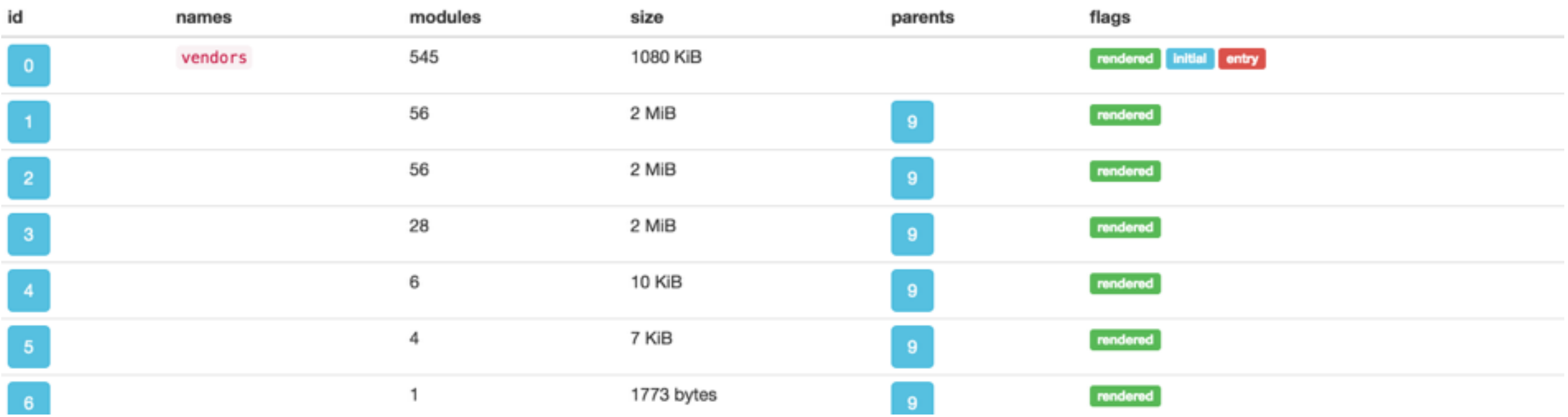
http://webpack.github.io/analyse/

Before Optimization

Red means file is super big

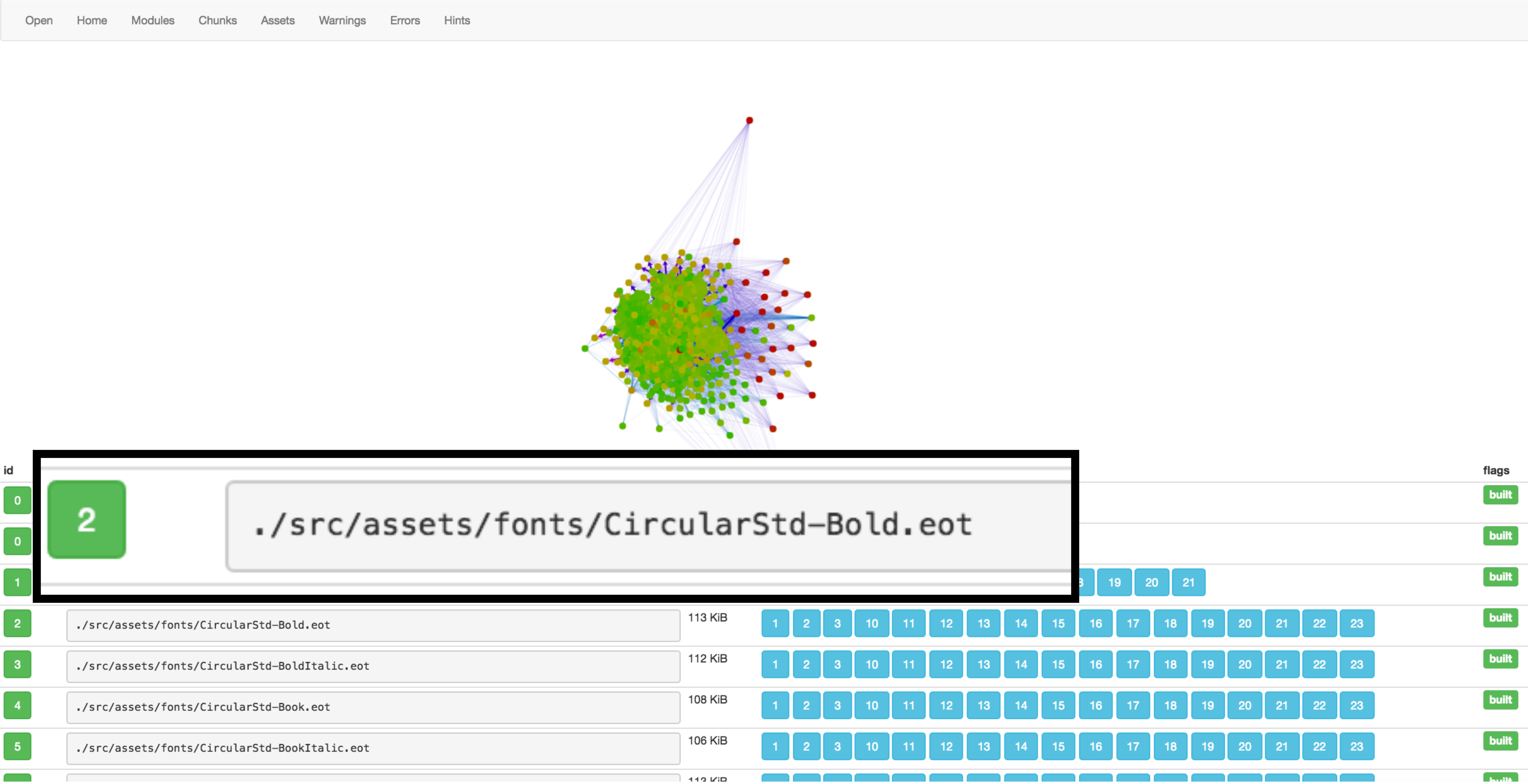
😰 😰 😰





id	names	modules	size	parents	flags
0	vendors	545	1080 KiB		rendered initial entry
1		56	2 MiB	9	rendered
2		56	2 MiB	9	rendered
3		28	2 MiB	9	rendered
4		6	10 KiB	9	rendered
5		4	7 KiB	9	rendered
6		1	1773 bytes	9	rendered

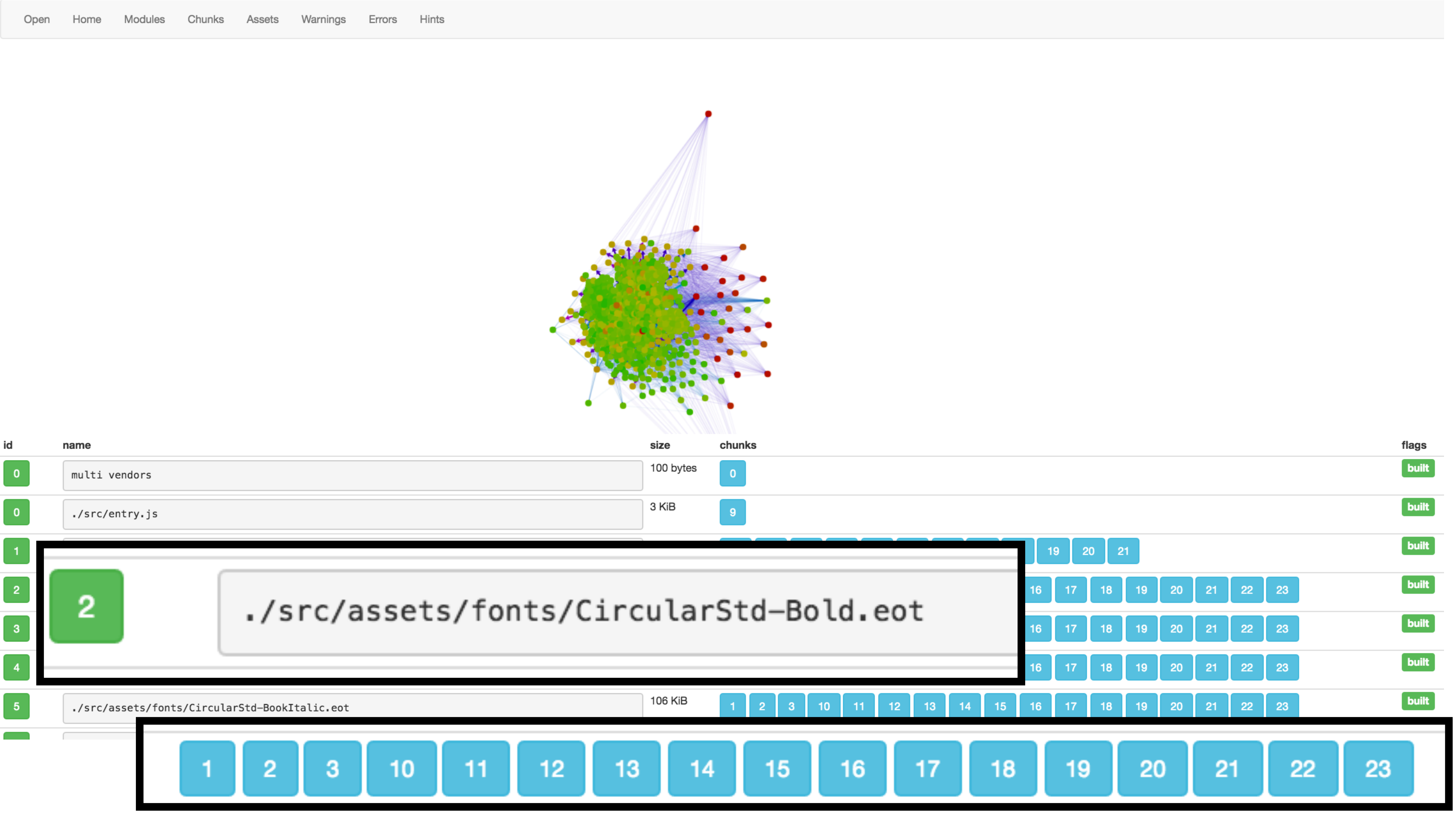
Before Optimization



2 ./src/assets/fonts/CircularStd-Bold.eot

id				flags
0				built
0				built
1			19 20 21	built
2	./src/assets/fonts/CircularStd-Bold.eot	113 KiB	1 2 3 10 11 12 13 14 15 16 17 18 19 20 21 22 23	built
3	./src/assets/fonts/CircularStd-BoldItalic.eot	112 KiB	1 2 3 10 11 12 13 14 15 16 17 18 19 20 21 22 23	built
4	./src/assets/fonts/CircularStd-Book.eot	108 KiB	1 2 3 10 11 12 13 14 15 16 17 18 19 20 21 22 23	built
5	./src/assets/fonts/CircularStd-BookItalic.eot	106 KiB	1 2 3 10 11 12 13 14 15 16 17 18 19 20 21 22 23	built

Before Optimization



id	name	size	chunks	flags
0	multi vendors	100 bytes	0	built
0	./src/entry.js	3 KiB	9	built
1			19 20 21	built
2			16 17 18 19 20 21 22 23	built
3			16 17 18 19 20 21 22 23	built
4			16 17 18 19 20 21 22 23	built
5	./src/assets/fonts/CircularStd-BookItalic.eot	106 KiB	1 2 3 10 11 12 13 14 15 16 17 18 19 20 21 22 23	built

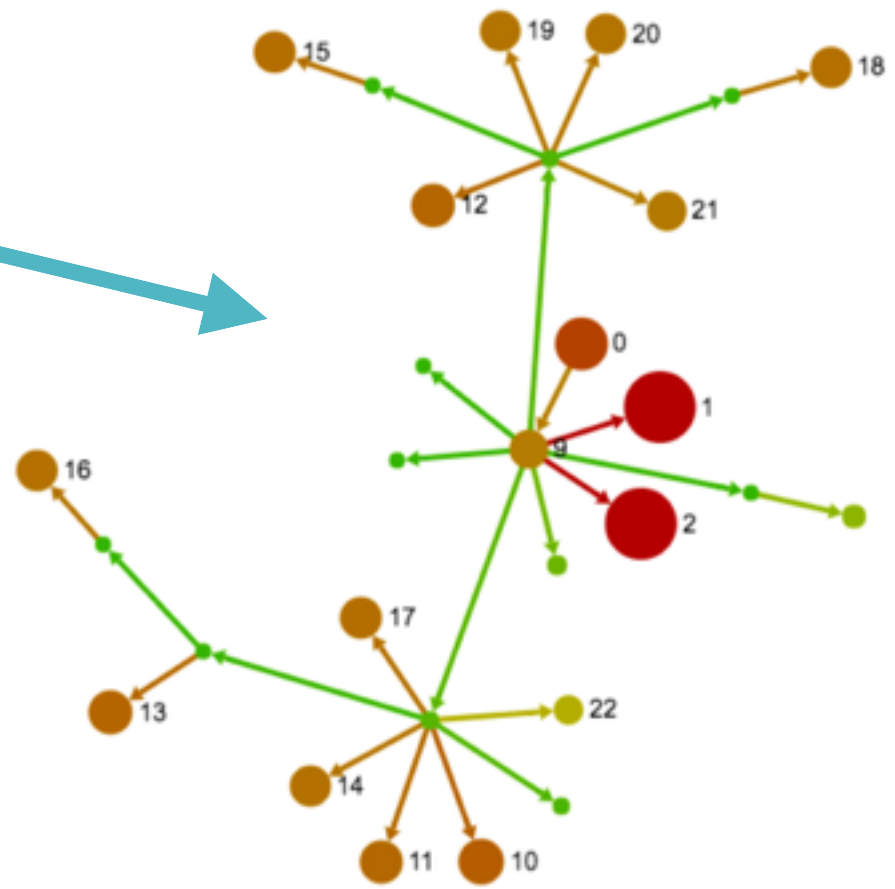
2 ./src/assets/fonts/CircularStd-Bold.eot

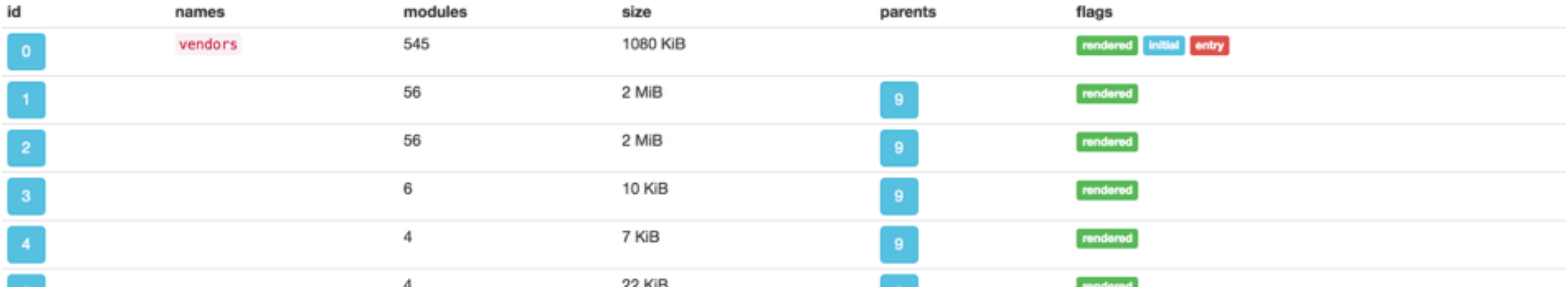
1 2 3 10 11 12 13 14 15 16 17 18 19 20 21 22 23

After Optimization

Not many red chunks left

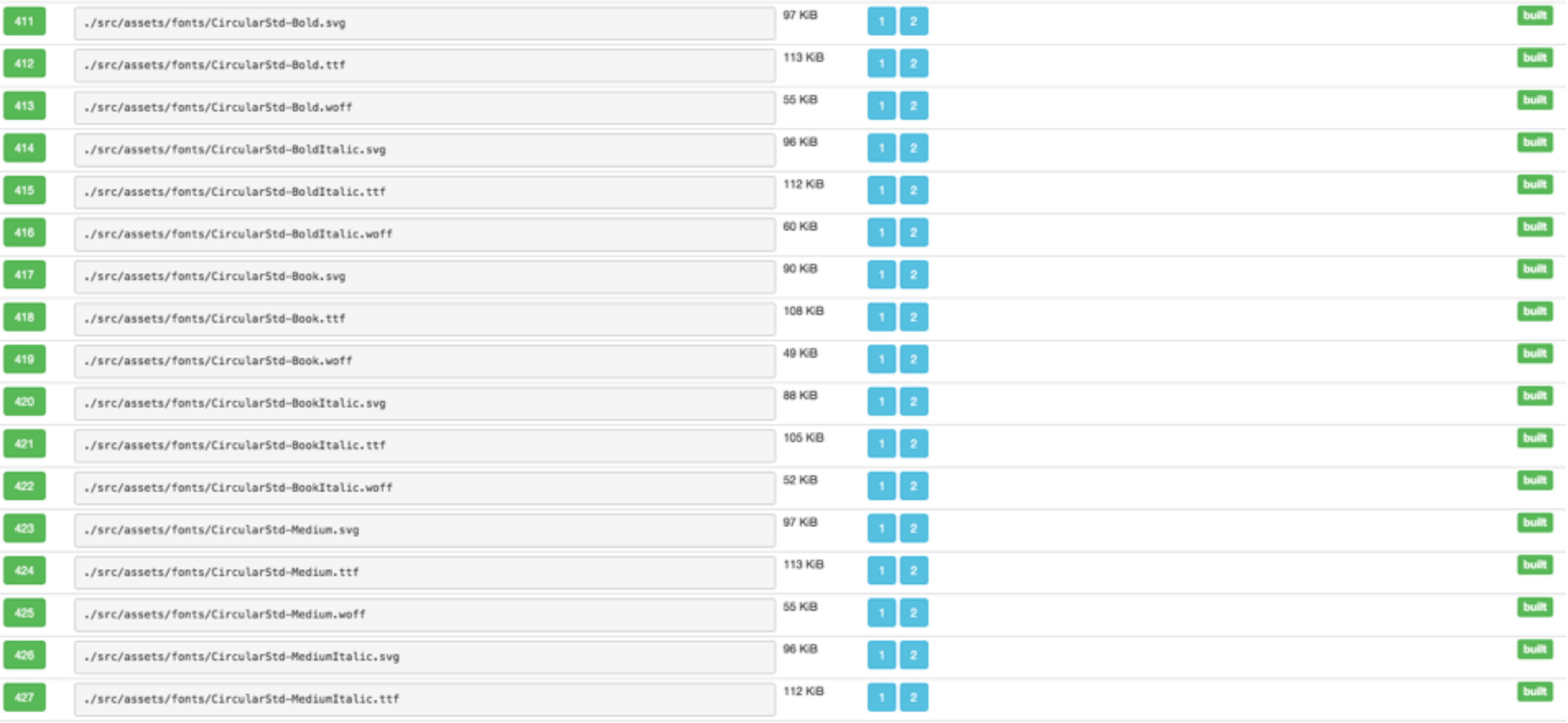
😍😍😍





id	names	modules	size	parents	flags
0	vendors	545	1080 KiB		rendered initial entry
1		56	2 MiB	9	rendered
2		56	2 MiB	9	rendered
3		6	10 KiB	9	rendered
4		4	7 KiB	9	rendered
		4	22 KiB		rendered

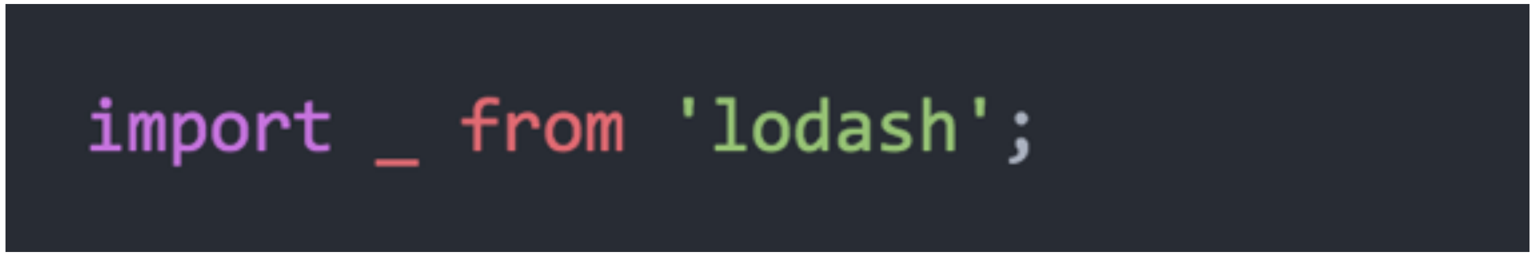
After Optimization



411	./src/assets/fonts/CircularStd-Bold.svg	97 KiB	1 2	built
412	./src/assets/fonts/CircularStd-Bold.ttf	113 KiB	1 2	built
413	./src/assets/fonts/CircularStd-Bold.woff	55 KiB	1 2	built
414	./src/assets/fonts/CircularStd-BoldItalic.svg	96 KiB	1 2	built
415	./src/assets/fonts/CircularStd-BoldItalic.ttf	112 KiB	1 2	built
416	./src/assets/fonts/CircularStd-BoldItalic.woff	60 KiB	1 2	built
417	./src/assets/fonts/CircularStd-Book.svg	90 KiB	1 2	built
418	./src/assets/fonts/CircularStd-Book.ttf	108 KiB	1 2	built
419	./src/assets/fonts/CircularStd-Book.woff	49 KiB	1 2	built
420	./src/assets/fonts/CircularStd-BookItalic.svg	88 KiB	1 2	built
421	./src/assets/fonts/CircularStd-BookItalic.ttf	105 KiB	1 2	built
422	./src/assets/fonts/CircularStd-BookItalic.woff	52 KiB	1 2	built
423	./src/assets/fonts/CircularStd-Medium.svg	97 KiB	1 2	built
424	./src/assets/fonts/CircularStd-Medium.ttf	113 KiB	1 2	built
425	./src/assets/fonts/CircularStd-Medium.woff	55 KiB	1 2	built
426	./src/assets/fonts/CircularStd-MediumItalic.svg	96 KiB	1 2	built
427	./src/assets/fonts/CircularStd-MediumItalic.ttf	112 KiB	1 2	built

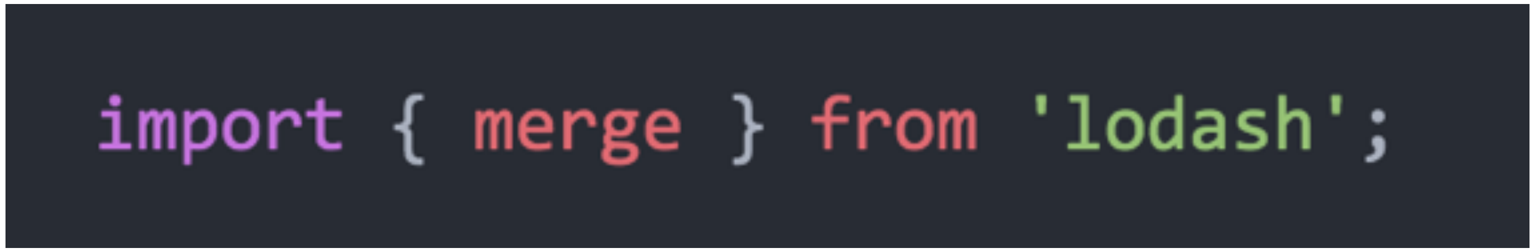
X. Use Direct import

1



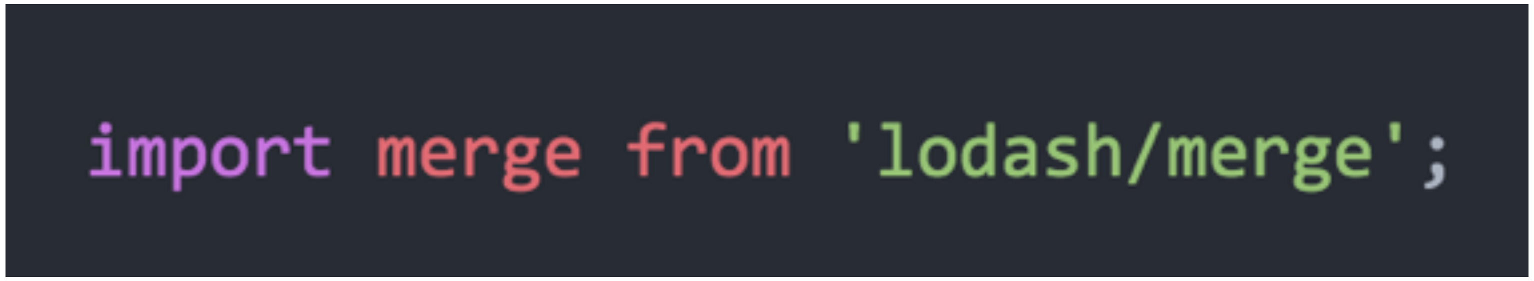
```
import _ from 'lodash';
```

2



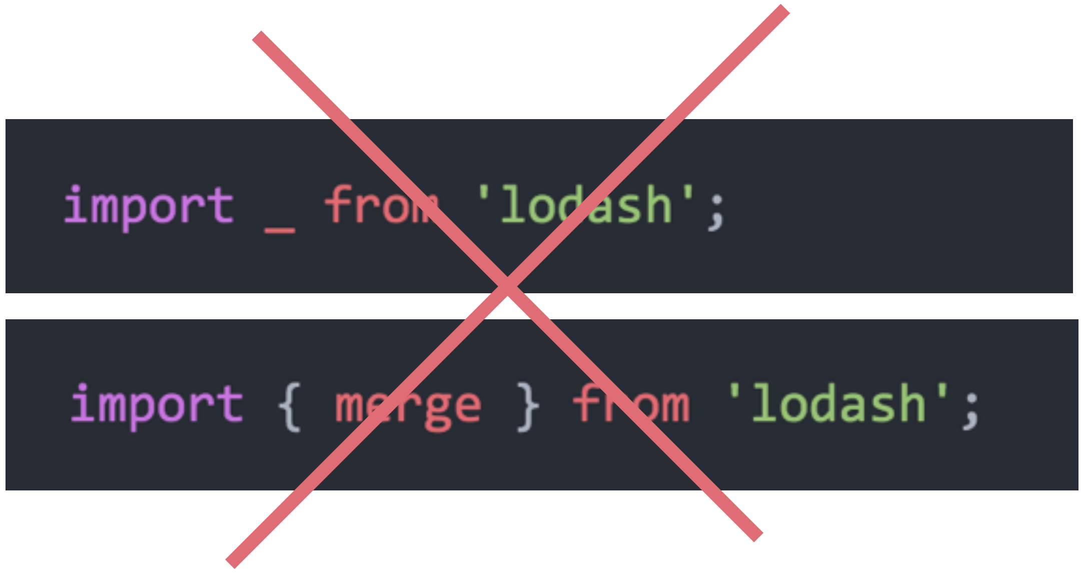
```
import { merge } from 'lodash';
```

3



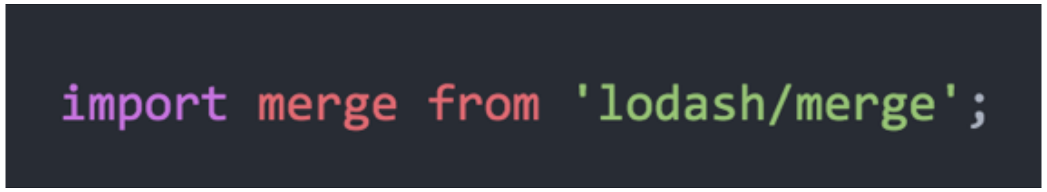
```
import merge from 'lodash/merge';
```

VIII. Use Direct import

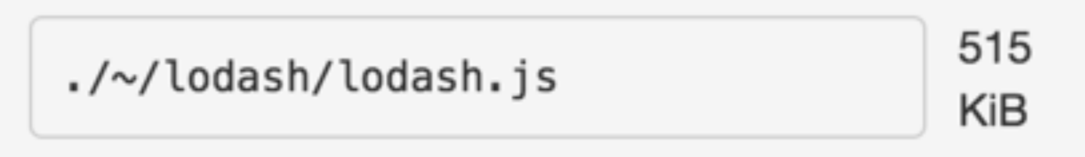


~~`import _ from 'lodash';`~~

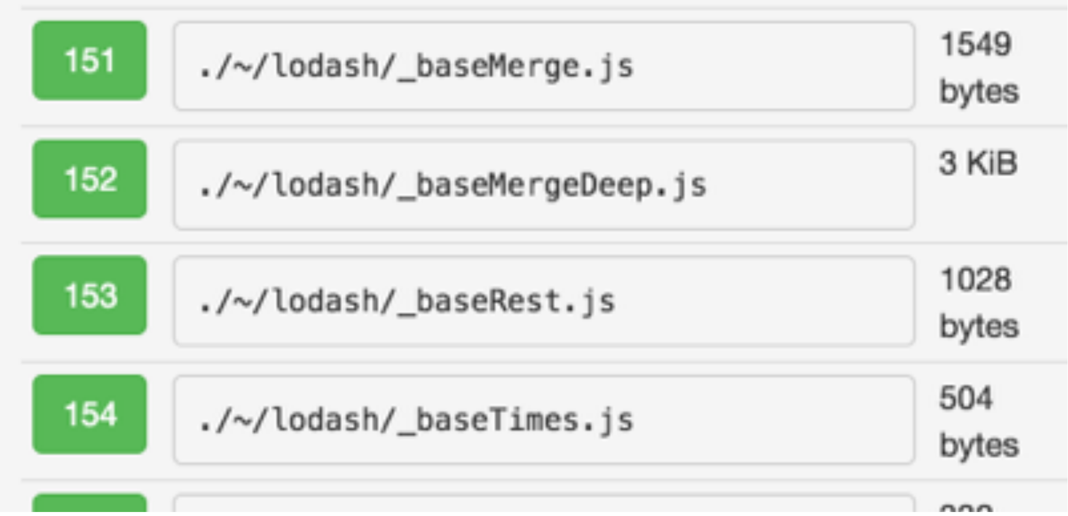
~~`import { merge } from 'lodash';`~~



```
import merge from 'lodash/merge';
```



