

# Test Plan for API Testing

## 1. Test Plan ID

TP-API-001

## 2. Objective

To verify the functionality, reliability, performance, and security of the API endpoints provided in the [Swagger API Documentation](#). The goal is to identify bugs and ensure the API meets the specified requirements.

## 3. Scope

### In Scope:

- Functional Testing of all API endpoints.
- Validation of request/response parameters, headers, and payloads.
- Authentication and Authorization testing.
- Error handling and status codes verification.
- Performance testing for critical endpoints.
- Security testing to check for vulnerabilities like unauthorized access, SQL Injection, etc.

### Out of Scope:

- Testing front-end components.
- External API integrations not covered in the Swagger documentation.

## 4. Test Items

All API endpoints mentioned in the Swagger documentation, including:

- GET, POST, PUT, DELETE operations.
- Authentication mechanisms (e.g., bearer token-based).
- Specific query parameters and payload validations.

## 5. Test Approach

### Test Design Technique:

- Exploratory Testing
- Negative Testing

### Tools Used:

- Postman (Manual Testing)

## 6. Entry & Exit Criteria

### Entry Criteria:

- Swagger documentation is accessible.
- API endpoints are deployed in the QA environment.
- Valid credentials for authentication are provided.

### Exit Criteria:

- All planned test cases are executed.
- Critical and major bugs are resolved.
- Performance benchmarks are met.

## 7. Deliverables

- Test Plan Document.
- Test Case Suite (including Positive, Negative, and Edge Test Cases).
- Bug Report with all identified issues.
- Test Execution Summary Report.

## 8. Roles and Responsibilities

- Test Lead: Oversee testing activities and manage resources.
- Test Engineers: Design and execute test cases, log bugs, and retest fixes.
- Developers: Resolve bugs and deploy fixes.

## 9. Test Schedule

Activity	Start Date	End Date
Test Planning	2025-01-26	2025-01-27
Test Case Development	2025-01-27	2025-01-28
Test Execution	2025-01-28	2025-01-29
Bug Fixing & Retesting	2025-01-29	2025-01-30

## 10. Risks & Mitigations

**\*\*Risk:\*\*** Delayed deployment of APIs in the QA environment.

**\*\*Mitigation:\*\*** Ensure close collaboration with the development team.

**\*\*Risk:\*\*** Insufficient test data for edge cases.

**\*\*Mitigation:\*\*** Use a data generator tool for complex scenarios.

## 11. Test Metrics

- Test Case Execution Rate (%).
- Defect Density (Defects per Functionality).
- Test Coverage (% of Endpoints Tested).
- Mean Time to Detect (MTTD) and Resolve (MTTR) Defects.