
Seek - Next

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Team 18

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AUTHENTICATION API TEST CASES

This document provides details about the unit tests for the authentication API endpoints. Each test case includes information about the API being tested, the inputs, expected output, actual output, and the result.

1.1 Test Cases for `/register`

1.1.1 Test Case: `test_register_success`

- **API being tested:** */register*

- **Inputs:**

```
{
  "username": "testuser",
  "email": "testuser@example.com",
  "password": "password123",
  "role": "user"
}
```

- **Expected Output:**

```
{
  "message": "User registered successfully"
}
```

- **Actual Output:**

```
{
  "message": "User registered successfully"
}
```

- **Result:** Success

1.1.2 Test Case: `test_register_existing_user`

- API being tested: */register*
- Inputs:

```
{  
  "username": "testuser",  
  "email": "testuser@example.com",  
  "password": "password123",  
  "role": "user"  
}
```

```
{  
  "username": "testuser",  
  "email": "newemail@example.com",  
  "password": "newpassword123",  
  "role": "user"  
}
```

- Expected Output:

```
{  
  "detail": "User already exists"  
}
```

- Actual Output:

```
{  
  "detail": "User already exists"  
}
```

- Result: Success

1.1.3 Test Case: `test_register_missing_fields`

- API being tested: */register*
- Inputs:

```
{  
  "username": "testuser",  
  "email": "testuser@example.com"  
}
```

- Expected Output:

```
{  
  "detail": "Field required"  
}
```

- Actual Output:


```
{  
  "detail": "Field required"  
}
```

- **Result:** Success

1.2 Test Cases for `/login`

1.2.1 Test Case: `test_login_success`

- **API being tested:** */login*
- **Inputs:**

```
{  
  "username": "testuser",  
  "password": "password123"  
}
```

- **Expected Output:**

```
{  
  "access_token": "string",  
  "username": "testuser",  
  "role": "user",  
  "email": "testuser@example.com"  
}
```

- **Actual Output:**

```
{  
  "access_token": "string",  
  "username": "testuser",  
  "role": "user",  
  "email": "testuser@example.com"  
}
```

- **Result:** Success

1.2.2 Test Case: `test_login_incorrect_password`

- **API being tested:** */login*
- **Inputs:**

```
{  
  "username": "testuser",  
  "password": "wrongpassword"  
}
```

- **Expected Output:**

```
{
  "detail": "Incorrect username or password"
}
```

- **Actual Output:**

```
{
  "detail": "Incorrect username or password"
}
```

- **Result:** Success

1.2.3 Test Case: `test_login_non_existing_user`

- **API being tested:** */login*

- **Inputs:**

```
{
  "username": "nonexistentuser",
  "password": "password123"
}
```

- **Expected Output:**

```
{
  "detail": "User does not exist"
}
```

- **Actual Output:**

```
{
  "detail": "User does not exist"
}
```

- **Result:** Success

1.3 Test Cases for `/verify-token`

1.3.1 Test Case: `test_verify_token_success`

- **API being tested:** */verify-token*

- **Inputs:**

```
{
  "Authorization": "Bearer validtoken"
}
```

- **Expected Output:**

```
{  
  "username": "testuser",  
  "role": "user",  
  "email": "testuser@example.com"  
}
```

- **Actual Output:**

```
{  
  "username": "testuser",  
  "role": "user",  
  "email": "testuser@example.com"  
}
```

- **Result:** Success

1.3.2 Test Case: `test_verify_token_invalid`

- **API being tested:** */verify-token*

- **Inputs:**

```
{  
  "Authorization": "Bearer invalidtoken"  
}
```

- **Expected Output:**

```
{  
  "detail": "Invalid token"  
}
```

- **Actual Output:**

```
{  
  "detail": "Invalid token"  
}
```

- **Result:** Success

EXTENDED COURSE API TEST CASES

This document provides details about the additional unit tests for the course-related API endpoints. Each test case includes information about the API being tested, the inputs, expected output, actual output, and the result.

2.1 Test Cases for `/courses/create`

2.1.1 Test Case: `test_create_course`

- **API being tested:** */courses/create*

- **Inputs:**

```
{
  "title": "New Test Course 1",
  "description": "A new test course description",
  "total_modules": 10,
  "price": 100.0
}
```

- **Expected Output:** - Ensure the response contains the details of the newly created course.

- **Actual Output:**

```
{
  "title": "New Test Course 1",
  "description": "A new test course description",
  "total_modules": 10,
  "price": 100.0
}
```

- **Result:** Success

2.1.2 Test Case: `test_create_course_missing_fields`

- **API being tested:** */courses/create*

- **Inputs:**

```
{
  "title": "Incomplete Course",
  "description": "Missing total_modules and price"
}
```

- **Expected Output:**

```
{
  "detail": "Unprocessable Entity (Validation error)"
}
```

- **Actual Output:**

```
{
  "detail": "Unprocessable Entity (Validation error)"
}
```

- **Result:** Success

2.1.3 Test Case: `test_create_course_invalid_data_type`

- **API being tested:** */courses/create*

- **Inputs:**

```
{
  "title": "Invalid Course",
  "description": "Invalid data types",
  "total_modules": "ten",
  "price": "hundred"
}
```

- **Expected Output:**

```
{
  "detail": "Unprocessable Entity (Validation error)"
}
```

- **Actual Output:**

```
{
  "detail": "Unprocessable Entity (Validation error)"
}
```

- **Result:** Success

2.2 Test Cases for `/courses/update`

2.2.1 Test Case: `test_update_course`

- **API being tested:** */courses/update*
- **Inputs:**

```
{  
  "id": 1,  
  "title": "Updated Test Course",  
  "description": "An updated test course description"  
}
```