./~/lodash/lodash.js	515 KiB



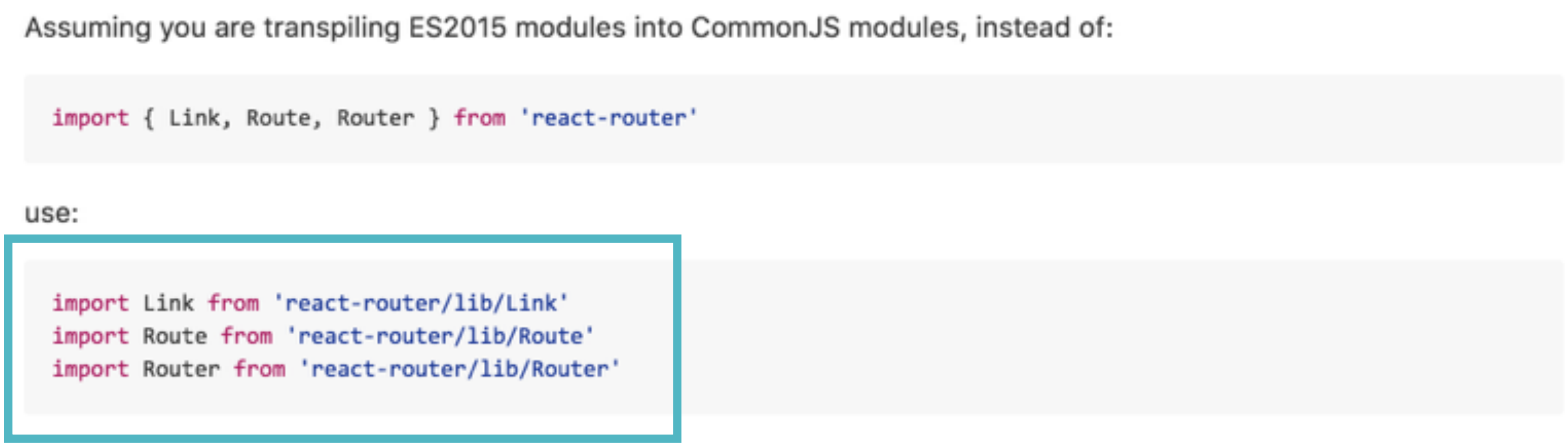
151	./~/lodash/_baseMerge.js	1549 bytes
152	./~/lodash/_baseMergeDeep.js	3 KiB
153	./~/lodash/_baseRest.js	1028 bytes
154	./~/lodash/_baseTimes.js	504 bytes

515 KB → Sum 74 KB

Reduce by 85%

Many Libraries support direct import already

React-Router



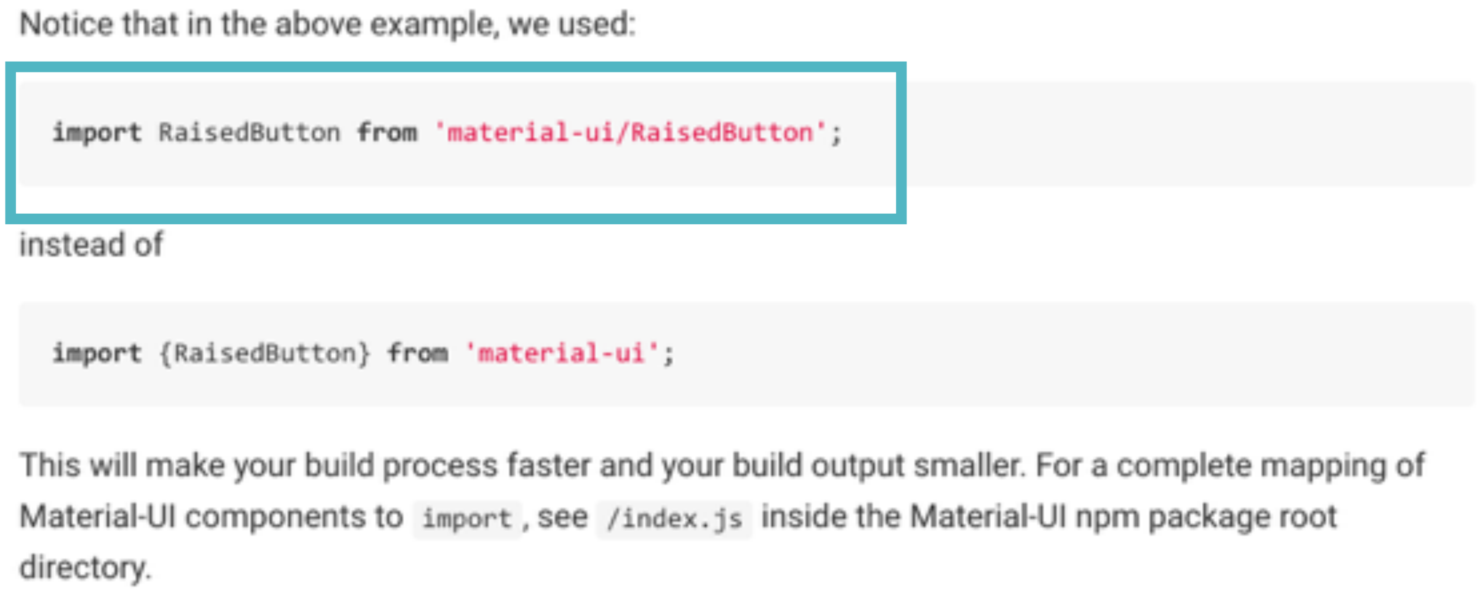
Assuming you are transpiling ES2015 modules into CommonJS modules, instead of:

```
import { Link, Route, Router } from 'react-router'
```

use:

```
import Link from 'react-router/lib/Link'
import Route from 'react-router/lib/Route'
import Router from 'react-router/lib/Router'
```

Material-UI



Notice that in the above example, we used:

```
import RaisedButton from 'material-ui/RaisedButton';
```

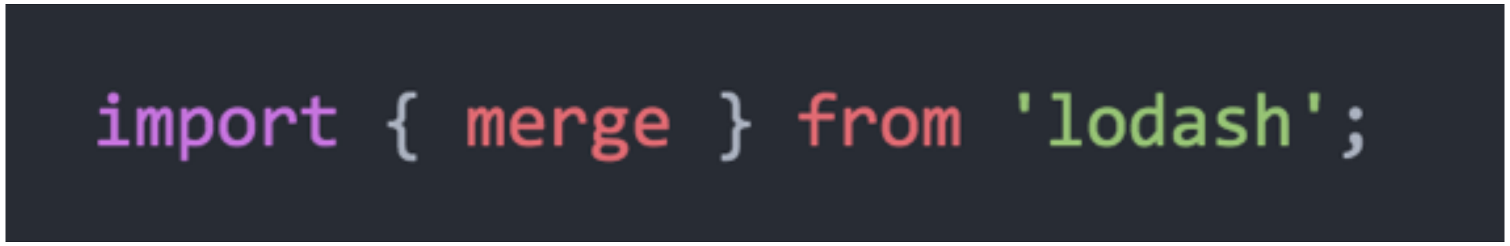
instead of

```
import {RaisedButton} from 'material-ui';
```

This will make your build process faster and your build output smaller. For a complete mapping of Material-UI components to `import`, see `/index.js` inside the Material-UI npm package root directory.

Webpack 2 Tree shaking

Current webpack (v1) does not support native ES6 import, it just convert code it CommonJS require.



```
import { merge } from 'lodash';
```

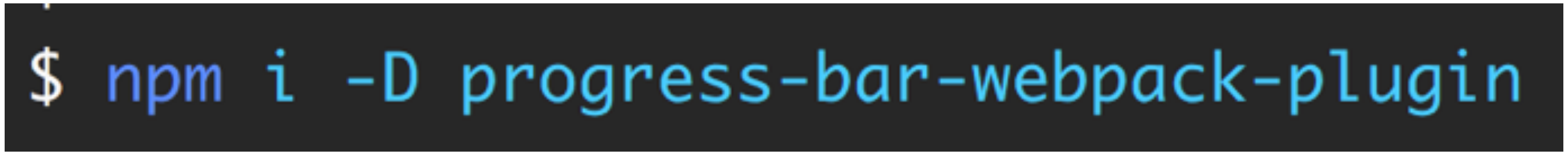
Tree shaking or automatically exclude unused functions will be available in Webpack 2

7.2

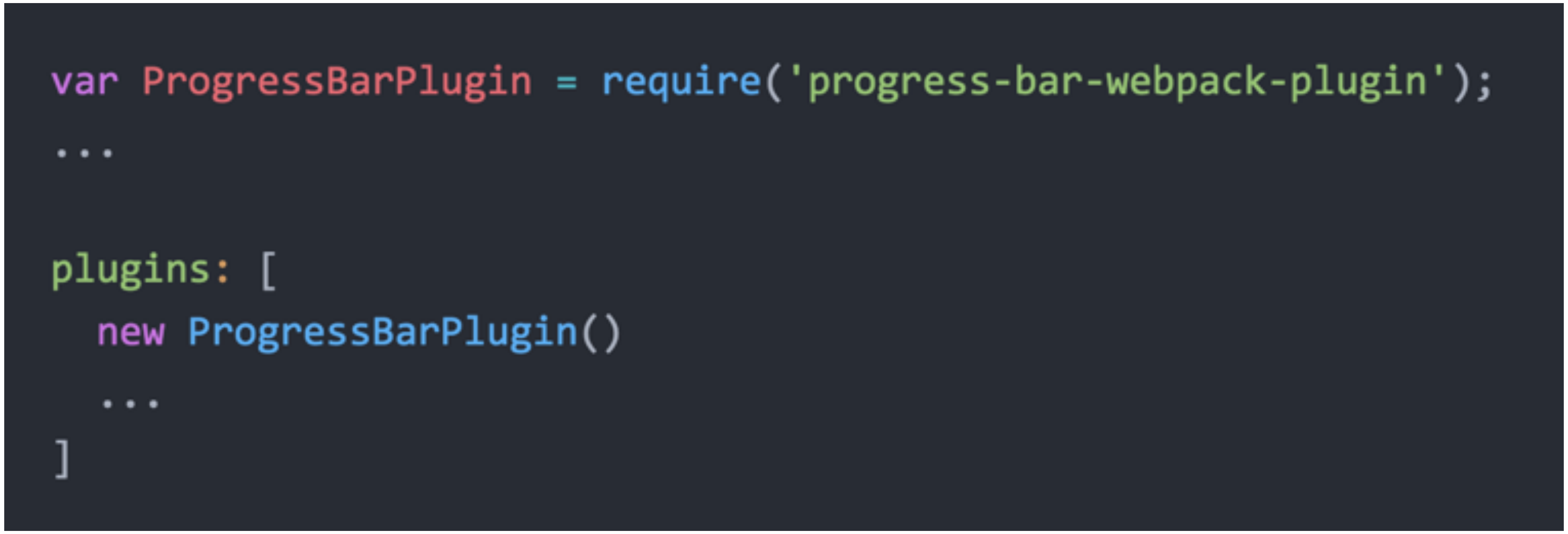
Build is too long

I. ProgressPlugin

I. ProgressPlugin



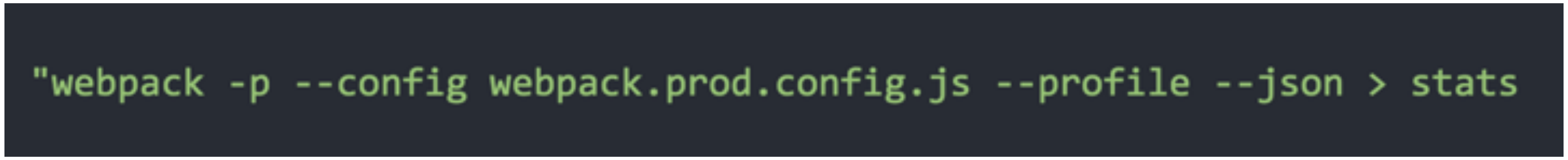
```
$ npm i -D progress-bar-webpack-plugin
```



```
var ProgressBarPlugin = require('progress-bar-webpack-plugin');
...

plugins: [
  new ProgressBarPlugin()
  ...
]
```

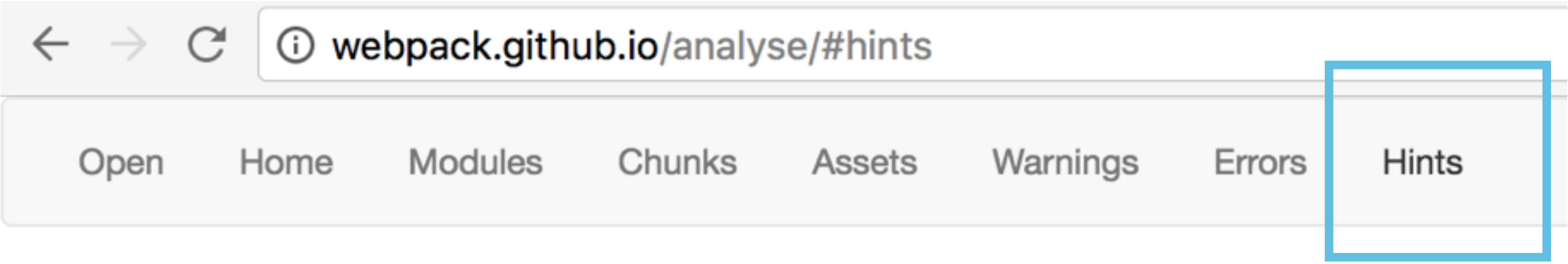
II. Debugging Build time

with Webpack Analyse Tool

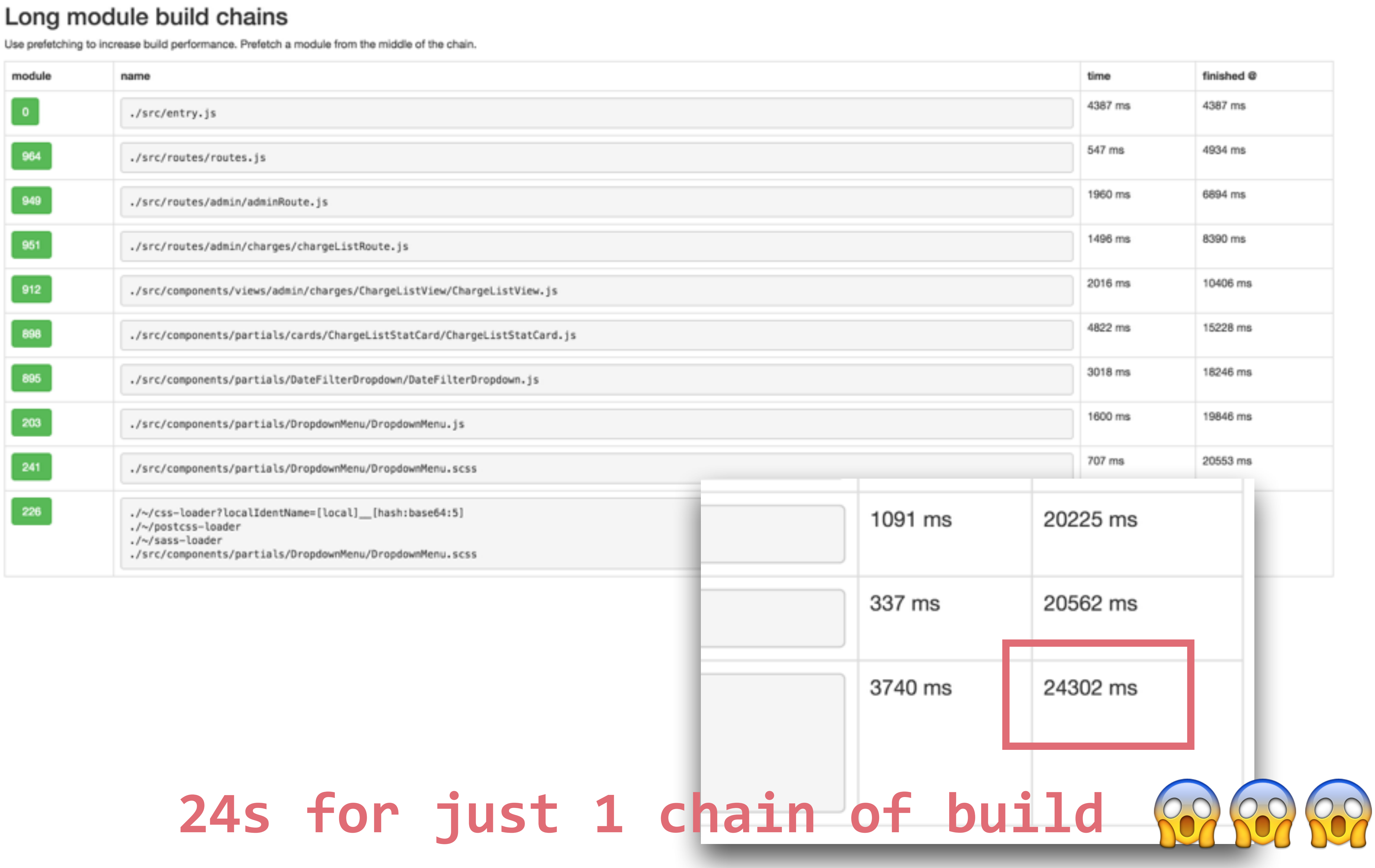


```
"webpack -p --config webpack.prod.config.js --profile --json > stats
```

Upload stats.json



Check the Long module build chains



Long module build chains

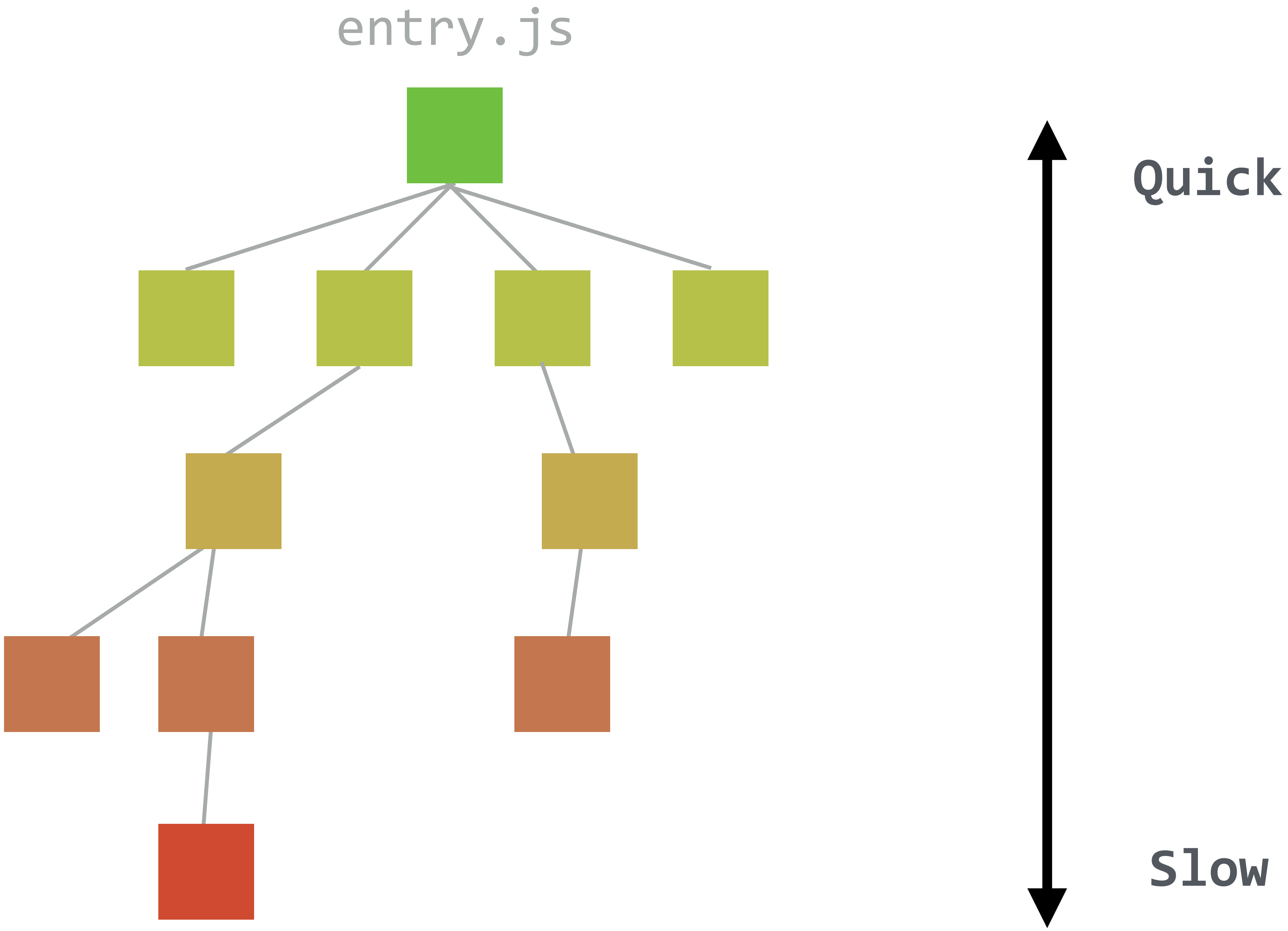
Use prefetching to increase build performance. Prefetch a module from the middle of the chain.

module	name	time	finished @
0	./src/entry.js	4387 ms	4387 ms
964	./src/routes/routes.js	547 ms	4934 ms
949	./src/routes/admin/adminRoute.js	1960 ms	6894 ms
951	./src/routes/admin/charges/chargeListRoute.js	1496 ms	8390 ms
912	./src/components/views/admin/charges/ChargeListView/ChargeListView.js	2016 ms	10406 ms
898	./src/components/partials/cards/ChargeListStatCard/ChargeListStatCard.js	4822 ms	15228 ms
895	./src/components/partials/DateFilterDropdown/DateFilterDropdown.js	3018 ms	18246 ms
203	./src/components/partials/DropdownMenu/DropdownMenu.js	1600 ms	19846 ms
241	./src/components/partials/DropdownMenu/DropdownMenu.scss	707 ms	20553 ms
226	./~/css-loader?localIdentName=[local]__[hash:base64:5] ./~/postcss-loader ./~/sass-loader ./src/components/partials/DropdownMenu/DropdownMenu.scss		

1091 ms	20225 ms
337 ms	20562 ms
3740 ms	24302 ms

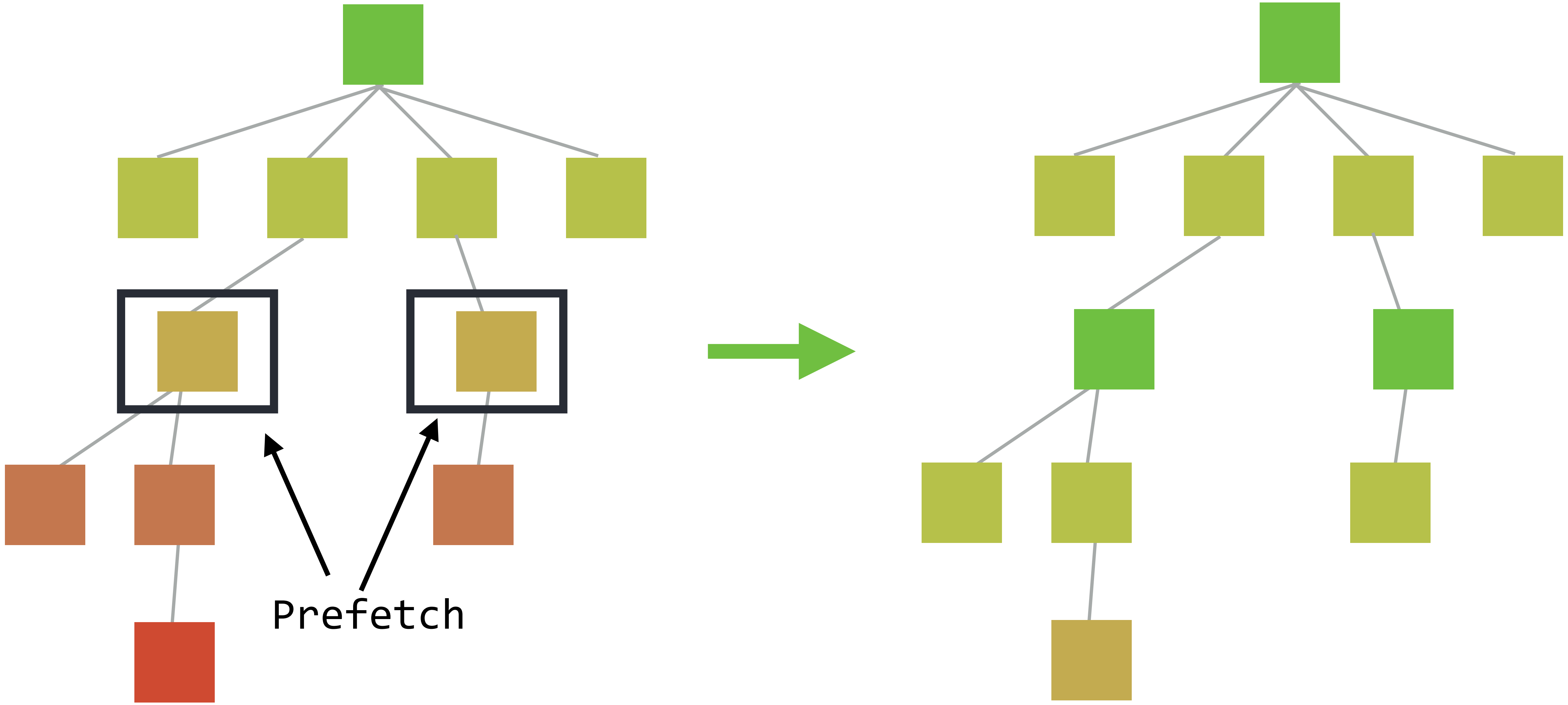
24s for just 1 chain of build 😱😱😱

One of the biggest time consuming in Webpack build is **DEEP nested** components / assets.

