Project Development Phase
GenAI Functional & Performance Testing Template for "Book A Doc"

Field	Details
Date	10 April 2025
Team ID	SWTID1743701170
Project Name	Book A Doc

GenAI Functional & Performance Testing Overview

Aspect	Details
Purpose	To evaluate the functional correctness and performance of a hypothetical Generative AI model integrated into "Book A Doc" (e.g., generating appointment suggestions or automated doctor responses).
Scope	Testing the accuracy, response time, and scalability of the GenAI model within the MERN framework.
Team Members	- Param Yadav (22BCY10165) - Testing Lead - Vibhushit Bhat (22BSA10132) - Performance Analyst - Tushar Chahar (22BCY10231) - GenAI Model Tester - Saurabh Yadav (22BCY10165) - Reviewer

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Test Scenarios & Results
Functional Testing

Test ID	Scenario	Description	Expected Result	Actual Result	Status
FT-001	Appointment Suggestion Generation	Generate 5 appointment slot suggestions based on doctor availability.	5 valid suggestions	4 valid, 1 irrelevant	Fail
FT-002	Automated Response Generation	Generate a confirmation message for a booking.	Clear, accurate message	Success	Pass
FT-003	Contextual Response Accuracy	Respond to a patient query (e.g., "Can I reschedule?").	Relevant response	Success	Pass

***Note*: Results are hypothetical, assuming a GenAI model (e.g., GPT-based). Update with actual data if implemented.**
Performance Testing

Test ID	Scenario	Description	Metric	Expected Value	Actual Value	Status
PT-001	Response Time for Suggestions	Generate 10 suggestions concurrently.	Latency	< 2s	2.5s	Fail
PT-002	Throughput under Load	Handle 50 requests/min for responses.	Requests per Min	> 45	40	Fail
PT-003	Model Scalability	Test with 1000 input queries.	Accuracy Drop	< 5%	7%	Fail

***Note*: Results assume a generative model (e.g., using Hugging Face Transformers). Adjust if no GenAI is used.**

Test Environment

Component	Details
Hardware	16GB RAM, 8-core CPU, 512GB SSD
Software	Node.js v18, MongoDB v6, Python v3.11, Hugging Face Transformers v4.35
Dataset	500 synthetic patient queries and doctor schedules

Observations & Recommendations

Observation	Details
Suggestion Accuracy	4/5 valid suggestions indicate model needs better training data.
Latency Exceeded	2.5s response time exceeds 2s target; optimize model inference.
Throughput Limit	40 requests/min falls short of 45; increase server resources.
Scalability Issue	7% accuracy drop with 1000 queries suggests scaling limitations.

Recommendation	Details
Data Improvement	Enhance training dataset with real-world appointment data.
Performance Optimization	Use GPU acceleration or model pruning to reduce latency.
Resource Scaling	Deploy on AWS with auto-scaling for higher throughput.

Observation	Details
Scalability Plan	Test with distributed inference (e.g., AWS SageMaker) for larger loads.

Conclusion

Aspect	Details
Summary	The hypothetical GenAI model for appointment suggestions and responses shows functional success but fails performance targets (latency, throughput, scalability).
Next Steps	Address failures (FT-001, PT-001 to PT-003) by implementing recommendations before submission on April 12-14, 2025. If no GenAI is used, document as a future feature.