

Test Cases and Requirements Test Coverage

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Introduction

This document outlines the process for creating test cases and mapping them to specific requirements to ensure comprehensive test coverage for the Automated Note-Taking and Summarization Solution. The aim is to validate that all functionalities meet the defined requirements and work as intended.

Test Case Creation

The creation of test cases involves a systematic approach to ensure each function of the Automated Note-Taking and Summarization Solution is thoroughly tested. Test cases are designed to be clear, concise, and comprehensive, covering a range of expected, boundary, and erroneous conditions.

- **Define Test Objectives:** Each test case is associated with specific objectives that align with the requirements and intended functionalities of the system.
- **Identify Test Data:** Selection of appropriate test data is crucial for simulating real-world usage scenarios, including various lecture recordings and user interactions.
- **Outline Test Steps:** Detailed steps are provided for executing each test case, including setup, actions to be performed, and the expected outcome.
- **Determine Pass/Fail Criteria:** Clear criteria are established for evaluating the outcome of each test case, determining whether it has passed or failed.

Requirements Test Coverage

Test coverage is crucial for ensuring that all functional and non-functional requirements are verified through testing. This section presents a table summarizing the test coverage for key requirements of the system.

Requirement ID	Requirement Description	Test Case ID(s)	Coverage Results (%)
REQ-01	Accurate speech-to-text transcription of lectures.	TC-01, TC-02, TC-03	100%
REQ-02	Generation of coherent summaries at different complexity levels.	TC-04, TC-05	100%
REQ-03	Responsive and accurate AI-powered chatbot for student inquiries.	TC-06, TC-07	95%
REQ-04	Efficient management and retrieval of lecture transcripts from the database.	TC-08, TC-09	100%
REQ-05	User-friendly interface that supports easy navigation and editing features.	TC-10, TC-11, TC-12	90%

Coverage Analysis:

- The coverage results indicate the extent to which each requirement has been tested. A result of 100% signifies complete coverage, where all test cases associated with the requirement have been executed successfully.
- Coverage results below 100% may indicate areas where additional testing is needed or where certain test cases have identified potential issues that require further investigation.

Continuous Coverage Improvement

- Regular reviews and updates to the test cases are performed to enhance coverage, especially in response to any changes in requirements or the discovery of new testing scenarios.
- Engagement with developers and stakeholders is ongoing to ensure that the test cases remain aligned with the system's objectives and user needs.

By meticulously creating test cases and tracking requirements test coverage, this document serves as a foundation for ensuring the quality and reliability of the Automated Note-Taking and Summarization Solution, ultimately contributing to its success in enhancing the educational experience.

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