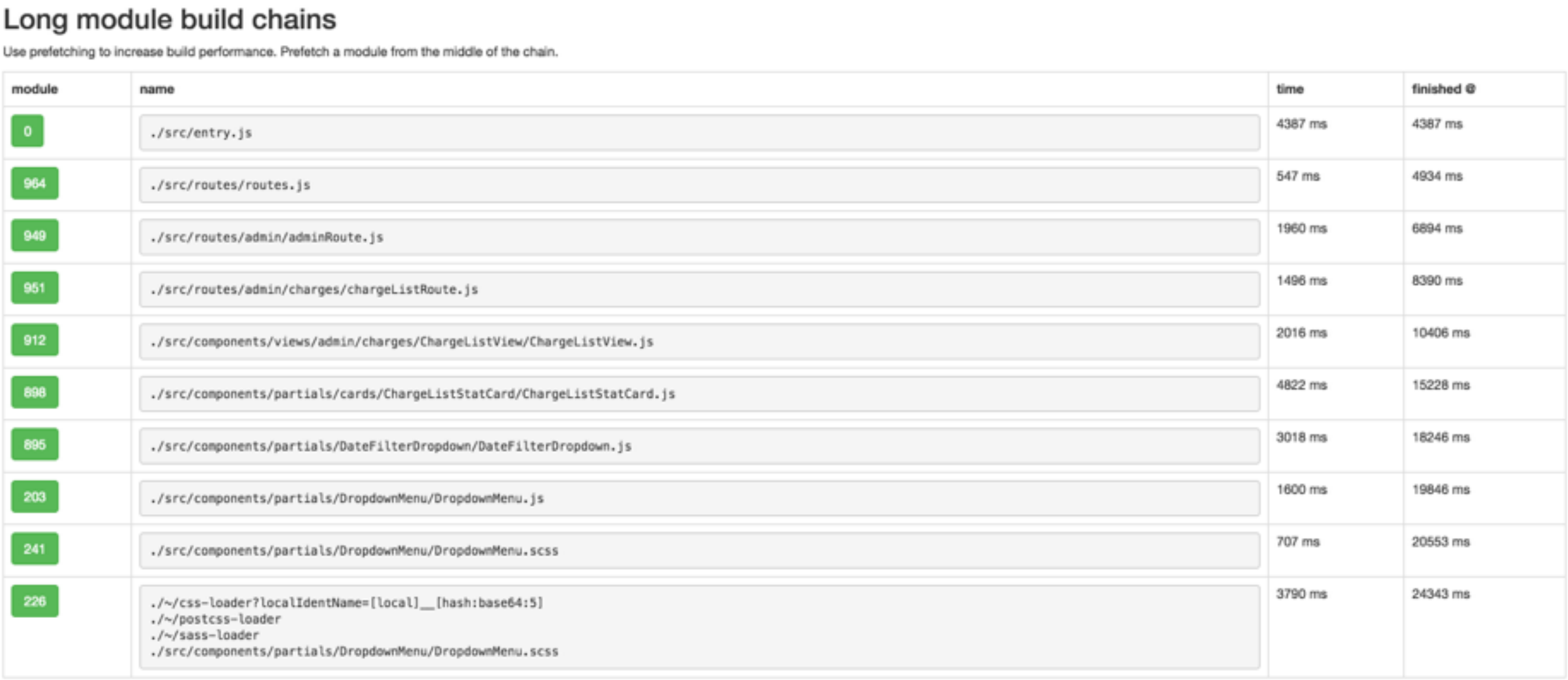


III. Prefetch to rescue!

Prefetch is a manual way to predetermine the target build file instead of waiting webpack to crawl



Back to check “Hint” in Analyse tool



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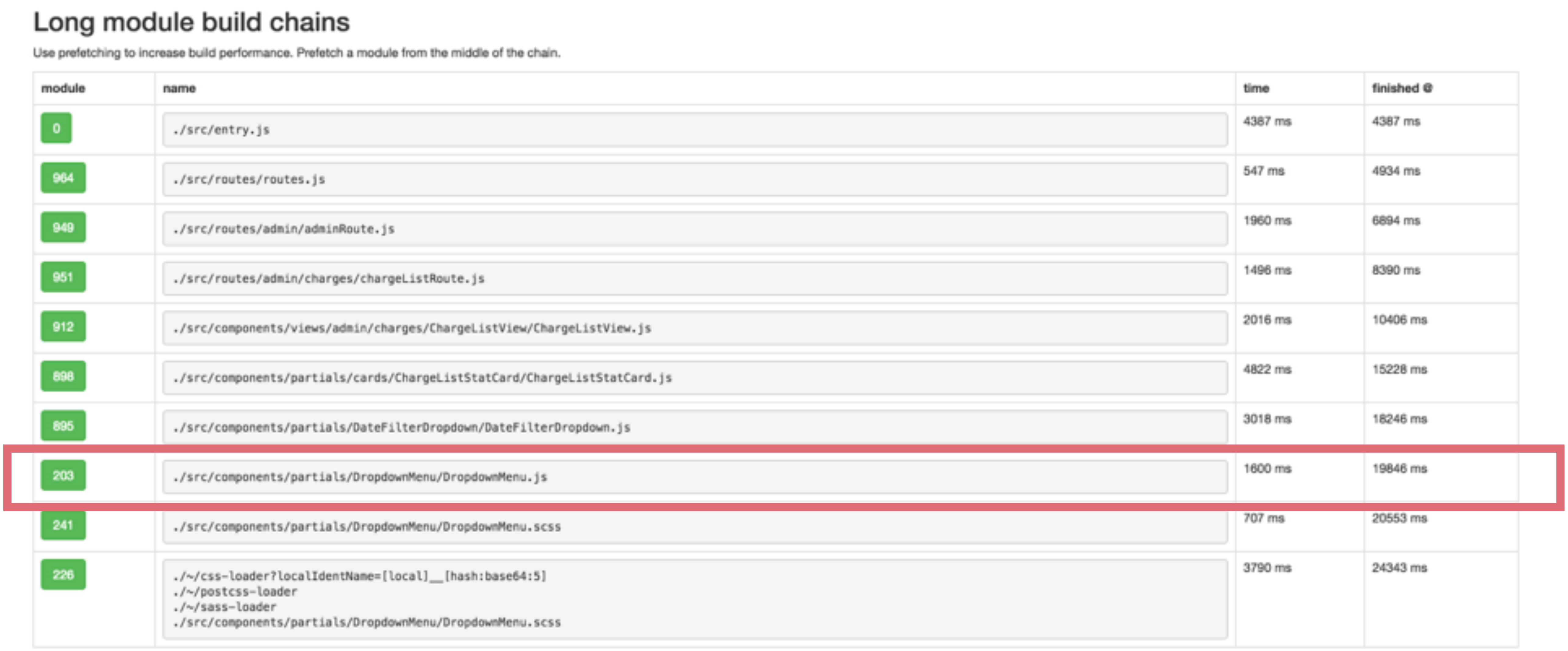
964	./src/routes/routes.js	547 ms	4934 ms
949	./src/routes/admin/adminRoute.js	1960 ms	6894 ms
951	./src/routes/admin/charges/chargeListRoute.js	1496 ms	8390 ms
912	./src/components/views/admin/charges/ChargeListView/ChargeListView.js	2016 ms	10406 ms
898	./src/components/partials/cards/ChargeListStatCard/ChargeListStatCard.js	4822 ms	15228 ms
895	./src/components/partials/DateFilterDropdown/DateFilterDropdown.js	3018 ms	18246 ms
203	./src/components/partials/DropdownMenu/DropdownMenu.js	1600 ms	19846 ms
241	./src/components/partials/DropdownMenu/DropdownMenu.scss	707 ms	20553 ms
226	./~/css-loader?localIdentName=[local]__[hash:base64:5] ./~/postcss-loader ./~/sass-loader ./src/components/partials/DropdownMenu/DropdownMenu.scss	3790 ms	24343 ms

Select files in the middle of the chain



Long module build chains

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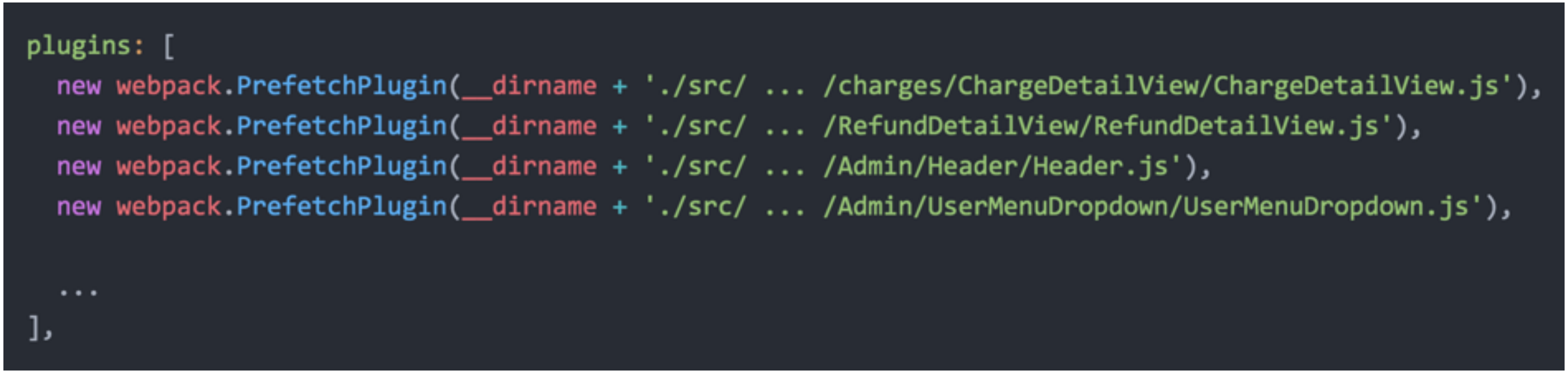
module	name	time	finished @
0	./src/entry.js	4387 ms	4387 ms
964	./src/routes/routes.js	547 ms	4934 ms
949	./src/routes/admin/adminRoute.js	1960 ms	6894 ms
951	./src/routes/admin/charges/chargeListRoute.js	1496 ms	8390 ms
912	./src/components/views/admin/charges/ChargeListView/ChargeListView.js	2016 ms	10406 ms
898	./src/components/partials/cards/ChargeListStatCard/ChargeListStatCard.js	4822 ms	15228 ms
895	./src/components/partials/DateFilterDropdown/DateFilterDropdown.js	3018 ms	18246 ms
203	./src/components/partials/DropdownMenu/DropdownMenu.js	1600 ms	19846 ms
241	./src/components/partials/DropdownMenu/DropdownMenu.scss	707 ms	20553 ms
226	./~/css-loader?localIdentName=[local]__[hash:base64:5] ./~/postcss-loader ./~/sass-loader ./src/components/partials/DropdownMenu/DropdownMenu.scss	3790 ms	24343 ms

Someone recommend not to take file that has more than 3 level nested.

ref: http://stackoverflow.com/questions/32923085/how-to-optimize-webpacks-build-time-using-prefetchplugin-analyse-tool

Select another prefetch points



```
plugins: [
  new webpack.PrefetchPlugin(__dirname + './src/ ... /charges/ChargeDetailView/ChargeDetailView.js'),
  new webpack.PrefetchPlugin(__dirname + './src/ ... /RefundDetailView/RefundDetailView.js'),
  new webpack.PrefetchPlugin(__dirname + './src/ ... /Admin/Header/Header.js'),
  new webpack.PrefetchPlugin(__dirname + './src/ ... /Admin/UserMenuDropdown/UserMenuDropdown.js'),

  ...
],
```

Result

Original build time: **110s** (avg)

1st Attempt: 4 prefetch points

build time: **58s**

2nd Attempt: 8 prefetch points

build time: **51s**

3rd Attempt: 12 prefetch points

build time: **50s**

IV. Common Chunk

Without Common Chunk

build time: **98s**

With Common Chunk

build time: **51s**

*Note: This experiment includes prefetch already

V. Tips for Faster Development Build

Original build time: **38s** (avg)

1st Attempt: 4 prefetch points

build time: **36s**

2st Attempt: Change devtool

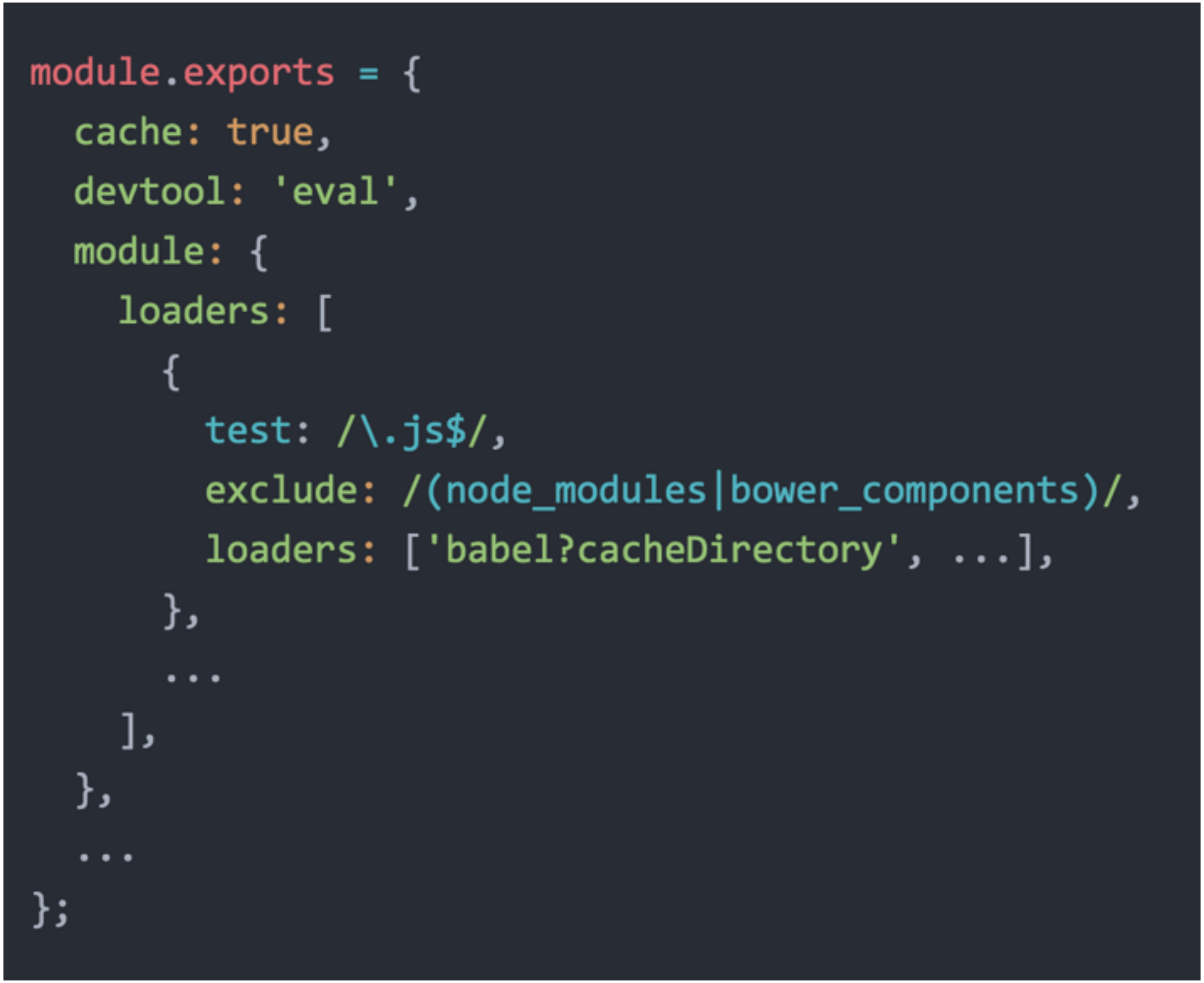
From ‘eval-cheap-module-source-map’ to ‘eval’

build time: **26s** (avg)

3rd Attempt: add cache: true

build time: **17s** (avg)

Faster Config for dev



```
module.exports = {
  cache: true,
  devtool: 'eval',
  module: {
    loaders: [
      {
        test: /\.js$/,
        exclude: /(node_modules|bower_components)/,
        loaders: ['babel?cacheDirectory', ...],
      },
      ...
    ],
  },
  ...
};
```

