

Testing Phase Report

Report Period : September 12, 2024 to September 19, 2024

Project Title: AIKO (AI-powered Knowledge Organizer)

Project Manager: Dr. P. B. Jawade

In-house Guide: Dr. D. J. Chaudhari

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Executive Summary: The AIKO (AI-powered Knowledge Organizer) project has undergone comprehensive testing as outlined in the Verification and Validation (V&V) document. This report summarizes the testing activities, results, and recommendations for the AIKO system. AIKO has a 100% test pass rate with over 80% code coverage. The project has successfully completed its testing phase, meeting the required quality standards and performance metrics.

Current Task Progress:

Task Description	Testing Phase
Scheduled Completion	October 21, 2024
Actual Completion	September 19, 2024
Status	Completed
Remarks	Scope adjusted due to timeline reduction

Accomplishments:

- Conducted extensive unit testing across all core modules
- Performed integration testing to verify seamless interaction between components
- Executed comprehensive user acceptance testing with a diverse group of potential end-users
- Achieved 100% test pass rate for all critical functionalities with over 80% code coverage.
- Successfully created a Verification and Validation document for AIKO.

Challenges & Mitigations:

- The project deadline was unexpectedly shortened by one month, with notification received only one week into the final month of development. This significant reduction in available time posed a substantial risk to the planned scope and quality assurance processes.
 - We made judicious decisions regarding feature implementation and testing depth, focusing on essential elements to ensure timely delivery. We implemented a revised project scope that prioritized core deliverables while regrettably limiting our capacity for extensive feature development and thorough testing
- Initial performance bottlenecks in neural search capabilities when dealing with extensive datasets.
 - Optimized search algorithms and implemented caching mechanisms to significantly improve query response times.
- User feedback indicated some UI elements were not intuitive for non-technical users.
 - Conducted rapid UI/UX iterations based on user feedback. Implemented SUS testing to validate improvements.

Planned Activities for Next Phase:

- Finalize the codebase for deployment
- Provision cloud platforms, setup infrastructure, and deploy AIKO.
- Setup CI/CD pipelines for automated testing and deployment
- Re-evaluate project scope and timeline for the next phase

Financial Summary:

Description	Budgeted Amount	Amount Spent This Phase	Total Expendi- ture
Hosting	₹1,300	₹0	₹1,072
Machine Learning	₹21,000	₹2,000	₹20,000

Risk Assessment:

The AIKO project faces several key risks that require ongoing attention. Data privacy compliance remains a critical concern as the system handles potentially sensitive information, necessitating rigorous adherence to evolving data protection regulations. While current tests show promising results, the system’s scalability under extreme load conditions needs continued monitoring to ensure consistent performance as user base grows. There’s also a risk of AI model drift, where accuracy may decrease over time if the model isn’t periodically retrained to accommodate the expanding knowledge base. Lastly, despite positive initial feedback, widespread adoption may face challenges due to varying levels of AI familiarity among potential users, requiring targeted training and change management strategies.

Conclusions & Recommendations:

The AIKO project has successfully passed its rigorous testing phase, demonstrating robust performance, enhanced security, and improved user experience. The system's ability to efficiently organize and retrieve knowledge from vast datasets positions it as a valuable tool for entities dealing with information overload.

The project guide recommends:

1. Continuous monitoring of search performance with growing datasets.
2. Regular usability testing to address user feedback and improve the UI/UX.
3. Ongoing compliance checks to ensure data privacy and security.
4. Exploring additional input formats and authentication methods for future releases.

Approval:

Dr. D. J. Chaudhari

Project Guide

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