

| Story/Task | Test Case ID | Test Case Description | Preconditions | Steps | Expected Result | Status |
|-------------------|--------------|--|--|--|--|--------|
| User Story 6 | TC6-1 | Verify that content recommendations are based on quiz performance and article difficulty. | User has completed at least one quiz. | 1. Complete a quiz with some questions answered incorrectly. 2. Navigate to the recommendations section. | Recommended articles focus on weak areas based on quiz performance and difficulty matches the knowledge gap. | Pass |
| | TC6-2 | Verify that users are directed to articles covering weak areas. | User has identified weak areas through quizzes. | 1. Complete a quiz and check the weak areas identified. 2. View the recommended articles for weak topics. | Recommendations specifically address topics in which the user scored poorly in quizzes. | Pass |
| User Story 7 | TC7-1 | Verify spaced repetition scheduling for topics where the user struggles. | User has a history of quiz attempts. | 1. Complete a quiz with some incorrect answers. 2. Track spaced repetition scheduling for those topics. | The app schedules reminders for topics with low scores, prompting users to revisit the content. | Pass |
| | TC7-2 | Verify that users are prompted to revisit content at optimal intervals. | User has multiple quizzes with varying results. | 1. Track the system prompts over a period. 2. Check the timing of prompts to revisit specific topics. | System prompts align with spaced repetition intervals to maximize retention. | Pass |
| User Story 8 | TC8-1 | Verify display of quiz scores, articles read, and time spent on each subject in the dashboard. | User has quiz results and article reading history. | 1. Access the performance dashboard. 2. Review quiz scores, articles read, and time spent. | All information is displayed correctly and reflects the user's history accurately. | Pass |
| | TC8-2 | Verify that areas of strength and weakness are displayed visually. | User has completed multiple quizzes. | 1. Open the dashboard. 2. Analyze visual representations of strengths and weaknesses. | Visuals clearly depict areas where the user is strong or needs improvement. | Pass |
| User Story 9 | TC9-1 | Verify that detailed feedback is provided for each quiz question. | User completes a quiz. | 1. Complete a quiz. 2. Review the feedback provided for each question. | Each question has detailed feedback, explaining correct/incorrect answers. | Fail |
| | TC9-2 | Verify that feedback explains why answers are correct or incorrect. | User completes a quiz. | 1. Complete a quiz and access feedback. 2. Check explanations for correctness of answers. | Feedback is clear and instructional, explaining the rationale behind answers. | Fail |
| User Story 10 | TC10-1 | Verify that content difficulty increases with good performance. | User consistently scores well in quizzes. | 1. Complete multiple quizzes with high scores. 2. Check the difficulty level of subsequent content recommendations. | Recommended content has a higher difficulty level after strong performance in quizzes. | Fail |
| | TC10-2 | Verify that simpler articles are recommended if the user struggles. | User performs poorly on multiple quizzes. | 1. Complete quizzes with low scores. 2. View the recommended content following poor performance. | Recommended content is simplified, focusing on foundational topics. | Fail |
| Technical Story 5 | TC5-1 | Verify that the ML model generates personalized recommendations based on quiz performance. | ML model is integrated into the system. | 1. Complete a quiz with varied results. 2. Access recommended content. 3. Check if recommendations align with weak and strong areas. | Recommendations are tailored based on quiz performance, focusing on weak areas identified by the ML model. | Pass |
| | TC5-2 | Verify that the ML model adjusts recommendations as user performance changes. | ML model is active and collecting data. | 1. Complete multiple quizzes with different scores. 2. Monitor any changes in the type and difficulty of recommended content. | Recommended content adjusts in difficulty and relevance as user performance improves or declines. | Pass |
| Technical Story 6 | TC6-1 | Verify that spaced repetition prompts are generated based on user quiz performance. | Spaced repetition algorithm is configured. | 1. Complete multiple quizzes on the same topic with varied performance. 2. Check if the system dynamically updates the review schedule based on recent performance. | Users receive reminders for challenging topics at appropriate intervals to reinforce memory and concept retention. | Pass |
| | TC6-2 | Verify that spaced repetition scheduling considers user performance trends. | Spaced repetition algorithm is active. | 1. Complete quizzes with some incorrect answers. 2. Observe when the system prompts a review of these topics. 3. Verify prompt timing. | Review schedule adjusts based on user's latest performance, prioritizing difficult topics when needed. | Pass |
| Technical Story 7 | TC7-1 | Verify that quiz results, time spent, and subject mastery are displayed on the dashboard. | User has completed quizzes and read articles. | 1. Access the performance dashboard. 2. Check for accurate display of quiz scores, time spent, and subject mastery metrics. | Dashboard displays comprehensive data that accurately reflects the user's progress and engagement. | Pass |
| | TC7-2 | Verify that visual charts display trends in user performance over time. | User has accumulated quiz and article data. | 1. Open the performance dashboard. 2. Review visual charts for clarity and accuracy in representing performance trends. | Visualizations provide an accurate, easily interpretable view of user performance trends. | Pass |
| Technical Story 8 | TC8-1 | Verify that each quiz question includes detailed feedback on correct and incorrect answers. | User has completed a quiz. | 1. Complete a quiz. 2. Review feedback for each question. 3. Confirm that explanations are provided for all answers. | Feedback is detailed and provides constructive explanations, enhancing the user's understanding. | Fail |
| | TC8-2 | Verify that feedback helps users understand their mistakes and improve. | User has completed multiple quizzes. | 1. Access feedback after completing several quizzes. 2. Observe if the feedback explains misconceptions or knowledge gaps. | Feedback is instructional and encourages better comprehension and retention of correct concepts. | Fail |