Test Project

Session 1 – Map Application

IT Software Solutions for Business

Submitted by:
Faye FEI - Neusoft Education and Technology Group, Independent Test Project Designer
Benjamin Frost, Independent Test Project Validator

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Introduction to Test Project

This project is an offline-map application. Its functional modules include map display, route planning, nearby restaurant and attraction search, review management for restaurants and attractions, and user profile management.

For this module, contestants are required to develop a complete set of APIs using the provided SQL Server data tables and sample data. The APIs consist of five major modules with a total of 15 interfaces.

Instructions to the Competitor

Files to submit:

- A directory containing the complete source code
- Session1_README.txt: A README file with instructions on how to launch the API application, plus optional additional notes for the judging panel
- Session1_API_Endpoints.txt: A list of all implemented API endpoints, corresponding HTTP methods and required parameters

All above files and directories shall be placed inside the Competitor-Module1 folder for submission.

Other Requirements and Notes

- The project shall ensure stable invocation of all APIs, accurate data processing and zero program exceptions.
- All APIs shall support standard data operations: query, insert, update, and delete.
- Properly implement login status management as well as Token storage and validity period control.

Description of project and tasks

Create an API application named Model1. In this phase, develop a standardized API application based on the provided database SQL scripts.

1.1 Nearby Services

Return paginated query for nearby restaurants/Scenic Spots with filters by name, address. Returns basic information, ratings, price range, location, business hours and descriptions of catering establishments.

Develop the following interfaces based on Database Tables【Restaurants】 and【ScenicSpots】.

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1.1.1 Query restaurants : GET /system/api/restaurant/list

PARAMETER NAME	TYPE	REQUIRED	DESCRIPTION
pageNum	Integer	No	Page number
pageSize	Integer	No	Records per page
restaurantName	String	No	Name of the restaurant
restaurantType	String	No	Cuisine type (refer to table below)

Response requirements:


```
{
"code": 200,
"msg": "success",
"data": {
"total": 10,
"rows": [
{
            "restaurantId": 1,
            "restaurantName": "Quanjude Roast Duck",
            "address": "30 Qianmen Street, Dongcheng District, Beijing",
            "phone": "010-12345678",
            "rating": "4.5",
            "priceRange": "$15-45",
            "restaurantType": "Beijing Cuisine",
            "imageUrl": "/upload/20260602/639160074121552317.png",
            "description": "Century-old roast duck restaurant",
            "distance": "3.4",
            "businessType": "restaurant"
        }]
 }
}
```


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1.1.2 Query restaurant Details：GET /system/api/restaurant/{restaurantId}

Response requirements:


```
{
"code": 200,
"msg": "success",
"data": {
      "businessHours": "10:00-22:00",
      "remainingParkingSpaces": 15,
      "restaurantId": 1,
      "restaurantName": "Quanjude Roast Duck",
      "address": "30 Qianmen Street, Dongcheng District, Beijing",
      "phone": "010-12345678",
      "rating": "4.5",
      "priceRange": "$15-45",
      "restaurantType": "Beijing Cuisine",
      "imageUrl": "/upload/20260602/639160074121552317.png",
      "description": "Century-old roast duck restaurant",
      "distance": "3.4",
      "businessType": "restaurant"
   }
}
```


1.1.3 Query Scenic Spots：GET /system/api/scenicSpot/list

PARAMETER NAME	TYPE	REQUIRED	DESCRIPTION
pageNum	Integer	No	Page number
pageSize	Integer	No	Item count per page
spotName	String	No	Scenic spot name
address	String	No	Address

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Response requirements:


```
{
"code": 200,
"msg": "success",
"data": {
"total": 10,
"rows": [
{
            "spotId": 1,
            "spotName": "Palace Museum",
            "address": "4 Jingshan Front Street, Dongcheng District, Beijing",
            "latitude": "39.9163",
            "longitude": "116.3972",
            "phone": "010-85007047",
            "rating": "5.0",
            "ticketPrice": "$9",
            "openingHours": "8:30-17:00",
            "description": "Imperial palace of Ming and Qing dynasties",
            "distance": "3.4",
            "imageUrl": "/upload/20260602/639160112022167429.png",
            "businessType": "scenic"
        }]
}
}
```


