Webpack项目工程化与项目架构
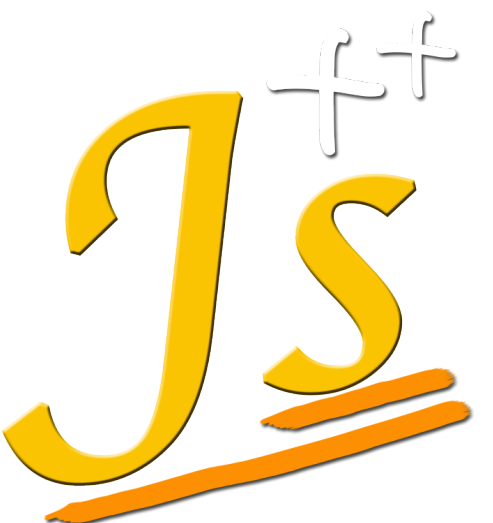
Webpack工程化

Webpack的本质：通过编译打包试项目开发版与上线版完全分离

dist

node_modules

src

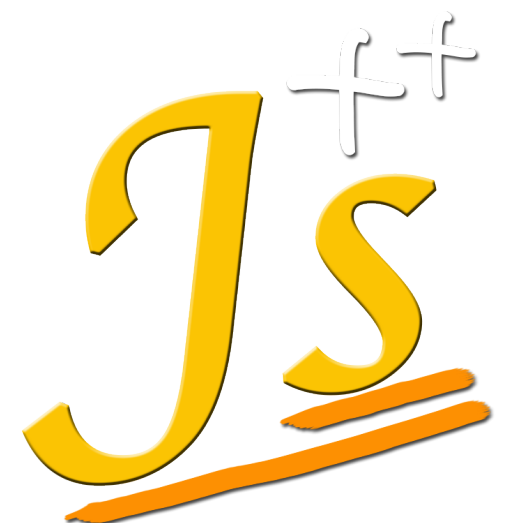webpack.config.js

package-lock.json

上线目录

开发目录

Webpack工程化

Webpack的本质：通过编译打包试项目开发版与上线版完全分离

dist

node_modules

src

webpack.config.js

package-lock.json

打包工具模块

打包配置文件
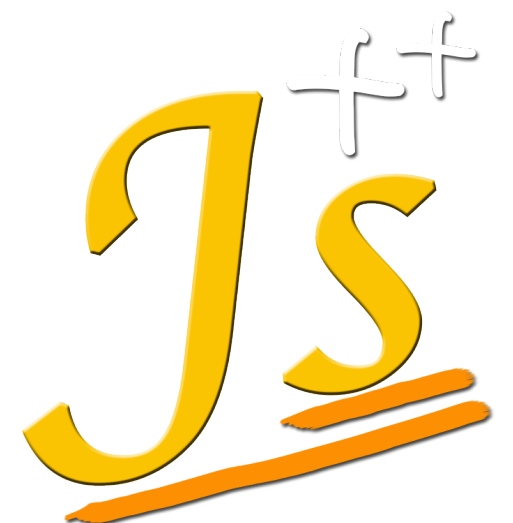
Webpack工程化

Webpack打包工具模块：打包过程中代码转换与项目代码与结构优化的一系列工具集合

uglifyjs-webpack-plugin：压缩混淆**JS**插件

html-webpack-plugin：压缩**HTML**注入脚本插件

autoprefixer：自动添加**CSS**兼容性前缀插件

clean-webpack-plugin：清除多余文件插件

babel-loader/babel-core/babel-preset-latest：**ES6**脚本代码转换工具模块

ejs/ejs-loader：模板文件编译工具模块

css-loader/postcss-loader/style-loader：编译**CSS**样式代码并放入html内部样式表的工具模块