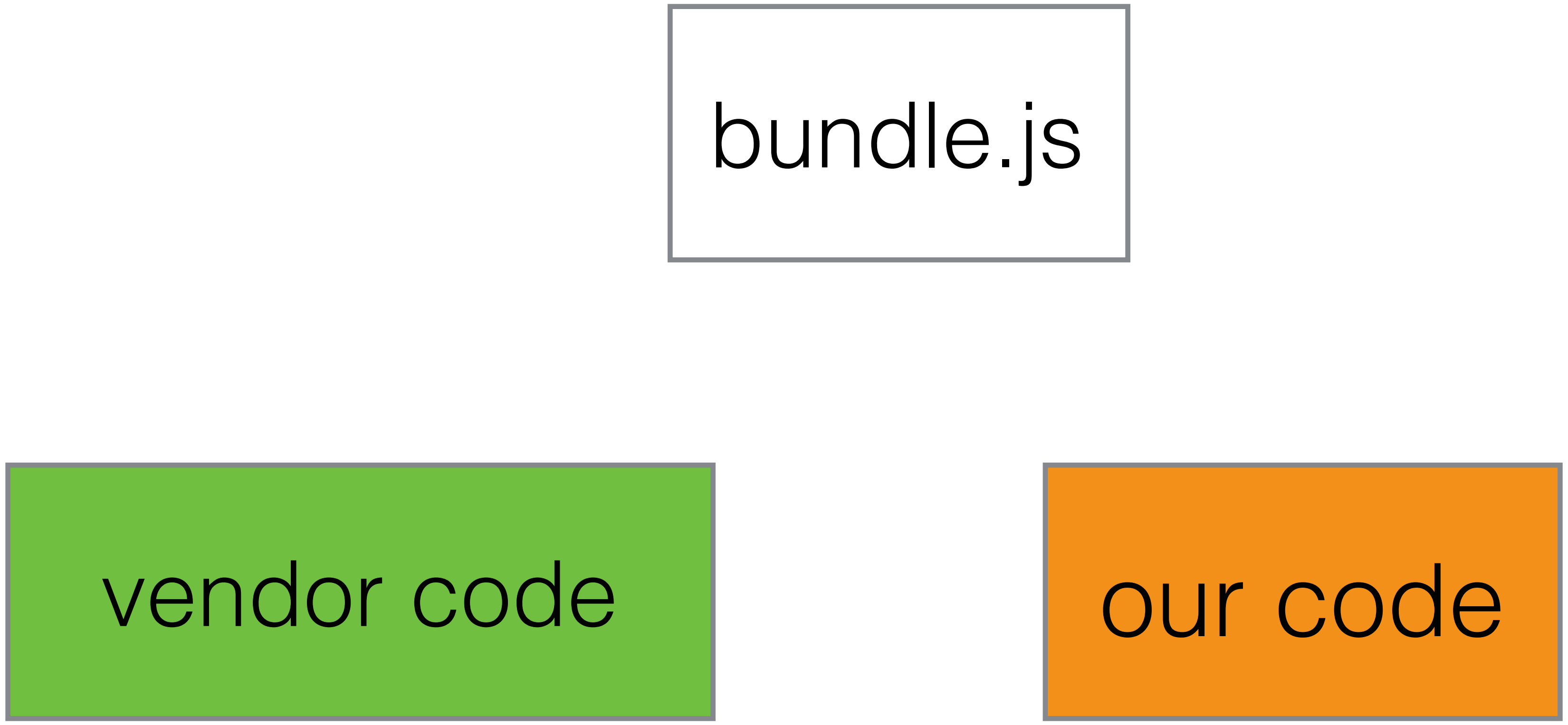
7.3

Browser-side Performance

bundle.js

rebuild everytime file changes

Split Vendor

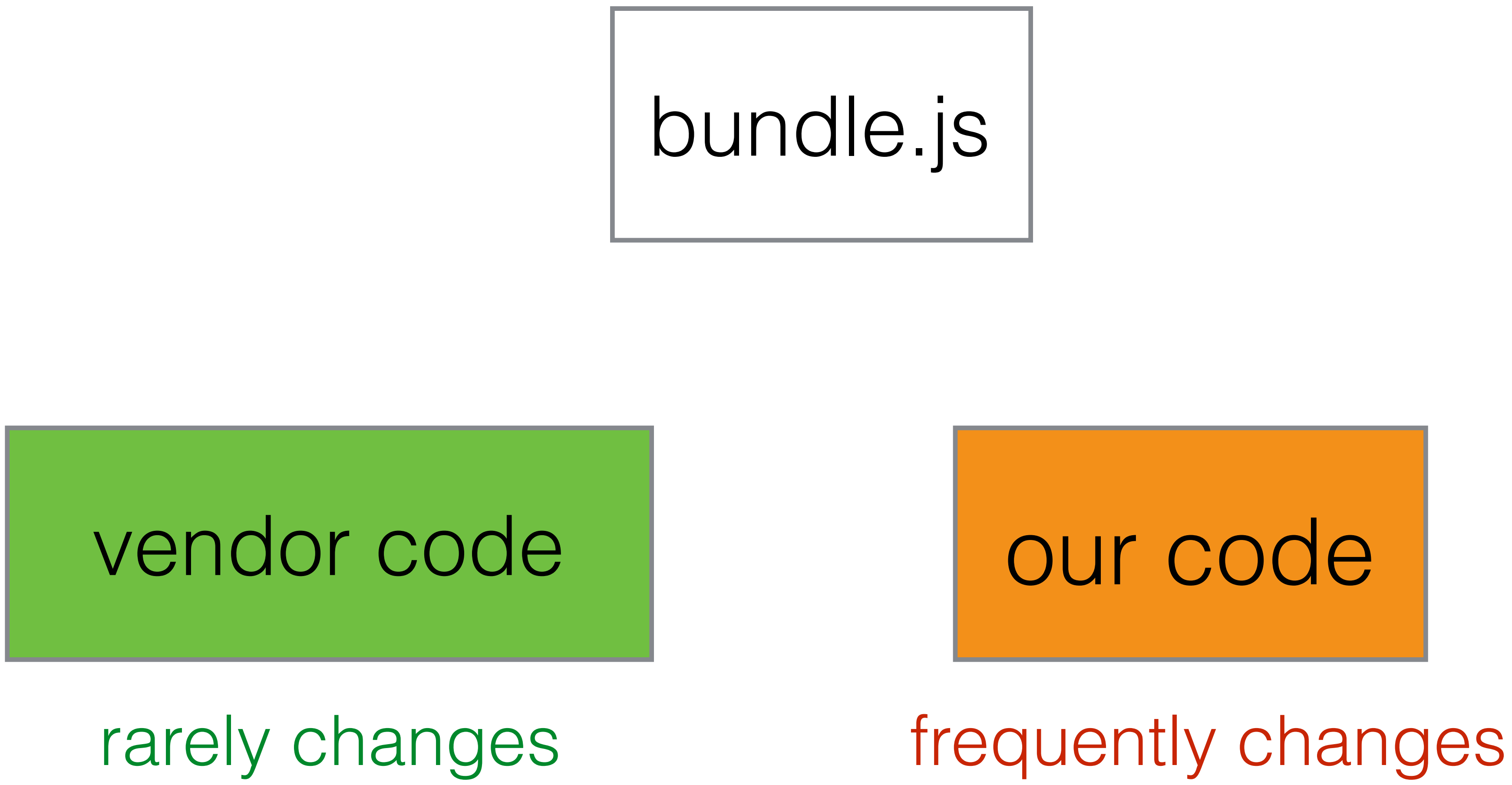


bundle.js

vendor code

our code

Split Vendor



bundle.js

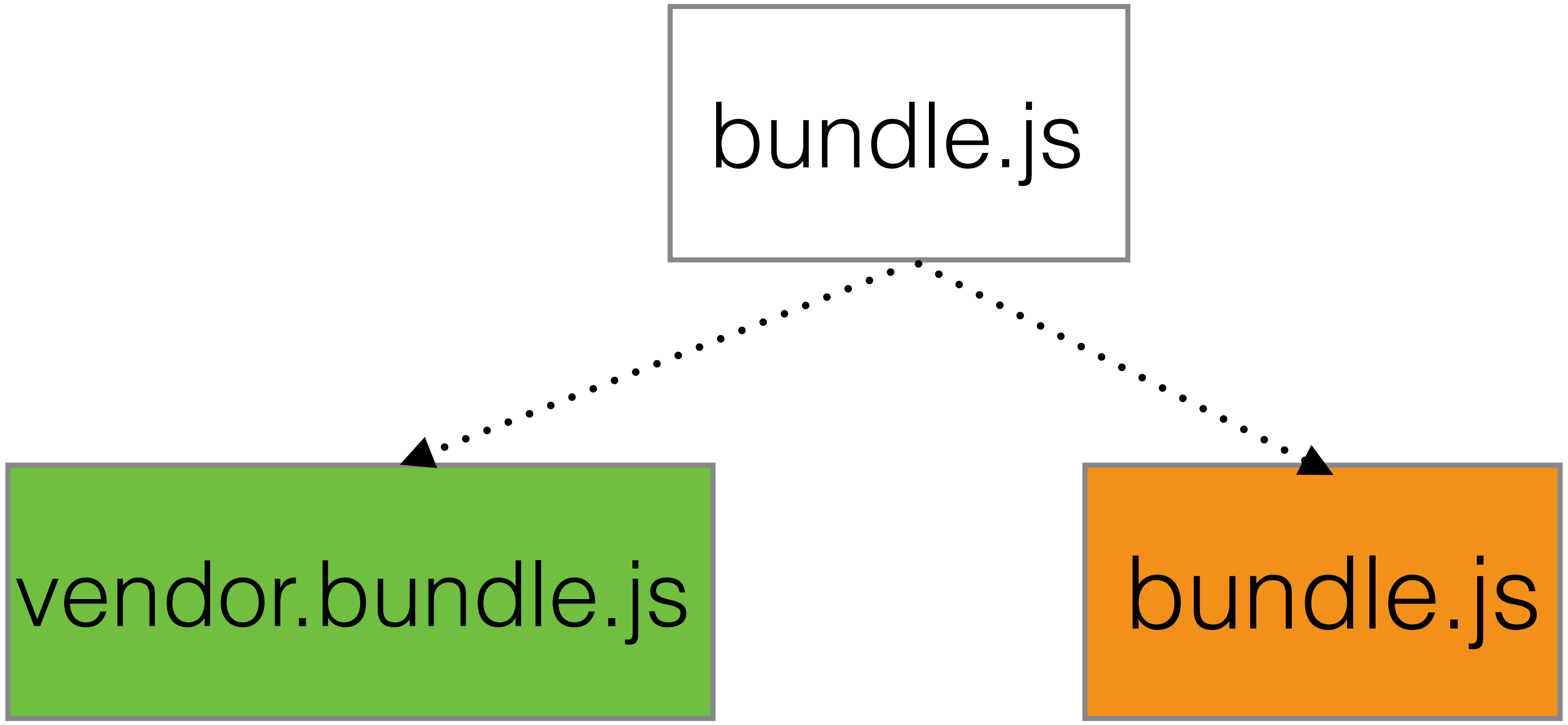
vendor code

our code

rarely changes

frequently changes

Splitting Vendor



bundle.js

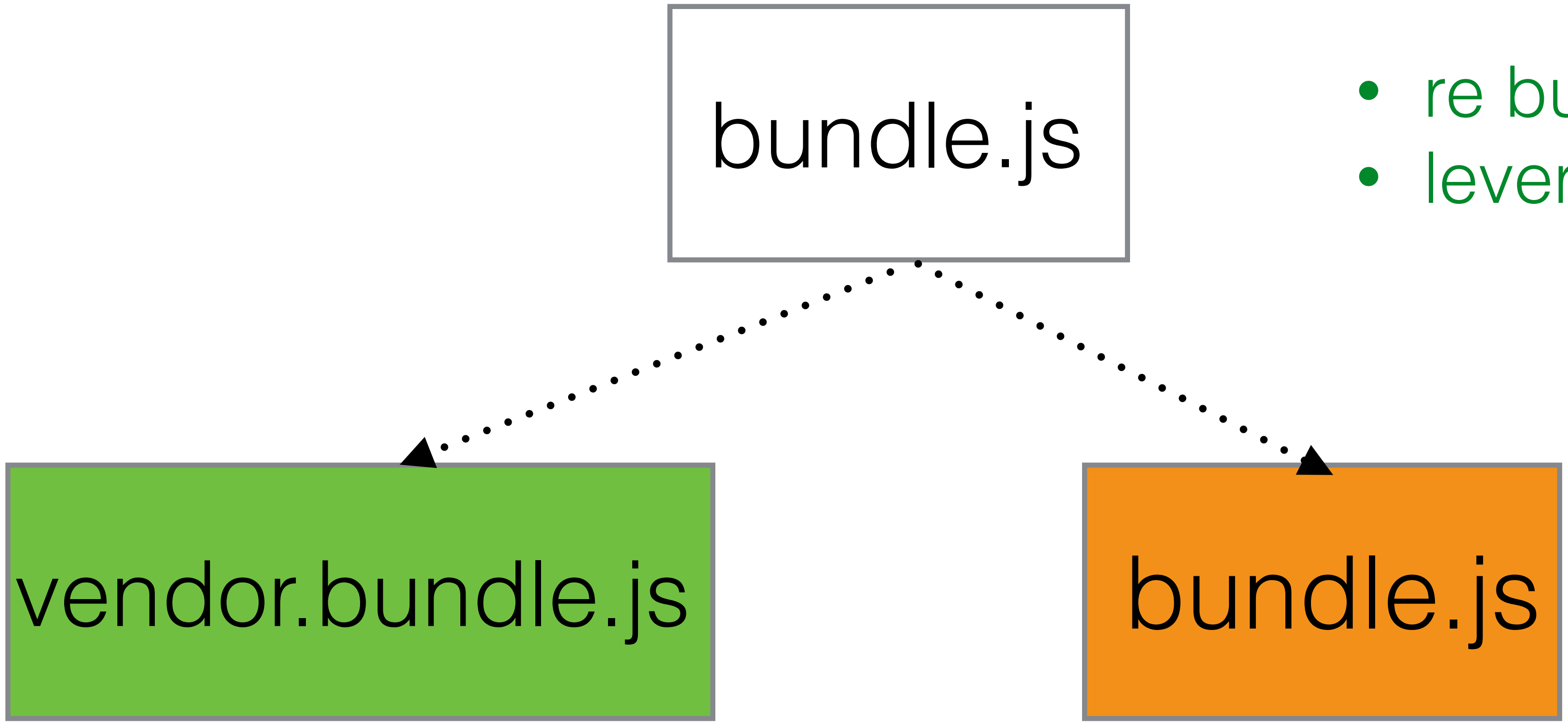
vendor.bundle.js

bundle.js

rarely changes

frequently changes

Splitting Vendor



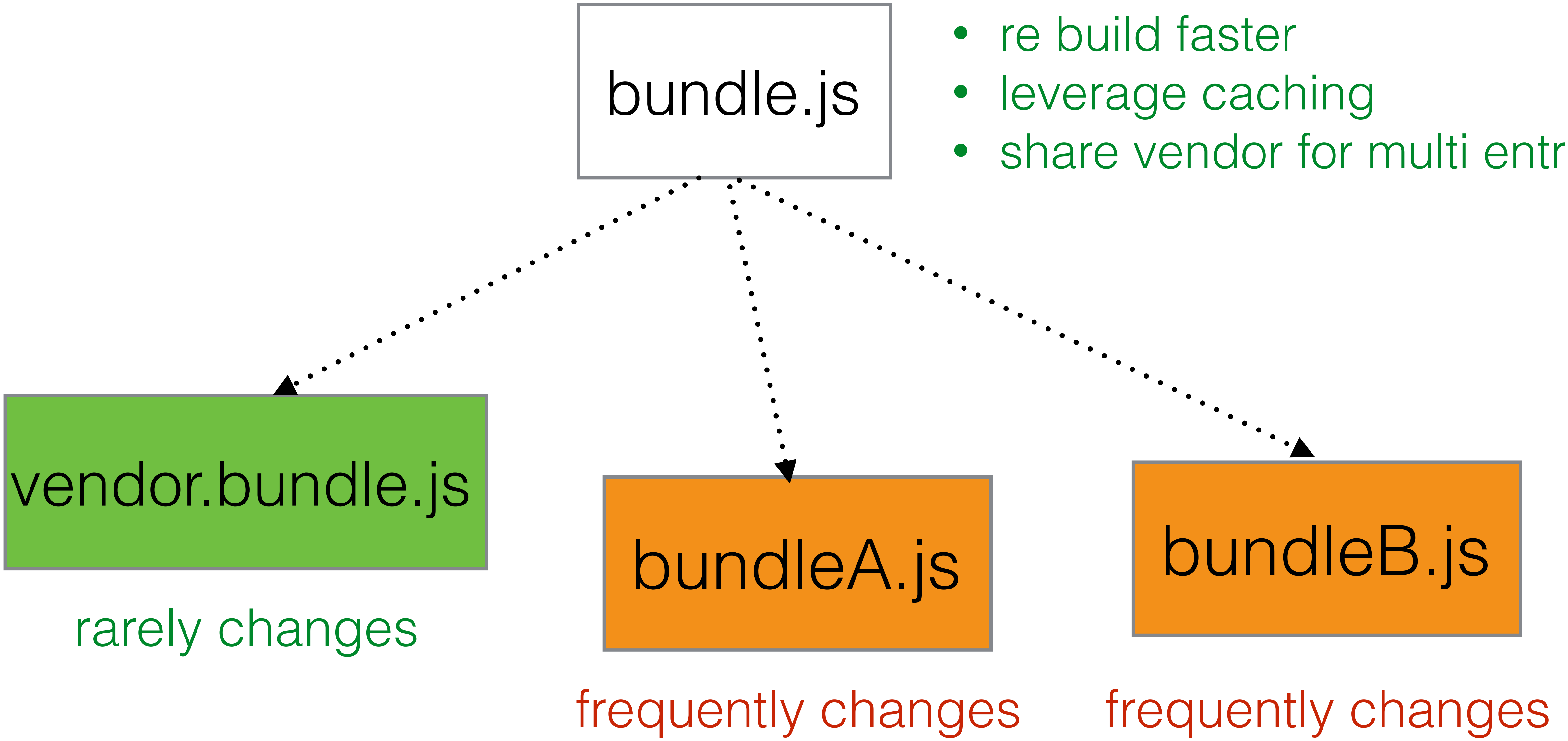
- re build faster
- leverage caching

rarely changes

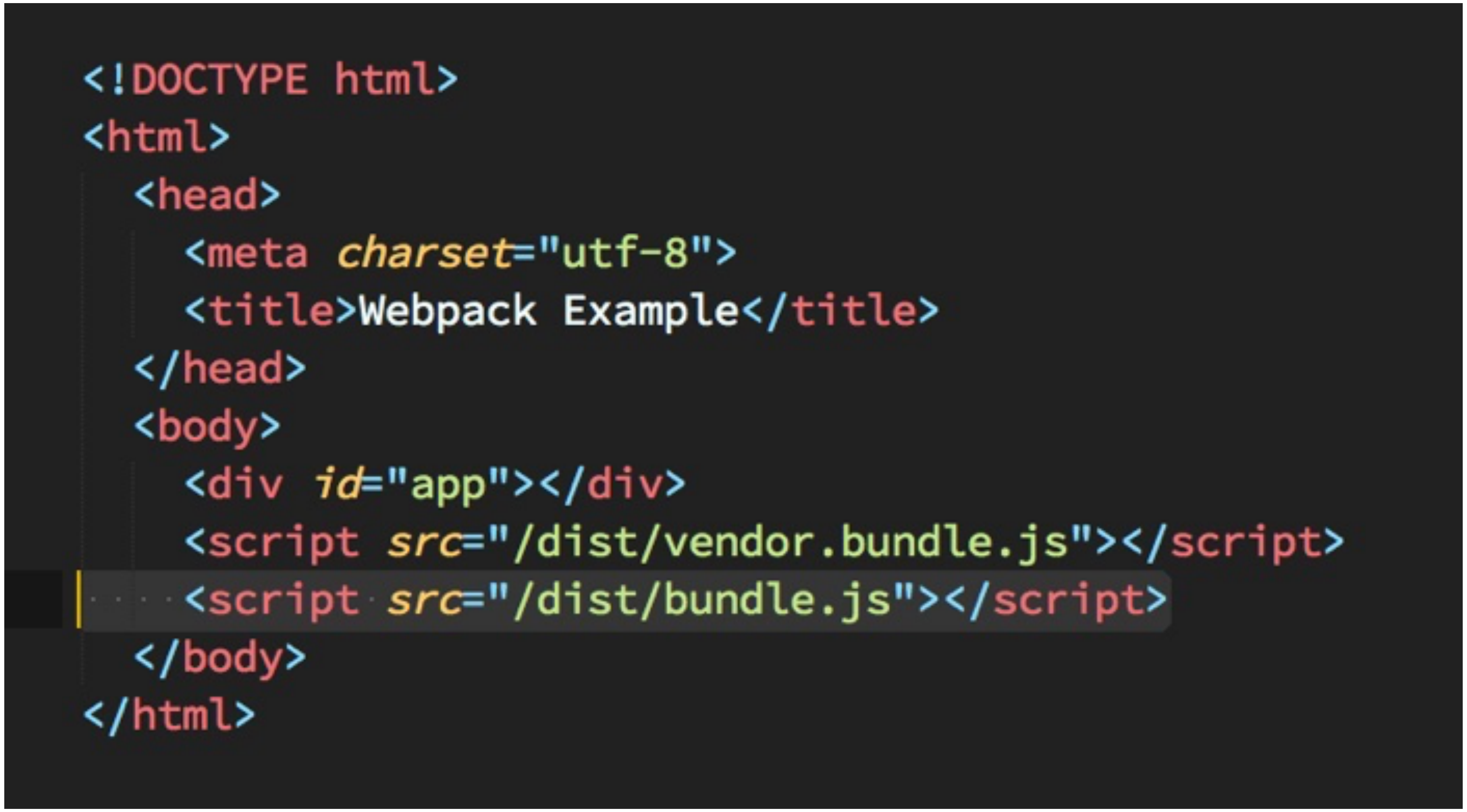
frequently changes

Splitting Vendor

- re build faster
- leverage caching
- share vendor for multi entry



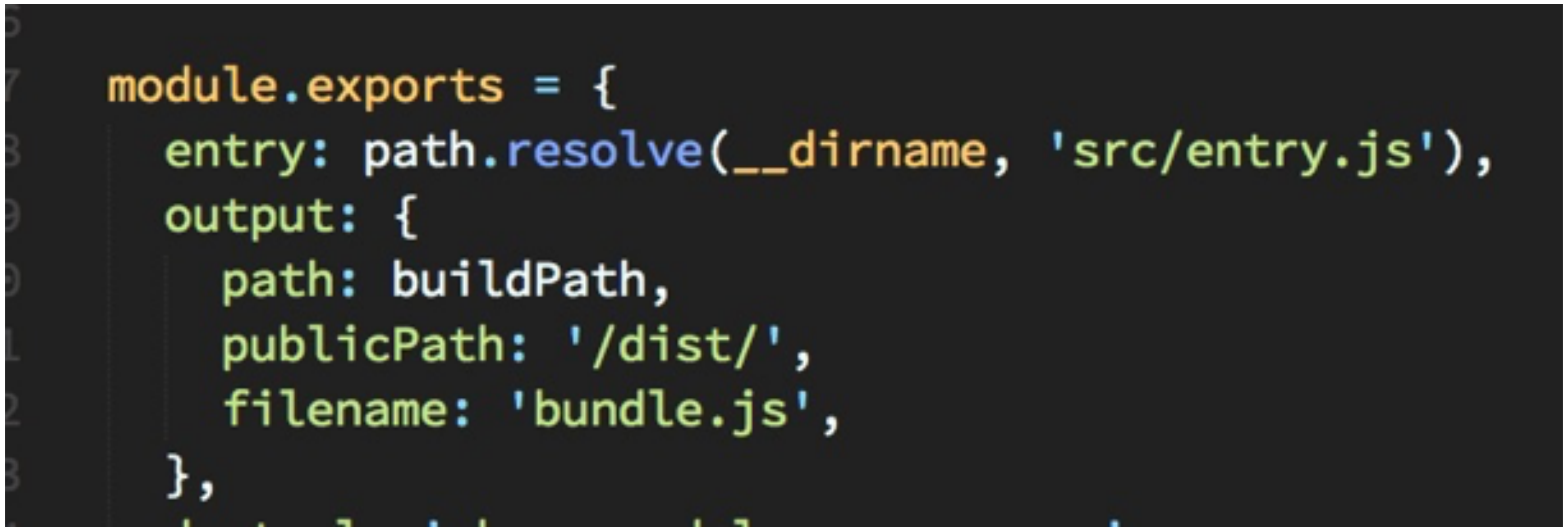
Splitting Vendor



```html
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8">
    <title>Webpack Example</title>
  </head>
  <body>
    <div id="app"></div>
    <script src="/dist/vendor.bundle.js"></script>
    <script src="/dist/bundle.js"></script>
  </body>
</html>
```

Splitting Vendor

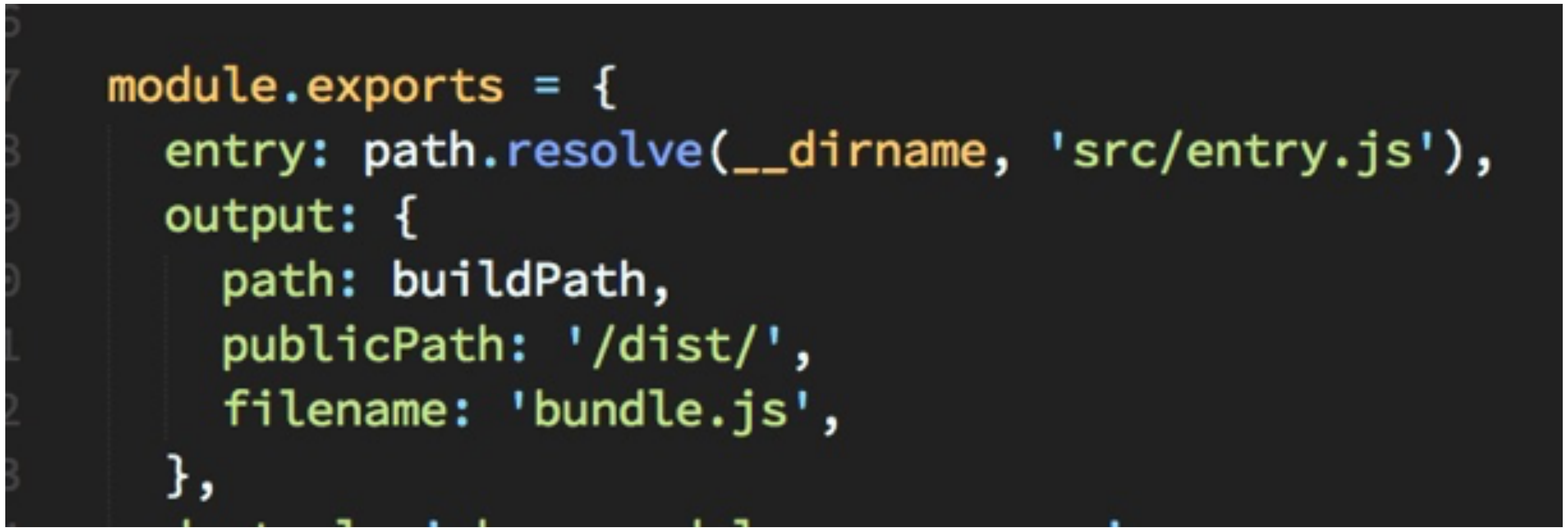
before



```
module.exports = {
  entry: path.resolve(__dirname, 'src/entry.js'),
  output: {
    path: buildPath,
    publicPath: '/dist/',
    filename: 'bundle.js',
  },
```

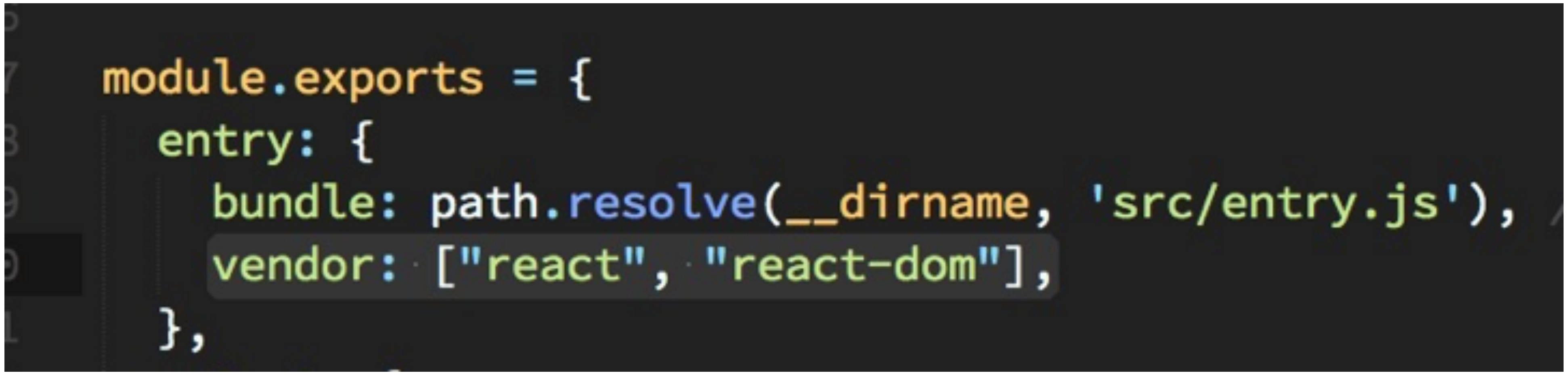
Splitting Vendor

before



```
module.exports = {
  entry: path.resolve(__dirname, 'src/entry.js'),
  output: {
    path: buildPath,
    publicPath: '/dist/',
    filename: 'bundle.js',
  },
```

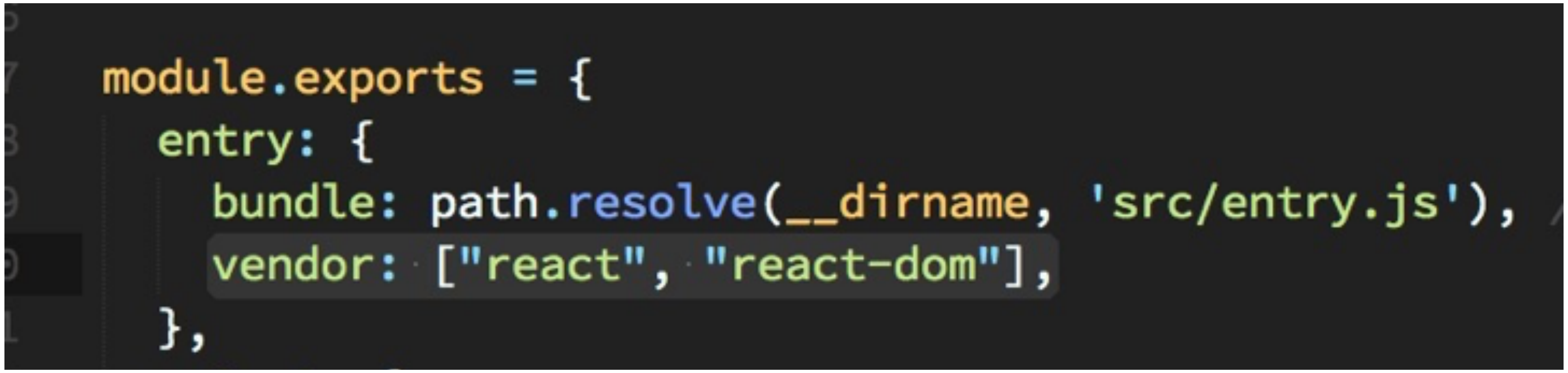
after



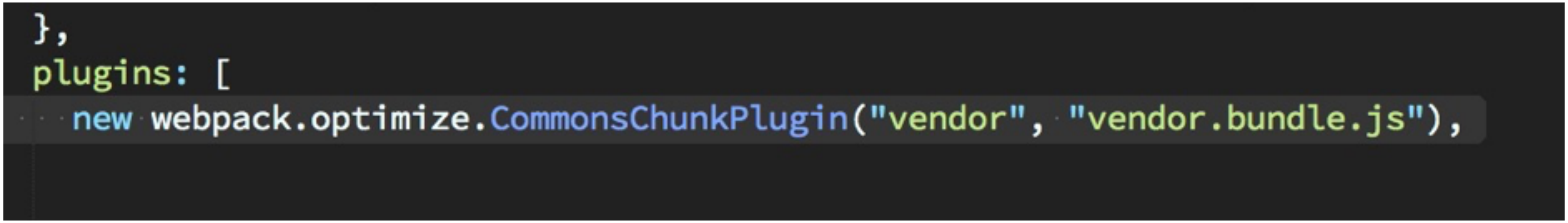
```
module.exports = {
  entry: {
    bundle: path.resolve(__dirname, 'src/entry.js'),
    vendor: ["react", "react-dom"],
  },
```

Splitting Vendor

after



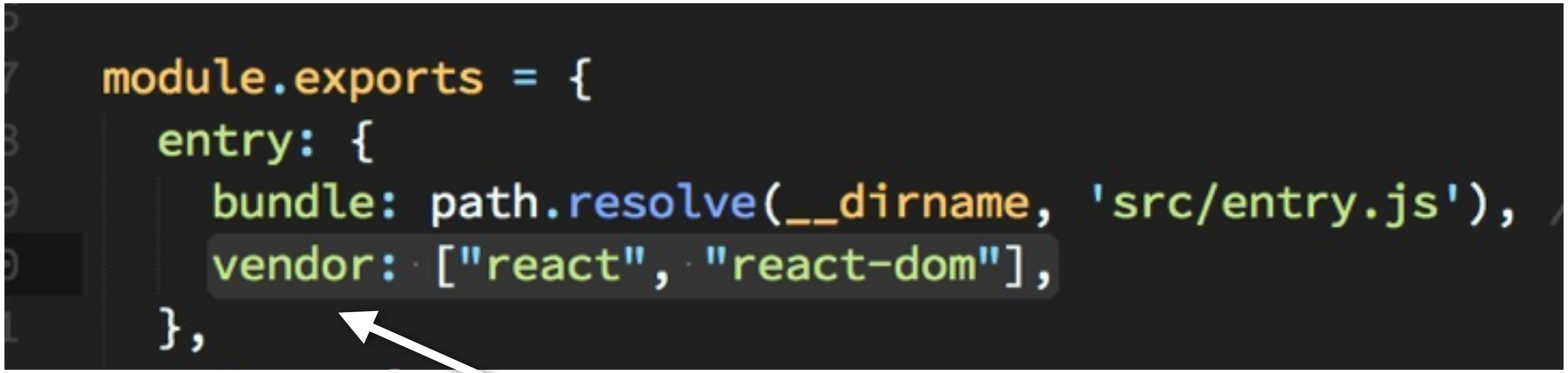
```
module.exports = {
  entry: {
    bundle: path.resolve(__dirname, 'src/entry.js'),
    vendor: ["react", "react-dom"],
  },
```



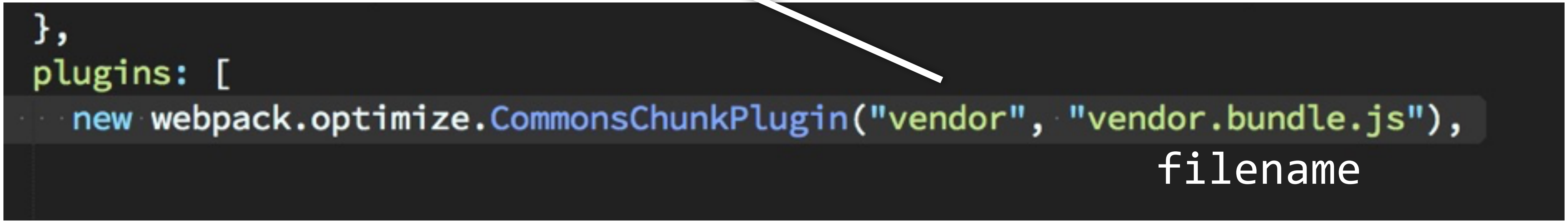
```
},
plugins: [
  new webpack.optimize.CommonsChunkPlugin("vendor", "vendor.bundle.js"),
```

Splitting Vendor

after



```
module.exports = {
  entry: {
    bundle: path.resolve(__dirname, 'src/entry.js'),
    vendor: ["react", "react-dom"],
  },
```

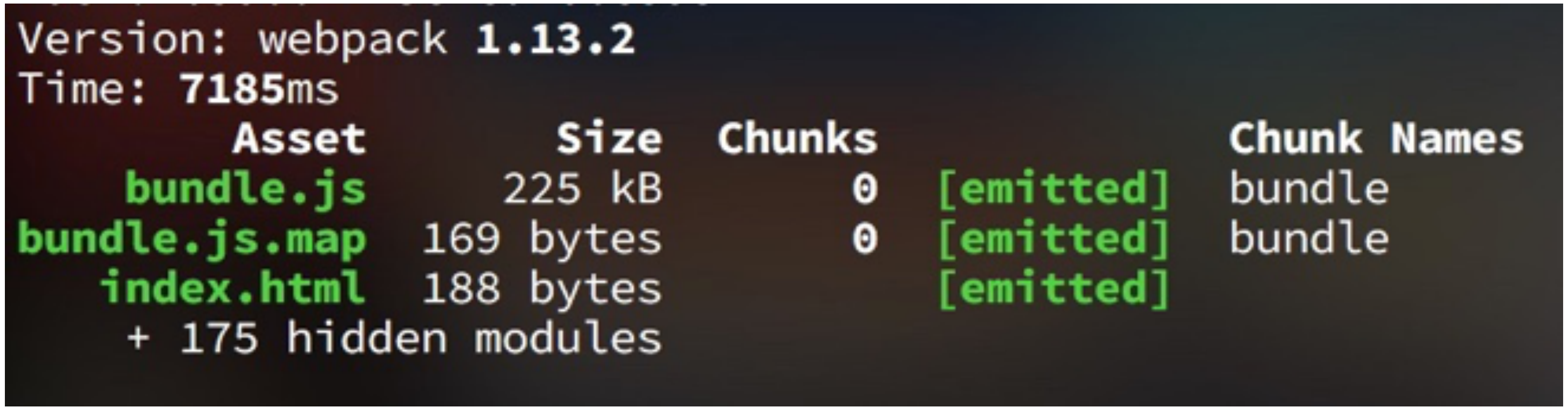


```
},
plugins: [
  new webpack.optimize.CommonsChunkPlugin("vendor", "vendor.bundle.js"),
```

filename

Splitting Vendor

before

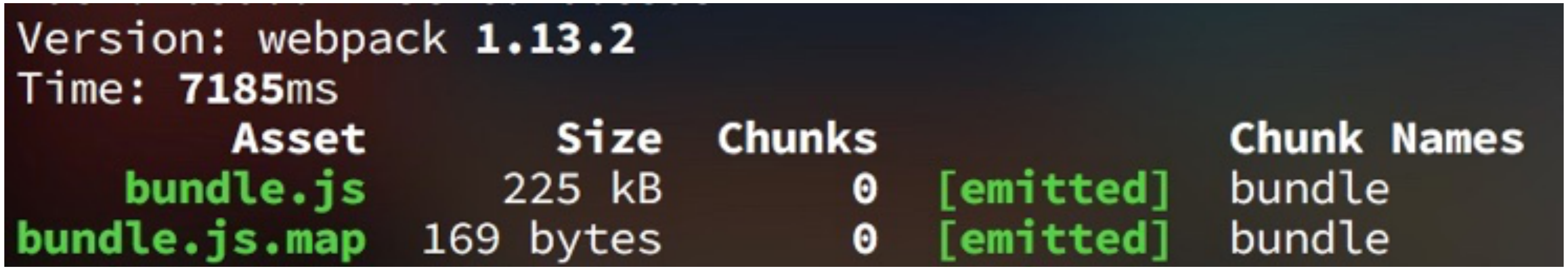


```
Version: webpack 1.13.2
Time: 7185ms
        Asset       Size  Chunks             Chunk Names
    bundle.js     225 kB       0  [emitted]  bundle
bundle.js.map  169 bytes       0  [emitted]  bundle
   index.html  188 bytes          [emitted]
    + 175 hidden modules
```

bundle.js 225 kB

Splitting Vendor

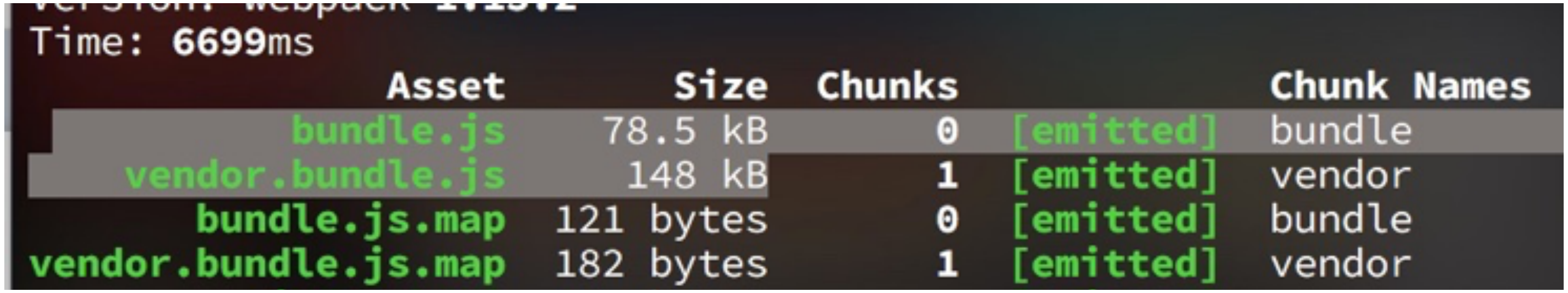
before



```
Version: webpack 1.13.2
Time: 7185ms
        Asset       Size  Chunks             Chunk Names
    bundle.js     225 kB       0  [emitted]  bundle
bundle.js.map  169 bytes       0  [emitted]  bundle
```

bundle.js 225 kB

after

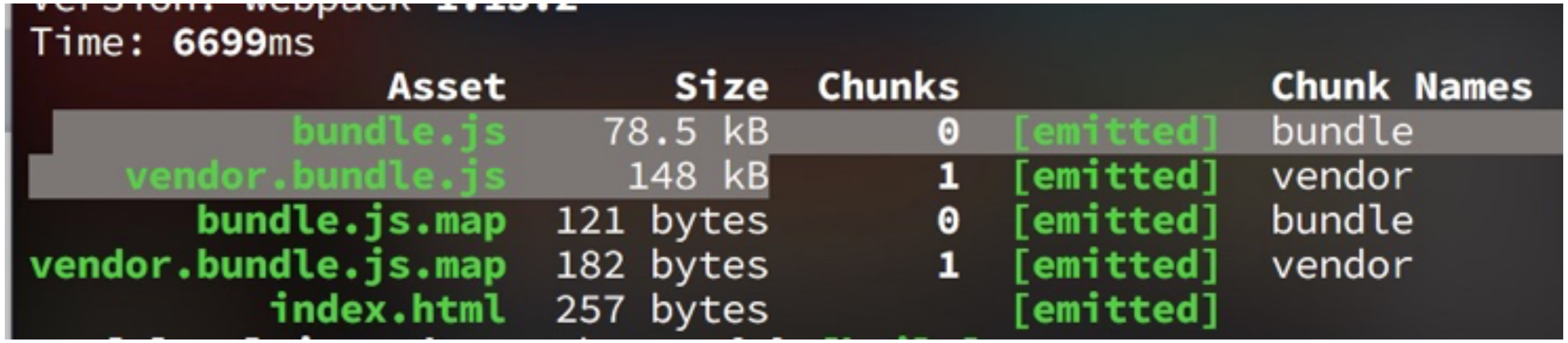


```
Version: webpack 1.13.2
Time: 6699ms
               Asset       Size  Chunks             Chunk Names
           bundle.js    78.5 kB       0  [emitted]  bundle
    vendor.bundle.js     148 kB       1  [emitted]  vendor
       bundle.js.map  121 bytes       0  [emitted]  bundle
vendor.bundle.js.map  182 bytes       1  [emitted]  vendor
```

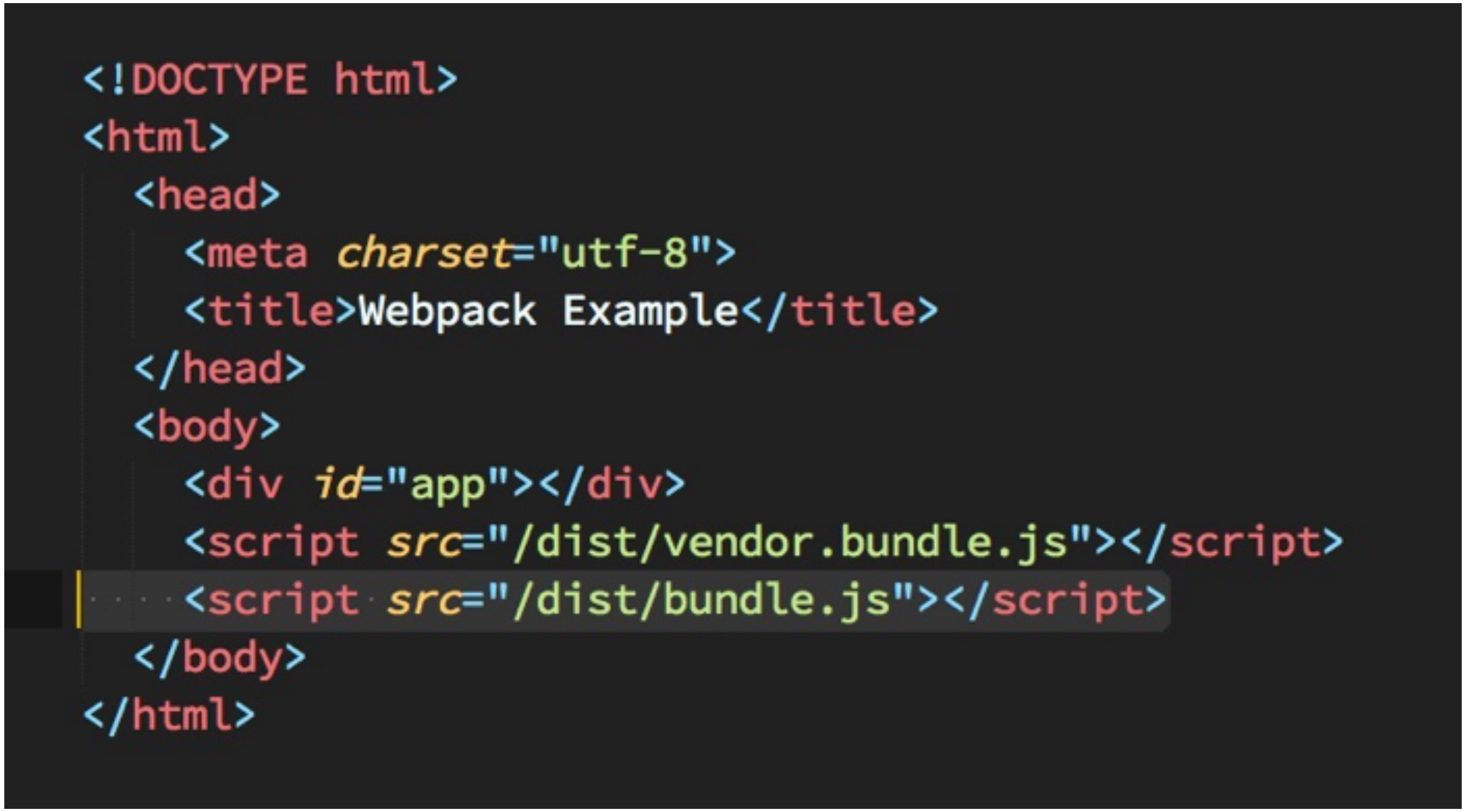
bundle.js 78.5 kB

vendor.bundle.js 148 kB

Splitting Vendor



```
Version: webpack 1.13.2
Time: 6699ms
                 Asset       Size  Chunks             Chunk Names
             bundle.js    78.5 kB       0  [emitted]  bundle
      vendor.bundle.js     148 kB       1  [emitted]  vendor
         bundle.js.map  121 bytes       0  [emitted]  bundle
  vendor.bundle.js.map  182 bytes       1  [emitted]  vendor
            index.html  257 bytes          [emitted]
```

