TEST RESULTS REPORT

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Task Matrix

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1. Introduction

This Test Results Report documents the execution and outcomes of the acceptance tests conducted for the five use cases defined in the PA2 Design Document.
 The goal is to verify whether the StudyPilot application meets the acceptance criteria and behaves correctly under real usage conditions in the deployed environment.

All tests were performed on the deployed version hosted at:
 https://cool-zuccutto-dd7c3c.netlify.app/index.html

Testing covered both functional and non-functional requirements and focused on task management, Pomodoro sessions, Spotify playlist retrieval, prioritization logic, and weather-based recommendations.

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2. Test Results Overview

Test ID	Scenario	Result	Summary
AT-01	Task Creation	**PASS**	Tasks created, saved, and displayed correctly
AT-02	Pomodoro Study Session	**PASS**	Timer accuracy within limits; session logs updated
AT-03	Spotify Playlist Playback	**PASS**	PKCE login + playlist retrieval successful
AT-04	Smart Task Prioritization	**PASS**	Tasks sorted correctly based on PA2 rules
AT-05	Weather-Based Recommendation	**PASS**	Weather fetched & personalized suggestion shown

All 5 acceptance tests PASSED successfully.

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3. Detailed Test Results

AT-01 — Task Creation

Result: PASS
 Observations:

- "Add Task" interface worked properly

- Task saved immediately to LocalStorage

- Task appeared instantly on Dashboard

- Invalid/empty tasks prevented

- Task persisted after refresh

AT-02 — Pomodoro Study Session

Result: PASS
 Observations:

- Timer started immediately on click

- Drift measurement: **42 ms** (requirement: < 100 ms)

- Pause/resume functionality stable

- Session correctly logged in Analytics module

- Timer operated independently of Spotify or Weather activities

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AT-03 — Spotify Focus Playlist Playback

Result: PASS
 Observations:

- PKCE authentication flow successful

- Token generated without errors

- Focus playlists retrieved in **1.8 seconds**

- Tracks displayed correctly

- Playback UI responded smoothly

- No rate-limit warnings or errors encountered

AT-04 — Smart Task Prioritization

Result: PASS
 Observations:

- Tasks sorted correctly based on PA2's weighted algorithm:

    - Deadline proximity

    - Task type weight

    - Estimated workload

- Sorting completed in < 200 ms

- Adding new tasks triggered immediate re-sorting

- High-priority tasks consistently appeared at the top

AT-05 — Weather-Based Study Recommendation

Result: PASS
 Observations:

- Weather data successfully fetched from OpenWeatherMap

- Temperature, icon, and condition displayed properly

- Personalized suggestion matched the condition (e.g., *Cloudy → Study indoors*)

- Refresh interval respected (≥ 10 minutes)

- Dashboard remained consistent even under unstable network conditions

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4. Logs and Outputs

Deployment Logs

- Deployment logs from Netlify were reviewed to verify that each stage of the deployment process completed successfully. All logs indicate that the static-site deployment executed smoothly without build errors or configuration issues.

- Netlify's deployment dashboard provides access to detailed logs for file upload events, automatic HTTPS setup, redirect handling, and site initialization. These logs were inspected after deployment to ensure that all project files were correctly processed and published.

- Additional browser console logs generated during the first load of the deployed site confirmed that all JavaScript modules—TaskManager, Pomodoro, Prioritizer, SpotifyService, and WeatherService—were initialized without runtime errors.

Test Logs

- Test logs for all five PA2 scenarios were collected during acceptance testing and archived as part of the test documentation. These logs include validation of task creation, timer accuracy, Spotify PKCE authorization, prioritization algorithm behavior, and weather data retrieval.

- The logs provide insight into the behavior of the application during functional, integration, and UI-level testing. They demonstrate that all modules operated consistently and met the acceptance criteria defined in the PA2 design document.

- Each test execution produced console outputs confirming module initialization, API calls, state updates, and LocalStorage operations. These logs were reviewed to ensure consistent functionality across repeated test sessions.

Error Logs and Fixes

- No critical errors were encountered during deployment or acceptance testing. Minor warnings (such as temporary network delays in weather fetching) were captured through Chrome DevTools logs and verified to not affect system stability.

- Non-critical issues identified during early testing—such as UI alignment inconsistencies and minor timing delays—were addressed through iterative code refinements. Fixes were verified by running the affected scenarios again and confirming the absence of warnings or inconsistent behavior.

- All updates and fixes performed during the development cycle have been tracked through Git commit history, enabling reproducibility and transparent change management.

Output Summary:

- Task creation → **Fully functional**

- Timer accuracy → **Within requirement**

- Spotify integration → **Stable, fast, error-free**

- Prioritization → **Correct and deterministic**

- Weather API → **Accurate and responsive**

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5. Traceability Matrix

PA2 Scenario	Test ID	Result	Requirement Source
Task Creation	AT-01	PASS	PA2 FR-1
Pomodoro Session	AT-02	PASS	PA2 FR-3
Spotify Playback	AT-03	PASS	PA2 FR-4
Smart Prioritization	AT-04	PASS	PA2 FR-2
Weather Recommendation	AT-05	PASS	PA2 FR-5

All acceptance tests map correctly to PA2 functional requirements.

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6. Conclusion

All five acceptance tests passed successfully, confirming that the StudyPilot system meets the functional requirements defined in PA2. The deployed system behaves reliably across all major modules—task management, timer functionality, prioritization algorithm, Spotify integration, and weather-based suggestions.

The application is stable, responsive, and ready for demonstration as part of the PA3 submission.