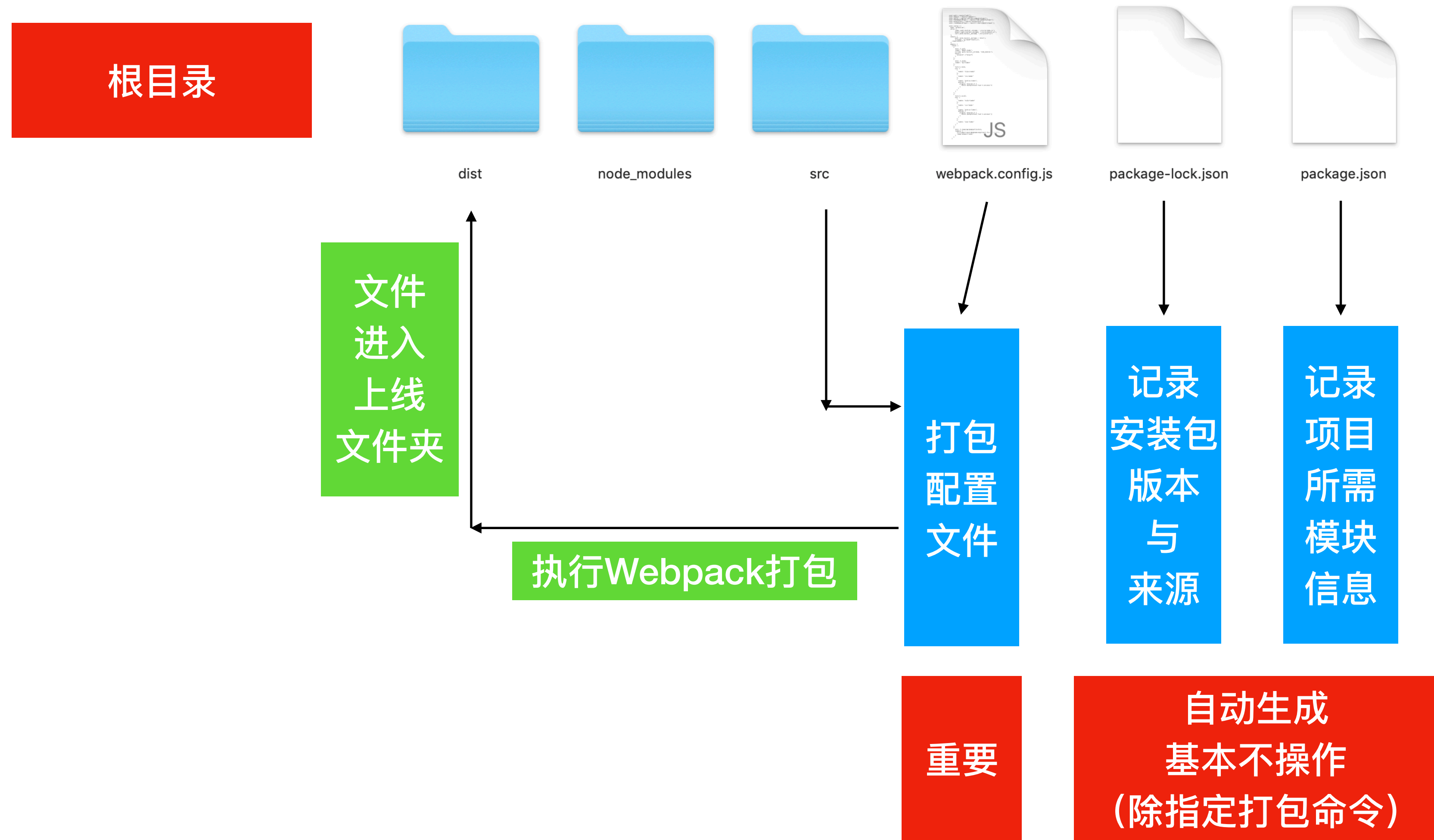
file-loader/url-loader/img-loader/image-webpack-plugin：对图片文件进行压缩及目录位置移动的工具模块与插件

sass-loader/node-sass：编译**sass**文件

Webpack工程化

Webpack目录结构

| 根目录 | dist | node_modules | src | webpack.config.js | package-lock.json | package.json |

文件进入上线文件夹

执行Webpack打包

打包配置文件

记录安装包版本与来源

记录项目所需模块信息

重要

自动生成
基本不操作
（除指定打包命令）

Js

Webpack工程化

项目开发目录结构与打包后目录结构

根目录

| dist | node_modules | src | webpack.config.js | package-lock.json | package.json |

静态文件文件夹

打包后的JS文件与HTML文件

- ▶ css
- ▶ fonts
- ▶ js
- ▶ scripts
- cart.html
- detail.html
- index.html

▶ components	组件文件夹
▶ css	样式文件夹
▶ img	图片文件夹
▶ js	逻辑层脚本文件夹
▶ models	模型层脚本文件夹
▶ utils	工具模块文件夹
cart.html	视图层HTML文件
detail.html	
index.html	