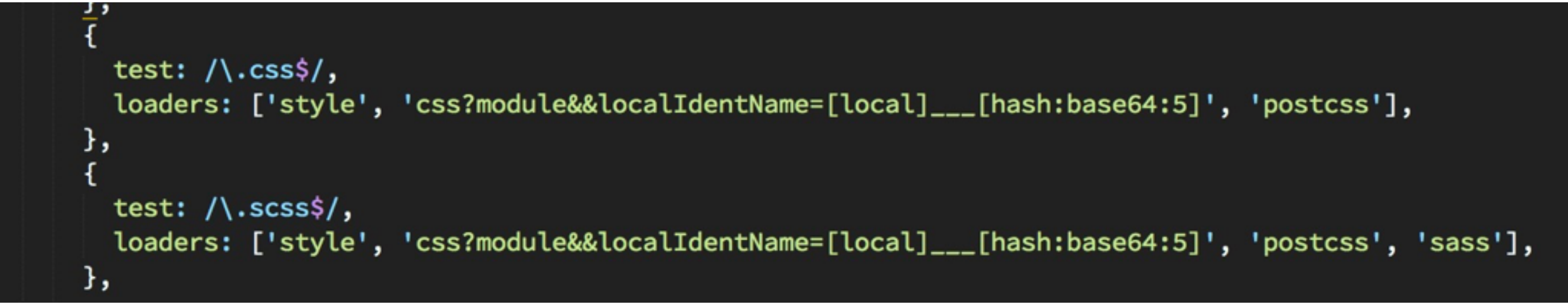


```html
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8">
    <title>Webpack Example</title>
  </head>
  <body>
    <div id="app"></div>
    <script src="/dist/vendor.bundle.js"></script>
    <script src="/dist/bundle.js"></script>
  </body>
</html>
```

Split CSS

ExtractTextPlugin

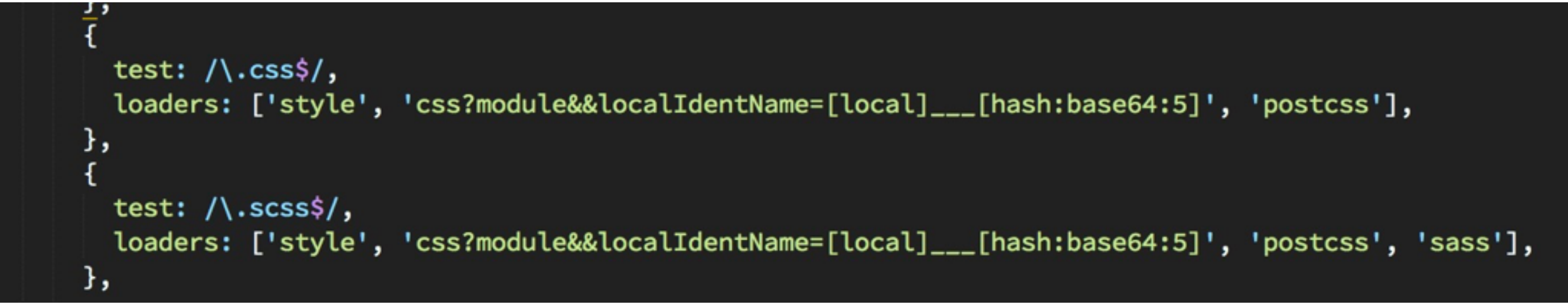
before



```
},
{
  test: /\.css$/,
  loaders: ['style', 'css?module&&localIdentName=[local]___[hash:base64:5]', 'postcss'],
},
{
  test: /\.scss$/,
  loaders: ['style', 'css?module&&localIdentName=[local]___[hash:base64:5]', 'postcss', 'sass'],
},
```

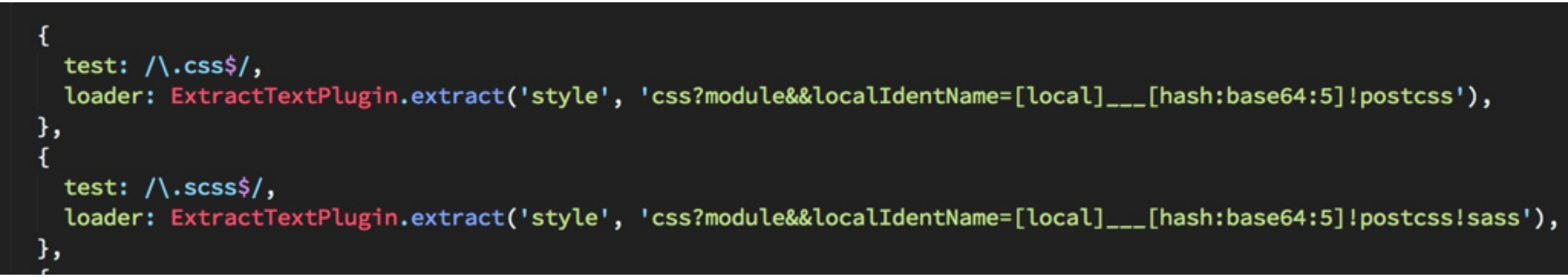
ExtractTextPlugin

before



```
    },
    {
      test: /\.css$/,
      loaders: ['style', 'css?module&&localIdentName=[local]___[hash:base64:5]', 'postcss'],
    },
    {
      test: /\.scss$/,
      loaders: ['style', 'css?module&&localIdentName=[local]___[hash:base64:5]', 'postcss', 'sass'],
    },
```

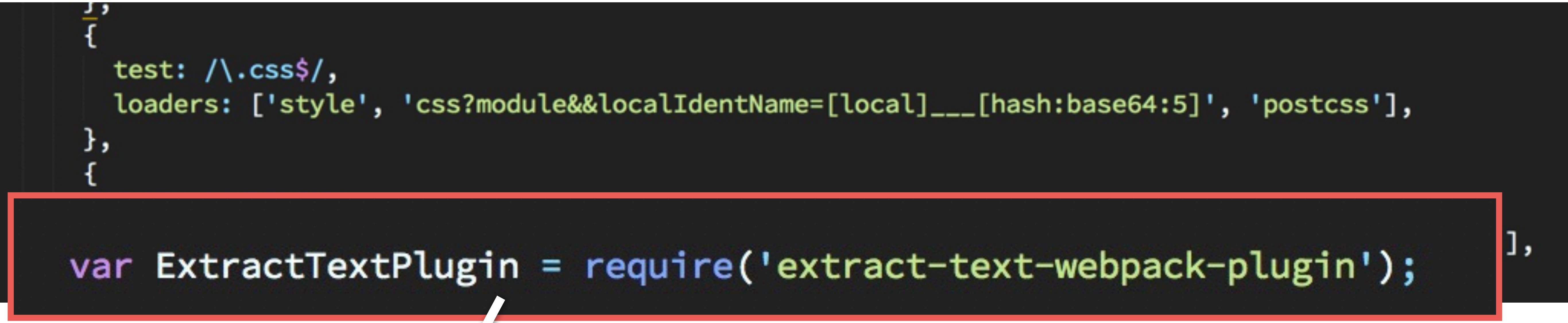
after



```
{
  test: /\.css$/,
  loader: ExtractTextPlugin.extract('style', 'css?module&&localIdentName=[local]___[hash:base64:5]!postcss'),
},
{
  test: /\.scss$/,
  loader: ExtractTextPlugin.extract('style', 'css?module&&localIdentName=[local]___[hash:base64:5]!postcss!sass'),
},
```

ExtractTextPlugin

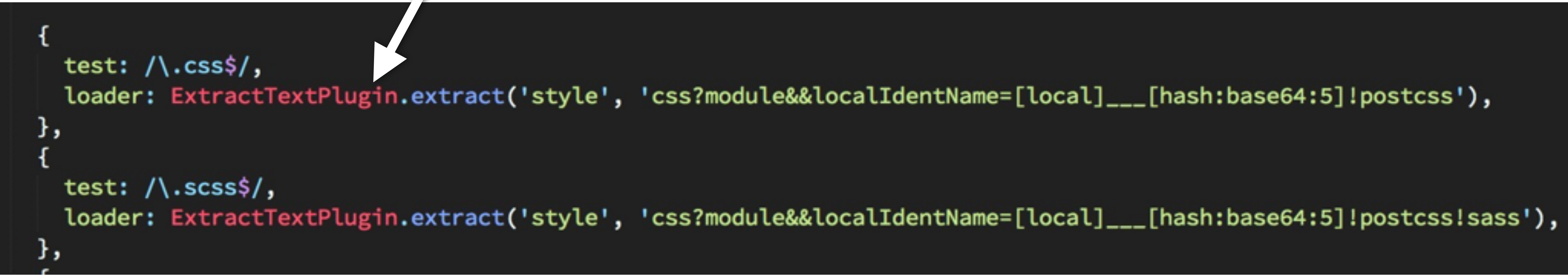
before



```
  },
  {
    test: /\.css$/,
    loaders: ['style', 'css?module&&localIdentName=[local]___[hash:base64:5]', 'postcss'],
  },
  {
                                                                                            ],
```

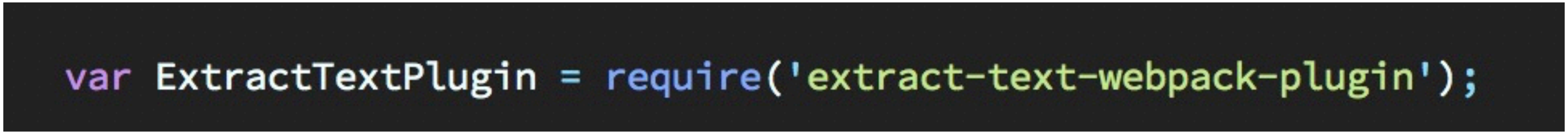
```
var ExtractTextPlugin = require('extract-text-webpack-plugin');
```

after

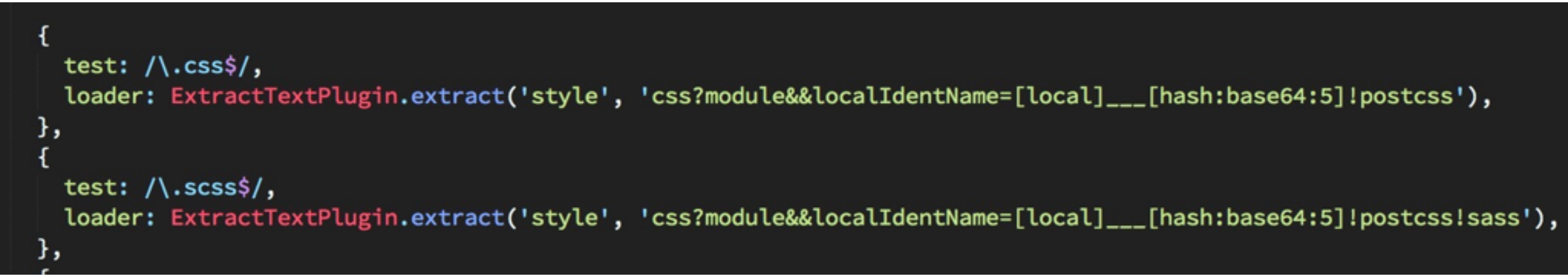


```
{
  test: /\.css$/,
  loader: ExtractTextPlugin.extract('style', 'css?module&&localIdentName=[local]___[hash:base64:5]!postcss'),
},
{
  test: /\.scss$/,
  loader: ExtractTextPlugin.extract('style', 'css?module&&localIdentName=[local]___[hash:base64:5]!postcss!sass'),
},
```

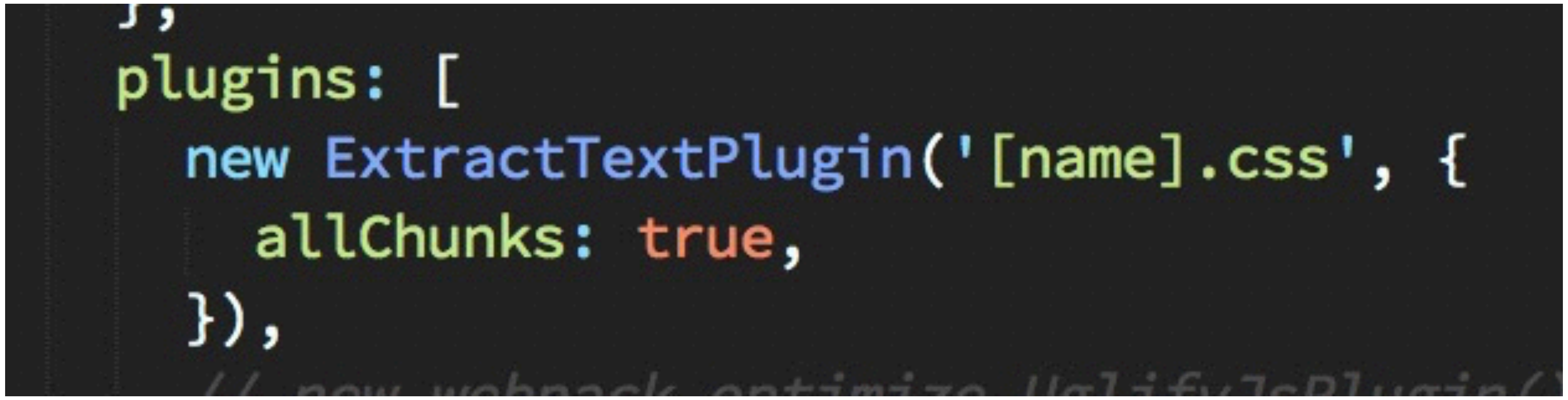
ExtractTextPlugin



```
var ExtractTextPlugin = require('extract-text-webpack-plugin');
```

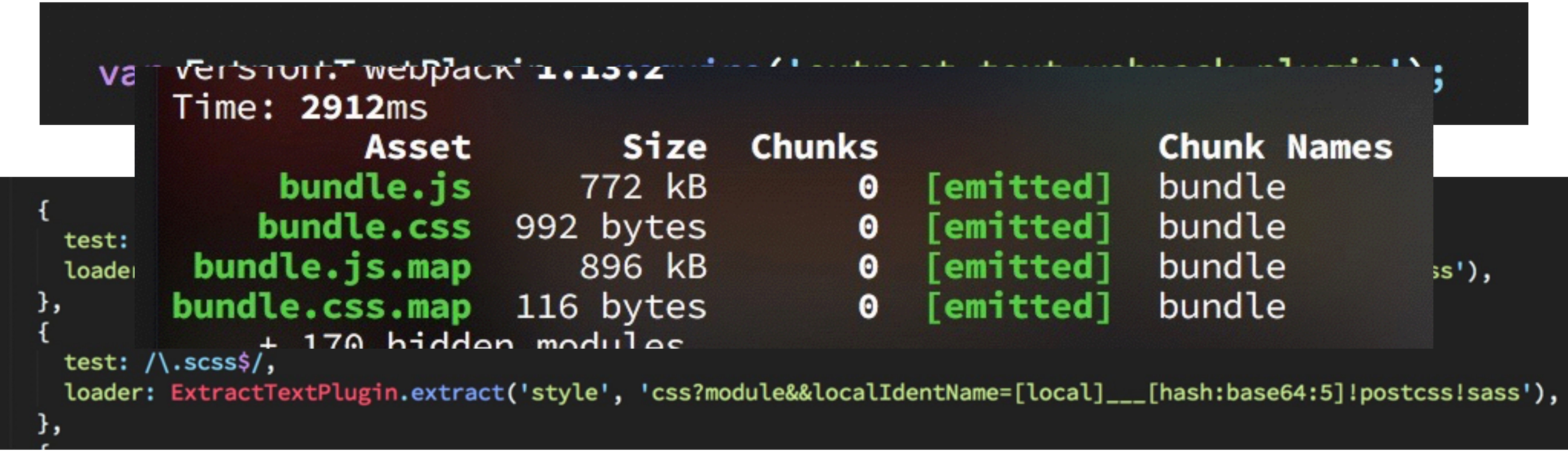


```
{
  test: /\.css$/,
  loader: ExtractTextPlugin.extract('style', 'css?module&&localIdentName=[local]___[hash:base64:5]!postcss'),
},
{
  test: /\.scss$/,
  loader: ExtractTextPlugin.extract('style', 'css?module&&localIdentName=[local]___[hash:base64:5]!postcss!sass'),
},
{
```



```
},
plugins: [
  new ExtractTextPlugin('[name].css', {
    allChunks: true,
  }),
  // new webpack.optimize.UglifyJsPlugin(
```

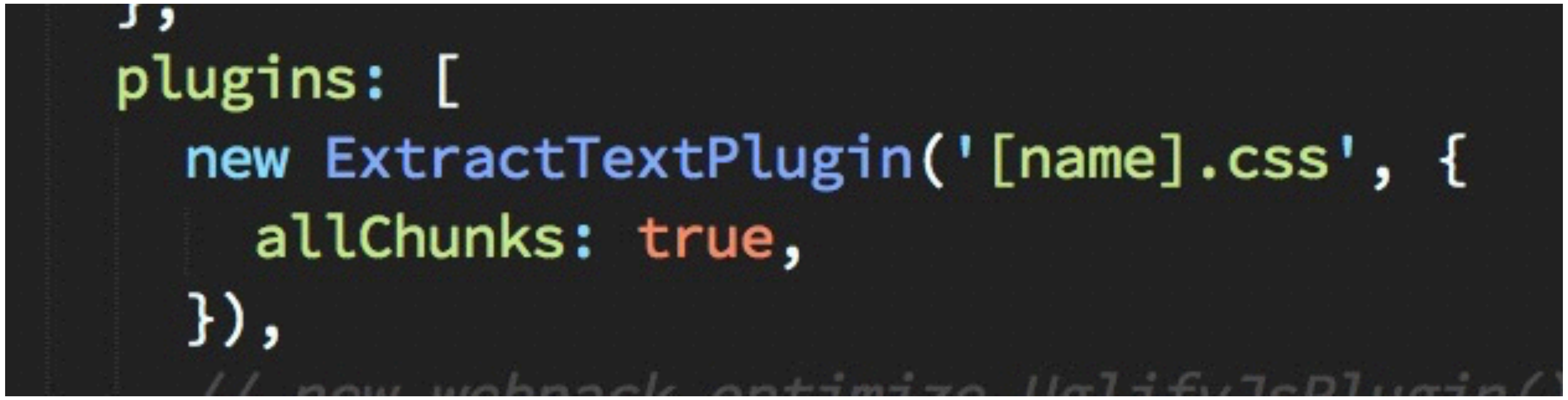
ExtractTextPlugin



```
va                                                          ;
```

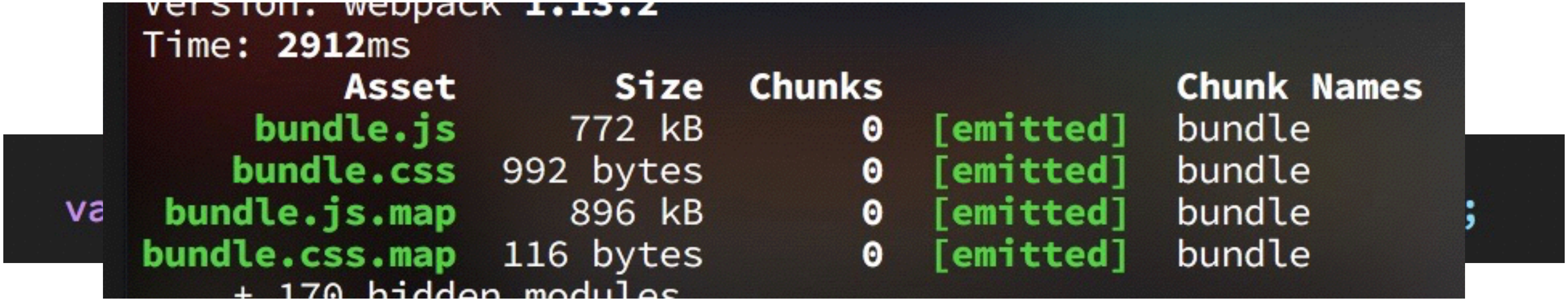
```
Version: webpack 1.13.2
Time: 2912ms
           Asset       Size  Chunks             Chunk Names
       bundle.js     772 kB       0  [emitted]  bundle
      bundle.css  992 bytes       0  [emitted]  bundle
   bundle.js.map     896 kB       0  [emitted]  bundle
  bundle.css.map  116 bytes       0  [emitted]  bundle
    + 170 hidden modules
```

```
{
  test:
  loade                                                                ss'),
},
{
  test: /\.scss$/,
  loader: ExtractTextPlugin.extract('style', 'css?module&&localIdentName=[local]___[hash:base64:5]!postcss!sass'),
},
```

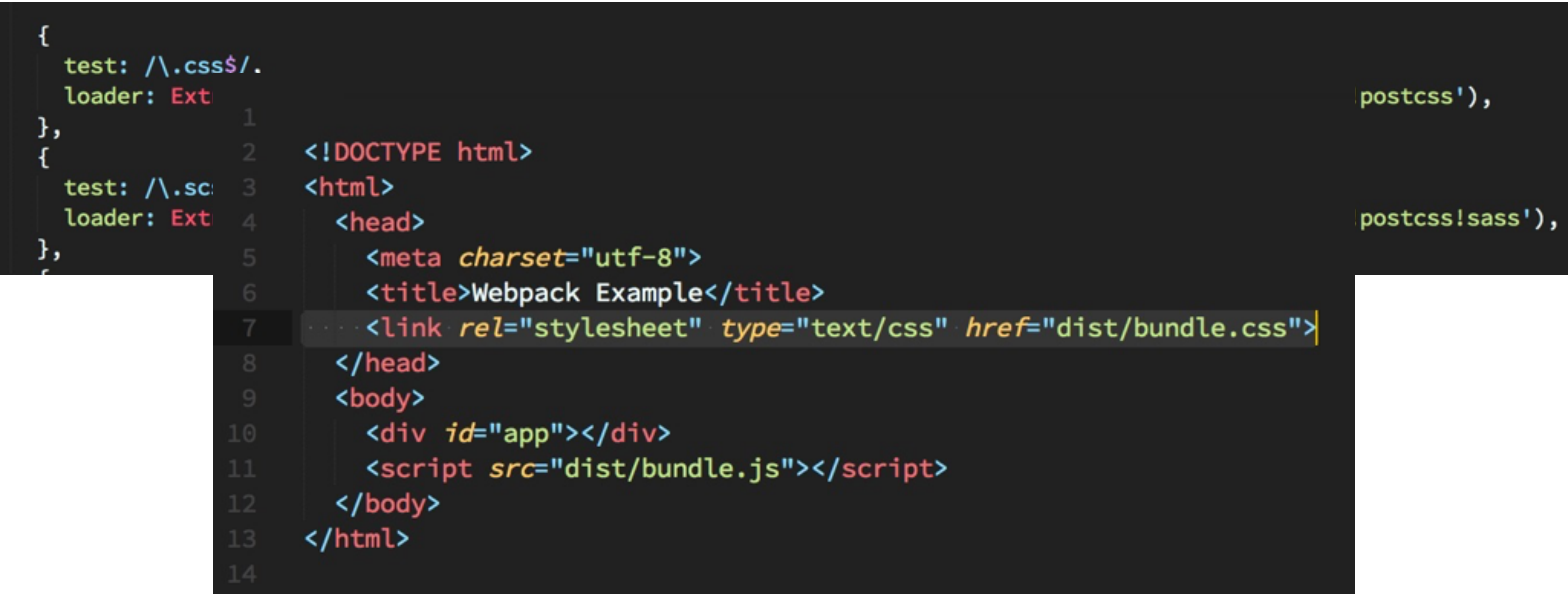


```
],
plugins: [
  new ExtractTextPlugin('[name].css', {
    allChunks: true,
  }),
  // new webpack.optimize.UglifyJsPlugin(
```

ExtractTextPlugin



```
Version: webpack 1.13.2
Time: 2912ms
           Asset       Size  Chunks             Chunk Names
       bundle.js     772 kB       0  [emitted]  bundle
      bundle.css  992 bytes       0  [emitted]  bundle
   bundle.js.map     896 kB       0  [emitted]  bundle
  bundle.css.map  116 bytes       0  [emitted]  bundle
    + 170 hidden modules
```

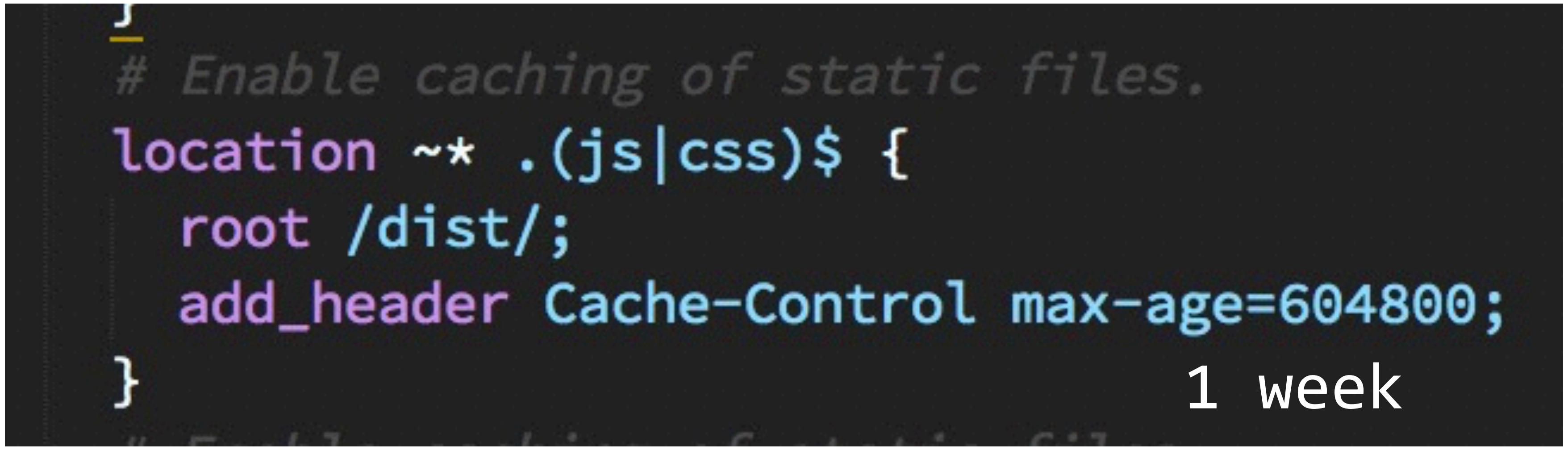


```
{
  test: /\.css$/.
  loader: Ext                                          postcss'),
},
{
  test: /\.sc                                          postcss!sass'),
  loader: Ext
},
```

```html

<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8">
    <title>Webpack Example</title>
    <link rel="stylesheet" type="text/css" href="dist/bundle.css">
  </head>
  <body>
    <div id="app"></div>
    <script src="dist/bundle.js"></script>
  </body>
</html>

