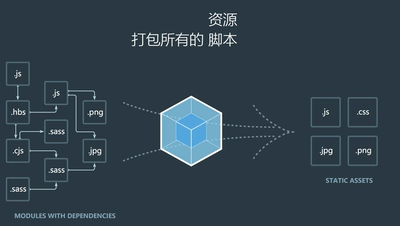
## **1. webpack介绍**

* Webpack是一个前端资源加载/打包工具。它将根据模块的依赖关系进行静态分析，然后将这些模块按照指定的规则生成对应的静态资源。



## **2. 预备知识**

### **2.1 toStringTag**

* Symbol.toStringTag 是一个内置 symbol，它通常作为对象的属性键使用，对应的属性值应该为字符串类型，这个字符串用来表示该对象的自定义类型标签，通常只有内置的 Object.prototype.toString() 方法会去读取这个标签并把它包含在自己的返回值里。

console.log(Object.prototype.toString.call('foo')); // "[object String]"console.log(Object.prototype.toString.call([1, 2])); // "[object Array]"console.log(Object.prototype.toString.call(3)); // "[object Number]"console.log(Object.prototype.toString.call(true)); // "[object Boolean]"console.log(Object.prototype.toString.call(undefined)); // "[object Undefined]"console.log(Object.prototype.toString.call(null)); // "[object Null]"**let** myExports={};Object.defineProperty(myExports, Symbol.toStringTag, { value: 'Module' });console.log(Object.prototype.toString.call(myExports));

### **2.2 Object.create(null)**

* 使用create创建的对象，没有任何属性,把它当作一个非常纯净的map来使用，我们可以自己定义hasOwnProperty、toString方法,完全不必担心会将原型链上的同名方法覆盖掉
* 在我们使用for..in循环的时候会遍历对象原型链上的属性，使用create(null)就不必再对属性进行检查了

**var** ns = Object.create(null);**if** (**typeof** Object.create !== "function") {

Object.create = **function** (proto) {

**function** **F**() {}

F.prototype = proto;

**return** **new** F();

};

}console.log(ns)console.log(Object.getPrototypeOf(ns));

### **2.3 getter**

* [defineProperty](https://developer.mozilla.org/zh-CN/docs/Web/JavaScript/Reference/Global_Objects/Object/defineProperty) 方法会直接在一个对象上定义一个新属性，或者修改一个对象的现有属性， 并返回这个对象。
  + obj 要在其上定义属性的对象。
  + prop 要定义或修改的属性的名称。
  + descriptor 将被定义或修改的属性描述符。

### **2.3.1 描述符可同时具有的键值**

|  | **configurable** | **enumerable** | **value** | **writable** | **get** | **set** |
| --- | --- | --- | --- | --- | --- | --- |
| 数据描述符 | Yes | Yes | Yes | Yes | No | No |
| 存取描述符 | Yes | Yes No | No | Yes | Yes |  |

### **2.3.2 示例**

**var** ageValue;Object.defineProperty(obj, "age", {

value : 10,//数据描述符和存取描述符不能混合使用

**get**(){

**return** ageValue;

},

**set**(newValue){

ageValue = newValue;

}

writable : true,//是否可修改

enumerable : true,//是否可枚举

configurable : true//是否可配置可删除

});

## **2. 同步加载**

cnpm i webpack webpack-cli html-webpack-plugin clean-webpack-plugin -D

### **2.1 webpack.config.js**

**const** path = require('path');**const** HtmlWebpackPlugin = require('html-webpack-plugin');**const** { CleanWebpackPlugin } = require('clean-webpack-plugin');module.exports = {

mode: 'development',

devtool: 'none',

entry: './src/index.js',

output: {

path: path.resolve(\_\_dirname, 'dist'),

filename: 'bundle.js'

},

module: {},

plugins: [

**new** CleanWebpackPlugin({ cleanOnceBeforeBuildPatterns: ['\*\*/\*'] }),

**new** HtmlWebpackPlugin({

template: './src/index.html',

filename: 'index.html'

})],

devServer: {}

}

### **2.2 index.js**

src\index.js

**let** title = require('./title.js');console.log(title);

### **2.3 title.js**

src\title.js

module.exports = "title";

### **2.4 打包文件分析**

(**function**(modules) {

// webpack的启动函数

//模块的缓存

**var** installedModules = {};

//定义在浏览器中使用的require方法

**function** **\_\_webpack\_require\_\_**(moduleId) {

//检查模块是否在缓存中

**if** (installedModules[moduleId]) {

**return** installedModules[moduleId].exports;

}

//创建一个新的模块并且放到模块的缓存中

**var** module = (installedModules[moduleId] = {

i: moduleId,

l: false,

exports: {}

});

//执行模块函数

modules[moduleId].call(

module.exports,

module,

module.exports,

\_\_webpack\_require\_\_

);

//把模块设置为已经加载

module.l = true;

//返回模块的导出对象

**return** module.exports;

}

//暴露出模块对象

\_\_webpack\_require\_\_.m = modules;

//暴露出模块缓存

\_\_webpack\_require\_\_.c = installedModules;

//为harmony导出定义getter函数

\_\_webpack\_require\_\_.d = **function**(exports, name, getter) {

**if** (!\_\_webpack\_require\_\_.o(exports, name)) {

Object.defineProperty(exports, name, { enumerable: true, get: getter });

}

};

//在导出对象上定义\_\_esModule属性

\_\_webpack\_require\_\_.r = **function**(exports) {

**if** (**typeof** Symbol !== "undefined" && Symbol.toStringTag) {

Object.defineProperty(exports, Symbol.toStringTag, { value: "Module" });

}

Object.defineProperty(exports, "\_\_esModule", { value: true });

};