JS

Webpack工程化

```html
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="
width=device-width,initial-scale=1,user-scalable=no" />
  <title><%= htmlWebpackPlugin.options.title %></title>

</head>
<body>

  <div class="container J_container">
    <div class="list-container J_list"></div>
  </div>
  <script src="scripts/common.js"></script>
</body>
</html>
```
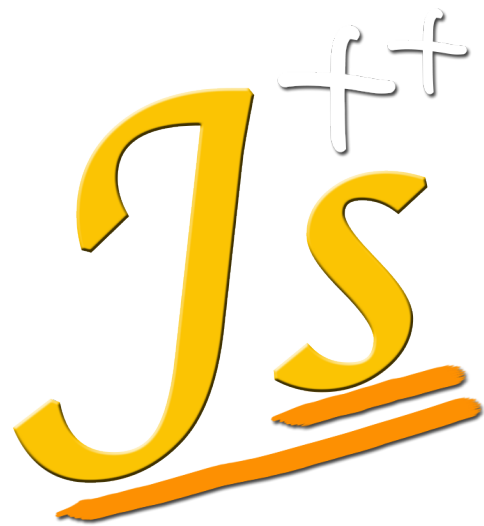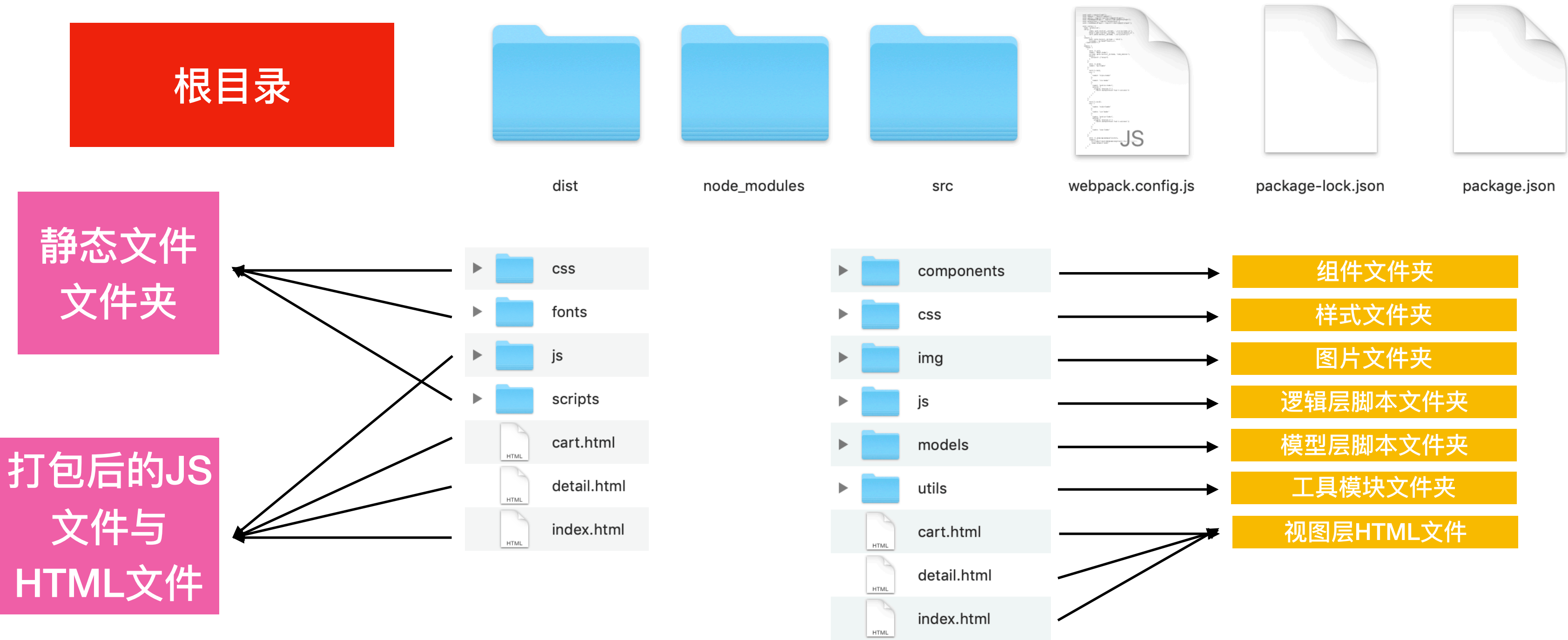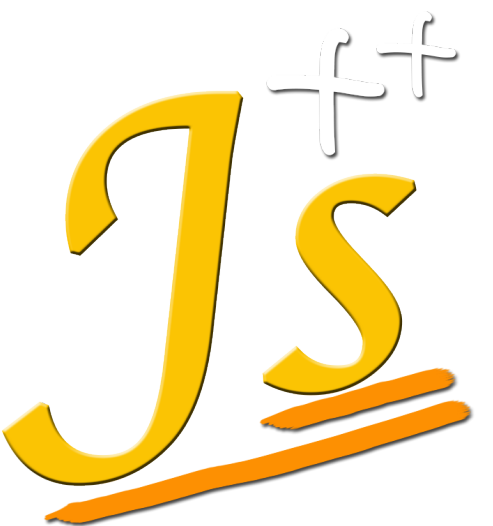
```html
<!doctype html>
<html lang="en" style="font-size: 100px;">
  <head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width,initial-scale=1,user-scalable=no">
    <title>商品列表</title>
    <style type="text/css">…</style>
    <style type="text/css">
      .item {
        width: 50%;
        height: 2.45rem;
        padding: .05rem;
        -webkit-box-sizing: border-box;
               box-sizing: border-box; }
      .item .item-lk {
        display: block;
        height: 100%;
        padding: .05rem .05rem 0;
        background-color: #fff;
        -webkit-box-sizing: border-box;
               box-sizing: border-box; }
      .item .item-lk .goods-img {
        width: 100%; }
      .item .item-lk .title {
        height: .30rem;
        line-height: .15rem;
        overflow: hidden;
        font-weight: bold; }
      .item .item-lk .price {
        height: .25rem;
        line-height: .30rem;
        font-size: .14rem;
        color: #f40; }
    </style>
    <style type="text/css">…</style>
    <style type="text/css">…</style>
  </head>
  <body>
    <div class="container J_container">
      <div class="header">
        <h2>商品列表</h2>
      </div>
      <div class="list-container J_list">…</div>
    </div>
    <script src="scripts/common.js"></script>
    <script type="text/javascript" src="js/index-41b6f14….js?41b6f14…"></script>
  </body>
</html>
```

