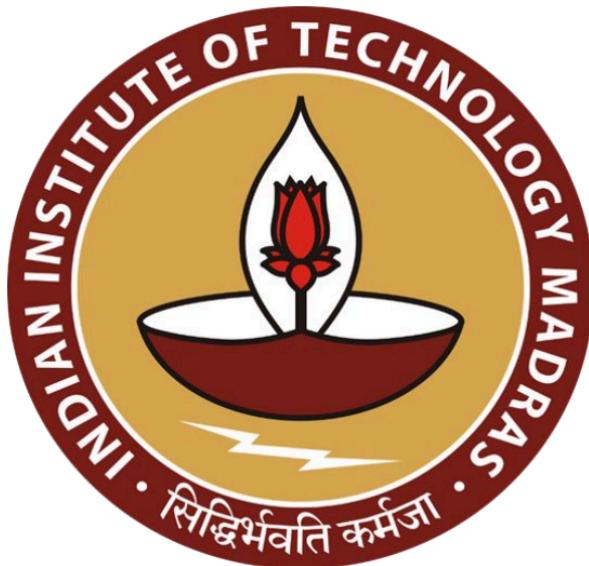


# Software Engineering Project

Sep 25 - Team 38

Milestone 5



## Team Members

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# EduAssist Backend – Comprehensive Test Documentation

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## 1. Introduction

This document provides a comprehensive overview of the backend test cases implemented for the EduAssist platform, covering all major modules such as assessment generation, knowledge assistant flows, study guide generation, slide deck creation, workflow automation, feedback system, and intelligent chat processing.

Each section includes:

- API tested
- Preconditions
- Input payload
- Expected output
- Behavior / purpose of the test
- Failure scenarios

The structure follows the same format used in the uploaded reference document.

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## 2. Assessment Generator

**Test File:** `test_assessment.py`

**APIs Tested**

- GET /assessments/{assessment\_id}
- 

## 2.1 Test Case: Get Assessment – Success

**API:**

**GET /assessments/1**

**Preconditions**

- Assessment id = 1 exists
- created\_by = 10 (current instructor user)

**Input:**

**No body parameters (path only)**

**Expected Output**

**Status: 200 OK**

{

```
"id": 1,  
"title": "Unit Test Assessment",  
"created_by": 10  
}
```

**Behavior Validated**

- Returns full assessment details

- Ensures authenticated instructor can access their own assessment
- 

## 2.2 Test Case: Get Assessment – Not Found (FAILURE)

**API:**

```
GET /assessments/9999
```

**Preconditions**

- Assessment with ID 9999 does not exist

**Expected Output**

**Status:** 404

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

**Behavior Validated**

- Proper 404 handling
  - Validates missing resource error flow
- 

## 3. Knowledge Assistant – Conversation System

**Test File: test\_knowledge.py**

### **APIs Tested**

- POST /knowledge/conversations
  - GET /knowledge/conversations/{conversation\_id}
- 

## **3.1 Create Conversation – Success**

### **API:**

**POST /knowledge/conversations**

### **Input**

```
{  
    "course_id": 1  
}
```

### **Preconditions**

- Logged-in student: id = 101

### **Expected Output**

**Status: 201**

```
{  
    "id": 1,  
    "course_id": 1,  
    "student_id": 101,
```

```
    "messages": []  
}  
  
  

```

## Behavior Validated

- Conversation gets created for the student
  - Ensures correct ownership
- 

## 3.2 Get Conversation – Forbidden (FAILURE)

### API:

```
GET /knowledge/conversations/1
```

### Preconditions

- Conversation belongs to student\_id = 999
- Current student = 101

### Expected Output

Status: 403

```
{  
  "detail": "Not authorized"  
}
```

## Behavior Validated

- Access is blocked when user does not own the conversation

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## 4. Study Guide Generator

Test File: `test_study_guide.py`

### APIs Tested

- POST `/study-guides/`
  - GET `/study-guides/{guide_id}`
- 

### 4.1 Create Study Guide – Success

#### Input

```
{  
    "youtube_url": "https://youtube.com/watch?v=abc123",  
    "title": "Test Guide",  
    "course_id": 1,  
    "priority_segments": []  
}
```