/\*\*

\* 创建一个模拟的命名空间对象

\* mode & 1 value是模块ID直接用\_\_webpack\_require\_\_加载

\* mode & 2 把所有的属性合并到命名空间ns上

\* mode & 4 当已经是命名空间的时候(\_\_esModule=true)可以直接返回值

\* mode & 8|1 行为类似于require

\*/

\_\_webpack\_require\_\_.t = **function**(value, mode) {

**if** (mode & 1) value = \_\_webpack\_require\_\_(value);

**if** (mode & 8) **return** value;

**if** (mode & 4 && **typeof** value === "object" && value && value.\_\_esModule)

**return** value;

**var** ns = Object.create(null); //定义一个空对象

\_\_webpack\_require\_\_.r(ns);

Object.defineProperty(ns, "default", { enumerable: true, value: value });

**if** (mode & 2 && **typeof** value != "string")

**for** (**var** key **in** value)

\_\_webpack\_require\_\_.d(

ns,

key,

**function**(key) {

**return** value[key];

}.bind(null, key)

);

**return** ns;

};

// getDefaultExport函数为了兼容那些非non-harmony模块

\_\_webpack\_require\_\_.n = **function**(module) {

**var** getter =

module && module.\_\_esModule

? **function** **getDefault**() {

**return** module["default"];

}

: **function** **getModuleExports**() {

**return** module;

};

\_\_webpack\_require\_\_.d(getter, "a", getter);

**return** getter;

};

//判断对象身上是否拥有此属性

\_\_webpack\_require\_\_.o = **function**(object, property) {

**return** Object.prototype.hasOwnProperty.call(object, property);

};

//公共路径

\_\_webpack\_require\_\_.p = "";

//加载入口模块并且返回导出对象

**return** \_\_webpack\_require\_\_((\_\_webpack\_require\_\_.s = "./src/index.js"));

})({

"./src/index.js": **function**(module, exports, \_\_webpack\_require\_\_) {

**var** title = \_\_webpack\_require\_\_("./src/title.js");

console.log(title);

},

"./src/title.js": **function**(module, exports) {

module.exports = "title";

}

});

### **2.5 实现**

(**function**(modules){

**var** installedModules = {};

**function** **\_\_webpack\_require\_\_**(moduleId){

**if**(installedModules[moduleId]){

**return** installedModules[moduleId];

}

**var** module = installedModules[moduleId] = {

i:moduleId,

l:false,

exports:{}

}

modules[moduleId].call(modules.exports,module,module.exports,\_\_webpack\_require\_\_);

module.l = true;

**return** module.exports;

}

**return** \_\_webpack\_require\_\_((\_\_webpack\_require\_\_.s = "./src/index.js"));

})({

"./src/index.js":**function**(module,exports,\_\_webpack\_require\_\_){

**var** title = \_\_webpack\_require\_\_('./src/title.js');

console.log(title);

},

"./src/title.js":**function**(module,exports){

module.exports = "title";

}

})

## **3. harmony**

### **3.1 common.js加载 common.js**

#### **3.1.1 index.js**

**let** title = require('./title');console.log(title.name);console.log(title.age);

#### **3.1.2 title.js**

exports.name = 'title\_name';

exports.age = 'title\_age';

#### **3.1.3 bundle.js**

{"./src/index.js":

(**function**(module, exports, \_\_webpack\_require\_\_) {

**var** title = \_\_webpack\_require\_\_("./src/title.js");

console.log(title.name);

console.log(title.age);

}),"./src/title.js":

(**function**(module, exports) {

exports.name = 'title\_name';

exports.age = 'title\_age';

})

}

### **3.2 common.js加载 ES6 modules**

#### **3.2.1 index.js**

**let** title = require('./title');console.log(title.name);console.log(title.age);

#### **3.2.2 title.js**

exports.name = 'title\_name';

exports.age = 'title\_age';

#### **3.2.3 bundle.js**

{

"./src/index.js":

(**function**(module, exports, \_\_webpack\_require\_\_) {

**var** title = \_\_webpack\_require\_\_("./src/title.js");

console.log(title["default"]);

console.log(title.age);

}),

"./src/title.js":

(**function**(module, \_\_webpack\_exports\_\_, \_\_webpack\_require\_\_) {

\_\_webpack\_require\_\_.r(\_\_webpack\_exports\_\_);//\_\_esModule=true

\_\_webpack\_require\_\_.d(\_\_webpack\_exports\_\_, "age", **function**() { **return** age; });

\_\_webpack\_exports\_\_["default"] = 'title\_name';

**var** age = 'title\_age';

})

}

### **3.3 ES6 modules 加载 ES6 modules**

#### **3.3.1 index.js**

**import** name,{age} **from** './title';console.log(name);console.log(age);

#### **3.3.2 title.js**

**export** **default** name = 'title\_name';**export** **const** age = 'title\_age';

#### **3.3.3 bundle.js**

{

"./src/index.js":

(**function**(module, \_\_webpack\_exports\_\_, \_\_webpack\_require\_\_) {

\_\_webpack\_require\_\_.r(\_\_webpack\_exports\_\_);//\_\_esModule=true

**var** \_title\_\_WEBPACK\_IMPORTED\_MODULE\_0\_\_ = \_\_webpack\_require\_\_("./src/title.js");

console.log(\_title\_\_WEBPACK\_IMPORTED\_MODULE\_0\_\_["default"]);

console.log(\_title\_\_WEBPACK\_IMPORTED\_MODULE\_0\_\_["age"]);

}),

"./src/title.js":

(**function**(module, \_\_webpack\_exports\_\_, \_\_webpack\_require\_\_) {

\_\_webpack\_require\_\_.r(\_\_webpack\_exports\_\_);//\_\_esModule=true

\_\_webpack\_require\_\_.d(\_\_webpack\_exports\_\_, "age", **function**() { **return** age; });

\_\_webpack\_exports\_\_["default"] = 'title\_name';

**var** age = 'title\_age';

})