- **Expected Output:** - Ensure the response contains the updated details of the course.
- **Actual Output:**

```
{  
  "id": 1,  
  "title": "Updated Test Course",  
  "description": "An updated test course description"  
}
```

- **Result:** Success

2.2.2 Test Case: `test_update_non_existent_course`

- **API being tested:** */courses/update*
- **Inputs:**

```
{  
  "id": 9999,  
  "title": "Non-existent Course",  
  "description": "Should not be updated"  
}
```

- **Expected Output:**

```
{  
  "detail": "Course not found"  
}
```

- **Actual Output:**

```
{  
  "detail": "Course not found"  
}
```

- **Result:** Success

2.2.3 Test Case: `test_update_course_invalid_id`

- **API being tested:** */courses/update*
- **Inputs:**

```
{  
  "id": 2000,  
  "title": "Invalid ID Course",  
  "description": "Should fail due to invalid ID"  
}
```

- **Expected Output:**

```
{  
  "detail": "Course not found"  
}
```

- **Actual Output:**

```
{  
  "detail": "Course not found"  
}
```

- **Result:** Success

2.3 Test Cases for `/courses/delete`

2.3.1 Test Case: `test_delete_course`

- **API being tested:** */courses/delete*
- **Inputs:**

```
{  
  "id": 1  
}
```

- **Expected Output:**

```
{  
  "message": "Course deleted successfully"  
}
```

- **Actual Output:**

```
{  
  "message": "Course deleted successfully"  
}
```

- **Result:** Success

2.3.2 Test Case: `test_delete_non_existent_course`

- **API being tested:** */courses/delete*

- **Inputs:**

```
{  
  "id": 9999  
}
```

- **Expected Output:**

```
{  
  "detail": "Course not found"  
}
```

- **Actual Output:**

```
{  
  "detail": "Course not found"  
}
```

- **Result:** Success

2.4 Test Cases for `/courses/get`

2.4.1 Test Case: `test_get_course`

- **API being tested:** */courses/get*

- **Inputs:**

```
{  
  "id": 1  
}
```

- **Expected Output:** - Ensure the response contains the details of the course with the given ID.

- **Actual Output:**

```
{  
  "id": 1,  
  "title": "Test Course",  
  "description": "A test course description"  
}
```

- **Result:** Success

2.4.2 Test Case: `test_get_course_invalid_id`

- **API being tested:** */courses/get*
- **Inputs:**

```
{  
  "id": "invalid_id"  
}
```

- **Expected Output:**

```
{  
  "detail": "Unprocessable Entity (Validation error)"  
}
```

- **Actual Output:**

```
{  
  "detail": "Unprocessable Entity (Validation error)"  
}
```

- **Result:** Success

2.5 Test Cases for `/courses/list`

2.5.1 Test Case: `test_get_all_courses`

- **API being tested:** */courses/list*
- **Inputs:**

```
{}
```

- **Expected Output:** - Ensure the response contains a list of all courses.
- **Actual Output:**

```
[  
  {  
    "id": 1,  
    "title": "New Test Course 1",  
    "description": "A new test course description",  
    "total_modules": 10,  
    "price": 100.0  
  }  
]
```

- **Result:** Success

2.5.2 Test Case: `test_get_all_courses_pagination`

- **API being tested:** `/courses/list`

- **Inputs:**

```
{
  "limit": 5,
  "skip": 5
}
```

- **Expected Output:** - Ensure the response contains a paginated list of courses.

- **Actual Output:**

```
[
  {
    "id": 9,
    "title": "Course 9",
    "description": "Course description",
    "total_modules": 10,
    "price": 100.0
  }
]
```

- **Result:** Success

2.5.3 Test Case: `test_get_all_courses_no_data`

- **API being tested:** `/courses/list`

- **Inputs:**

```
{}
```

- **Expected Output:**

```
{
  "courses": []
}
```

- **Actual Output:**

```
{
  "courses": []
}
```

- **Result:** Success

STUDENT COURSE MANAGEMENT API UNIT TESTS

This document provides details about the unit tests for the API endpoints related to student course management. Each test case includes information about the API being tested, the inputs, expected output, actual output, and the result.

3.1 Test Cases for `/student/enrolled_course/student-overview`

3.1.1 Test Case: `test_get_student_course_overview_success`

- **Inputs:**

```
{
  "course_id": "1",
  "student_id": "1"
}
```

- **Expected Output:**

```
{
  "course_description": "Test Description",
  "assignment_marks": {"1": null},
  "exam_marks": {"1": 90.0}
}
```

- **Actual Output:**

```
{
  "course_description": "Test Description",
  "assignment_marks": {"1": null},
  "exam_marks": {"1": 90.0}
}
```

- **Result:** Success

3.1.2 Test Case: `test_get_student_course_overview_invalid_course_id`

- **Inputs:**

```
{  
  "course_id": "999",  
  "student_id": "1"  
}
```

- **Expected Output:**

```
{  
  "detail": "Enrollment not found"  
}
```

- **Actual Output:**

```
{  
  "detail": "Enrollment not found"  
}
```

- **Result:** Success

3.1.3 Test Case: `test_get_student_course_overview_invalid_student_id`

- **Inputs:**

```
{  
  "course_id": "1",  
  "student_id": "999"  
}
```

- **Expected Output:**

```
{  
  "detail": "Enrollment not found"  
}
```

- **Actual Output:**

```
{  
  "detail": "Enrollment not found"  
}
```

- **Result:** Success

3.1.4 Test Case: `test_get_student_course_overview_invalid_ids`

- **Inputs:**

```
{
  "course_id": "999",
  "student_id": "999"
}
```

- **Expected Output:**

```
{
  "detail": "Enrollment not found"
}
```

- **Actual Output:**

```
{
  "detail": "Enrollment not found"
}
```

- **Result:** Success

3.2 Test Cases for `/student/enrolled_course/`

3.2.1 Test Case: `test_get_module_details_success`

- **Inputs:**

```
{
  "course_id": "1",
  "module_id": "1"
}
```

- **Expected Output:**

```
{
  "title": "Test Module",
  "total_lectures": 5,
  "total_assignments": 3
}
```