#### Mocked Preconditions

- Extracted video ID: "abc123"
- Metadata returned: title, duration, thumbnail
- Captions available

- CRUD returns guide id = 1

### Expected Output

Status: 201

```
{  
  "id": 1,  
  "title": "Test Guide"  
}
```

### Behavior Validated

- Successfully creates a study guide when required metadata exists
- 

## 4.2 Create Study Guide – No Captions (FAILURE)

### Mock

- check\_captions\_available → False

### Expected Output

Status: 400

```
{  
  "detail": "Video does not have captions available"  
}
```

## **Behavior Validated**

- System rejects videos without captions
  - Prevents unusable study guides
- 

## **5. Slide Deck Generator**

**Test File:** test\_slide\_deck.py

### **APIs Tested**

- POST /slide-decks/
  - GET /slide-decks/{deck\_id}
- 

### **5.1 Create Slide Deck – Success**

#### **Input**

```
{  
    "course_id": 1,  
    "title": "Intro Slides",  
    "source_type": "DOCUMENT",  
    "source_id": 5  
}
```

#### **Expected Output**

```
Status: 201  
{  
  "id": 1,  
  "title": "Intro Slides"  
}
```

### **Behavior Validated**

- Slide deck gets created from a document source
- 

## **5.2 Slide Deck – Not Found (FAILURE)**

### **API:**

```
GET /slide-decks/9999
```

### **Expected Output**

**Status: 404**

```
{  
  "detail": "Slide deck not found"  
}
```

### **Behavior Validated**

- Ensures proper missing-deck handling
-

# 6. Workflow Automation

**Test File:** test\_workflow\_agent.py

## APIs Tested

- POST /workflow/workflow-requests/
  - GET /workflow/workflow-requests/{id}
- 

### 6.1 Create Workflow Request – Success

#### Input

```
{  
    "course_id": 1,  
    "description": "Need help setting grading rules",  
    "priority": "MEDIUM"  
}
```

#### Expected Output

**Status:** 201

```
{  
    "id": 1,  
    "course_id": 1,  
    "status": "PENDING"  
}
```

## **Behavior Validated**

---

- New workflow request is created and stored

---

## **6.2 Workflow Request Not Found – FAILURE**

**API:**

**GET /workflow/workflow-requests/9999**

**Expected Output**

**Status: 404**

```
{  
    "detail": "Workflow request not found"  
}
```

---

## **7. Feedback System**

**Test File: test\_feedback.py**

**APIs Tested**

- POST /feedback/
- GET /feedback/

---

### **7.1 Create Feedback – Success**

## **Input**

```
{  
  "rating": 4,  
  "comment": "Helpful answer",  
  "context": {  
    "type": "chat",  
    "id": 10  
  }  
}
```

## **Expected Output**

**Status:** 201

```
{  
  "id": 1,  
  "rating": 4,  
  "comment": "Helpful answer"  
}
```

---

## **7.2 Create Feedback – Invalid Rating (FAILURE)**

## **Input**

```
{
```

```
"rating": 11,  
"comment": "Too high",  
"context": { "type": "chat", "id": 10 }  
}
```

## Expected Output

- Status: 400 or 422 (Pydantic validation error)

## Behavior Validated

- Ensures rating boundaries
- 

# 8. Knowledge Assistant – Chat Flow

Test File: test\_knowledge\_chat.py

## API Tested

- POST /knowledge/chat
- 

## 8.1 Chat – New Conversation Success

### Input

```
{  
  "course_id": 1,
```

```
"query": "What is RAG?",  
"conversation_id": null  
}
```

### Expected Response

Status: 200

```
{  
  "message": { "content": "AI answer" },  
  "confidence_score": <0-1>,  
  "should_escalate": true/false  
}
```

---

## 8.2 Conversation Not Found – FAILURE

### Input

```
{  
  "course_id": 1,  
  "query": "Hello",  
  "conversation_id": 9999  
}
```

### Expected Output

Status: 404

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

---

## 9. Conclusion

This document consolidates all backend test scenarios for EduAssist.  
It provides clear documentation for:

- Positive and negative test paths
- Validation of business rules
- Authorization flows
- Handling of missing resources
- Integration with external services ( RAG engine, etc.)