}

### **3.4 ES6 modules 加载 common.js**

#### **3.4.1 index.js**

**import** name,{age} **from** './title';console.log(name);console.log(age);

#### **3.4.2 title.js**

**export** **default** name = 'title\_name';**export** **const** age = 'title\_age';

#### **3.4.3 bundle.js**

{"./src/index.js":

(**function**(module, \_\_webpack\_exports\_\_, \_\_webpack\_require\_\_) {

\_\_webpack\_require\_\_.r(\_\_webpack\_exports\_\_);//\_\_esModule=true

/\* 兼容common.js导出 \*/ **var** \_title\_\_WEBPACK\_IMPORTED\_MODULE\_0\_\_ = \_\_webpack\_require\_\_("./src/title.js");

/\* 兼容common.js导出 \*/ **var** \_title\_\_WEBPACK\_IMPORTED\_MODULE\_0\_\_\_default = \_\_webpack\_require\_\_.n(\_title\_\_WEBPACK\_IMPORTED\_MODULE\_0\_\_);

console.log(\_title\_\_WEBPACK\_IMPORTED\_MODULE\_0\_\_\_default.a.name);

console.log(\_title\_\_WEBPACK\_IMPORTED\_MODULE\_0\_\_\_default.a.age);

}),"./src/title.js":

(**function**(module, \_\_webpack\_exports\_\_,\_\_webpack\_require\_\_) {

\_\_webpack\_exports\_\_.name = 'title\_name';

\_\_webpack\_exports\_\_.age = 'title\_age';

}),"./src/title\_esm.js":

(**function**(module, \_\_webpack\_exports\_\_,\_\_webpack\_require\_\_) {

\_\_webpack\_require\_\_.r(\_\_webpack\_exports\_\_);//\_\_esModule=true

\_\_webpack\_exports\_\_.name = 'title\_name';

\_\_webpack\_exports\_\_.age = 'title\_age';

\_\_webpack\_exports\_\_.default = {name:'default\_name',age:'default\_age'};

})

}

## **4.异步加载**

### **4.1 webpack.config.js**

**const** path = require('path');**const** HtmlWebpackPlugin = require('html-webpack-plugin');**const** { CleanWebpackPlugin } = require('clean-webpack-plugin');module.exports = {

mode: 'development',

devtool: 'none',

entry: './src/main.js',

output: {

path: path.resolve(\_\_dirname, 'dist'),

filename: '[name].js'

},

module: {},

plugins: [

**new** CleanWebpackPlugin({ cleanOnceBeforeBuildPatterns: ['\*\*/\*'] }),

**new** HtmlWebpackPlugin({

template: './src/index.html',

filename: 'index.html',

chunks: ['main1']

})],

devServer: {}

}

### **4.3 src\main.js**

**import**(/\* webpackChunkName: "c" \*/'./c').then(c => {

console.log(c)

})

### **4.4 src\c.js**

**export** **default** {

name: 'zhufeng'

}

### **4.5 dist\main.js**

(**function** (modules) {

**function** **webpackJsonpCallback**(data) {

**var** chunkIds = data[0];

**var** moreModules = data[1];

**var** moduleId, chunkId, i = 0, resolves = [];

**for** (; i < chunkIds.length; i++) {

chunkId = chunkIds[i];

**if** (Object.prototype.hasOwnProperty.call(installedChunks, chunkId) && installedChunks[chunkId]) {

resolves.push(installedChunks[chunkId][0]);

}

installedChunks[chunkId] = 0;

}

**for** (moduleId **in** moreModules) {

**if** (Object.prototype.hasOwnProperty.call(moreModules, moduleId)) {

modules[moduleId] = moreModules[moduleId];

}

}

**if** (parentJsonpFunction) parentJsonpFunction(data);

**while** (resolves.length) {

resolves.shift()();

}

};

**var** installedModules = {};

**var** installedChunks = {

"main": 0

};

**function** **jsonpScriptSrc**(chunkId) {

**return** \_\_webpack\_require\_\_.p + "" + ({ "c": "c" }[chunkId] || chunkId) + ".js"

}

**function** **\_\_webpack\_require\_\_**(moduleId) {

**if** (installedModules[moduleId]) {

**return** installedModules[moduleId].exports;

}

**var** module = installedModules[moduleId] = {

i: moduleId,

l: false,

exports: {}

};

modules[moduleId].call(module.exports, module, module.exports, \_\_webpack\_require\_\_);

module.l = true;

**return** module.exports;

}

\_\_webpack\_require\_\_.e = **function** **requireEnsure**(chunkId) {

**var** promises = [];

**var** installedChunkData = installedChunks[chunkId];

**if** (installedChunkData !== 0) {

**if** (installedChunkData) {

promises.push(installedChunkData[2]);

} **else** {

**var** promise = **new** Promise(**function** (resolve, reject) {

installedChunkData = installedChunks[chunkId] = [resolve, reject];

});

promises.push(installedChunkData[2] = promise);

**var** script = document.createElement('script');

**var** onScriptComplete;

script.charset = 'utf-8';

script.timeout = 120;

**if** (\_\_webpack\_require\_\_.nc) {

script.setAttribute("nonce", \_\_webpack\_require\_\_.nc);

}

script.src = jsonpScriptSrc(chunkId);

**var** error = **new** Error();

onScriptComplete = **function** (event) {

script.onerror = script.onload = null;

clearTimeout(timeout);

**var** chunk = installedChunks[chunkId];

**if** (chunk !== 0) {

**if** (chunk) {

**var** errorType = event && (event.type === 'load' ? 'missing' : event.type);

**var** realSrc = event && event.target && event.target.src;

error.message = 'Loading chunk ' + chunkId + ' failed.\n(' + errorType + ': ' + realSrc + ')';

error.name = 'ChunkLoadError';

error.type = errorType;

error.request = realSrc;

chunk[1](error);

}

installedChunks[chunkId] = undefined;

}

};

**var** timeout = setTimeout(**function** () {

onScriptComplete({ type: 'timeout', target: script });

}, 120000);

script.onerror = script.onload = onScriptComplete;

document.head.appendChild(script);