- **Actual Output:**

```
{
  "title": "Test Module",
  "total_lectures": 5,
  "total_assignments": 3
}
```

- **Result:** Success

3.2.2 Test Case: `test_get_module_details_invalid_course_id`

- **Inputs:**

```
{
  "course_id": "999",
  "module_id": "1"
}
```

- **Expected Output:**

```
{
  "detail": "Module not found"
}
```

- **Actual Output:**

```
{
  "detail": "Module not found"
}
```

- **Result:** Success

3.2.3 Test Case: `test_get_module_details_invalid_module_id`

- **Inputs:**

```
{
  "course_id": "1",
  "module_id": "999"
}
```

- **Expected Output:**

```
{
  "detail": "Module not found"
}
```

- **Actual Output:**

```
{
  "detail": "Module not found"
}
```

- **Result:** Success

3.2.4 Test Case: `test_get_module_details_invalid_ids`

- **Inputs:**

```
{  
  "course_id": "999",  
  "module_id": "999"  
}
```

- **Expected Output:**

```
{  
  "detail": "Module not found"  
}
```

- **Actual Output:**

```
{  
  "detail": "Module not found"  
}
```

- **Result:** Success

3.3 Test Cases for `/student/courses/{course_id}`

3.3.1 Test Case: `test_get_course_details_success`

- **Inputs:** None

- **Expected Output:**

```
{  
  "title": "Test Course",  
  "description": "Test Description",  
  "total_modules": 10,  
  "price": 100.0  
}
```

- **Actual Output:**

```
{  
  "title": "Test Course",  
  "description": "Test Description",  
  "total_modules": 10,  
  "price": 100.0  
}
```

- **Result:** Success

3.3.2 Test Case: `test_get_course_details_invalid_course_id`

- **Inputs:** None
- **Expected Output:**

```
{  
  "detail": "Course not found"  
}
```

- **Actual Output:**

```
{  
  "detail": "Course not found"  
}
```

- **Result:** Success

3.4 Test Cases for `/student/enroll`

3.4.1 Test Case: `test_enroll_student_success`

- **Inputs:**

```
{  
  "student_id": "1",  
  "course_id": "2"  
}
```

- **Expected Output:**

```
{  
  "message": "Enrollment successful"  
}
```

- **Actual Output:**

```
{  
  "message": "Enrollment successful"  
}
```

- **Result:** Success

3.4.2 Test Case: `test_enroll_student_invalid_student_id`

- **Inputs:**

```
{  
  "student_id": "999",  
  "course_id": "1"  
}
```

- **Expected Output:**

```
{
  "detail": "Student or Course not found"
}
```

- **Actual Output:**

```
{
  "detail": "Student or Course not found"
}
```

- **Result:** Success

3.4.3 Test Case: `test_enroll_student_invalid_course_id`

- **Inputs:**

```
{
  "student_id": "1",
  "course_id": "999"
}
```

- **Expected Output:**

```
{
  "detail": "Student or Course not found"
}
```

- **Actual Output:**

```
{
  "detail": "Student or Course not found"
}
```

- **Result:** Success

3.5 Test Cases for `/student/enrolled-courses/{student_id}`

3.5.1 Test Case: `test_get_enrolled_courses_success`

- **Inputs:** None
- **Expected Output:**

```
[
  {
    "id": 1,
    "title": "Test Course"
  }
]
```

- **Actual Output:**

```
[
  {
    "id": 1,
    "title": "Test Course"
  }
]
```

- **Result:** Success

3.5.2 Test Case: `test_get_enrolled_courses_invalid_student_id`

- **Inputs:** None
- **Expected Output:**

```
[]
```

- **Actual Output:**

```
[]
```

- **Result:** Success

3.5.3 Test Case: `test_get_enrolled_courses_no_courses`

- **Inputs:** None
- **Expected Output:**

```
[]
```

- **Actual Output:**

```
[]
```

- **Result:** Success

INSTRUCTOR API TEST CASES

This document provides details about the unit tests for the API endpoints related to instructor course management. Each test case includes information about the API being tested, the inputs, expected output, actual output, and the result.

4.1 Test Cases for `/add_module`

4.1.1 Test Case: `test_add_module_success`

- **API being tested:** */add_module*

- **Inputs:**

```
{
  "title": "New Module",
  "description": "Module Description",
  "total_lectures": 6,
  "course_id": 1
}
```

- **Expected Output:**

```
{
  "message": "Module added successfully"
}
```

- **Actual Output:**

```
{
  "message": "Module added successfully"
}
```

- **Result:** Success

4.1.2 Test Case: `test_add_module_invalid_courseid`

- API being tested: `/add_module`
- Inputs:

```
{
  "title": "New Module",
  "description": "Module Description",
  "total_lectures": 6,
  "course_id": 2
}
```

- Expected Output:

```
{
  "detail": "Course not found"
}
```

- Actual Output:

```
{
  "detail": "Course not found"
}
```

- Result: Success

4.2 Test Cases for `/edit_module`

4.2.1 Test Case: `test_edit_module_success`

- API being tested: `/edit_module/1`
- Inputs:

```
{
  "title": "Updated Module Title"
}
```