Webpack工程化

打包前

打包后

```javascript
import { IndexModel } from '../models/index';
import ListItem from '../components/index/list_item/index';
import Header from '../components/header/index';
import '../css/index.scss';

const indexModel = new IndexModel(),
      listItem = new ListItem(),
      header = new Header();

const App = (doc) => {
    const container = doc.getElementsByClassName('J_container')[0],
          list = container.getElementsByClassName('J_list')[0];

    const init = () => {
        indexModel.getGoodsList(listItem.tpl).then((res) => {
            list.innerHTML = res;
        });

        container.insertBefore(header.makeHeader('商品列表'), list);
    }

    init();
}

new App(document);
```
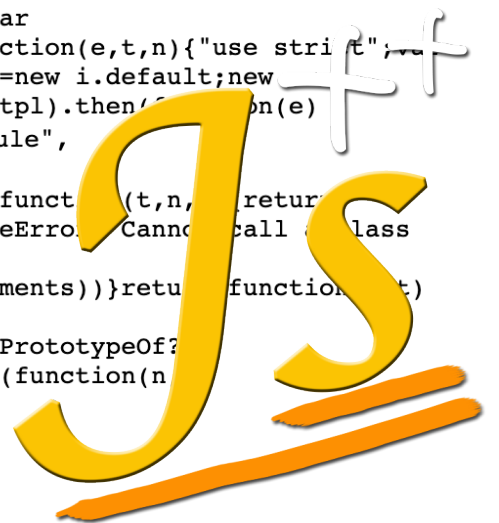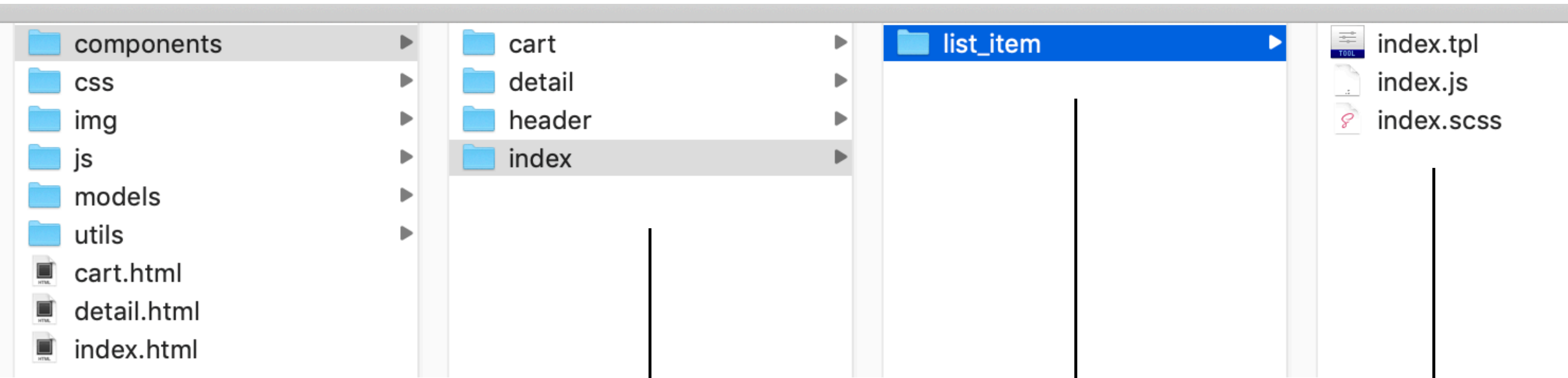
!function(e){var t={};function n(r){if(t[r])return t[r].exports;var o=t[r]={i:r,l:!1,exports:{}};return
e[r].call(o.exports,o,o.exports,n),o.l=!0,o.exports}n.m=e,n.c=t,n.d=function(e,t,r){n.o(e,t)||Object.defineProperty(e,t,
{enumerable:!0,get:r})},n.r=function(e){"undefined"!=typeof Symbol&&Symbol.toStringTag&&Object.defineProperty(e,Symbol.toStringTag,
{value:"Module"}),Object.defineProperty(e,"__esModule",{value:!0})},n.t=function(e,t){if(1&t&&(e=n(e)),8&t)return e;if(4&t&&"object"==typeof
e&&e&&e.__esModule)return e;var r=Object.create(null);if(n.r(r),Object.defineProperty(r,"default",{enumerable:!0,value:e}),2&t&&"string"!=typeof e)for(var
o in e)n.d(r,o,function(t){return e[t]}.bind(null,o));return r},n.n=function(e){var t=e&&e.__esModule?function(){return e.default}:function(){return
e};return n.d(t,"a",t),t},n.o=function(e,t){return Object.prototype.hasOwnProperty.call(e,t)},n.p="",n(n.s=2)}([function(e,t,n){"use
strict";e.exports=function(e){var t=[];return t.toString=function(){return this.map(function(t){var n=function(e,t){var n,r=e[1]||"",o=e[3];if(!o)return
r;if(t&&"function"==typeof btoa){var i=(n=o,"/*# sourceMappingURL=data:application/json;charset=utf-
8;base64,"+btoa(unescape(encodeURIComponent(JSON.stringify(n))))+" */"),a=o.sources.map(function(e){return"/*# sourceURL="+o.sourceRoot+e+"
*/"});return[r].concat(a).concat([i]).join("\n")}return[r].join("\n")}(t,e);return t[2]?"@media "+t[2]+"{"+n+"}":n}).join("")},t.i=function(e,n)
{"string"==typeof e&&(e=[[null,e,""]]);for(var r={},o=0;o<this.length;o++){var i=this[o][0];null!=i&&(r[i]=!0)}for(o=0;o<e.length;o++){var
a=e[o];null!=a[0]&&r[a[0]]||(n&&!a[2]?a[2]=n:n&&(a[2]="("+a[2]+") and ("+n+")"),t.push(a))}},t},function(e,t,n){var r,o,i,a={},s=(r=function(){return
window&&document&&document.all&&!window.atob},function(){return void 0===o&&(o=r.apply(this,arguments)),o}),u=(i={},function(e,t){if("function"==typeof
e)return e();if(void 0===i[e]){var n=function(e,t){return t?t.querySelector(e):document.querySelector(e)}.call(this,e,t);if(window.HTMLIFrameElement&&n
instanceof window.HTMLIFrameElement)try{n=n.contentDocument.head}catch(e){n=null}i[e]=n}return i[e]}),c=null,l=0,f=[],p=n(10);function d(e,t){for(var
n=0;n<e.length;n++){var r=e[n],o=a[r.id];if(o){o.refs++;for(var i=0;i<o.parts.length;i++)o.parts[i]
(r.parts[i]);for(;i<r.parts.length;i++)o.parts.push(g(r.parts[i],t))}else{var s=[];for(i=0;i<r.parts.length;i++)s.push(g(r.parts[i],t));a[r.id]=
{id:r.id,refs:1,parts:s}}}}function m(e,t){for(var n=[],r={},o=0;o<e.length;o++){var i=e[o],a=t.base?i[0]+t.base:i[0],s=
{css:i[1],media:i[2],sourceMap:i[3]};r[a]?r[a].parts.push(s):n.push(r[a]={id:a,parts:[s]})}return n}function h(e,t){var n=u(e.insertInto);if(!n)throw new
Error("Couldn't find a style target. This probably means that the value for the 'insertInto' parameter is invalid.");var r=f[f.length-
1];if("top"===e.insertAt)r?r.nextSibling?n.insertBefore(t,r.nextSibling):n.appendChild(t):n.insertBefore(t,n.firstChild),f.push(t);else
if("bottom"===e.insertAt)n.appendChild(t);else if("object"!=typeof e.insertAt||!e.insertAt.before)throw new Error("[Style Loader]\n\n Invalid value for
parameter 'insertAt' ('options.insertAt') found.\n Must be 'top', 'bottom', or Object.\n (https://github.com/webpack-contrib/style-
loader#insertat)\n");var o=u(e.insertAt.before,n);n.insertBefore(t,o)}}function b(e){if(null===e.parentNode)return!1;e.parentNode.removeChild(e);var