}

}

**return** Promise.all(promises);

};

\_\_webpack\_require\_\_.m = modules;

\_\_webpack\_require\_\_.c = installedModules;

\_\_webpack\_require\_\_.d = **function** (exports, name, getter) {

**if** (!\_\_webpack\_require\_\_.o(exports, name)) {

Object.defineProperty(exports, name, { enumerable: true, get: getter });

}

};

\_\_webpack\_require\_\_.r = **function** (exports) {

**if** (**typeof** Symbol !== 'undefined' && Symbol.toStringTag) {

Object.defineProperty(exports, Symbol.toStringTag, { value: 'Module' });

}

Object.defineProperty(exports, '\_\_esModule', { value: true });

};

\_\_webpack\_require\_\_.t = **function** (value, mode) {

**if** (mode & 1) value = \_\_webpack\_require\_\_(value);

**if** (mode & 8) **return** value;

**if** ((mode & 4) && **typeof** value === 'object' && value && value.\_\_esModule) **return** value;

**var** ns = Object.create(null);

\_\_webpack\_require\_\_.r(ns);

Object.defineProperty(ns, 'default', { enumerable: true, value: value });

**if** (mode & 2 && **typeof** value != 'string') **for** (**var** key **in** value) \_\_webpack\_require\_\_.d(ns, key, **function** (key) { **return** value[key]; }.bind(null, key));

**return** ns;

};

\_\_webpack\_require\_\_.n = **function** (module) {

**var** getter = module && module.\_\_esModule ?

**function** **getDefault**() { **return** module['default']; } :

**function** **getModuleExports**() { **return** module; };

\_\_webpack\_require\_\_.d(getter, 'a', getter);

**return** getter;

};

\_\_webpack\_require\_\_.o = **function** (object, property) { **return** Object.prototype.hasOwnProperty.call(object, property); };

\_\_webpack\_require\_\_.p = "";

\_\_webpack\_require\_\_.oe = **function** (err) { console.error(err); **throw** err; };

**var** jsonpArray = window["webpackJsonp"] = window["webpackJsonp"] || [];

**var** oldJsonpFunction = jsonpArray.push.bind(jsonpArray);

jsonpArray.push = webpackJsonpCallback;

jsonpArray = jsonpArray.slice();

**for** (**var** i = 0; i < jsonpArray.length; i++) webpackJsonpCallback(jsonpArray[i]);

**var** parentJsonpFunction = oldJsonpFunction;

**return** \_\_webpack\_require\_\_(\_\_webpack\_require\_\_.s = "./src/main.js");

})

({

"./src/main.js":

(**function** (module, exports, \_\_webpack\_require\_\_) {

\_\_webpack\_require\_\_.e("c").then(\_\_webpack\_require\_\_.bind(null, "./src/c.js")).then(c => {

console.log(c)

})

})

});

### **4.6 dist\c.js**

(window["webpackJsonp"] = window["webpackJsonp"] || []).push([["c"], {

"./src/c.js":

(**function** (module, \_\_webpack\_exports\_\_, \_\_webpack\_require\_\_) {

"use strict";

\_\_webpack\_require\_\_.r(\_\_webpack\_exports\_\_);

\_\_webpack\_exports\_\_["default"] = ({

name: 'zhufeng'

});

})

}]);

### **4.7 实现**

(**function** (modules) {

**function** **webpackJsonpCallback**(data) {

**var** chunkIds = data[0];

**var** moreModules = data[1];

**var** moduleId, chunkId, i = 0, resolves = [];

**for** (; i < chunkIds.length; i++) {

chunkId = chunkIds[i];

**if** (installedChunks[chunkId]) {

resolves.push(installedChunks[chunkId][0]);

}

installedChunks[chunkId] = 0;

}

**for** (moduleId **in** moreModules) {

modules[moduleId] = moreModules[moduleId];

}

**while** (resolves.length) {

resolves.shift()();

}

}

**var** installedModules = {};

**var** installedChunks = { main: 0 };

\_\_webpack\_require\_\_.p = "";

**function** **jsonpScriptSrc**(chunkId) {

**return** \_\_webpack\_require\_\_.p + "" + chunkId + ".bundle.js";

}

**function** **\_\_webpack\_require\_\_**(moduleId) {

**if** (installedModules[moduleId]) {

**return** installedModules[moduleId].exports;

}

**var** module = (installedModules[moduleId] = { i: moduleId, l: false, exports: {} });

modules[moduleId].call(module.exports, module, module.exports, \_\_webpack\_require\_\_);

module.l = true;

**return** module.exports;

}

\_\_webpack\_require\_\_.t = **function** (value, mode) {

value = \_\_webpack\_require\_\_(value);

**var** ns = Object.create(null);

Object.defineProperty(ns, "\_\_esModule", { value: true });

Object.defineProperty(ns, "default", { enumerable: true, value: value });

**return** ns;

};

\_\_webpack\_require\_\_.e = **function** **requireEnsure**(chunkId) {

**var** promises = [];

**var** installedChunkData = installedChunks[chunkId];

**var** promise = **new** Promise(**function** (resolve, reject) {

installedChunkData = installedChunks[chunkId] = [resolve, reject];

});

promises.push((installedChunkData[2] = promise));

**var** script = document.createElement("script");

script.src = jsonpScriptSrc(chunkId);

document.head.appendChild(script);

**return** Promise.all(promises);

}

**var** jsonpArray = (window["webpackJsonp"] = window["webpackJsonp"] || []);

jsonpArray.push = webpackJsonpCallback;

**return** \_\_webpack\_require\_\_((\_\_webpack\_require\_\_.s = "./src/index.js"));

})({

"./src/main.js":

(**function** (module, exports, \_\_webpack\_require\_\_) {

\_\_webpack\_require\_\_.e("c").then(\_\_webpack\_require\_\_.bind(null, "./src/c.js")).then(c => {