```

Leverage Caching

Leverage Caching

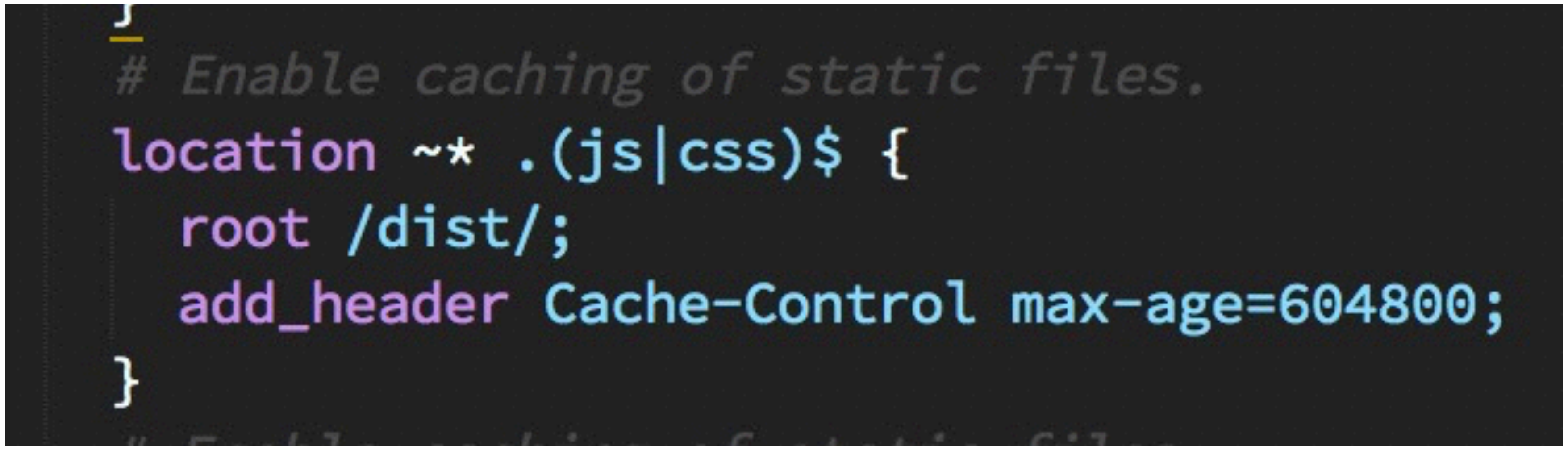


```
}
# Enable caching of static files.
location ~* .(js|css)$ {
  root /dist/;
  add_header Cache-Control max-age=604800;
}
```

1 week

nginx.conf

Long-Term Caching



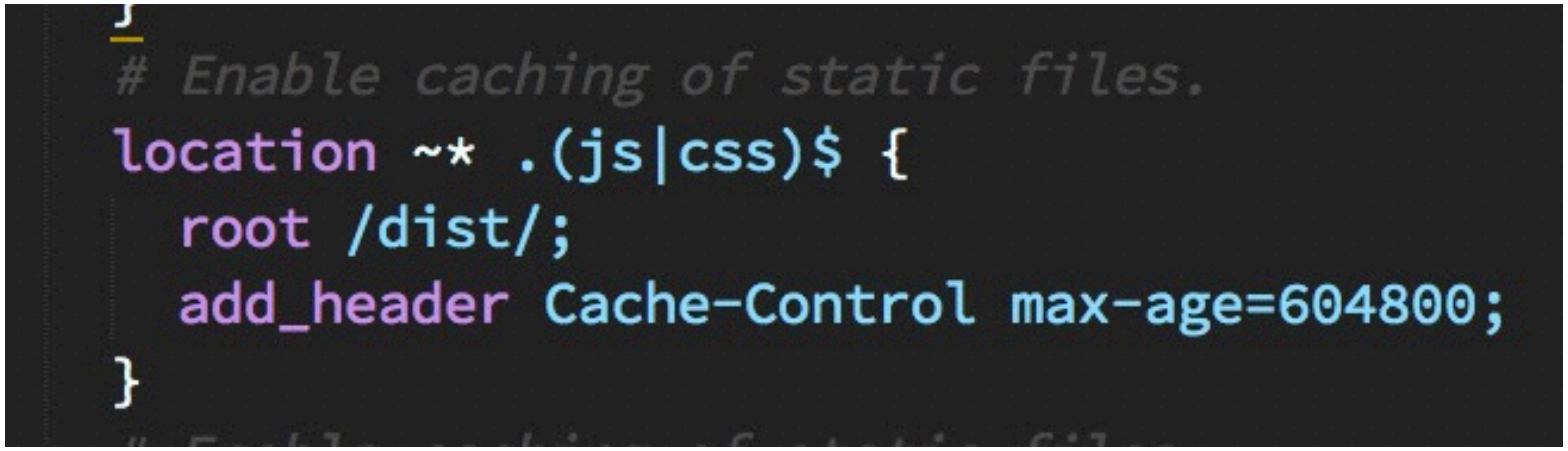
```
}
# Enable caching of static files.
location ~* .(js|css)$ {
  root /dist/;
  add_header Cache-Control max-age=604800;
}
# Enable caching of static files.
```

nginx.conf

work with CDN

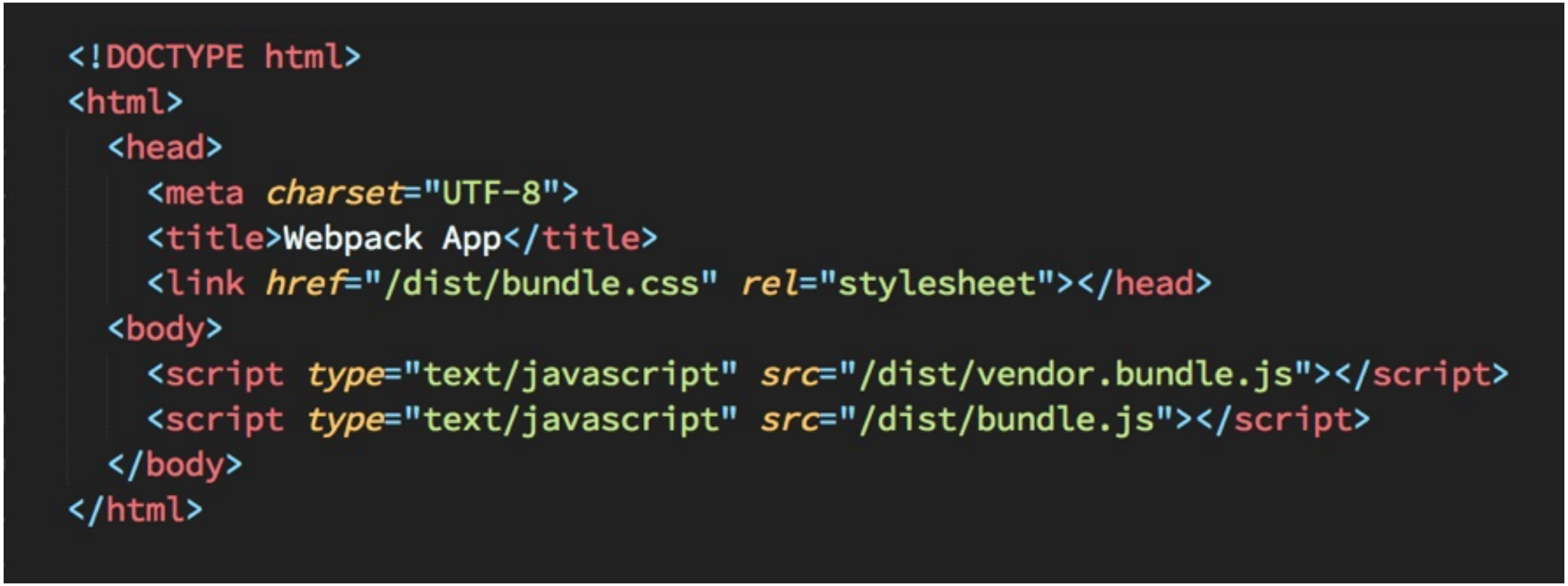
ServiceWorker
offline caching

Long-term caching



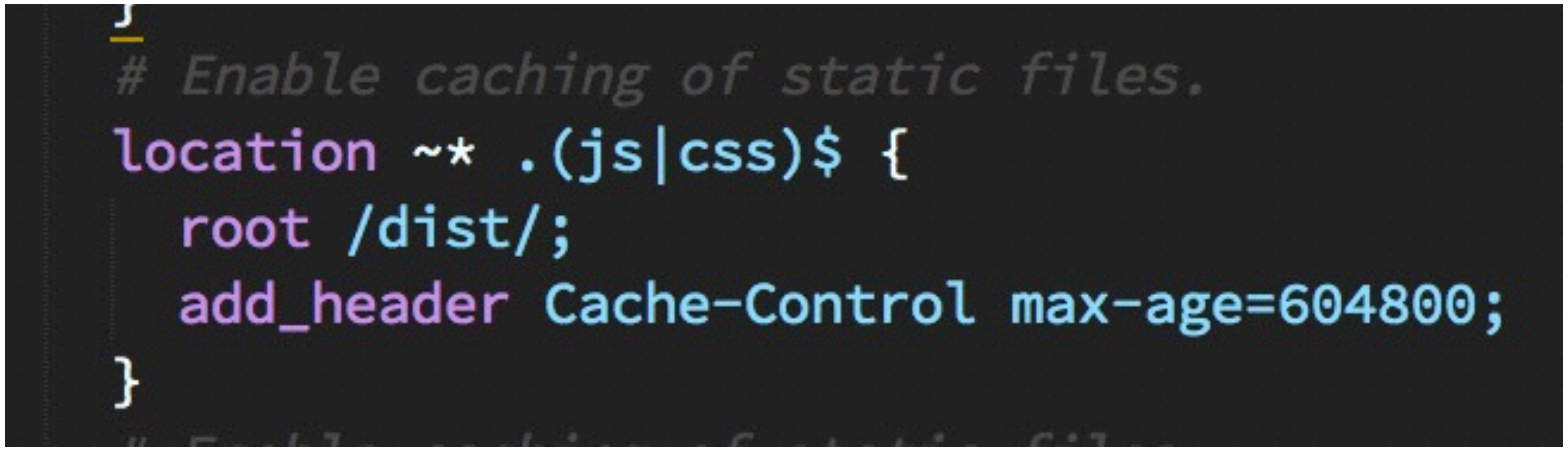
```
}
# Enable caching of static files.
location ~* .(js|css)$ {
  root /dist/;
  add_header Cache-Control max-age=604800;
}
```

before



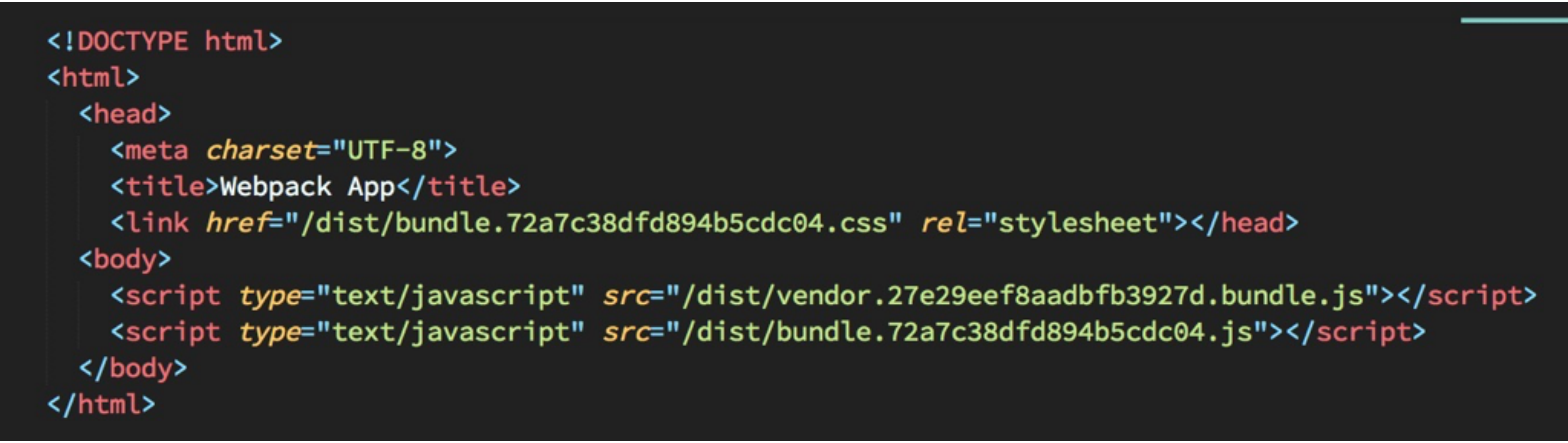
```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="UTF-8">
    <title>Webpack App</title>
    <link href="/dist/bundle.css" rel="stylesheet"></head>
  <body>
    <script type="text/javascript" src="/dist/vendor.bundle.js"></script>
    <script type="text/javascript" src="/dist/bundle.js"></script>
  </body>
</html>
```

Long-term caching



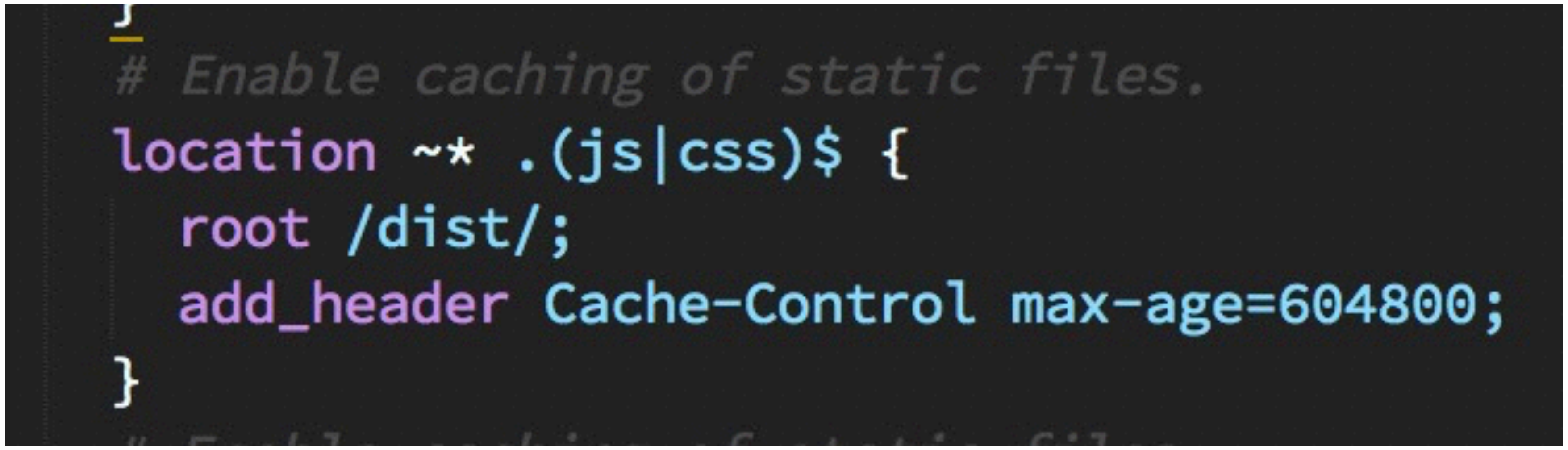
```
}
# Enable caching of static files.
location ~* .(js|css)$ {
  root /dist/;
  add_header Cache-Control max-age=604800;
}
```

after

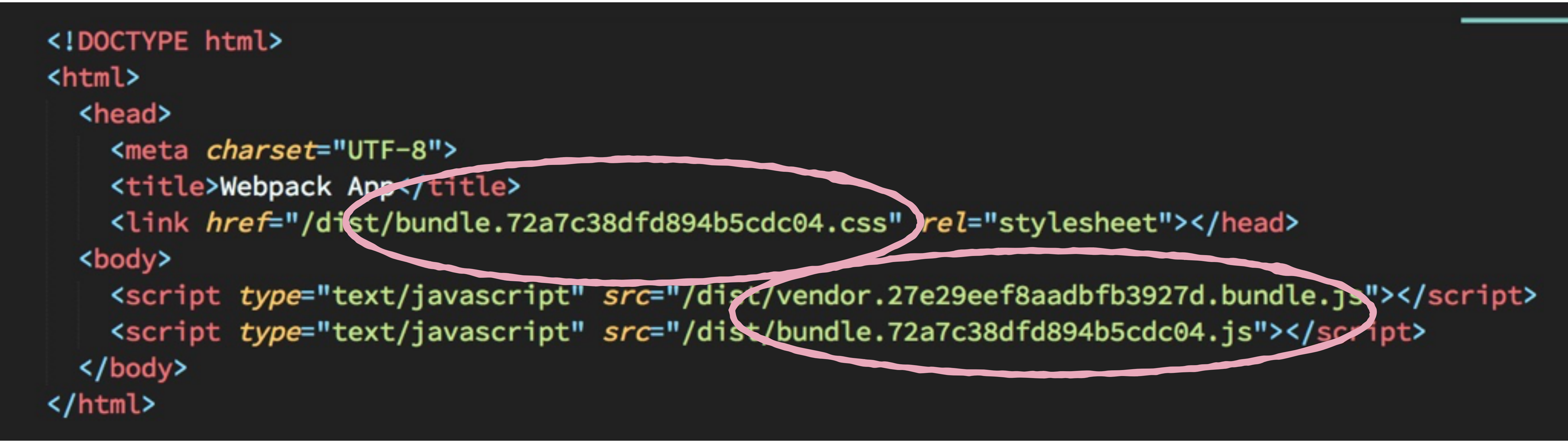


```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="UTF-8">
    <title>Webpack App</title>
    <link href="/dist/bundle.72a7c38dfd894b5cdc04.css" rel="stylesheet"></head>
  <body>
    <script type="text/javascript" src="/dist/vendor.27e29eef8aadbfb3927d.bundle.js"></script>
    <script type="text/javascript" src="/dist/bundle.72a7c38dfd894b5cdc04.js"></script>
  </body>
</html>
```

Long-term caching



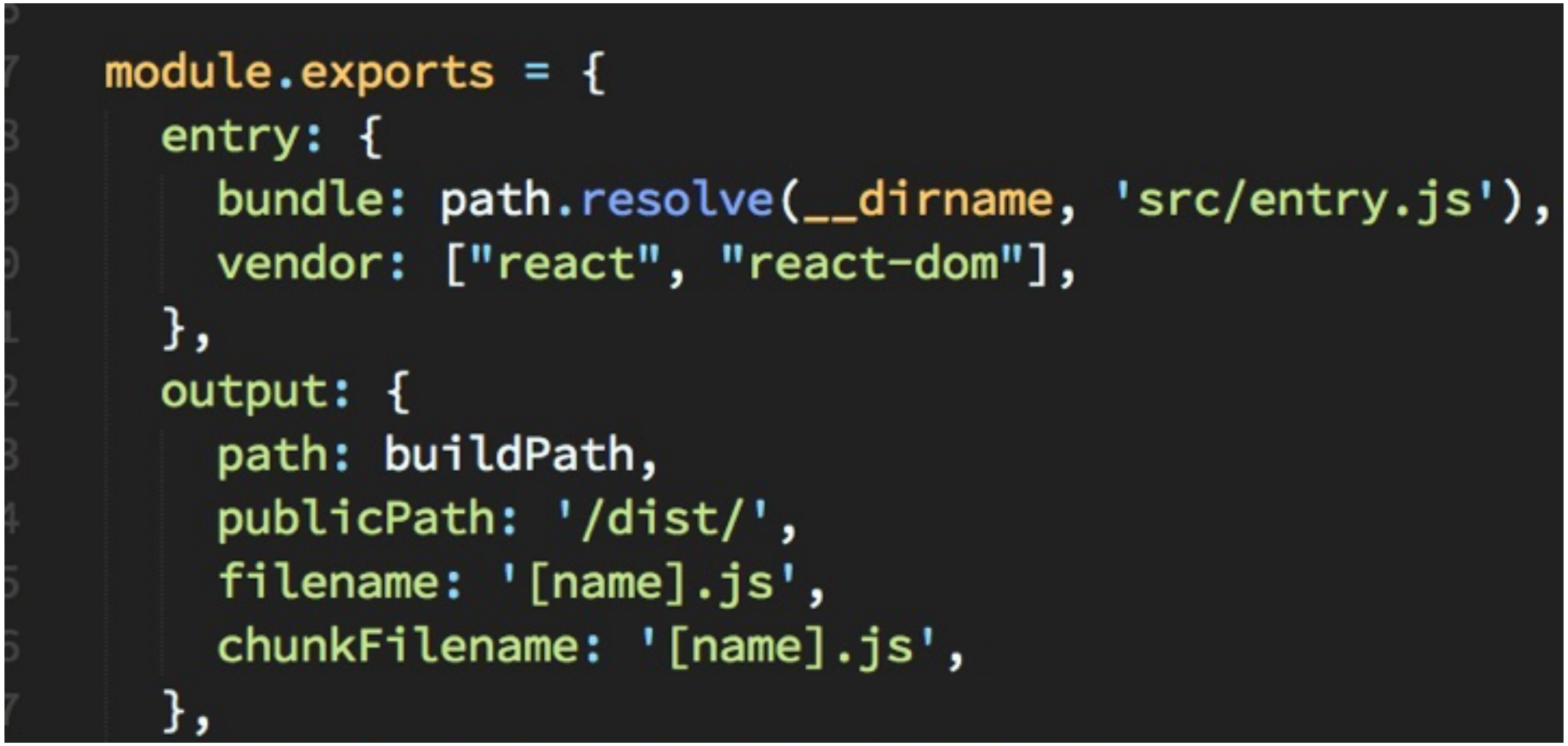
```
# Enable caching of static files.
location ~* .(js|css)$ {
  root /dist/;
  add_header Cache-Control max-age=604800;
}
```



```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="UTF-8">
    <title>Webpack App</title>
    <link href="/dist/bundle.72a7c38dfd894b5cdc04.css" rel="stylesheet"></head>
  <body>
    <script type="text/javascript" src="/dist/vendor.27e29eef8aadbfb3927d.bundle.js"></script>
    <script type="text/javascript" src="/dist/bundle.72a7c38dfd894b5cdc04.js"></script>
  </body>
</html>
```

Long-term caching

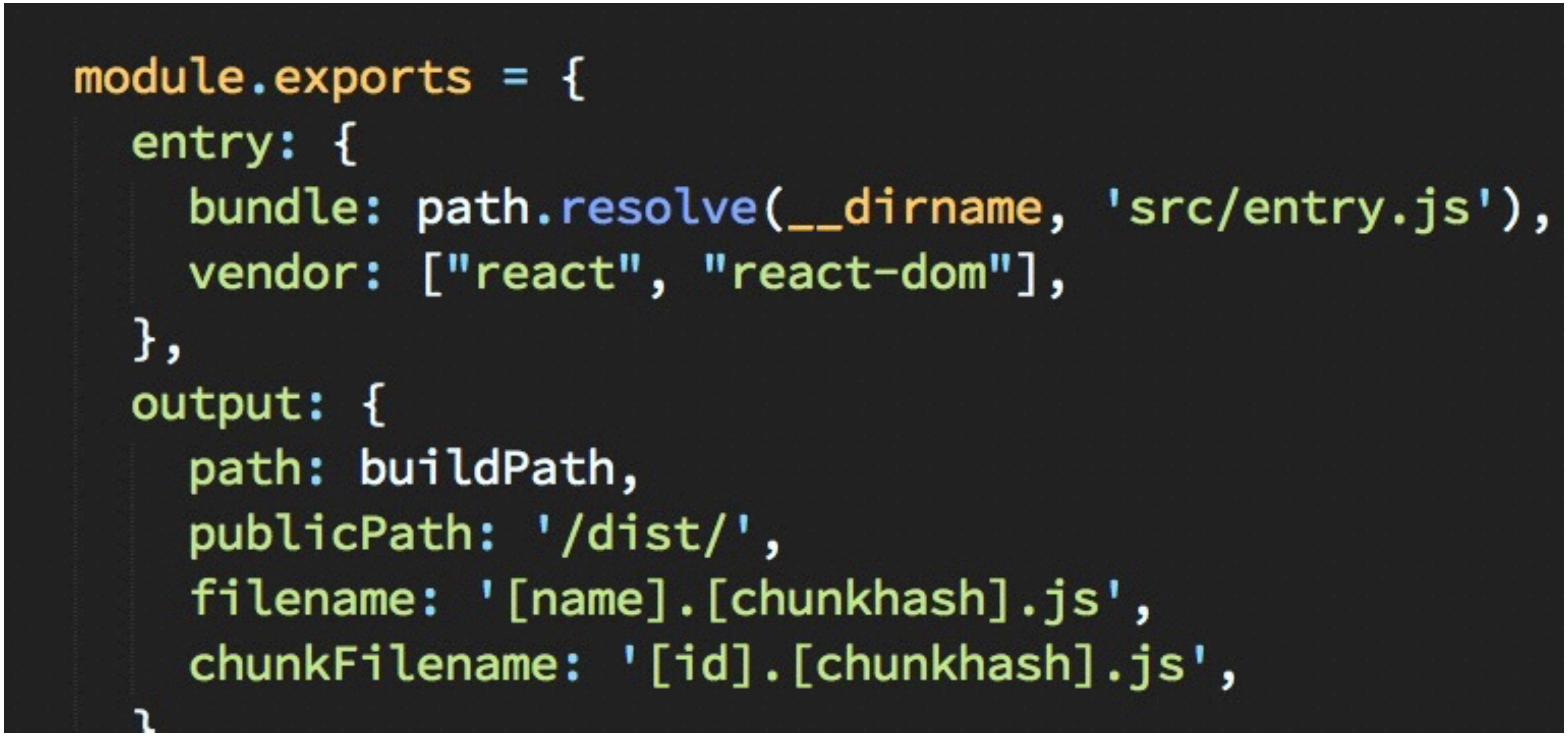
before



```
module.exports = {
  entry: {
    bundle: path.resolve(__dirname, 'src/entry.js'),
    vendor: ["react", "react-dom"],
  },
  output: {
    path: buildPath,
    publicPath: '/dist/',
    filename: '[name].js',
    chunkFilename: '[name].js',
  },
```

Long-term caching

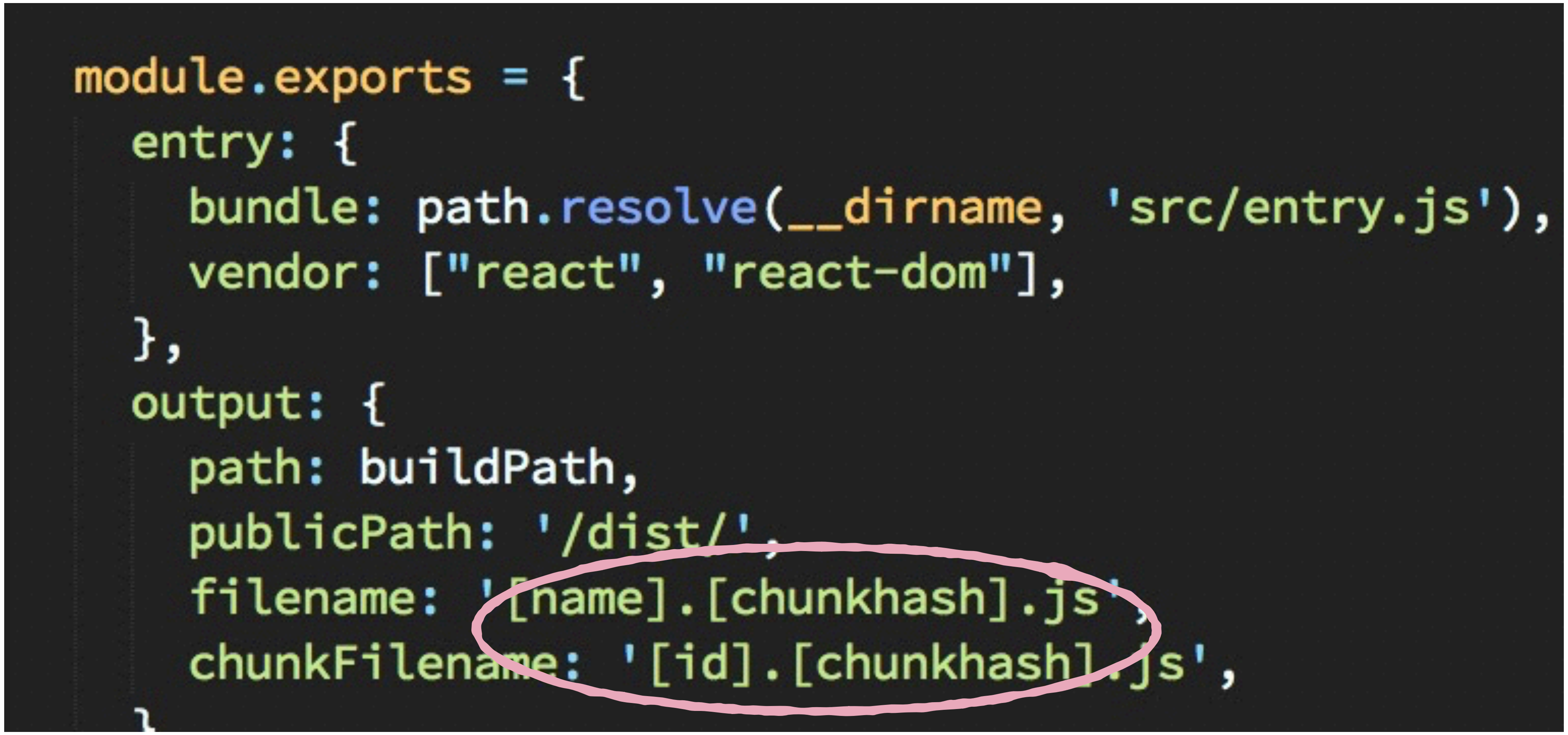
after



```
module.exports = {
  entry: {
    bundle: path.resolve(__dirname, 'src/entry.js'),
    vendor: ["react", "react-dom"],
  },
  output: {
    path: buildPath,
    publicPath: '/dist/',
    filename: '[name].[chunkhash].js',
    chunkFilename: '[id].[chunkhash].js',
  }
```