t=f.indexOf(e);0<=t&&f.splice(t,1)}function v(e){var t=document.createElement("style");if(void 0===e.attrs.type&&(e.attrs.type="text/css"),void
0===e.attrs.nonce){var r=n.nc;r&&(e.attrs.nonce=r)}return y(t,e.attrs),h(e,t),t}function y(e,t){Object.keys(t).forEach(function(n)
{e.setAttribute(n,t[n])})}function g(e,t){var n,r,o,i,a,s;if(t.transform&&e.css){if(!(i="function"==typeof t.transform?
t.transform(e.css):t.transform.default(e.css)))return function(){};e.css=i}if(t.singleton){var u=l++;n=c||
(c=v(t)),r=_.bind(null,n,u,!1),o=_.bind(null,n,u,!0)}else o=e.sourceMap&&"function"==typeof URL&&"function"==typeof
URL.createObjectURL&&"function"==typeof URL.revokeObjectURL&&"function"==typeof Blob&&"function"==typeof btoa?(a=t,s=document.createElement("link"),void
0===a.attrs.type&&(a.attrs.type="text/css"),a.attrs.rel="stylesheet",y(s,a.attrs),h(a,s),r=function(e,t,n){var r=n.css,o=n.sourceMap,i=void
0===t.convertToAbsoluteUrls&&o;(t.convertToAbsoluteUrls||i)&&(r=p(r)),o&&(r+="\n/*#
sourceMappingURL=data:application/json;base64,"+btoa(unescape(encodeURIComponent(JSON.stringify(o))))+" */");var a=new Blob([r],
{type:"text/css"}),s=e.href;e.href=URL.createObjectURL(a),s&&URL.revokeObjectURL(s)}.bind(null,n=s,t),function()
{b(n),n.href&&URL.revokeObjectURL(n.href)}):(n=v(t),r=function(e,t){var
n=t.css,r=t.media;if(r&&e.setAttribute("media",r),e.styleSheet)e.styleSheet.cssText=x(t,o);else{for(;e.firstChild;)e.removeChild(e.firstChild);e.appendChild(do
cument.createTextNode(n))}}.bind(null,n),function(){b(n)});return r(e),function(t){if(t)
{if(t.css===e.css&&t.media===e.media&&t.sourceMap===e.sourceMap)return;r(e=t)}else o()}}var e.exports=function(e,t){if("undefined"!=typeof
DEBUG&&DEBUG&&"object"!=typeof document)throw new Error("The style-loader cannot be used in a non-browser environment");(t=t||{}).attrs="object"==typeof
t.attrs?t.attrs:{},t.singleton||"boolean"==typeof t.singleton||(t.singleton=s()),t.insertInto||(t.insertInto="head"),t.insertAt||(t.insertAt="bottom");var
n=m(e,t);return d(n,t),function(e){for(var r=[],o=0;o<n.length;o++){var i=n[o];(s=a[i.id]).refs--,r.push(s)}for(e&&d(m(e,t),t),o=0;o<r.length;o++){var
s;if(0===(s=r[o]).refs){for(var u=0;u<s.parts.length;u++)s.parts[u]();delete a[s.id]}}};var w,x=(w=[],function(e,t){return
w[e]=t,w.filter(Boolean).join("\n")});function _(e,t,n,r){var o=n?"":r.css;if(e.styleSheet)e.styleSheet.cssText=x(t,o);else{var
i=document.createTextNode(o),a=e.childNodes;a[t]&&e.removeChild(a[t]),a.length?e.insertBefore(i,a[t]):e.appendChild(i)}}],function(e,t,n){"use strict";
r=n(3),o=a(n(6)),i=a(n(12));function a(e){return e&&e.__esModule?e:{default:e}}n(16);var s=new r.IndexModel,u=new o.default,c=new i.default;new
function(e){var t=document.getElementsByClassName("J_container")[0],n=t.getElementsByClassName("J_list")[0];s.getGoodsList(u.tpl).then(function(e)
{n.innerHTML=e}),t.insertBefore(c.makeHeader("商品列表"),n)}(0)},function(e,t,n){"use strict";Object.defineProperty(t,"__esModule",
{value:!0}),t.IndexModel=void 0;var r=function(){function e(e,t){for(var n=0;n<t.length;n++){var
r=t[n];r.enumerable=r.enumerable||!1,r.configurable=!0,"value"in r&&(r.writable=!0),Object.defineProperty(e,r.key,r)}}return funct (t,n, return
n&&e(t.prototype,n),r&&e(t,r),t}}(),o=n(4),i=function(e){function t(){return function(e,t){if(!(e instanceof t))throw new TypeErro "Canno call lass
as a function")}(this,t),function(e,t){if(!e)throw new ReferenceError("this hasn't been initialised - super() hasn't been
called");return!t||"object"!=typeof t&&"function"!=typeof t?e:t}(this,(t.__proto__||Object.getPrototypeOf(t)).apply(this,arguments))}return function t)
{if("function"!=typeof t&&null!==t)throw new TypeError("Super expression must either be null or a function, not "+typeof
t);e.prototype=Object.create(t&&t.prototype,{constructor:{value:e,enumerable:!1,writable:!0,configurable:!0}}),t&&(Object.setPrototypeOf?
Object.setPrototypeOf(e,t):e.__proto__=t)}(t,o.HTTP),r(t,[{key:"getGoodsList",value:function(e){var t=this;return new Promise(function(n
{t.ajax({url:"ShoppingCart/getGoodsList",type:"POST",dataType:"JSON",success:function(t){var r="";t.forEach(function(t,n)