- Expected Output:

```
{
  "message": "Module updated successfully"
}
```

- Actual Output:

```
{
  "message": "Module updated successfully"
}
```

- Result: Success

4.2.2 Test Case: `test_edit_module_not_found`

- **API being tested:** `/edit_module/999`
- **Inputs:**

```
{  
  "title": "Updated Module Title"  
}
```

- **Expected Output:**

```
{  
  "detail": "Content not found"  
}
```

- **Actual Output:**

```
{  
  "detail": "Content not found"  
}
```

- **Result:** Success

4.3 Test Cases for `/delete_module`

4.3.1 Test Case: `test_delete_module_success`

- **API being tested:** `/delete_module/1`
- **Inputs:** None
- **Expected Output:**

```
{  
  "message": "Module deleted successfully"  
}
```

- **Actual Output:**

```
{  
  "message": "Module deleted successfully"  
}
```

- **Result:** Success

4.3.2 Test Case: `test_delete_module_not_found`

- **API being tested:** */delete_module/999*
- **Inputs:** None
- **Expected Output:**

```
{  
  "detail": "Module not found"  
}
```

- **Actual Output:**

```
{  
  "detail": "Module not found"  
}
```

- **Result:** Success

4.4 Test Cases for `/add_lecture`

4.4.1 Test Case: `test_add_lecture_success`

- **API being tested:** */add_lecture*
- **Inputs:**

```
{  
  "title": "New Lecture",  
  "module_id": 1,  
  "url": "http://example.com",  
  "transcript": "Lecture Transcript"  
}
```

- **Expected Output:**

```
{  
  "message": "Lecture added successfully"  
}
```

- **Actual Output:**

```
{  
  "message": "Lecture added successfully"  
}
```

- **Result:** Success

4.4.2 Test Case: `test_add_lecture_invalid_moduleid`

- API being tested: `/add_lecture`

- Inputs:

```
{
  "title": "New Lecture",
  "module_id": 999,
  "url": "http://example.com",
  "transcript": "Lecture Transcript"
}
```

- Expected Output:

```
{
  "detail": "Module not found"
}
```

- Actual Output:

```
{
  "detail": "Module not found"
}
```

- Result: Success

4.5 Test Cases for `/edit_lecture`

4.5.1 Test Case: `test_edit_lecture_success`

- API being tested: `/edit_lecture/1`

- Inputs:

```
{
  "title": "Updated Lecture Title"
}
```

- Expected Output:

```
{
  "message": "Lecture updated successfully"
}
```

- Actual Output:

```
{
  "message": "Lecture updated successfully"
}
```

- Result: Success

4.5.2 Test Case: `test_edit_lecture_not_found`

- **API being tested:** `/edit_lecture/999`
- **Inputs:**

```
{  
  "title": "Updated Lecture Title"  
}
```

- **Expected Output:**

```
{  
  "detail": "Lecture not found"  
}
```

- **Actual Output:**

```
{  
  "detail": "Lecture not found"  
}
```

- **Result:** Success

4.6 Test Cases for `/delete_lecture`

4.6.1 Test Case: `test_delete_lecture_success`

- **API being tested:** `/delete_lecture/1`
- **Inputs:** None
- **Expected Output:**

```
{  
  "message": "Lecture deleted successfully"  
}
```

- **Actual Output:**

```
{  
  "message": "Lecture deleted successfully"  
}
```

- **Result:** Success

4.6.2 Test Case: `test_delete_lecture_not_found`

- **API being tested:** `/delete_lecture/999`
- **Inputs:** None
- **Expected Output:**

```
{  
  "detail": "Lecture not found"  
}
```

- **Actual Output:**

```
{  
  "detail": "Lecture not found"  
}
```

- **Result:** Success

4.7 Test Cases for `/add_assignment`

4.7.1 Test Case: `test_add_assignment_success`

- **API being tested:** `/add_assignment`
- **Inputs:**

```
{  
  "id": 2,  
  "title": "New Assignment",  
  "description": "Assignment Description",  
  "module_id": 1,  
  "type": "homework",  
  "due_date": "2024-08-05 00:00:00"  
}
```

- **Expected Output:**

```
{  
  "message": "Assignment added successfully"  
}
```

- **Actual Output:**

```
{  
  "message": "Assignment added successfully"  
}
```

- **Result:** Success

4.7.2 Test Case: `test_add_assignment_invalid_moduleid`

- API being tested: `/add_assignment`
- Inputs:

```
{
  "id": 2,
  "title": "New Assignment",
  "description": "Assignment Description",
  "module_id": 999,
  "type": "homework",
  "due_date": "2024-08-05 00:00:00"
}
```

- Expected Output:

```
{
  "detail": "Module not found"
}
```

- Actual Output:

```
{
  "detail": "Module not found"
}
```

- Result: Success

4.8 Test Cases for `/edit_assignment`

4.8.1 Test Case: `test_edit_assignment_success`

- API being tested: `/edit_assignment/1`
- Inputs:

```
{
  "title": "Updated Assignment Title"
}
```

- Expected Output:

```
{
  "message": "Assignment updated successfully"
}
```

- Actual Output:

```
{
  "message": "Assignment updated successfully"
}
```

- Result: Success

4.8.2 Test Case: `test_edit_assignment_not_found`

- API being tested: `/edit_assignment/999`

- Inputs:

```
{  
  "title": "Updated Assignment Title"  
}
```

- Expected Output:

```
{  
  "detail": "Assignment not found"  
}
```

- Actual Output:

```
{  
  "detail": "Assignment not found"  
}
```

- Result: Success

4.8.3 Test Case: `test_edit_assignment_invalid_moduleid`

- API being tested: `/edit_assignment/1`

- Inputs:

```
{  
  "module_id": 999  
}
```

- Expected Output:

```
{  
  "detail": "Module not found"  
}
```

- Actual Output:

```
{  
  "detail": "Module not found"  
}
```

- Result: Success

4.9 Test Cases for `/delete_assignment``

4.9.1 Test Case: ``test_delete_assignment_success``

- **API being tested:** `/delete_assignment/1`
- **Inputs:** None
- **Expected Output:**

```
{  
  "message": "Assignment deleted successfully"  
}
```