1.1.4 Query Scenic Spot Details：GET /system/api/scenicSpot/{spotId}

Response requirements:


```
{
"code": 200,
"msg": "success",
 "data": {
      "touristPeriod": "09:00-11:00",
      "spotId": 1,
      "spotName": "Palace Museum",
      "address": "4 Jingshan Front Street, Dongcheng District, Beijing",
      "latitude": "39.9163",
      "longitude": "116.3972",
      "phone": "010-85007047",
      "rating": "5.0",
      "ticketPrice": "$9",
      "openingHours": "8:30-17:00",
      "description": "Imperial palace of Ming and Qing dynasties",
      "distance": "3.4",
      "imageUrl": "/upload/20260602/639160112022167429.png",
      "businessType": "scenic"
   }
}
```


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1.2 Review Management

Return paginated query of review list with filters by business type, business ID and star rating; allows submitting score, review content and pictures, as well as deleting and managing user's own reviews.

Develop the following interfaces based on Database Tables【Reviews】 and【Users】.

1.2.1 Query Public Review List: GET /system/api/review/list

PARAMETER NAME	TYPE	REQUIRED	DESCRIPTION
pageNum	Integer	No	Page number
pageSize	Integer	No	Number of items per page
businessType	String	No	Business type (scenic、restaurant)
businessId	Long	No	Business ID

Headers:

Authorization: Token -- Required. Used for identity verification when calling the API after user login via authentication center.

Response requirements:

```
{
"code": 200,
"msg": "success",
"data": {
"total": 10,
"rows": [
{
            "reviewId": 1,
            "userId": 2,
            "userName": "Zhang San",
            "businessType": "scenic",
            "businessId": 1,
            "rating": "5",
            "reviewContent": "Very nice scenic spot, worth visiting!",
            "reviewTime": "2026-04-27 10:00:00",
            "imageUrls":[/upload/20260602/639160112022167429.png,
/upload/20260602/639160074121552317.png],
            "likeCount": 128
        }
]
}
}
```


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1.2.2 Query My Personal Review List: GET /system/api/review/mine

PARAMETER NAME	TYPE	REQUIRED	DESCRIPTION
pageNum	Integer	No	Page number
pageSize	Integer	No	Number of records per page
businessType	String	No	Business type (scenic、restaurant)
businessId	Long	No	Business ID

Headers:

Authorization: Token -- Required. Used for identity verification when calling the API after user login via authentication center.

Response requirements:


```
{
   "code": 200,
   "msg": "success",
   "data": {
      "total": 1,
      "rows": [
         {
            "reviewId": 31,
            "userId": 1,
            "userName": "Admin",
            "businessType": "scenic",
            "businessId": 2,
            "rating": "5",
            "reviewContent": "Hi,This is TEST",
            "reviewTime": "2026-05-28 13:36:39",
           "imageUrls":[/upload/20260602/639160112022167429.png,
/upload/20260602/639160074121552317.png],
            "likeCount": 10
         }
      ]
   }
}
```


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1.2.3 Add a comment：POST /system/api/review/add

PARAMETER NAME	TYPE	REQUIRED	DESCRIPTION
businessType	String	Yes	Business type（scenic、restaurant）
businessId	Long	Yes	Business ID
rating	String	Yes	Star rating (range: 1–5)
reviewContent	String	Yes	Content of the review
imageUrls	String[]	No	Review picture files

Headers:

Authorization: Token -- Required. Used for identity verification when calling the API after user login via authentication center.

Content-Type: application/json

Response requirements:

```
{
    "code": 200,
    "msg": "success",
    "data": 1   //return add counts
}
```

1.2.4 Delete one's comments：DELETE /system/api/review/{reviewIds}

Headers:

Authorization: Token -- Required. Used for identity verification when calling the API after user login via authentication center.

Response requirements:

```
{
    "code": 200,
    "msg": "success",
    "data": 3 //return deleted counts
}
```


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1.2.5 image upload: POST /api/upload/images

PARAMETER NAME	TYPE	REQUIRED	DESCRIPTION
files	MultipartFile[]	Yes	List of image files

Headers: {Content-Type:multipart/form-data}

Request Example:

files: [binary file data**]**

Response requirements:


```
{
    "code": 200,
    "msg": "Upload completed",
    "data": {
        "success": 2,
        "fail": 0,
        "total": 2,
        "details": [
            {
                "fileName": "/upload/20260602/639159965591609734.png",
                "url": "http://localhost:5127/upload/20260602/639159965591609734.png",
                "size": 4368078
            },
            {
                "fileName": "/upload/20260602/639159965591859617.png",
                "url": "http://localhost:5127/upload/20260602/639159965591859617.png",
                "size": 4368078
            }
        ]
```


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