Webpack工程化与项目架构-组件化

```
  📁 components          ▶
  📁 css                 ▶
  📁 img                 ▶
  📁 js                  ▶
  📁 models              ▶
  📁 utils               ▶
  📄 cart.html
  📄 detail.html
  📄 index.html
```

```
  📁 cart               ▶
  📁 detail             ▶
  📁 header             ▶
  📁 index              ▶
```

```
  📁 list_item          ▶
```

```
  📄 index.tpl
  📄 index.js
  📄 index.scss
```

```javascript
import './index.scss';
import tpl from './index.tpl';

export default () => {
    return {
        name: 'listItem',
        tpl
    }
}
```

```scss
@import url('../../../css/common.scss');

.item {
    width: 50%;
    height: 2.45rem;
    padding: .05rem;
    box-sizing: border-box;

    .item-lk {
        display: block;
        height: 100%;
        padding: .05rem .05rem 0;
        background-color: #fff;
        box-sizing: border-box;
    }
```
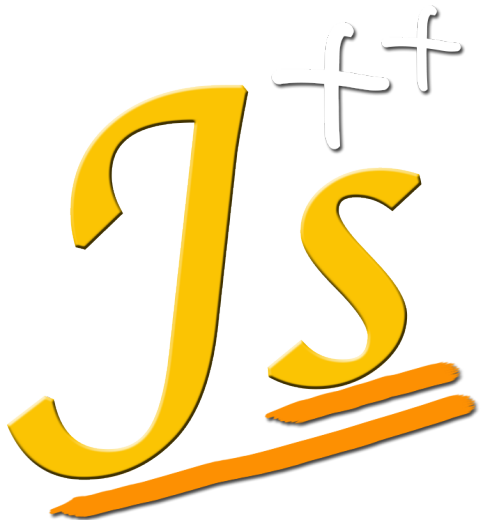
```html
<div class="item">
    <a href="" class="item-lk">
        <div class="img-box">
            <img src="{{img_url}}" alt="{{goods_
                />
        </div>
        <div class="title">{{goods_name}}</div>
        <div class="price">¥{{price}}.00</div>
    </a>
</div>
```
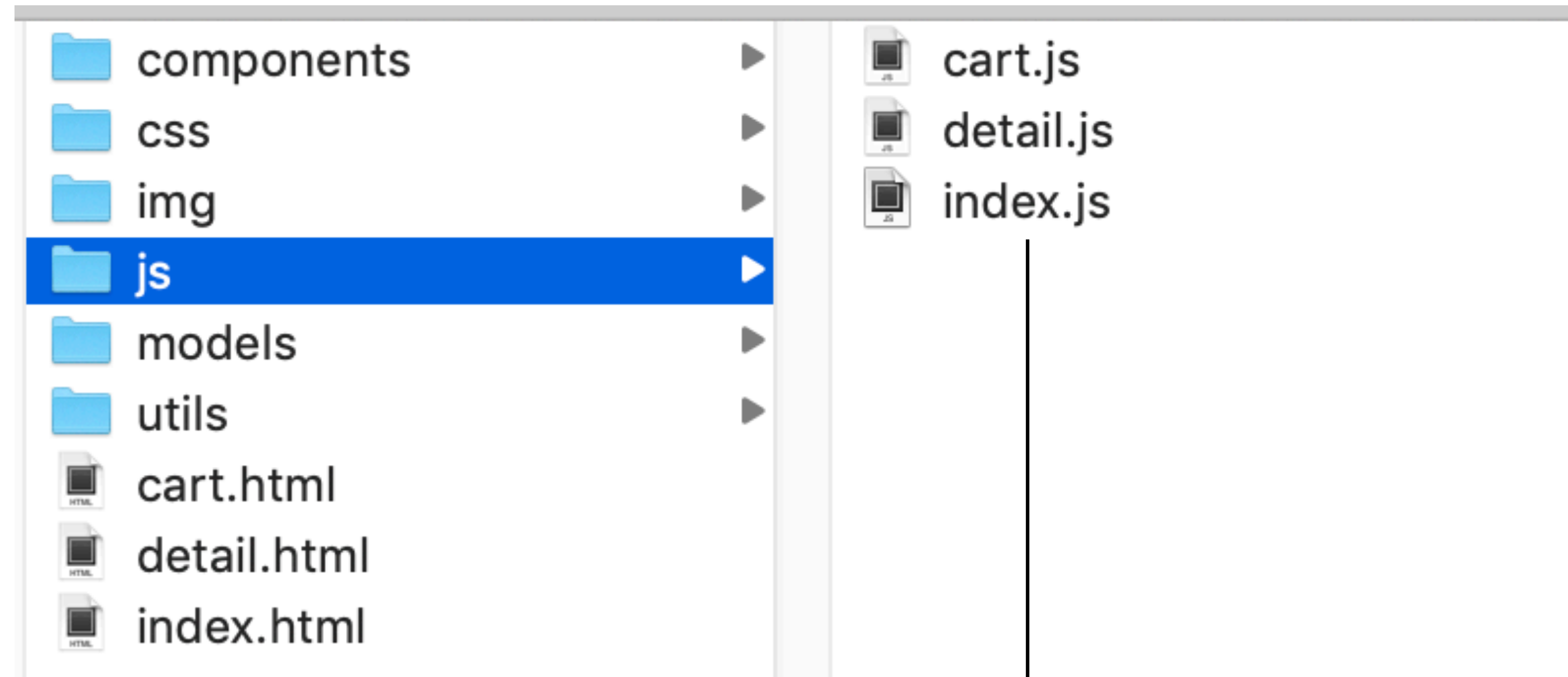
index页面拆分成多个组件

