1. 初识 webpack

环境准备

安装/初始化 Node.js

```
echo `nvm version-remote --lts` > .nvmrc
nvm install
npm init
```

- /package.json

  ```
  {
    "name": "goratings-tutorial",
    "version": "0.0.1",
    "description": "A tutorial of modern frontend.",
    "author": "ysdeng",
    "license": "ISC",
    "repository": {
      "type": "git",
      "url": "https://github.com/Yasenia/goratings-tutorial.git"
    },
    "scripts": {},
    "dependencies": {},
    "devDependencies": {}
  }
  ```

模块化重构

安装 webpack

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

代码清单

- /src/render.js

```javascript
function renderRatingItem(rating) {
  // ...
}

function renderRatings(ratings) {
  // ...
}

module.exports = renderRatings;
```

- /src/ratings.js

```javascript
const ratingList = [
  {
    "id": "1195",
    "name": "Ke Jie",
    "country": "cn",
    "gender": "male",
    "rank": 1,
    "avatar": "",
    "elo": 3672
  },
  // ...
];

module.exports = ratingList;
```

- /src/index.js

```javascript
const ratingList = require('./ratings');
const renderRatings = require('./render');

window.onload = function() {
  document.getElementById('root').innerHTML = renderRatings(ratingList);
};
```

- /dist/index.html

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta content="text/html" charset="UTF-8">
  </head>
  <body>
    <div id="root"></div>
    <script src="./index.bundle.js"></script>
  </body>
</html>
```

- /webpack.config.js

```
const config = {
  entry: `${__dirname}/src/index.js`,
  output: {
    path: `${__dirname}/dist`,
    filename: 'index.bundle.js',
  },
};

module.exports = config;
```

- /package.json

```
{
  "scripts": {
    "build": "webpack",
  },
}
```

打包运行

```
npm run build
```

2. 使用 loader

使用 ES6 语法

安装 babel

```
npm install --save-dev babel-core babel-preset-es2015 babel-loader
```

配置 babel loader

- /webpack.config.js

```js
const config = {
  // ...
  module: {
    rules: [
      {
        test: /\.js$/,
        use: {
          loader: 'babel-loader',
          options: {
            presets: 'es2015',
          },
        },
      },
    ],
  },
};

module.exports = config;
```

代码清单

- /src/ratings.js

  ```js
  // ...
  export default ratingList;
  ```

- /src/render.js

```javascript
const renderRatingItem = rating => `<div>
  <span>${rating.rank}</span>
  <span>|</span>
  <span>${rating.name}</span>
  <span>|</span>
  <span>${rating.elo}</span>
</div>`;

const renderRatings = ratings => `<div>
  ${ratings.map(renderRatingItem).join('\n')}
</div>`;

export default renderRatings;
```

- /src/index.js

```javascript
import ratingList from './ratings';
import renderRatings from './render';

window.onload = () => {
  document.getElementById('root').innerHTML = renderRatings(ratingList);
};
```

模块化加载 json 文件

安装 json loader

```
npm install --save-dev json-loader
```

配置 json loader

- /webpack.config.js

```
// ...
const config = {
  // ...
  module: {
    rules: [
      // ...
      {
        test: /\.json$/,
        use: 'json-loader',
      },
    ],
  },
  // ...
};

module.exports = config;
```

代码清单

- /src/ratings.json

```
[
  {
    "id": "1195",
    "name": "Ke Jie",
    "country": "cn",
    "gender": "male",
    "rank": 1,
    "avatar": "",
    "elo": 3672
  }
]
```

添加 HtmlWebpackPlugin 支持

安装 HtmlWebpackPlugin

```
npm install --save-dev html-webpack-plugin
```

代码清单

- /webpack.config.js
```

```javascript
const HtmlWebpackPlugin = require('html-webpack-plugin');

const config = {
  // ...
  plugins: [
    new HtmlWebpackPlugin({
      template: `${__dirname}/src/index.html`,
    }),
  ],
};

module.exports = config;
```

- /src/index.html

```html
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta content="text/html" charset="UTF-8">
  </head>
  <body>
    <div id="root"></div>
  </body>
</html>
```

3. 代码微调

[+]优化 webpack 配置文件

使用 path 解析文件路径

- /webpack.config.js

```javascript
// ...
const path = require('path');

const rootPath = __dirname;
const config = {
  entry: path.join(rootPath, 'src', 'index.js'),
  output: {
    path: path.join(rootPath, 'dist'),
    // ...
  },
  // ...
  plugins: [
    new HtmlWebpackPlugin({
      template: path.join(rootPath, 'src', 'index.html'),
    }),
  ],
};

module.exports = config;
```