- **Actual Output:**

```
{  
  "message": "Assignment deleted successfully"  
}
```

- **Result:** Success

4.9.2 Test Case: ``test_delete_assignment_not_found``

- **API being tested:** `/delete_assignment/999`
- **Inputs:** None
- **Expected Output:**

```
{  
  "detail": "Assignment not found"  
}
```

- **Actual Output:**

```
{  
  "detail": "Assignment not found"  
}
```

- **Result:** Success

4.10 Test Cases for `/add_module``

4.10.1 Test Case: ``test_add_module_success``

- **API being tested:** `/add_module`
- **Inputs:**

```
{  
  "title": "New Module",  
  "description": "Module Description",  
}
```

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```
"total_lectures": 6,  
"course_id": 1  
}
```

- **Expected Output:**

```
{  
  "message": "Module added successfully"  
}
```

- **Actual Output:**

```
{  
  "message": "Module added successfully"  
}
```

- **Result:** Success

4.10.2 Test Case: `test_add_module_invalid_courseid`

- **API being tested:** */add_module*

- **Inputs:**

```
{  
  "title": "New Module",  
  "description": "Module Description",  
  "total_lectures": 6,  
  "course_id": 2  
}
```

- **Expected Output:**

```
{  
  "detail": "Course not found"  
}
```

- **Actual Output:**

```
{  
  "detail": "Course not found"  
}
```

- **Result:** Success

4.11 Test Cases for `/edit_module`

4.11.1 Test Case: `test_edit_module_success`

- **API being tested:** */edit_module/1*

- **Inputs:**

```
{  
  "title": "Updated Module Title"  
}
```

- **Expected Output:**

```
{  
  "message": "Module updated successfully"  
}
```

- **Actual Output:**

```
{  
  "message": "Module updated successfully"  
}
```

- **Result:** Success

4.11.2 Test Case: `test_edit_module_not_found`

- **API being tested:** */edit_module/999*

- **Inputs:**

```
{  
  "title": "Updated Module Title"  
}
```

- **Expected Output:**

```
{  
  "detail": "Content not found"  
}
```

- **Actual Output:**

```
{  
  "detail": "Content not found"  
}
```

- **Result:** Success

4.12 Test Cases for `/delete_module`

4.12.1 Test Case: `test_delete_module_success`

- **API being tested:** */delete_module/1*
- **Inputs:** None
- **Expected Output:**

```
{  
  "message": "Module deleted successfully"  
}
```

- **Actual Output:**

```
{  
  "message": "Module deleted successfully"  
}
```

- **Result:** Success

4.12.2 Test Case: `test_delete_module_not_found`

- **API being tested:** */delete_module/999*
- **Inputs:** None
- **Expected Output:**

```
{  
  "detail": "Module not found"  
}
```

- **Actual Output:**

```
{  
  "detail": "Module not found"  
}
```

- **Result:** Success

4.13 Test Cases for `/add_lecture`

4.13.1 Test Case: `test_add_lecture_success`

- **API being tested:** */add_lecture*
- **Inputs:**

```
{  
  "title": "New Lecture",  
  "module_id": 1,  
  ...  
}
```

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```
"url": "http://example.com",  
"transcript": "Lecture Transcript"  
}
```

- **Expected Output:**

```
{  
  "message": "Lecture added successfully"  
}
```

- **Actual Output:**

```
{  
  "message": "Lecture added successfully"  
}
```

- **Result:** Success

4.13.2 Test Case: `test_add_lecture_invalid_moduleid`

- **API being tested:** */add_lecture*

- **Inputs:**

```
{  
  "title": "New Lecture",  
  "module_id": 999,  
  "url": "http://example.com",  
  "transcript": "Lecture Transcript"  
}
```

- **Expected Output:**

```
{  
  "detail": "Module not found"  
}
```

- **Actual Output:**

```
{  
  "detail": "Module not found"  
}
```

- **Result:** Success

4.14 Test Cases for `/edit_lecture`

4.14.1 Test Case: `test_edit_lecture_success`

- API being tested: `/edit_lecture/1`

- Inputs:

```
{  
  "title": "Updated Lecture Title"  
}
```

- Expected Output:

```
{  
  "message": "Lecture updated successfully"  
}
```

- Actual Output:

```
{  
  "message": "Lecture updated successfully"  
}
```

- Result: Success

4.14.2 Test Case: `test_edit_lecture_not_found`

- API being tested: `/edit_lecture/999`

- Inputs:

```
{  
  "title": "Updated Lecture Title"  
}
```

- Expected Output:

```
{  
  "detail": "Lecture not found"  
}
```

- Actual Output:

```
{  
  "detail": "Lecture not found"  
}
```

- Result: Success

4.15 Test Cases for `/delete_lecture`

4.15.1 Test Case: `test_delete_lecture_success`

- **API being tested:** `/delete_lecture/1`
- **Inputs:** None
- **Expected Output:**

```
{  
  "message": "Lecture deleted successfully"  
}
```

- **Actual Output:**

```
{  
  "message": "Lecture deleted successfully"  
}
```

- **Result:** Success

4.15.2 Test Case: `test_delete_lecture_not_found`

- **API being tested:** `/delete_lecture/999`
- **Inputs:** None
- **Expected Output:**

```
{  
  "detail": "Lecture not found"  
}
```