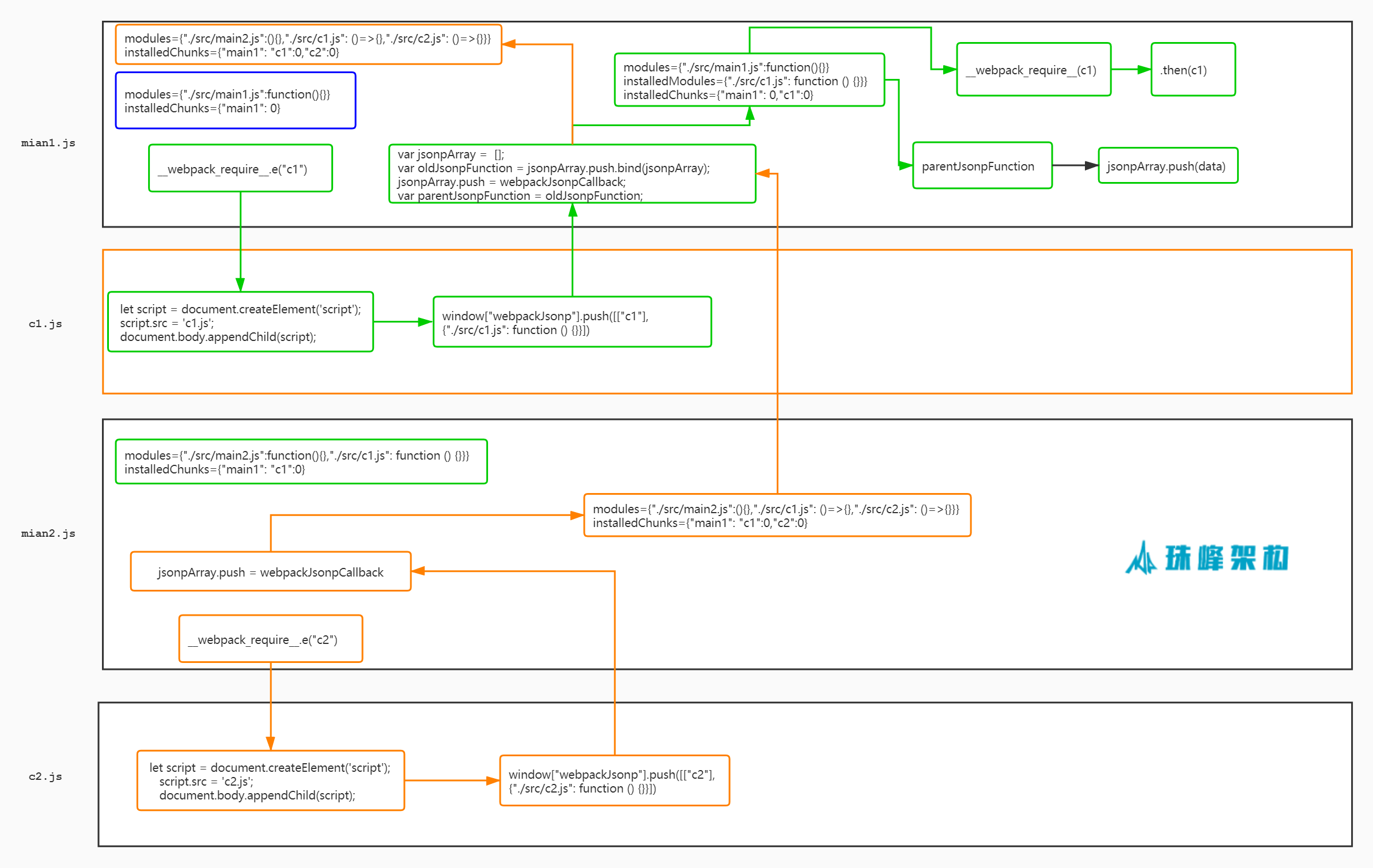
console.log(c)

})

})

});

## **5.异步加载**



### **5.1 src\index.html**

<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0 Transitional//EN"><html><head>

<title>import</title></head><body><button id="main1-loadC1">main1中加载c1模块</button><button id="main1-loadC2">main1中加载c2模块</button><button id="loadMain2">main2.js文件</button><button id="main2-loadC1">main2中加载c1模块</button><button id="main2-loadC2">main2中加载c2模块</button></body></html>

### **5.2 webpack.config.js**

**const** path = require('path');**const** HtmlWebpackPlugin = require('html-webpack-plugin');**const** { CleanWebpackPlugin } = require('clean-webpack-plugin');module.exports = {

mode: 'development',

devtool: 'none',

entry: {

main1: './src/main1.js',

main2: './src/main2.js'

},

output: {

path: path.resolve(\_\_dirname, 'dist'),

filename: '[name].js'

},

module: {},

plugins: [

**new** CleanWebpackPlugin({ cleanOnceBeforeBuildPatterns: ['\*\*/\*'] }),

**new** HtmlWebpackPlugin({

template: './src/index.html',

filename: 'index.html',

chunks: ['main1']

})],

devServer: {}

}

### **5.3 src\main1.js**

document.getElementById('main1-loadC1').addEventListener('click', () => {

**import**(/\* webpackChunkName: "c1" \*/'./c1').then(c1 => {

console.log(c1.default)

})

});document.getElementById('main1-loadC2').addEventListener('click', () => {

**import**(/\* webpackChunkName: "c2" \*/'./c2').then(c1 => {

console.log(c1.default)

})

});document.getElementById('loadMain2').addEventListener('click', () => {

**let** script = document.createElement('script');

script.src = 'main2.js';

document.body.appendChild(script);

});

### **5.4 src\main2.js**

document.getElementById('main2-loadC1').addEventListener('click', () => {

**import**(/\* webpackChunkName: "c1" \*/'./c1').then(c1 => {

console.log(c1.default)

})