组件文件夹

.tpl 组件的HTML模板
.js 组件的JS脚本
.scss 组件的样式

Webpack工程化与项目架构-页面入口脚本


```
import { IndexModel } from '../models/index';
import ListItem from '../components/index/list_item/index';
import Header from '../components/header/index';
import '../css/index.scss';

const indexModel = new IndexModel(),
      listItem = new ListItem(),
      header = new Header();

const App = (doc) => {
  const container = doc.getElementsByClassName('J_container')[0],
        list = container.getElementsByClassName('J_list')[0];

  const init = () => {
    indexModel.getGoodsList(listItem.tpl).then((res) => {
      list.innerHTML = res;
    });

    container.insertBefore(header.makeHeader('商品列表'), list);
  }

  init();
}

new App(document);
```

每个页面所对应的脚本
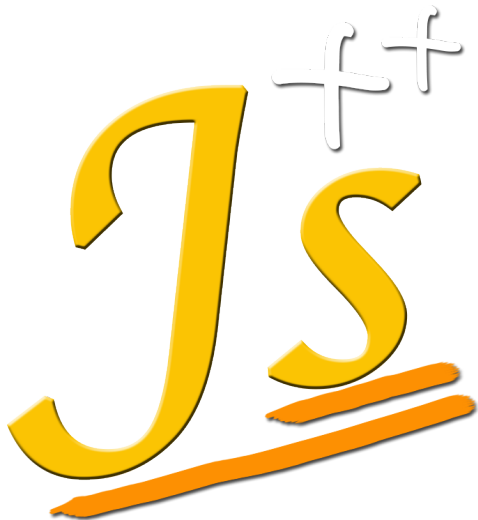
Webpack工程化与项目架构-模型层

每个页面对应的数据请求（模型层）

```js
import { HTTP } from '../utils/http';

class IndexModel extends HTTP {
  getGoodsList (tpl) {
    return new Promise ((resolve, reject) => {
      this.ajax({
        url: 'ShoppingCart/getGoodsList',
        type: 'POST',
        dataType: 'JSON',
        success: (data) => {
          let list = '';
          data.forEach((elem, idx) => {
            list += tpl().replace(/{{(.*?)}}/g, (node, key) => {
              return {
                id: elem.id,
                img_url: elem.img_url,
                limitation: elem.limitation,
                goods_name: elem.goods_name,
                price: elem.price,
                m_sales: elem.m_sales
