Unit Testing Plan Sample for API Development

1. Overview

This document describes the unit testing plan for SampleAPI endpoints. The goal is to ensure all API functionalities work correctly and reliably.

2. Scope

- Unit-level testing of controller/service logic
- Validation responses for expected and edge cases
- Error handling and proper status codes

3. Testing Tools

- Testing Framework: Jest
- Mocking Library: Sinon
- HTTP Testing: Supertest

4. Test Cases Summary

Test Case ID	API Endpoint	Description	Expected Result
TC-001	GET /api/users	Fetch all users	Returns HTTP 200 and list of users
TC-002	POST /api/users	Create user with valid data	Returns HTTP 201 and new user object
TC-003	POST /api/users	Create user with invalid/missing data	Returns HTTP 400 with validation errors
TC-004	GET /api/users/:id	Fetch single user with valid ID	Returns HTTP 200 and user details
TC-005	GET /api/users/:id	Fetch single user with unknown ID	Returns HTTP 404 not found
TC-006	PUT /api/users/:id	Update user with valid data	Returns HTTP 200 and updated user
TC-007	DELETE /api/users/:id	Delete existing user	Returns HTTP 204 no content

5. Assumptions

- Database is stubbed/mocked.
- External dependencies are mocked.
- Unit tests are executed in isolation.

6. Test Data

- Valid and invalid user data
- User IDs: existing, malformed, non-existent

7. Test Execution

- Unit tests will be executed locally and in CI pipeline.
- Tests are automated via command: `npm run test`

8. Reporting

- Test results logged in CI console and coverage report generated.