});document.getElementById('main2-loadC2').addEventListener('click', () => {

**import**(/\* webpackChunkName: "c2" \*/'./c2').then(c1 => {

console.log(c1.default)

})

});

### **5.5 src\c1.js**

**export** **default** {

name: 'c1'

}

### **5.6 src\c2.js**

**export** **default** {

name: 'c2'

}

### **5.7 dist\main1.js**

(**function** (modules) {

**function** **webpackJsonpCallback**(data) {

**var** chunkIds = data[0];

**var** moreModules = data[1];

**var** moduleId, chunkId, i = 0, resolves = [];

**for** (; i < chunkIds.length; i++) {

chunkId = chunkIds[i];

**if** (Object.prototype.hasOwnProperty.call(installedChunks, chunkId) && installedChunks[chunkId]) {

resolves.push(installedChunks[chunkId][0]);

}

installedChunks[chunkId] = 0;

}

**for** (moduleId **in** moreModules) {

**if** (Object.prototype.hasOwnProperty.call(moreModules, moduleId)) {

modules[moduleId] = moreModules[moduleId];

}

}

**if** (parentJsonpFunction) parentJsonpFunction(data);

**while** (resolves.length) {

resolves.shift()();

}

};

**var** installedModules = {};

**var** installedChunks = {

"main1": 0

};

**function** **jsonpScriptSrc**(chunkId) {

**return** \_\_webpack\_require\_\_.p + "" + ({ "c1": "c1", "c2": "c2" }[chunkId] || chunkId) + ".js"

}

**function** **\_\_webpack\_require\_\_**(moduleId) {

**if** (installedModules[moduleId]) {

**return** installedModules[moduleId].exports;

}

**var** module = installedModules[moduleId] = {

i: moduleId,

l: false,

exports: {}

};

modules[moduleId].call(module.exports, module, module.exports, \_\_webpack\_require\_\_);

module.l = true;

**return** module.exports;

}

\_\_webpack\_require\_\_.e = **function** **requireEnsure**(chunkId) {

**var** promises = [];

**var** installedChunkData = installedChunks[chunkId];

**if** (installedChunkData !== 0) {

**if** (installedChunkData) {

promises.push(installedChunkData[2]);

} **else** {

**var** promise = **new** Promise(**function** (resolve, reject) {

installedChunkData = installedChunks[chunkId] = [resolve, reject];

});

promises.push(installedChunkData[2] = promise);

**var** script = document.createElement('script');

**var** onScriptComplete;

script.charset = 'utf-8';

script.timeout = 120;

**if** (\_\_webpack\_require\_\_.nc) {

script.setAttribute("nonce", \_\_webpack\_require\_\_.nc);

}

script.src = jsonpScriptSrc(chunkId);

**var** error = **new** Error();

onScriptComplete = **function** (event) {

script.onerror = script.onload = null;

clearTimeout(timeout);

**var** chunk = installedChunks[chunkId];

**if** (chunk !== 0) {

**if** (chunk) {

**var** errorType = event && (event.type === 'load' ? 'missing' : event.type);

**var** realSrc = event && event.target && event.target.src;

error.message = 'Loading chunk ' + chunkId + ' failed.\n(' + errorType + ': ' + realSrc + ')';

error.name = 'ChunkLoadError';

error.type = errorType;

error.request = realSrc;

chunk[1](error);

}

installedChunks[chunkId] = undefined;

}

};

**var** timeout = setTimeout(**function** () {

onScriptComplete({ type: 'timeout', target: script });

}, 120000);

script.onerror = script.onload = onScriptComplete;

document.head.appendChild(script);

}

}

**return** Promise.all(promises);

};

\_\_webpack\_require\_\_.m = modules;

\_\_webpack\_require\_\_.c = installedModules;

\_\_webpack\_require\_\_.d = **function** (exports, name, getter) {

**if** (!\_\_webpack\_require\_\_.o(exports, name)) {

Object.defineProperty(exports, name, { enumerable: true, get: getter });

}

};

\_\_webpack\_require\_\_.r = **function** (exports) {

**if** (**typeof** Symbol !== 'undefined' && Symbol.toStringTag) {

Object.defineProperty(exports, Symbol.toStringTag, { value: 'Module' });

}

Object.defineProperty(exports, '\_\_esModule', { value: true });

};

\_\_webpack\_require\_\_.t = **function** (value, mode) {

**if** (mode & 1) value = \_\_webpack\_require\_\_(value);

**if** (mode & 8) **return** value;

**if** ((mode & 4) && **typeof** value === 'object' && value && value.\_\_esModule) **return** value;

**var** ns = Object.create(null);

\_\_webpack\_require\_\_.r(ns);

Object.defineProperty(ns, 'default', { enumerable: true, value: value });

**if** (mode & 2 && **typeof** value != 'string') **for** (**var** key **in** value) \_\_webpack\_require\_\_.d(ns, key, **function** (key) { **return** value[key]; }.bind(null, key));

**return** ns;

};

\_\_webpack\_require\_\_.n = **function** (module) {

**var** getter = module && module.\_\_esModule ?

**function** **getDefault**() { **return** module['default']; } :

**function** **getModuleExports**() { **return** module; };

\_\_webpack\_require\_\_.d(getter, 'a', getter);

**return** getter;

};

\_\_webpack\_require\_\_.o = **function** (object, property) { **return** Object.prototype.hasOwnProperty.call(object, property); };

\_\_webpack\_require\_\_.p = "";

\_\_webpack\_require\_\_.oe = **function** (err) { console.error(err); **throw** err; };

**var** jsonpArray = window["webpackJsonp"] = window["webpackJsonp"] || [];

**var** oldJsonpFunction = jsonpArray.push.bind(jsonpArray);

jsonpArray.push = webpackJsonpCallback;

jsonpArray = jsonpArray.slice();