              }[key];
            });
          });

          resolve(list);
        }
      });
    });
  }
}

export { IndexModel };
```
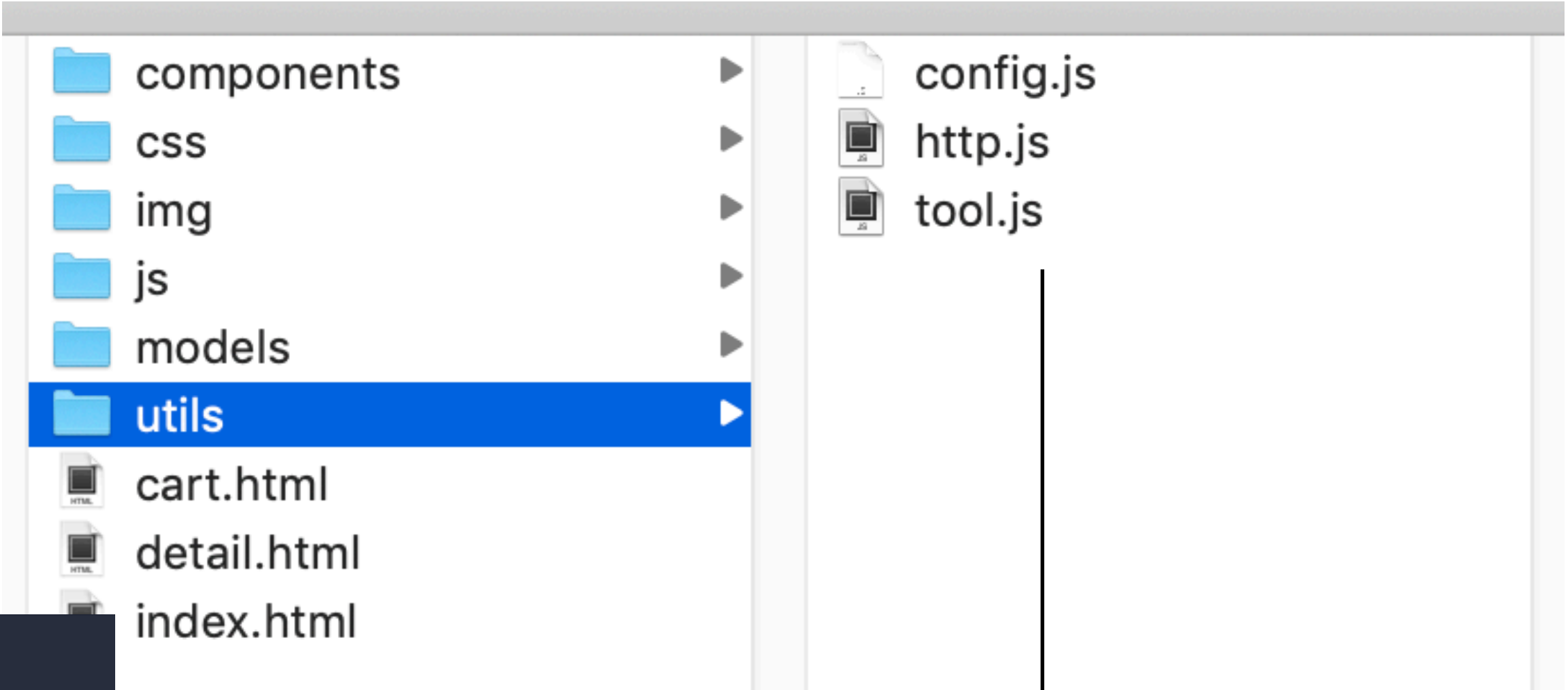
Webpack工程化与项目架构-工具集合


```
import { config } from './config';

const doAjax = Symbol('doAjax');

class HTTP {
  [doAjax] (options) {
    let o = window.XMLHttpRequest ?
            new XMLHttpRequest :
            new ActiveXObject('Microsoft.XMLHTTP');

    if(!o){
      throw new Error('您的浏览器不支持异步发起HTTP请求');
    }

    let opt = options || {},
        type = (opt.type || 'GET').toUpperCase(),
        async = '' + opt.async === 'false' ? false : true,
        dataType = opt.dataType || 'JSON',
        jsonp = opt.jsonp || 'cb'
        jsonpCallback = opt.jsonpCallback || 'jQuery' + randomNum() +
        url = config.api_base_url + opt.url,
        data = opt.data || null,
        timeout = opt.timeout || 30000,
        error = opt.error || function(){},
        success = opt.success || function(){},
        complete = opt.complete || function(){},
        t = null;

    if(!url){
      throw new Error('您没有填写URL');
    }

    if(dataType.toUpperCase() === 'JSONP' && type !== 'GET'){
      throw new Error('如果dataType为JSONP, type请您设置GET或不设置');
```
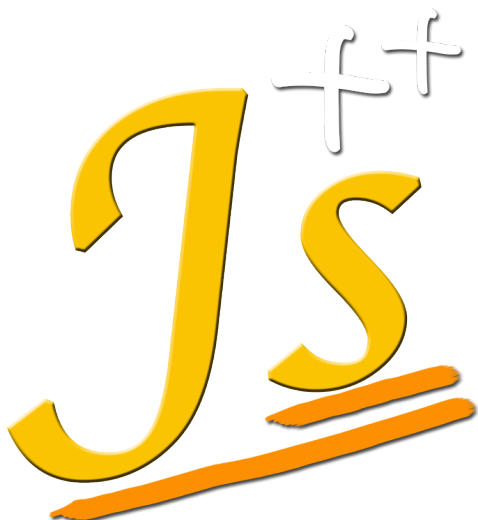
工具类、配置脚本

Webpack工程化与项目架构-模块

组件模板、样式与逻辑
（通过组件JS导出）

可导入

模型层（导出）

可导入

可导入

工具类模块（导出）

导入

页面JS脚本
（逻辑层）

页面HTML
（视图层）

打包

转换sass
转换ES6
处理图片
处理css
压缩JS
引入HTML
压缩HTML

打包文件
移入目标
文件夹

JS