- **Actual Output:**

```
{  
  "detail": "Lecture not found"  
}
```

- **Result:** Success

4.16 Test Cases for `/add_assignment`

4.16.1 Test Case: `test_add_assignment_success`

- **API being tested:** `/add_assignment`
- **Inputs:**

```
{  
  "id": 2,  
  "title": "New Assignment",  
  ...  
}
```

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```
"description": "Assignment Description",  
"module_id": 1,  
"type": "homework",  
"due_date": "2024-08-05 00:00:00"  
}
```

- **Expected Output:**

```
{  
  "message": "Assignment added successfully"  
}
```

- **Actual Output:**

```
{  
  "message": "Assignment added successfully"  
}
```

- **Result:** Success

4.16.2 Test Case: `test_add_assignment_invalid_moduleid`

- **API being tested:** */add_assignment*

- **Inputs:**

```
{  
  "id": 2,  
  "title": "New Assignment",  
  "description": "Assignment Description",  
  "module_id": 999,  
  "type": "homework",  
  "due_date": "2024-08-05 00:00:00"  
}
```

- **Expected Output:**

```
{  
  "detail": "Module not found"  
}
```

- **Actual Output:**

```
{  
  "detail": "Module not found"  
}
```

- **Result:** Success

4.17 Test Cases for `/edit_assignment`

4.17.1 Test Case: `test_edit_assignment_success`

- **API being tested:** `/edit_assignment/1`

- **Inputs:**

```
{  
  "title": "Updated Assignment Title"  
}
```

- **Expected Output:**

```
{  
  "message": "Assignment updated successfully"  
}
```

- **Actual Output:**

```
{  
  "message": "Assignment updated successfully"  
}
```

- **Result:** Success

4.17.2 Test Case: `test_edit_assignment_not_found`

- **API being tested:** `/edit_assignment/999`

- **Inputs:**

```
{  
  "title": "Updated Assignment Title"  
}
```

- **Expected Output:**

```
{  
  "detail": "Assignment not found"  
}
```

- **Actual Output:**

```
{  
  "detail": "Assignment not found"  
}
```

- **Result:** Success

4.17.3 Test Case: `test_edit_assignment_invalid_moduleid`

- **API being tested:** `/edit_assignment/1`
- **Inputs:**

```
{  
  "module_id": 999  
}
```

- **Expected Output:**

```
{  
  "detail": "Module not found"  
}
```

- **Actual Output:**

```
{  
  "detail": "Module not found"  
}
```

- **Result:** Success

4.18 Test Cases for `/delete_assignment`

4.18.1 Test Case: `test_delete_assignment_success`

- **API being tested:** `/delete_assignment/1`
- **Inputs:** None
- **Expected Output:**

```
{  
  "message": "Assignment deleted successfully"  
}
```

- **Actual Output:**

```
{  
  "message": "Assignment deleted successfully"  
}
```

- **Result:** Success

4.18.2 Test Case: `test_delete_assignment_not_found`

- **API being tested:** */delete_assignment/999*
- **Inputs:** None
- **Expected Output:**

```
{  
  "detail": "Assignment not found"  
}
```

- **Actual Output:**

```
{  
  "detail": "Assignment not found"  
}
```

- **Result:** Success

CODE COMPUTATION SERVICE TEST CASES

This document provides details about the unit tests for the API endpoints related to code submissions. Each test case includes information about the API being tested, the inputs, expected output, actual output, and the result.

5.1 Test Cases for `/compute`

5.1.1 Test Case: `test_compute_code_python`

- **API being tested:** `/compute`

- **Inputs:**

```
{
  "problem_id": "wxyz",
  "user_id": "1",
  "language": "python",
  "code": "import sys\n\nclass Solution:\n    def print_statement(s):\n        print(s)\n\ndef main():\n    # Read input from stdin\n    input_data = sys.stdin.\n    read().strip()\n    Solution.print_statement(input_data)\n\nif __name__ == \"__\nmain__\":\n    main()"
}
```

- **Expected Output:**

```
{
  "message": "Passed 1 out of 1 test cases",
  "result": [
    {"error": "Test case passed", "input_data": "hello", "expected_output": "hello",
    "your_output": "hello\n"}
  ]
}
```

- **Actual Output:**

```
{
  "message": "Passed 1 out of 1 test cases",
  "result": [
    {"error": "Test case passed", "input_data": "hello", "expected_output": "hello",
    "your_output": "hello\n"}
  ]
}
```

- **Result:** Success

5.1.2 Test Case: `test_compute_code_java`

- **API being tested:** */compute*
- **Inputs:**

```
{
  "problem_id": "wxyz",
  "user_id": "1",
  "language": "java",
  "code": "import java.util.Scanner;\n\npublic class solution {\n    public static
↪void main(String[] args) {\n        // Create a Scanner object to read input from
↪stdin\n        Scanner scanner = new Scanner(System.in);\n        // Read all
↪input from stdin\n        StringBuilder inputBuilder = new StringBuilder();\n
↪    while (scanner.hasNextLine()) {\n        inputBuilder.append(scanner.
↪nextLine());\n        if (scanner.hasNextLine()) {\n
↪inputBuilder.append("\\\\n\\n");\n        }\n        }\n        String inputData
↪= inputBuilder.toString().trim();\n        // Print the input\n        System.
↪out.print(inputData);\n        // Close the scanner\n        scanner.close();\n
↪    }\n}"
}
```

- **Expected Output:**

```
{
  "message": "Passed 1 out of 1 test cases",
  "result": [
    {"error": "Test case passed", "input_data": "hello", "expected_output": "hello",
↪ "your_output": "hello"}
  ]
}
```

- **Actual Output:**