添加 webpack-dev-serve 支持

安装 webpack-dev-server

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

配置 dev-server

- /webpack.config.js

  ```javascript
  // ...
  const config = {
    // ...
    devtool: 'eval-source-map',
    devServer: {
      contentBase: path.join(rootPath, 'dist'),
      port: 3000,
    },
  };

  module.exports = config;
  ```

- /package.json

```json
{
  "scripts": {
    "start": "webpack-dev-server",
  },
}
```

配置 HotModuleReplacementPlugin

- /webpack.config.js

```js
const webpack = require('webpack');

// ...
const { HotModuleReplacementPlugin } = webpack;

const config = {
  // ...
  plugins: [
    // ...
    new HotModuleReplacementPlugin(),
  ]
  devServer: {
    // ...
    hot: true,
  },
};

module.exports = config;
```

- /package.json

```json
{
  "scripts": {
    "start": "webpack-dev-server --hotOnly",
  },
}
```

启动服务

```
npm start
```

4. 使用 react

引入 react 框架

安装 react

```
npm install --save react react-dom
```

配置 webpack

```
# 添加 babel react 支持
npm install --save-dev babel-preset-react
```

- /webpack.config.js

```javascript
// ...
const config = {
  // ...
  entry: path.join(rootPath, 'src', 'index.jsx'),
  resolve: {
    extensions: ['.js', '.jsx']
  },
  // ...
  module: {
    rules: [
      {
        test: /\.js[x]?$/,
        use: {
          loader: 'babel-loader',
          options: {
            presets: ['es2015', 'react'],
          },
        },
      },
    ],
  },
  // ...
};

module.exports = config;
```

使用 react 进行开发

- /src/index.jsx

```
import React from 'react';
import ReactDOM from 'react-dom';
import ratingList from './ratings';

class RatingItem extends React.Component {
  render() {
    const { rating } = this.props;
    return (<div>
      <span>{ rating.rank }</span>
      <span>|</span>
      <span>{ rating.name }</span>
      <span>|</span>
      <span>{ rating.elo }</span>
    </div>);
  }
}

class RatingList extends React.Component {
  render() {
    const { ratings } = this.props;
    return (<div>
      { ratings.map(rating => (<RatingItem key={rating.id} rating={rati
ng} />)) }
    </div>);
  }
}

ReactDOM.render(<RatingList ratings={ratingList} />, document.getElemen
tById('root'));
```

模块化 react 组件

代码清单

- /src/components/rating-list/index.jsx

  ```
  import React from 'react';
  import RatingItem from './RatingItem';

  const RatingList = ({ ratings }) => (<div>
    { ratings.map(rating => (<RatingItem key={rating.id} rating={rating} />
  )) }
  </div>);

  export default RatingList;
  ```

- /src/components/rating-list/RatingItem.jsx

```jsx
import React from 'react';

/** @type {{ rank, name, elo }} */
const RatingItem = ({ rating }) => (<div>
  <span>{ rating.rank }</span>
  <span>|</span>
  <span>{ rating.name }</span>
  <span>|</span>
  <span>{ rating.elo }</span>
</div>);

export default RatingItem;
```

- /src/index.jsx

```jsx
import React from 'react';
import ReactDOM from 'react-dom';
import RatingList from './components/rating-list';
import ratings from './ratings.json';

ReactDOM.render(<RatingList ratings={ratings} />, document.getElementById('root'));
```

5. 引入样式

css 模块化

安装 css/style loader

```
npm install --save css-loader style-loader
```

配置 css/style loader

- /webpack.config.js

```
// ...
const config = {
  // ...
  module: {
    rules: [
      // ...
      {
        test: /\.css$/,
        use: ['style-loader' ,'css-loader?modules&localIdentName=[loca
l]-[hash:base64:4]'],
      },
    ],
  },
  // ...
};

module.exports = config;
```

使用 sass

安装 sass

```
npm install --save-dev node-sass sass-loader
```

配置 sass loader

- /webpack.config.js

```
const config = {
  // ...
  module: {
    rules: [
      // ...
      {
        test: /\.css$/,
        use: ['style-loader' ,'css-loader?modules&localIdentName=[loca
l]-[hash:base64:4]'],
      },
    ],
  },
  // ...
};
```