**for** (**var** i = 0; i < jsonpArray.length; i++) webpackJsonpCallback(jsonpArray[i]);

**var** parentJsonpFunction = oldJsonpFunction;

**return** \_\_webpack\_require\_\_(\_\_webpack\_require\_\_.s = "./src/main1.js");

})

({

"./src/main1.js":

(**function** (module, exports, \_\_webpack\_require\_\_) {

document.getElementById('main1-loadC1').addEventListener('click', () => {

\_\_webpack\_require\_\_.e("c1").then(\_\_webpack\_require\_\_.bind(null, "./src/c1.js")).then(c1 => {

console.log(c1.default)

})

});

document.getElementById('main1-loadC2').addEventListener('click', () => {

\_\_webpack\_require\_\_.e("c2").then(\_\_webpack\_require\_\_.bind(null, "./src/c2.js")).then(c1 => {

console.log(c1.default)

})

});

document.getElementById('loadMain2').addEventListener('click', () => {

**let** script = document.createElement('script');

script.src = 'main2.js';

document.body.appendChild(script);

});

})

});

### **5.8 dist\main2.js**

(**function** (modules) {

**function** **webpackJsonpCallback**(data) {

**var** chunkIds = data[0];

**var** moreModules = data[1];

**var** moduleId, chunkId, i = 0, resolves = [];

**for** (; i < chunkIds.length; i++) {

chunkId = chunkIds[i];

**if** (Object.prototype.hasOwnProperty.call(installedChunks, chunkId) && installedChunks[chunkId]) {

resolves.push(installedChunks[chunkId][0]);

}

installedChunks[chunkId] = 0;

}

**for** (moduleId **in** moreModules) {

**if** (Object.prototype.hasOwnProperty.call(moreModules, moduleId)) {

modules[moduleId] = moreModules[moduleId];

}

}

**if** (parentJsonpFunction) parentJsonpFunction(data);

**while** (resolves.length) {

resolves.shift()();

}

};

**var** installedModules = {};

**var** installedChunks = {

"main2": 0

};

**function** **jsonpScriptSrc**(chunkId) {

**return** \_\_webpack\_require\_\_.p + "" + ({ "c1": "c1", "c2": "c2" }[chunkId] || chunkId) + ".js"

}

**function** **\_\_webpack\_require\_\_**(moduleId) {

**if** (installedModules[moduleId]) {

**return** installedModules[moduleId].exports;

}

**var** module = installedModules[moduleId] = {

i: moduleId,

l: false,

exports: {}

};

modules[moduleId].call(module.exports, module, module.exports, \_\_webpack\_require\_\_);

module.l = true;

**return** module.exports;

}

\_\_webpack\_require\_\_.e = **function** **requireEnsure**(chunkId) {

**var** promises = [];

**var** installedChunkData = installedChunks[chunkId];

**if** (installedChunkData !== 0) {

**if** (installedChunkData) {

promises.push(installedChunkData[2]);

} **else** {

**var** promise = **new** Promise(**function** (resolve, reject) {

installedChunkData = installedChunks[chunkId] = [resolve, reject];

});

promises.push(installedChunkData[2] = promise);

**var** script = document.createElement('script');

**var** onScriptComplete;

script.charset = 'utf-8';

script.timeout = 120;

**if** (\_\_webpack\_require\_\_.nc) {

script.setAttribute("nonce", \_\_webpack\_require\_\_.nc);

}

script.src = jsonpScriptSrc(chunkId);

**var** error = **new** Error();

onScriptComplete = **function** (event) {

script.onerror = script.onload = null;

clearTimeout(timeout);

**var** chunk = installedChunks[chunkId];

**if** (chunk !== 0) {

**if** (chunk) {

**var** errorType = event && (event.type === 'load' ? 'missing' : event.type);

**var** realSrc = event && event.target && event.target.src;

error.message = 'Loading chunk ' + chunkId + ' failed.\n(' + errorType + ': ' + realSrc + ')';

error.name = 'ChunkLoadError';

error.type = errorType;

error.request = realSrc;

chunk[1](error);

}

installedChunks[chunkId] = undefined;

}

};

**var** timeout = setTimeout(**function** () {

onScriptComplete({ type: 'timeout', target: script });

}, 120000);

script.onerror = script.onload = onScriptComplete;

document.head.appendChild(script);

}

}

**return** Promise.all(promises);

};

\_\_webpack\_require\_\_.m = modules;

\_\_webpack\_require\_\_.c = installedModules;

\_\_webpack\_require\_\_.d = **function** (exports, name, getter) {

**if** (!\_\_webpack\_require\_\_.o(exports, name)) {

Object.defineProperty(exports, name, { enumerable: true, get: getter });

}

};

\_\_webpack\_require\_\_.r = **function** (exports) {

**if** (**typeof** Symbol !== 'undefined' && Symbol.toStringTag) {

Object.defineProperty(exports, Symbol.toStringTag, { value: 'Module' });

}

Object.defineProperty(exports, '\_\_esModule', { value: true });

};

\_\_webpack\_require\_\_.t = **function** (value, mode) {

**if** (mode & 1) value = \_\_webpack\_require\_\_(value);

**if** (mode & 8) **return** value;

**if** ((mode & 4) && **typeof** value === 'object' && value && value.\_\_esModule) **return** value;

**var** ns = Object.create(null);

\_\_webpack\_require\_\_.r(ns);

Object.defineProperty(ns, 'default', { enumerable: true, value: value });

**if** (mode & 2 && **typeof** value != 'string') **for** (**var** key **in** value) \_\_webpack\_require\_\_.d(ns, key, **function** (key) { **return** value[key]; }.bind(null, key));

**return** ns;

};

\_\_webpack\_require\_\_.n = **function** (module) {

**var** getter = module && module.\_\_esModule ?

**function** **getDefault**() { **return** module['default']; } :

**function** **getModuleExports**() { **return** module; };

\_\_webpack\_require\_\_.d(getter, 'a', getter);

**return** getter;

};

