Tab 1

| **TEST PLAN**  **PROJECT NAME: OpenAI Chat** |
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| **PREPARED BY: DUSHYANT VIKRAM SINGH**  **DATE: FEB 12, 2025** |
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| **INTRODUCTION** |
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This test plan outlines the approach for testing the OpenAI Chat Completions API (https://api.openai.com/v1/chat/completions). It includes manual testing using **Postman** and automated testing with **Rest Assured in Selenium Java**.

| **OBJECTIVE** |
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* Validate the functionality, reliability, and performance of the API.
* Ensure compliance with API specifications.
* Verify error handling and response codes.
* Identify potential vulnerabilities and security issues.

| **SCOPE OF TESTING** |
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* **Functional Testing**: Verify API responses, payload handling, and request validations.
* **Performance Testing**: Measure API response times and scalability.
* **Security Testing**: Validate authentication and authorization mechanisms.
* **Error Handling Testing**: Verify appropriate error messages and HTTP status codes.
* **Automation Testing**: Implement test scripts using Rest Assured in Selenium Java.

| **TEST SCENARIO** |
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* **Manual Testing**: Postman will be used to execute API requests and validate responses.
* **Automated Testing**: Rest Assured will be used to create automated test cases in Java for API validation.
* **Regression Testing**: Automate critical API tests to run on code updates.
* **Boundary Testing**: Test API with edge-case scenarios.

| **TEST STRATEGY** |
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* **Manual Testing:** For UI/UX, exploratory, and ad-hoc testing.
* **Automation Testing:** For regression and repetitive test cases using tools like Selenium and Cypress.

| **TEST ENVIRONMENT** |
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* **Tools & Technologies:**
  + Postman for manual API testing
  + Java + Rest Assured + TestNG for automation
  + OpenAI API key for authentication
* **Environment Setup:**
  + API Base URL: https://api.openai.com/v1/chat/completions
  + Authentication: Bearer Token (Authorization: Bearer YOUR\_API\_KEY)
* .

| **TEST SCENARIO** |
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* Verify API responds with **200 OK** for valid requests.
* Validate the response structure for correct input.
* Ensure API returns **400 Bad Request** for invalid inputs.
* Check behavior when required parameters are missing.
* Validate response time is within acceptable limits.
* Verify API returns **401 Unauthorized** for incorrect API keys.
* Ensure API supports different models (gpt-3.5-turbo, gpt-4).

| **TEST SCHEDULE** |
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| Test Planning | 12-FEB-2025 |
| --- | --- |
| Test Case Development | 12-FEB-2025 |
| Test Execution | 12-FEB-2025 |
| Reporting | 12-FEB-2025 |
| Test Closure | 13-FEB-2025 |

| **Entry & Exit Criteria** |
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### **Entry Criteria:**

* API endpoints are available and accessible.
* API documentation is provided.
* Test cases are reviewed and approved.
* Test data is prepared.

### **Exit Criteria:**

* All critical test cases are executed.
* No critical defects remain open.
* Test reports are generated and shared.
* Stakeholder approval is received.

| **RISK AND MITIGATION** |
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| Tight deadlines | Prioritize critical test cases. |
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| Environment issues | Regular backups and environment checks. |
| Incomplete requirements | Close coordination with stakeholders |

| **ROLE & RESPONSIBILITY** |
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| Role | Responsibility |
| --- | --- |
| Test Lead | Define strategy, review test cases, and ensure test execution |
| Manual Tester | Execute API tests using Postman and report defects |
| Automation Tester | Develop and run automated test scripts using Rest Assured |
| Developer | Fix reported defects and update API documentation |
| Project Manager | Oversee the testing process and ensure timely completion |

| **TOOLS & RESOURCES** |
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* **Tools:**
  + Postman (Manual Testing)
  + Java, Rest Assured, TestNG (Automation)
* **Resources:**
  + Test Engineers
  + Developers (for bug fixes)
  + API Documentation

| **APPROVAL** |
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| Test Lead | Dyushyant vikram singh |
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| Project Manager | Anil rajak |
| Date | 12-FEB-2025 |