```
{
  "message": "Passed 1 out of 1 test cases",
  "result": [
    {"error": "Test case passed", "input_data": "hello", "expected_output": "hello",
↪ "your_output": "hello"}
  ]
}
```

- **Result:** Success

5.1.3 Test Case: `test_compute_code_invalid_python_code`

- API being tested: `/compute`

- Inputs:

```
{
  "problem_id": "wxyz",
  "user_id": "1",
  "language": "python",
  "code": "import sys\n\nclass Solution:\n    def print_statement(s):\n        print(s)\n\ndef main():\n    # Read input from stdin\n    input_data = sys.stdin.\n    read().strip()\n    Solution.print_statement(input_data\n\nif __name__ == \"__\nmain__\":\n    main()"
```

- Expected Output:

```
{
  "message": "Passed 0 out of 1 test cases",
  "result": [
    {"error": "SyntaxError", "input_data": "hello", "expected_output": "hello",
    "your_output": ""}
  ]
}
```

- Actual Output:

```
{
  "message": "Passed 0 out of 1 test cases",
  "result": [
    {"error": "SyntaxError", "input_data": "hello", "expected_output": "hello",
    "your_output": ""}
  ]
}
```

- Result: Success

5.1.4 Test Case: `test_compute_code_invalid_java_code`

- API being tested: `/compute`

- Inputs:

```
{
  "problem_id": "1",
  "user_id": "1",
  "language": "java",
  "code": "import java.util.Scanner;\n\npublic class solution {\n    public static\nev\nvoid main(String[] args) {\n    // Create a Scanner object to read input from\nev\nstdin\n    Scanner scanner = new Scanner(System.in);\n    // Read all\nev\ninput from stdin\n    StringBuilder inputBuilder = new StringBuilder();\n    while (scanner.hasNextLine()) {\n        inputBuilder.append(scanner.\nev\nnextLine());\n        if (scanner.hasNextLine()) {\n
```

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```

↪inputBuilder.append("\\n\\n");\n                }\n                }\n                String inputData_
↪= inputBuilder.toString().trim();\n\n                // Print the input\n                System.
↪out.print(inputData)\n\n                // Close the scanner\n                scanner.close();\n
↪    }\n}

```

- **Expected Output:**

```

{
  "message": "Passed 0 out of 1 test cases",
  "result": [
    {
      "error": "Compilation error", "input_data": "hello", "expected_output": "hello
↪", "your_output": ""
    }
  ]
}

```

- **Actual Output:**

```

{
  "message": "Passed 0 out of 1 test cases",
  "result": [
    {
      "error": "Compilation error", "input_data": "hello", "expected_output": "hello
↪", "your_output": ""
    }
  ]
}

```

- **Result:** Success

5.1.5 Test Case: `test_compute_code_no_problem_info`

- **API being tested:** `/compute`

- **Inputs:**

```

{
  "problem_id": "pro",
  "user_id": "1",
  "language": "python",
  "code": "import sys\nclass Solution:\n    def print_statement(s):\n
↪print(s)\n\ndef main():\n    # Read input from stdin\n    input_data = sys.stdin.
↪read().strip()\n    Solution.print_statement(input_data)\n\nif __name__ == \"__
↪main__\":\n    main()"
}

```

- **Expected Output:**

```

{
  "detail": "Problem not found"
}

```

- **Actual Output:**

```
{
  "detail": "Problem not found"
}
```

- **Result:** Success

5.1.6 Test Case: `test_compute_code_empty_problem_id`

- **API being tested:** `/compute`
- **Inputs:**

```
{
  "problem_id": "",
  "user_id": "1",
  "language": "python",
  "code": "import sys\n\nclass Solution:\n    def print_statement(s):\n        print(s)\n\ndef main():\n    # Read input from stdin\n    input_data = sys.stdin.\n    read().strip()\n    Solution.print_statement(input_data)\n\nif __name__ == \"__\nmain__\":\n    main()"
}
```

- **Expected Output:**

```
{
  "detail": "Invalid input"
}
```

- **Actual Output:**

```
{
  "detail": "Invalid input"
}
```

- **Result:** Success

5.2 Test Cases for `/add-code-info`

5.2.1 Test Case: `test_add_code_info`

- **API being tested:** `/add-code-info`
- **Inputs:**

```
{
  "problem_id": "1001_test_unique_id",
  "total_test_cases": "1",
  "test_cases": [
    { "input": "hello", "expected_output": "hello" }
  ]
}
```

- **Expected Output:**

```
{
  "message": "Code information added successfully"
}
```

- **Actual Output:**

```
{
  "message": "Code information added successfully"
}
```

- **Result:** Success

5.2.2 Test Case: `test_add_code_info_missing_problem_id`

- **API being tested:** */add-code-info*

- **Inputs:**

```
{
  "problem_id": "",
  "total_test_cases": "1",
  "test_cases": [
    { "input": "hello", "expected_output": "hello" }
  ]
}
```

- **Expected Output:**

```
{
  "detail": "Problem ID is required"
}
```

- **Actual Output:**

```
{
  "detail": "Problem ID is required"
}
```

- **Result:** Success

5.3 Test Cases for `/delete-code-info`

5.3.1 Test Case: `test_delete_code_info`

- **API being tested:** */delete-code-info*

- **Inputs:**

```
{
  "problem_id": "1001_test_unique_id"
}
```

- **Expected Output:**

```
{  
  "message": "Code information deleted successfully"  
}
```

- **Actual Output:**

```
{  
  "message": "Code information deleted successfully"  
}
```

- **Result:** Success

5.3.2 Test Case: `test_delete_code_info_not_found`

- **API being tested:** */delete-code-info*

- **Inputs:**

```
{  
  "problem_id": "non_existing_problem_id"  
}
```

- **Expected Output:**

```
{  
  "detail": "Code information not found"  
}
```

- **Actual Output:**

```
{  
  "detail": "Code information not found"  
}
```

- **Result:** Success

AI SERVICE TEST CASES

This document provides details about the unit tests for the AI-related API endpoints. Each test case includes information about the API being tested, the inputs, expected output, actual output, and the result.