\_\_webpack\_require\_\_.o = **function** (object, property) { **return** Object.prototype.hasOwnProperty.call(object, property); };

\_\_webpack\_require\_\_.p = "";

\_\_webpack\_require\_\_.oe = **function** (err) { console.error(err); **throw** err; };

**var** jsonpArray = window["webpackJsonp"] = window["webpackJsonp"] || [];

**var** oldJsonpFunction = jsonpArray.push.bind(jsonpArray);

jsonpArray.push = webpackJsonpCallback;

jsonpArray = jsonpArray.slice();

**for** (**var** i = 0; i < jsonpArray.length; i++) webpackJsonpCallback(jsonpArray[i]);

**var** parentJsonpFunction = oldJsonpFunction;

**return** \_\_webpack\_require\_\_(\_\_webpack\_require\_\_.s = "./src/main2.js");

})

({

"./src/main2.js":

(**function** (module, exports, \_\_webpack\_require\_\_) {

document.getElementById('main2-loadC1').addEventListener('click', () => {

\_\_webpack\_require\_\_.e("c1").then(\_\_webpack\_require\_\_.bind(null, "./src/c1.js")).then(c1 => {

console.log(c1.default)

})

});

document.getElementById('main2-loadC2').addEventListener('click', () => {

\_\_webpack\_require\_\_.e("c2").then(\_\_webpack\_require\_\_.bind(null, "./src/c2.js")).then(c1 => {

console.log(c1.default)

})

});

})

});

### **5.9 dist\c1.js**

(window["webpackJsonp"] = window["webpackJsonp"] || []).push([["c1"], {

"./src/c1.js":

(**function** (module, \_\_webpack\_exports\_\_, \_\_webpack\_require\_\_) {

"use strict";

\_\_webpack\_require\_\_.r(\_\_webpack\_exports\_\_);

\_\_webpack\_exports\_\_["default"] = ({

name: 'c1'

});

})

}]);

### **5.10 dist\c2.js**

(window["webpackJsonp"] = window["webpackJsonp"] || []).push([["c2"], {

"./src/c2.js":

(**function** (module, \_\_webpack\_exports\_\_, \_\_webpack\_require\_\_) {

"use strict";

\_\_webpack\_require\_\_.r(\_\_webpack\_exports\_\_);

\_\_webpack\_exports\_\_["default"] = ({

name: 'c2'

});

})

}]);

### **5.11 实现**

(function (modules) {

function webpackJsonpCallback(data) {

var chunkIds = data[0];

var moreModules = data[1];

var moduleId, chunkId, i = 0, resolves = [];

for (; i < chunkIds.length; i++) {

chunkId = chunkIds[i];

if (installedChunks[chunkId]) {

resolves.push(installedChunks[chunkId][0]);

}

installedChunks[chunkId] = 0;

}

for (moduleId in moreModules) {

modules[moduleId] = moreModules[moduleId];

}+ if (parentJsonpFunction) parentJsonpFunction(data);

while (resolves.length) {

resolves.shift()();

}

}

var installedModules = {};

var installedChunks = { main: 0 };

\_\_webpack\_require\_\_.p = "";

function jsonpScriptSrc(chunkId) {

return \_\_webpack\_require\_\_.p + "" + chunkId + ".js";

}

function \_\_webpack\_require\_\_(moduleId) {

if (installedModules[moduleId]) {

return installedModules[moduleId].exports;

}

var module = (installedModules[moduleId] = { i: moduleId, l: false, exports: {} });

modules[moduleId].call(module.exports, module, module.exports, \_\_webpack\_require\_\_);

module.l = true;

return module.exports;

}

\_\_webpack\_require\_\_.r = function (exports) {

if (typeof Symbol !== 'undefined' && Symbol.toStringTag) {

Object.defineProperty(exports, Symbol.toStringTag, { value: 'Module' });

}

Object.defineProperty(exports, '\_\_esModule', { value: true });

};

\_\_webpack\_require\_\_.t = function (value, mode) {

value = \_\_webpack\_require\_\_(value);

var ns = Object.create(null);

Object.defineProperty(ns, "\_\_esModule", { value: true });

Object.defineProperty(ns, "default", { enumerable: true, value: value });

return ns;

};

\_\_webpack\_require\_\_.e = function requireEnsure(chunkId) {

var promises = [];

var installedChunkData = installedChunks[chunkId];

var promise = new Promise(function (resolve, reject) {

installedChunkData = installedChunks[chunkId] = [resolve, reject];

});

promises.push((installedChunkData[2] = promise));

var script = document.createElement("script");

script.src = jsonpScriptSrc(chunkId);

document.head.appendChild(script);

return Promise.all(promises);

}

var jsonpArray = (window["webpackJsonp"] = window["webpackJsonp"] || []);

var oldJsonpFunction = jsonpArray.push.bind(jsonpArray);

jsonpArray.push = webpackJsonpCallback;+ jsonpArray = jsonpArray.slice();+ for (var i = 0; i < jsonpArray.length; i++) webpackJsonpCallback(jsonpArray[i]);+ var parentJsonpFunction = oldJsonpFunction;

return \_\_webpack\_require\_\_(\_\_webpack\_require\_\_.s = "./src/main1.js");

})

({

"./src/main1.js":

(function (module, exports, \_\_webpack\_require\_\_) {

document.getElementById('main1-loadC1').addEventListener('click', () => {

\_\_webpack\_require\_\_.e("c1").then(\_\_webpack\_require\_\_.bind(null, "./src/c1.js")).then(c1 => {

console.log(c1.default)

})

});

document.getElementById('main1-loadC2').addEventListener('click', () => {

\_\_webpack\_require\_\_.e("c2").then(\_\_webpack\_require\_\_.bind(null, "./src/c2.js")).then(c1 => {

console.log(c1.default)

})

});

document.getElementById('loadMain2').addEventListener('click', () => {

let script = document.createElement('script');

script.src = 'main2.js';

document.body.appendChild(script);

});

})

});