1. Design interface

The whole system can be roughly divided into user center (registration, login, authentication), movie classification, telecom details, user collection, user likes, home page recommendation function modules.

According to each functional module design the interface incoming and response number

2. design database

Database using MySQL, the table probably has a user table (user name, password, email, contact information, personal information, etc.)

Movie classification table: classification name, classification label

Movie details table: basic information, related picture resources

User collection association table: this table is associated with the relationship between users and movies

User likes table: this table is related to the relationship between users and movie likes

3. back-end services using egg.js framework, this framework is based on koa secondary packaging of the back-end framework. Based on JavaScript, nodejs.

The whole service is divided into: Controller Service

front-end ajax request to access the service routing address, the framework controller layer is responsible for receiving parameters, service layer to process the business logic and interact with the database, and then the controller to return the response data.

Initially when I did this project, I wanted to use javascript to write the backend, the significant advantage of NodeJS to do web backend development compared to other languages is that the front and back end of a set of language technology stack is unified, with its own egg architecture will make the overall workload of the project and the probability of error is much smaller.

Of course the main reason or learning costs, individuals most familiar with java, in learning javascript and will not have any major difficulties and understanding problems, saving a lot of time.

4. The reason chose Egg.js

Egg.js is a product of Alibaba based on Node.js and Koa is a Nodejs enterprise application development framework. It can help development teams and developers to reduce development and maintenance costs.

Express and Koa is a widely used framework in the Node.js community, simple and highly scalable, ideal for personal projects.

Egg.js based on Es6, Es7 and Typescript, Koa2 makes Nodejs has a more standardized development model, lower learning costs, more elegant code, less development costs, less maintenance costs.

The features of Egg.js are:

provides the ability to customize the upper framework based on Egg

highly scalable plug-in mechanism

Built-in multi-process management

Koa-based development, excellent performance

Stable framework with high test coverage

Progressive development

5.Security

Encrypt user passwords using the bcrypt encryption algorithm

The biggest benefit of bcrypt is that there is a parameter (work factor) that can be used to adjust the computational strength, and the work factor is included in the output digest. As the attacker's computational power increases, the user can gradually increase the work factor without affecting the logins of existing users. bcrypt has been carefully analyzed by many security experts and is used in OpenBSD, which is known for its security, and is generally considered to be more tolerant of the risks associated with increased computational power than PBKDF2. bcrypt is also supported by a wide range of libraries, so I use this way of storing passwords.

6.Pro and cons

Although this architecture is not too difficult to develop, a problem has been found so far is the processing of movie data. Our original plan was to use the imdb api to update movie data in real time, but it turns out that we can only implement local data. As a result, we can only update the movies on the website manually, and if we want to scale up, we need additional hardware (hard drive/cloud drive) support.

7.Test run

Text

Description automatically generated

Text

Description automatically generated

Shape

Description automatically generated