Interface Specification

<algorithm >

# Introduction

This module is to implement the algorithm of recommender system. The details would presented in the following.

# Services

## Services Provided

|  |  |  |  |
| --- | --- | --- | --- |
|  | Service | Provided By | Tested By |
| 1 | The user gets a recommendation list of books. | recommend | T1 |
| 2 | The user updates/re-trains the existing model. | model\_fit | T2 |

## Access Method

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Access Method** | **Parameter name** | **Parameter type** | **Description** | **Exceptions** | **Map to services** |
| recommend | user\_id, items\_info, users\_info, ratings\_info, model | int, table, table, table, pickle | user\_id is the id of the user who is using the system;  items, users, and ratings are three tables in the database; model is a pickle file which represents the existing model. | There is no existing model. | 1 |
| model\_fit | items\_info, users\_info, ratings\_info | table, table, table | items, users, and ratings are three tables in the database; |  | 2 |

## Access Method Effects

|  |  |
| --- | --- |
| **Access Method** | **Description** |
| recommend | The user can get a list of recommendation list of books via this method. The default size of the result list is 4. The information in this list includes the ISBN, title, publisher, publish year, author and the url of the book cover. |
| model\_fit | The user can update/re-train the existing model when necessary.(e.g. The database was updated.) The new model would take place of the origin model. |

# Test Cases

<Characterize the expected value of the outputs over sets calls to the module.>

### T1

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Step** | **Description** | **Input Type/Value** | **Expected Results** | **Service** | **Preamble** |
| 1 | recommend | user\_id, items\_info, users\_info, ratings\_info | A list of top 4 recommendation books. |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

### T2

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Step** | **Description** | **Input Type/Value** | **Expected Results** | **Service** | **Preamble** |
| 1 | model\_fit | items\_info, users\_info, ratings\_info | A new model to be saved in place of origin model. |  |  |