

Toco Test plan

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Test Objectives

- Confirm that each endpoint matches the requirements needed.
- Verify that parameters and response data are as designed.
- Ensure the functionality and reliability of the /transactions, /buy, and /sell endpoints.
- Verify the correctness of returned responses in both success and failure scenarios.
- API endpoints validation under different conditions, including edge cases, error handling, and performance testing.
- Ensure the security aspects of each endpoint while executing it.

Test Scope

- Testing the behavior and functionality of the /transactions, /buy, and /sell endpoints.
- Test the integration between users' API and the APIs for buying, selling, and transactions.
- Test getting the transaction history retrieval.
- Include both positive and negative test cases to confirm that APIs behave correctly under different scenarios.
- Use various test input data with valid, invalid, and even empty data.

Testing Approach

- Combine manual and automated tests to cover more test cases with various test data/ input.
- Automate repetitive and critical test cases for easier regression and to make sure that always critical tests are working as expected.
- Perform manual testing to cover corner and edge cases.
- Consider security testing and SQL injection vulnerabilities.
- Measure performance testing and response time for endpoints.
- Validation of response payloads, status codes, and error handling.

Resources Needed

- A test environment that mimics the production environment.
- A test database that contains the same schema and data as the production database.
- Sufficient Toco balance and limit to perform the transactions.
- A test log that records the details of the test execution to investigate the root cause of any failure if something failed unexpectedly.
- Test management tools for organizing test cases and tracking test execution.
- Use team management/ bug tracking software (ex: Jira) to monitor defects progress/ status.
- Train the team members for APIs testing if needed.

Test Cases to be Executed

/transactions Endpoint:

- **Positive Test Cases:**
 - For **GET**: Retrieve transaction history for a user with a valid userId.
 - For **GET**: Verify retrieved JSON data for a transaction.
 - For **POST**: Make a transaction from a valid user's account to another.
 - For **GET & POST**: Validate the parameters needed.

- For **GET & POST**: For performance, endpoint response time is within the accepted requirement.
- **Negative Test Cases:**
 - For **GET**: Attempt to retrieve transaction history with an invalid or non-existent userId.
 - For **GET & POST**: Verify the API response for handling invalid or empty userId inputs.
 - For **GET & POST**: Test error handling and error message readability in case of failures.
 - For **GET & POST**: Verify failed authorization.

/buy Endpoint:

- **Positive Test Cases:**
 - Buy Tocos with a valid amount of fiat currency.
 - Buy Tocos and confirm it's added to a user's account.
 - Perform buying within the daily limit amount.
 - Validate the parameters needed.
 - Verify that the user's Toco balance is updated correctly after buying.
 - Validate the response status code and payload for a successful transaction.
 - For performance, endpoint response time is within the accepted requirement.
- **Negative Test Cases:**
 - Attempt to buy Tocos with invalid or negative fiat currency amounts.
 - Attempt to buy Tocos with unsupported currency.
 - Perform buying with exceeding the daily limit amount.
 - Test error handling unexpected payment-related issues.
 - Verify the API response and status codes for invalid input data.
 - Verify failed authorization.

/sell Endpoint:

- **Positive Test Cases:**

- Sell Tocos within a user balance limit.
- Sell Tocos within a daily limit.
- Validate the parameters needed.
- Verify that the user's balance is updated correctly after selling.
- Validate the response status code and payload for a successful transaction.
- For performance, endpoint response time is within the accepted requirement.

- **Negative Test Cases:**

- Attempt to sell more Tocos than the user owns.
- Sell Tocos that exceed a daily limit.
- Test error handling for exceeding Toco balance/ daily allowance.
- Verify the API response and status codes for invalid input data.
- Verify failed authorization.