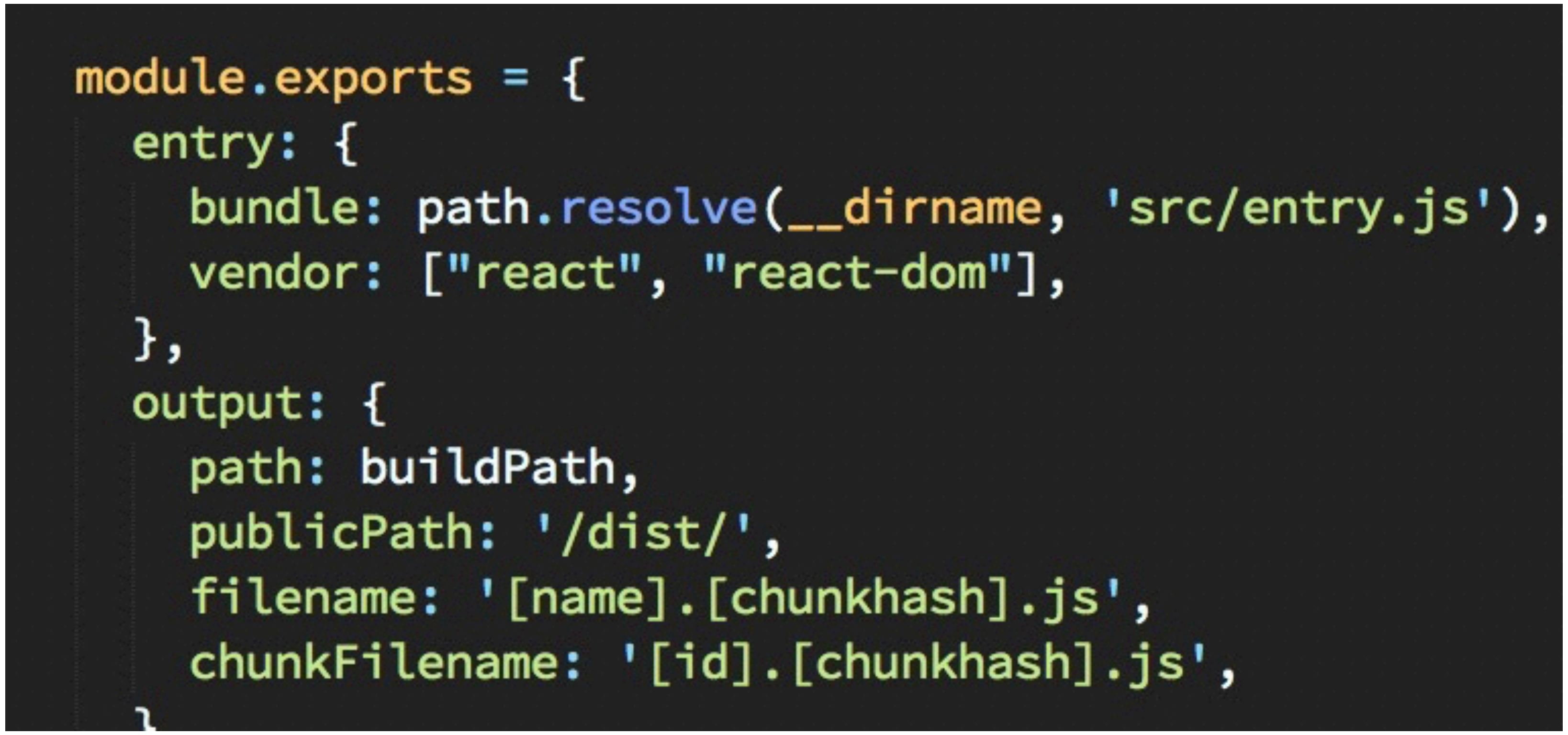
Long-term caching

after

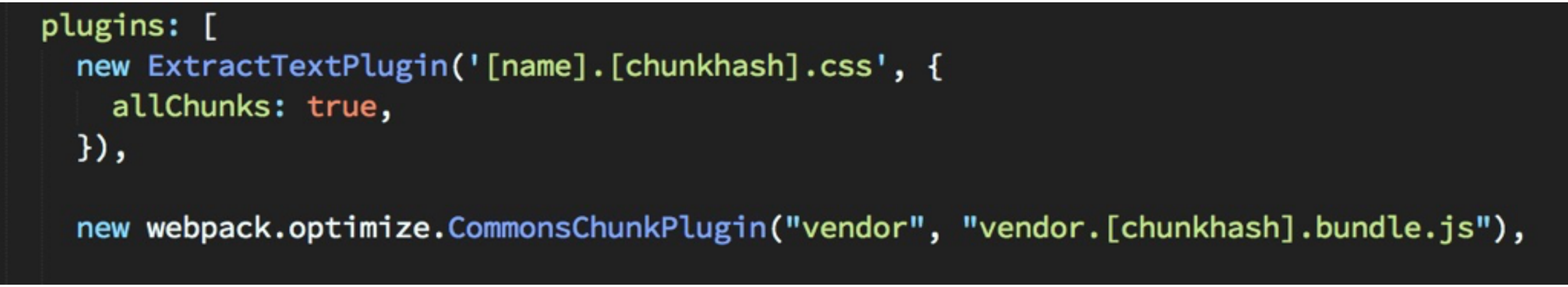


```
module.exports = {
  entry: {
    bundle: path.resolve(__dirname, 'src/entry.js'),
    vendor: ["react", "react-dom"],
  },
  output: {
    path: buildPath,
    publicPath: '/dist/',
    filename: '[name].[chunkhash].js',
    chunkFilename: '[id].[chunkhash].js',
  }
```

Long-term caching

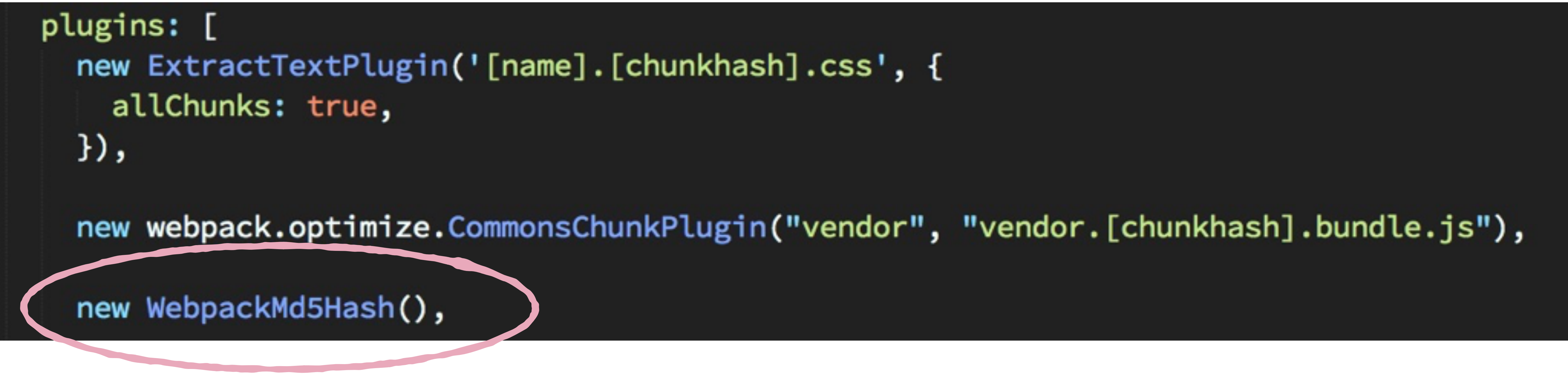


```
module.exports = {
  entry: {
    bundle: path.resolve(__dirname, 'src/entry.js'),
    vendor: ["react", "react-dom"],
  },
  output: {
    path: buildPath,
    publicPath: '/dist/',
    filename: '[name].[chunkhash].js',
    chunkFilename: '[id].[chunkhash].js',
  }
```



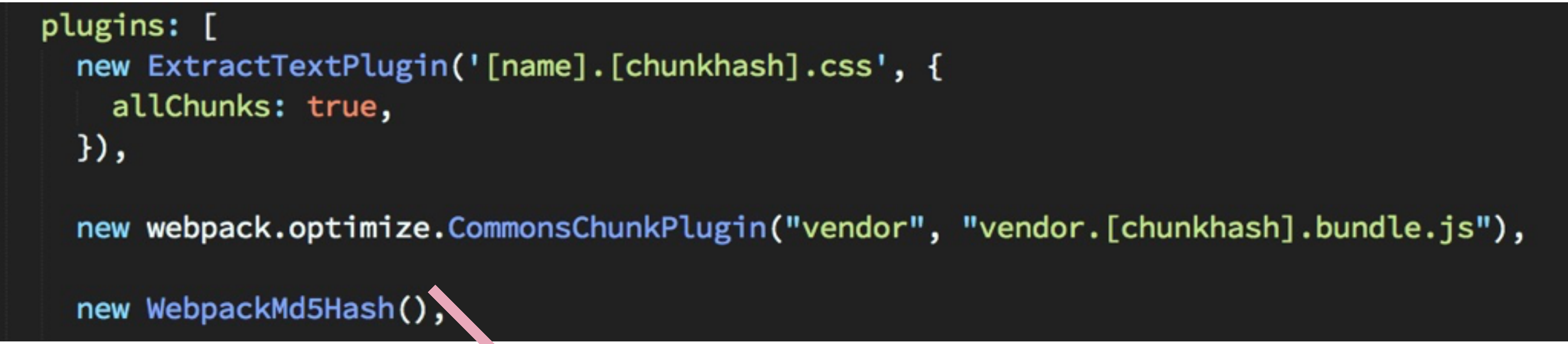
```
plugins: [
  new ExtractTextPlugin('[name].[chunkhash].css', {
    allChunks: true,
  }),

  new webpack.optimize.CommonsChunkPlugin("vendor", "vendor.[chunkhash].bundle.js"),
```

Long-term caching

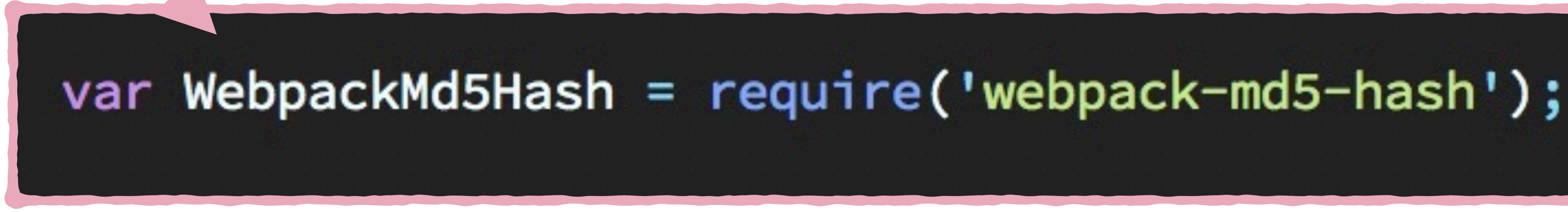


```
plugins: [
  new ExtractTextPlugin('[name].[chunkhash].css', {
    allChunks: true,
  }),

  new webpack.optimize.CommonsChunkPlugin("vendor", "vendor.[chunkhash].bundle.js"),

  new WebpackMd5Hash(),
```

Long-term caching

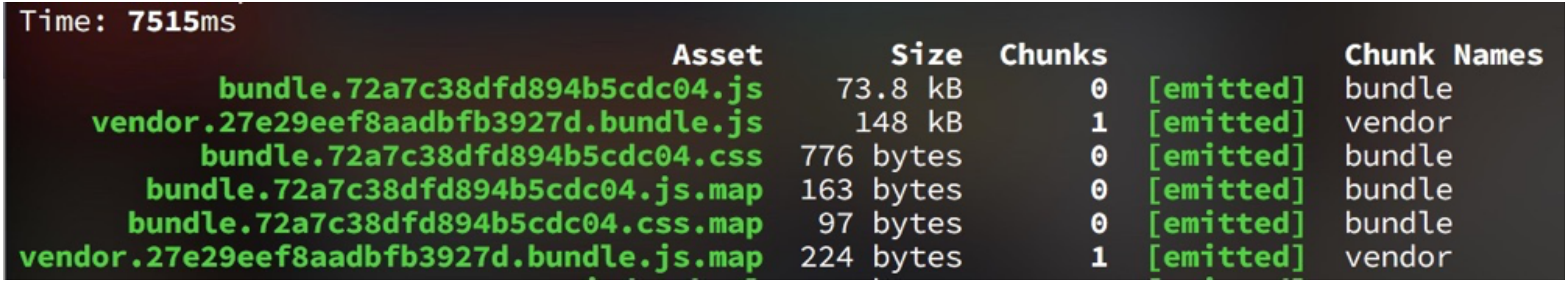


```
plugins: [
  new ExtractTextPlugin('[name].[chunkhash].css', {
    allChunks: true,
  }),

  new webpack.optimize.CommonsChunkPlugin("vendor", "vendor.[chunkhash].bundle.js"),

  new WebpackMd5Hash(),
```



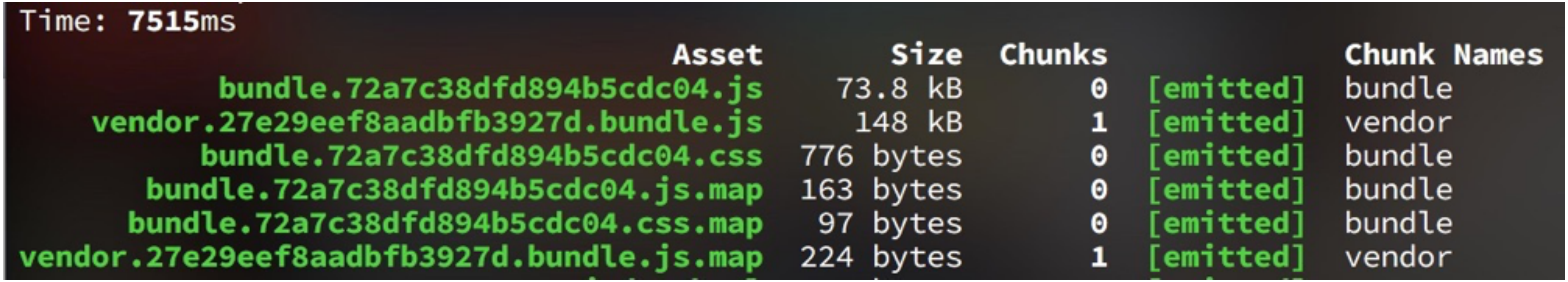
```
var WebpackMd5Hash = require('webpack-md5-hash');
```

Long-term caching

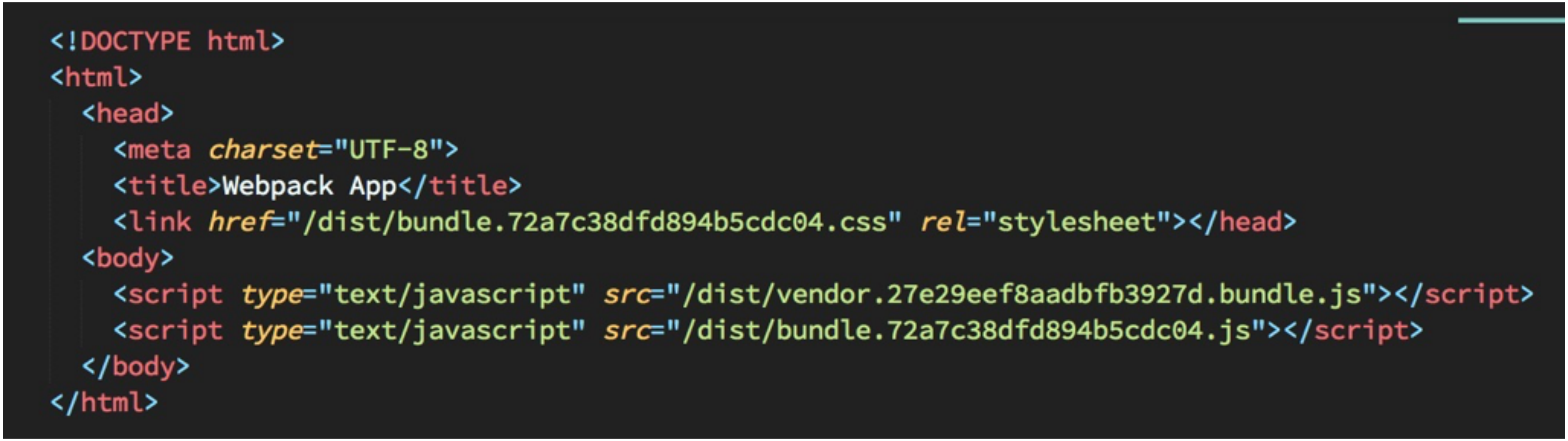


```
Time: 7515ms
                                 Asset       Size  Chunks             Chunk Names
         bundle.72a7c38dfd894b5cdc04.js    73.8 kB       0  [emitted]  bundle
  vendor.27e29eef8aadbfb3927d.bundle.js     148 kB       1  [emitted]  vendor
        bundle.72a7c38dfd894b5cdc04.css  776 bytes       0  [emitted]  bundle
     bundle.72a7c38dfd894b5cdc04.js.map  163 bytes       0  [emitted]  bundle
    bundle.72a7c38dfd894b5cdc04.css.map   97 bytes       0  [emitted]  bundle
vendor.27e29eef8aadbfb3927d.bundle.js.map  224 bytes       1  [emitted]  vendor
```

Long-term caching

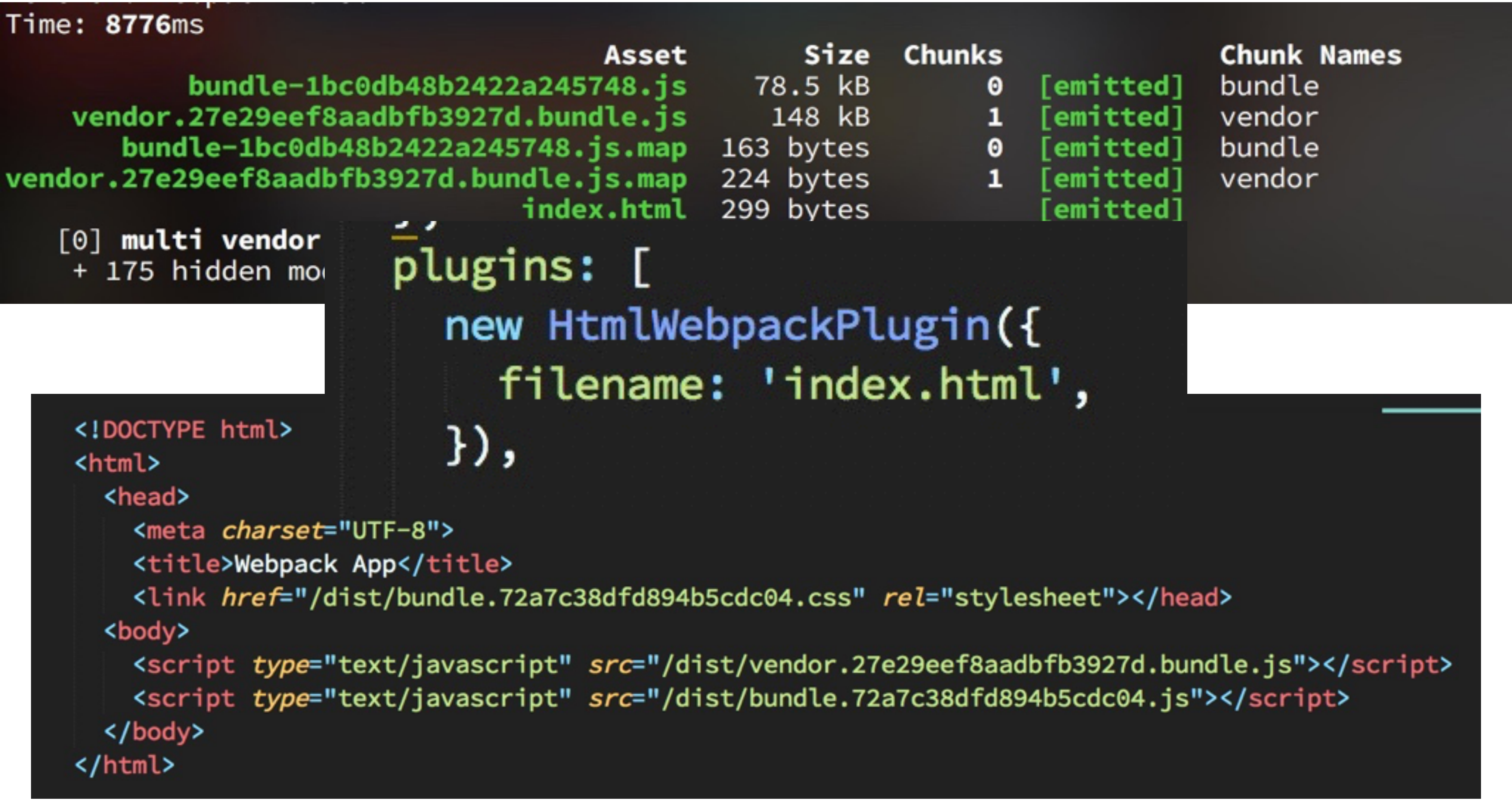


```
Time: 7515ms
                                 Asset       Size  Chunks                    Chunk Names
          bundle.72a7c38dfd894b5cdc04.js    73.8 kB       0  [emitted]         bundle
   vendor.27e29eef8aadbfb3927d.bundle.js     148 kB       1  [emitted]         vendor
         bundle.72a7c38dfd894b5cdc04.css  776 bytes       0  [emitted]         bundle
      bundle.72a7c38dfd894b5cdc04.js.map  163 bytes       0  [emitted]         bundle
     bundle.72a7c38dfd894b5cdc04.css.map   97 bytes       0  [emitted]         bundle
vendor.27e29eef8aadbfb3927d.bundle.js.map  224 bytes       1  [emitted]         vendor
```



```html
<!DOCTYPE html>
<html>
  <head>
    <meta charset="UTF-8">
    <title>Webpack App</title>
    <link href="/dist/bundle.72a7c38dfd894b5cdc04.css" rel="stylesheet"></head>
  <body>
    <script type="text/javascript" src="/dist/vendor.27e29eef8aadbfb3927d.bundle.js"></script>
    <script type="text/javascript" src="/dist/bundle.72a7c38dfd894b5cdc04.js"></script>
  </body>
</html>
```

Long-term caching

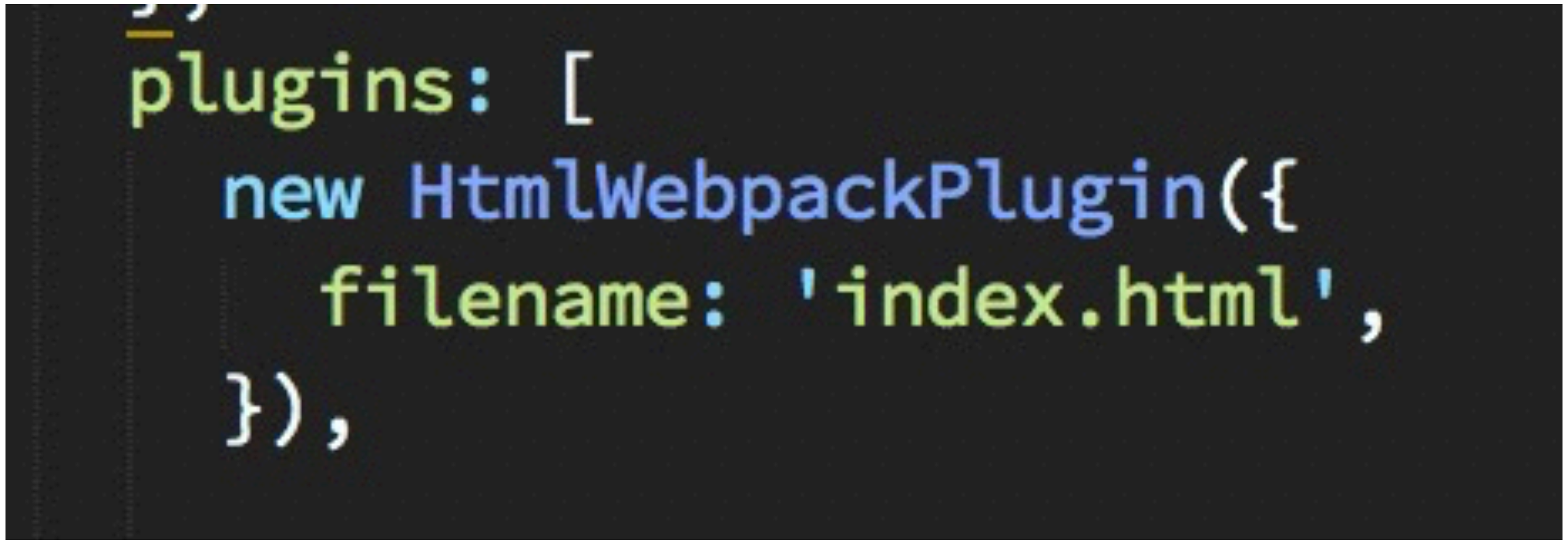


```
Time: 8776ms
                                    Asset       Size  Chunks             Chunk Names
           bundle-1bc0db48b2422a245748.js    78.5 kB       0  [emitted]  bundle
    vendor.27e29eef8aadbfb3927d.bundle.js     148 kB       1  [emitted]  vendor
       bundle-1bc0db48b2422a245748.js.map  163 bytes       0  [emitted]  bundle
vendor.27e29eef8aadbfb3927d.bundle.js.map  224 bytes       1  [emitted]  vendor
                               index.html  299 bytes          [emitted]
   [0] multi vendor
    + 175 hidden mo
```

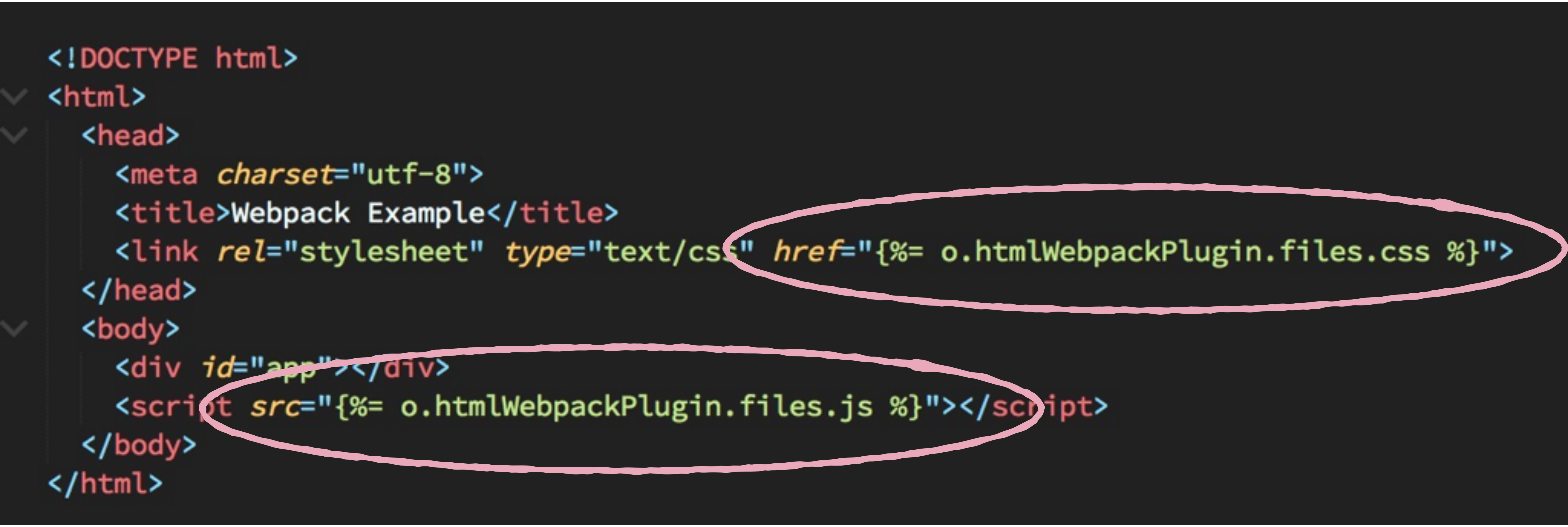
```
plugins: [
  new HtmlWebpackPlugin({
    filename: 'index.html',
  }),
```

```html
<!DOCTYPE html>
<html>
  <head>
    <meta charset="UTF-8">
    <title>Webpack App</title>
    <link href="/dist/bundle.72a7c38dfd894b5cdc04.css" rel="stylesheet"></head>
  <body>
    <script type="text/javascript" src="/dist/vendor.27e29eef8aadbfb3927d.bundle.js"></script>
    <script type="text/javascript" src="/dist/bundle.72a7c38dfd894b5cdc04.js"></script>
  </body>
</html>
```