6.1 Test Cases for `/ai-search-courses`

6.1.1 Test Case: `test_ai_search_courses_success`

- **API being tested:** */ai-search-courses*
- **Inputs:**

```
{  
  "prompt": "Find courses on data science"  
}
```

- **Expected Output:** - Ensure the response contains relevant course information based on the prompt.
- **Actual Output:** - (Output will vary due to AI response)
- **Result:** Success

6.1.2 Test Case: `test_ai_search_courses_no_data`

- **API being tested:** */ai-search-courses*
- **Inputs:**

```
{  
  "prompt": "Find courses on data science"  
}
```

- **Expected Output:** - Ensure the response is successful even if no additional data is provided.
- **Actual Output:** - (Output will vary due to AI response)
- **Result:** Success

6.1.3 Test Case: `test_ai_search_courses_missing_prompt`

- **API being tested:** */ai-search-courses*

- **Inputs:**

```
{}
```

- **Expected Output:**

```
{  
  "detail": "Unprocessable Entity"  
}
```

- **Actual Output:**

```
{  
  "detail": "Unprocessable Entity"  
}
```

- **Result:** Success

6.2 Test Cases for `/ai-explain-course`

6.2.1 Test Case: `test_ai_explain_course_success`

- **API being tested:** */ai-explain-course*

- **Inputs:**

```
{  
  "prompt": "Explain the basics of machine learning"  
}
```

- **Expected Output:** - Ensure the response contains a detailed explanation of the basics of machine learning.
- **Actual Output:** - (Output will vary due to AI response)
- **Result:** Success

6.2.2 Test Case: `test_ai_explain_course_no_data`

- **API being tested:** */ai-explain-course*

- **Inputs:**

```
{  
  "prompt": "Explain the basics of machine learning"  
}
```

- **Expected Output:** - Ensure the response is successful even if no additional data is provided.
- **Actual Output:** - (Output will vary due to AI response)
- **Result:** Success

6.2.3 Test Case: `test_ai_explain_course_missing_prompt`

- **API being tested:** */ai-explain-course*

- **Inputs:**

```
{}
```

- **Expected Output:**

```
{  
  "detail": "Unprocessable Entity"  
}
```

- **Actual Output:**

```
{  
  "detail": "Unprocessable Entity"  
}
```

- **Result:** Success

6.3 Test Cases for `/ai-summarize-transcript`

6.3.1 Test Case: `test_ai_summarize_transcript_success`

- **API being tested:** */ai-summarize-transcript*

- **Inputs:**

```
{  
  "prompt": "Summarize the transcript of the lecture on AI",  
  "data": "Transcript data here"  
}
```

- **Expected Output:** - Ensure the response contains a summary of the provided transcript data.
- **Actual Output:** - (Output will vary due to AI response)
- **Result:** Success

6.3.2 Test Case: `test_ai_summarize_transcript_no_data`

- **API being tested:** */ai-summarize-transcript*

- **Inputs:**

```
{  
  "prompt": "Summarize the transcript of the lecture on AI"  
}
```

- **Expected Output:** - Ensure the response is successful even if no additional data is provided.
- **Actual Output:** - (Output will vary due to AI response)
- **Result:** Success

6.3.3 Test Case: `test_ai_summarize_transcript_missing_prompt`

- **API being tested:** */ai-summarize-transcript*
- **Inputs:**

```
{}
```

- **Expected Output:**

```
{  
  "detail": "Unprocessable Entity"  
}
```

- **Actual Output:**

```
{  
  "detail": "Unprocessable Entity"  
}
```

- **Result:** Success

6.4 Test Cases for `/ai-programming-feedback`

6.4.1 Test Case: `test_ai_programming_feedback_success`

- **API being tested:** */ai-programming-feedback*
- **Inputs:** - Files:

```
{  
  "file": {  
    "filename": "test_image.png",  
    "content_type": "image/png"  
  }  
}
```

- **Form Data:**

```
{  
  "prompt": "Provide feedback on this code",  
  "data": "Code snippet here",  
  "language": "Python",  
  "question": "How can I optimize this code?"  
}
```

- **Expected Output:** - Ensure the response contains feedback on the provided code.
- **Actual Output:** - (Output will vary due to AI response)
- **Result:** Success

6.4.2 Test Case: `test_ai_programming_feedback_missing_data`

- **API being tested:** */ai-programming-feedback*
- **Inputs:** - Files:

```
{
  "file": {
    "filename": "test_image.png",
    "content_type": "image/png"
  }
}
```

– **Form Data:**

```
{
  "prompt": "Provide feedback on this code",
  "language": "Python",
  "question": "How can I optimize this code?"
}
```

- **Expected Output:** - Ensure the response is successful even if some data is missing.
- **Actual Output:** - (Output will vary due to AI response)
- **Result:** Success

6.4.3 Test Case: `test_ai_programming_feedback_missing_prompt`

- **API being tested:** */ai-programming-feedback*
- **Inputs:** - Files:

```
{
  "file": {
    "filename": "test_image.png",
    "content_type": "image/png"
  }
}
```

– **Form Data:**

```
{
  "data": "Code snippet here",
  "language": "Python",
  "question": "How can I optimize this code?"
}
```

- **Expected Output:** - Ensure the response is successful even if the prompt is missing.
- **Actual Output:** - (Output will vary due to AI response)
- **Result:** Success