Long-term caching

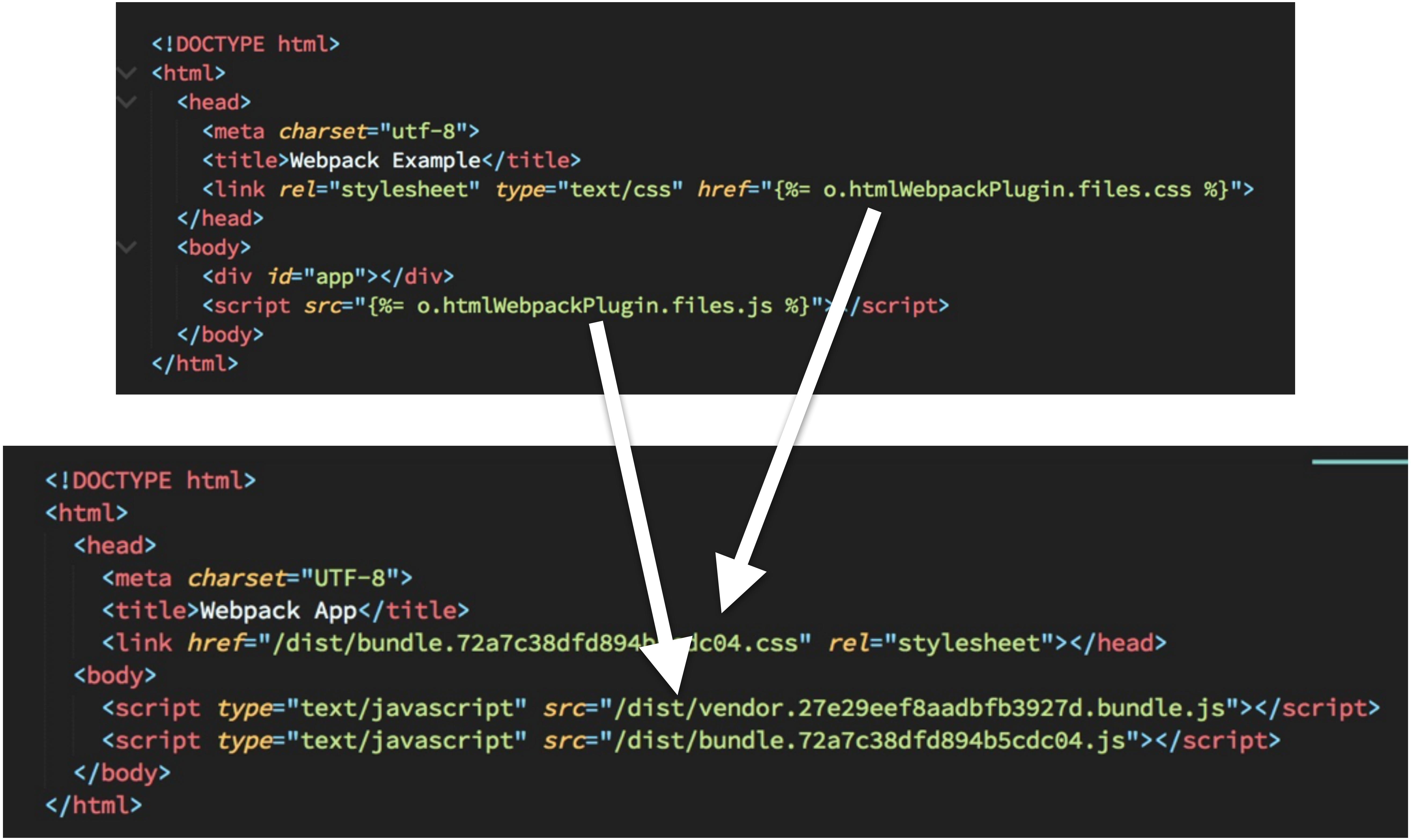


```
plugins: [
  new HtmlWebpackPlugin({
    filename: 'index.html',
  }),
```



```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8">
    <title>Webpack Example</title>
    <link rel="stylesheet" type="text/css" href="{%= o.htmlWebpackPlugin.files.css %}">
  </head>
  <body>
    <div id="app"></div>
    <script src="{%= o.htmlWebpackPlugin.files.js %}"></script>
  </body>
</html>
```

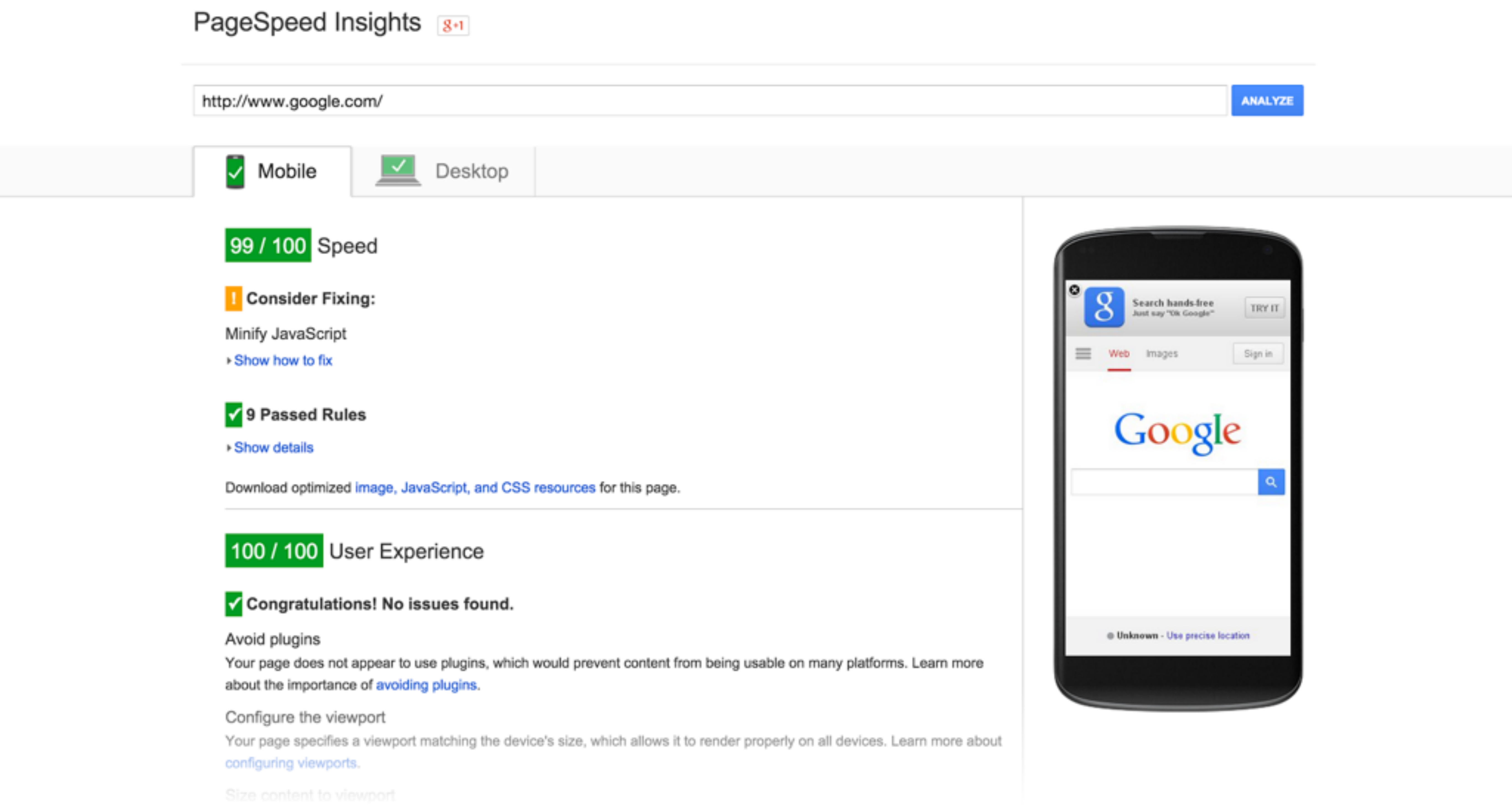
Long-term caching



```html
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8">
    <title>Webpack Example</title>
    <link rel="stylesheet" type="text/css" href="{%= o.htmlWebpackPlugin.files.css %}">
  </head>
  <body>
    <div id="app"></div>
    <script src="{%= o.htmlWebpackPlugin.files.js %}"></script>
  </body>
</html>
```

```html
<!DOCTYPE html>
<html>
  <head>
    <meta charset="UTF-8">
    <title>Webpack App</title>
    <link href="/dist/bundle.72a7c38dfd894b5cdc04.css" rel="stylesheet"></head>
  <body>
    <script type="text/javascript" src="/dist/vendor.27e29eef8aadbfb3927d.bundle.js"></script>
    <script type="text/javascript" src="/dist/bundle.72a7c38dfd894b5cdc04.js"></script>
  </body>
</html>
```

Google Can Help



99 / 100 Speed

! **Consider Fixing:**

Minify JavaScript

‣ Show how to fix

✓ **9 Passed Rules**

‣ Show details

Download optimized image, JavaScript, and CSS resources for this page.

100 / 100 User Experience

✓ **Congratulations! No issues found.**

Avoid plugins

Your page does not appear to use plugins, which would prevent content from being usable on many platforms. Learn more about the importance of avoiding plugins.

Configure the viewport

Your page specifies a viewport matching the device's size, which allows it to render properly on all devices. Learn more about configuring viewports.

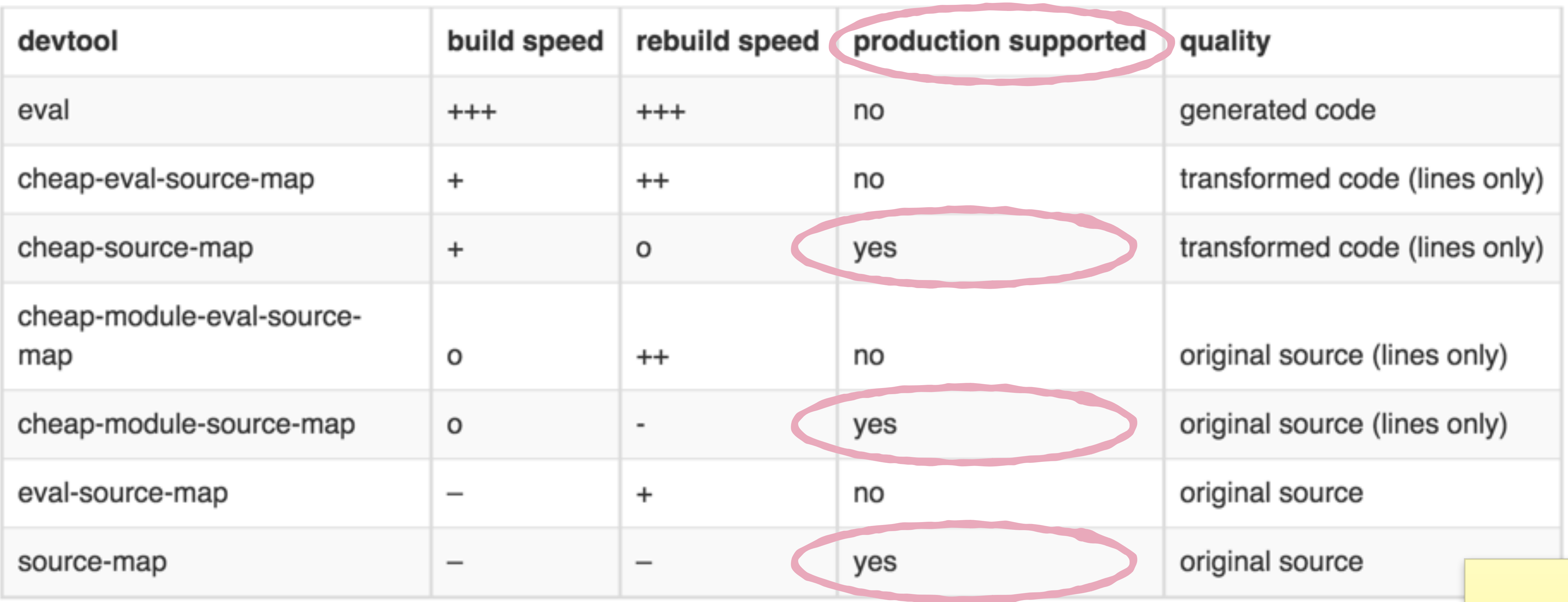
Size content to viewport

https://developers.google.com/speed/pagespeed/

7.5

Debugging

Sourcemap ?

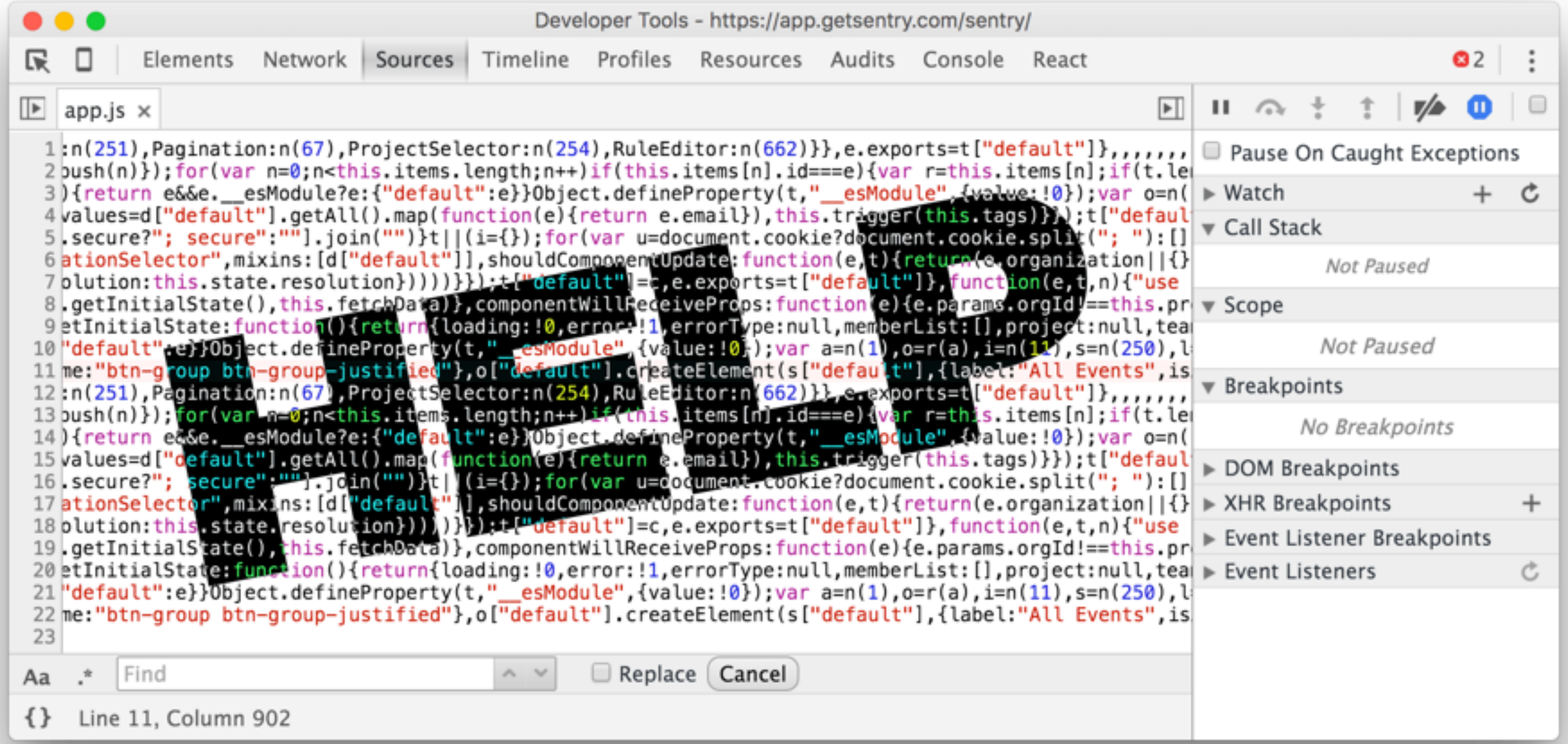


devtool	build speed	rebuild speed	production supported	quality
eval	+++	+++	no	generated code
cheap-eval-source-map	+	++	no	transformed code (lines only)
cheap-source-map	+	o	yes	transformed code (lines only)
cheap-module-eval-source-map	o	++	no	original source (lines only)
cheap-module-source-map	o	-	yes	original source (lines only)
eval-source-map	–	+	no	original source
source-map	–	–	yes	original source

http://cheng.logdo
2016/03/25/67904

tldr;
“cheap-module-source-map”

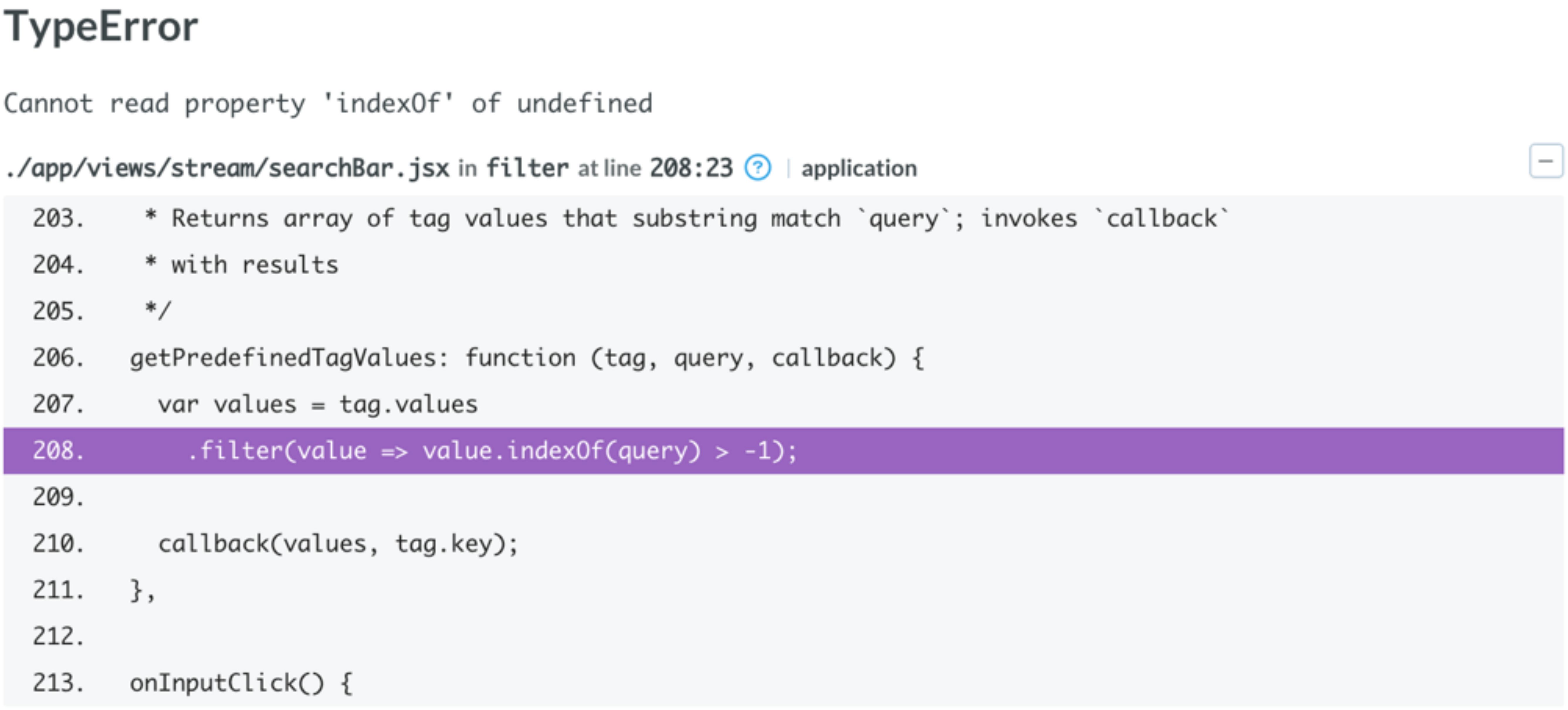
Private Sourcemap



```
:n(251),Pagination:n(67),ProjectSelector:n(254),RuleEditor:n(662)}},e.exports=t["default"]},,,,,,,
push(n)});for(var n=0;n<this.items.length;n++)if(this.items[n].id===e){var r=this.items[n];if(t.le
){return e&&e.__esModule?e:{"default":e}}Object.defineProperty(t,"__esModule",{value:!0});var o=n(
values=d["default"].getAll().map(function(e){return e.email}),this.trigger(this.tags)}});t["defaul
.secure?"; secure":""].join("")}t||(i={});for(var u=document.cookie?document.cookie.split("; "):[]
ationSelector",mixins:[d["default"]],shouldComponentUpdate:function(e,t){return(e.organization||{}
olution:this.state.resolution}))))}});t["default"]=c,e.exports=t["default"]},function(e,t,n){"use
.getInitialState(),this.fetchData)},componentWillReceiveProps:function(e){e.params.orgId!==this.pr
etInitialState:function(){return{loading:!0,error:!1,errorType:null,memberList:[],project:null,tea
"default":e}}Object.defineProperty(t,"__esModule",{value:!0});var a=n(1),o=r(a),i=n(11),s=n(250),l
me:"btn-group btn-group-justified"},o["default"].createElement(s["default"],{label:"All Events",is
:n(251),Pagination:n(67),ProjectSelector:n(254),RuleEditor:n(662)}},e.exports=t["default"]},,,,,,,
push(n)});for(var n=0;n<this.items.length;n++)if(this.items[n].id===e){var r=this.items[n];if(t.le
){return e&&e.__esModule?e:{"default":e}}Object.defineProperty(t,"__esModule",{value:!0});var o=n(
values=d["default"].getAll().map(function(e){return e.email}),this.trigger(this.tags)}});t["defaul
.secure?"; secure":""].join("")}t||(i={});for(var u=document.cookie?document.cookie.split("; "):[]
ationSelector",mixins:[d["default"]],shouldComponentUpdate:function(e,t){return(e.organization||{}
olution:this.state.resolution}))))}});t["default"]=c,e.exports=t["default"]},function(e,t,n){"use
.getInitialState(),this.fetchData)},componentWillReceiveProps:function(e){e.params.orgId!==this.pr
etInitialState:function(){return{loading:!0,error:!1,errorType:null,memberList:[],project:null,tea
"default":e}}Object.defineProperty(t,"__esModule",{value:!0});var a=n(1),o=r(a),i=n(11),s=n(250),l
me:"btn-group btn-group-justified"},o["default"].createElement(s["default"],{label:"All Events",is
```

Sentry and offline Source Maps

https://getsentry.com



TypeError

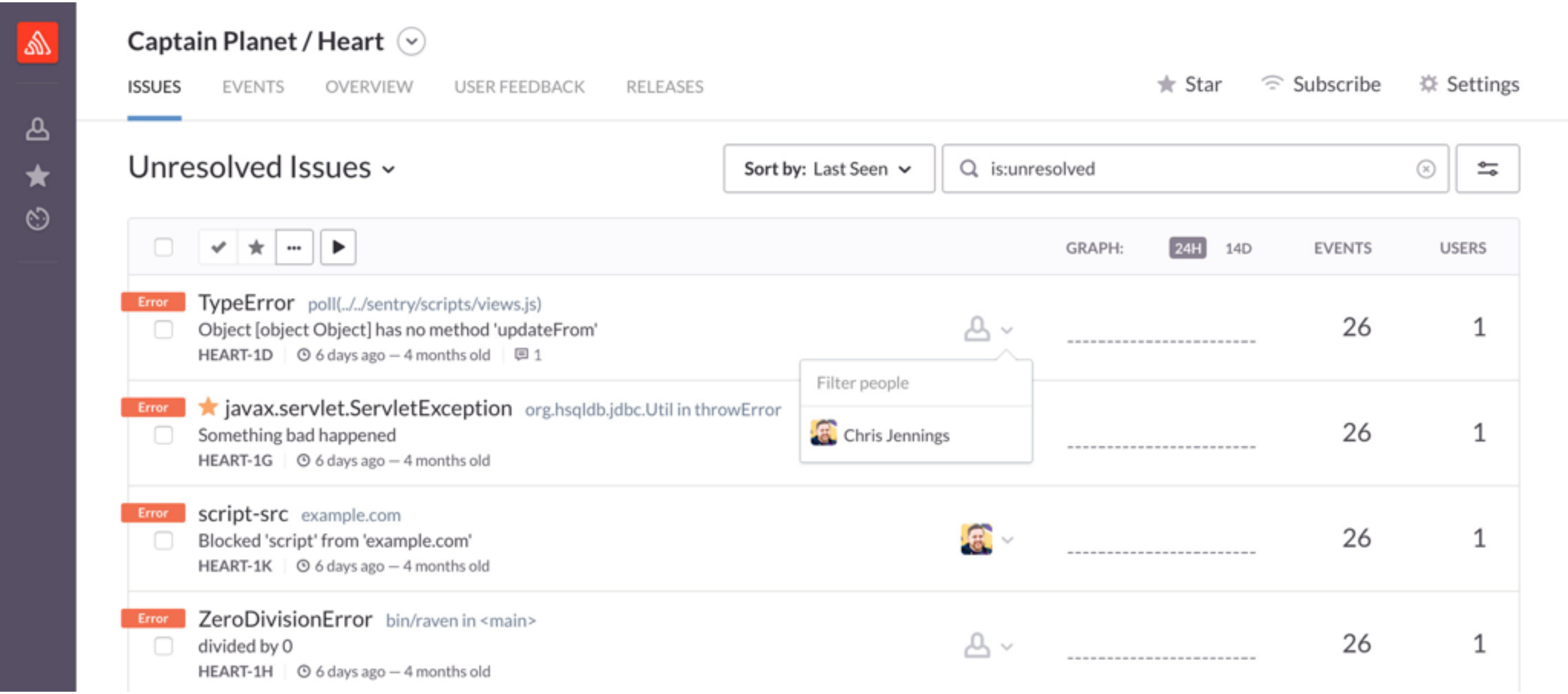
Cannot read property 'indexOf' of undefined

./app/views/stream/searchBar.jsx in filter at line 208:23 ? | application

```
203.     * Returns array of tag values that substring match `query`; invokes `callback`
204.     * with results
205.     */
206.   getPredefinedTagValues: function (tag, query, callback) {
207.     var values = tag.values
208.       .filter(value => value.indexOf(query) > -1);
209.
210.     callback(values, tag.key);
211.   },
212.
213.   onInputClick() {
```

Sentry

https://getsentry.com



Captain Planet / Heart

Unresolved Issues

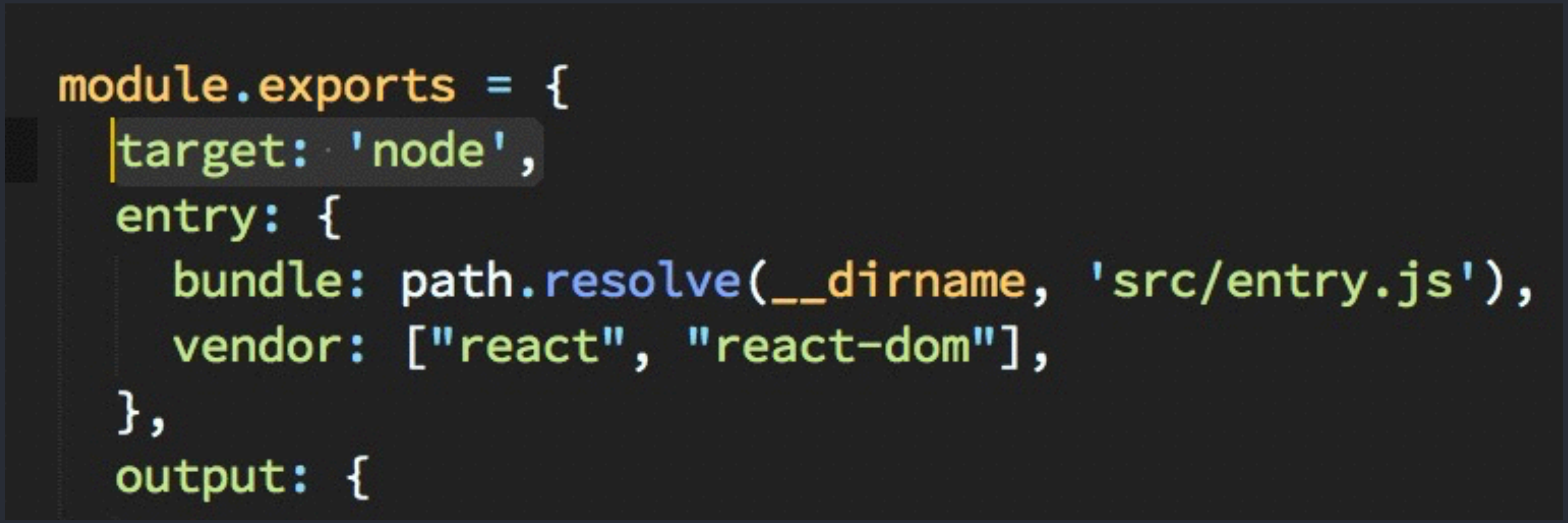
Sort by: Last Seen

is:unresolved

	GRAPH: 24H 14D	EVENTS	USERS
Error TypeError poll(../../sentry/scripts/views.js) Object [object Object] has no method 'updateFrom' HEART-1D 6 days ago — 4 months old 1		26	1
Error ★ javax.servlet.ServletException org.hsqldb.jdbc.Util in throwError Something bad happened HEART-1G 6 days ago — 4 months old		26	1
Error script-src example.com Blocked 'script' from 'example.com' HEART-1K 6 days ago — 4 months old		26	1
Error ZeroDivisionError bin/raven in <main> divided by 0 HEART-1H 6 days ago — 4 months old		26	1

Serverside Webpack

for Isomorphic



```
module.exports = {
  target: 'node',
  entry: {
    bundle: path.resolve(__dirname, 'src/entry.js'),
    vendor: ["react", "react-dom"],
  },
  output: {
```

Production Best Practice

Optimize Bundle Size (1)

- Separate Development & Production config
- Uglify & Dedupe Plugin
- Choose proper devtool the support prod
- Limit on URL Loader
- Emulate NODE_ENV

Production Best Practice

Optimize Bundle Size (2)

- Split code, Async load using “require.ensure”
- Split Vendor & CSS with CommonChunk
- Use direct import (ex. `lodash/merge`)
- Visualize bundle with Webpack Analyse Tool

Production Best Practice

Optimize Build Time

- Progress Plugin
- Webpack Analyse Tool to identify long build chain
- Define Prefetch point

Production Best Practice

Optimize Browser Performance

- Long-Term Caching
- Google Page Speed

Debugging

- Private Sourcemap with Sentry

ReactJS Bangkok 1.0.0

Chern

CTO at NextCover

Ⓜ @ranatchai

f fb.com/12chg0d

Turbo

Developer at Omise

🐦 @turboza

f fb.com/turboza