**Software Test Plan (STP) – GoRest Public API**

**System Under Test**: https://gorest.co.in/public/v2  
**Tested Entities**: Users, Posts, Comments, Todos  
**Authorization**: Bearer token (for POST/PUT/DELETE)  
**Test Types**: Functional, Negative, Boundary, CRUD Coverage  
**Test Approach**: Black-box, API-level testing  
**Test Tools**: Postman / Python + Pytest / REST Client, DDT

**1.** Test Objectives

* Validate that all API endpoints for each entity operate as expected
* Ensure proper error handling for negative inputs
* Verify field validation, status codes, and logical dependencies
* Ensure endpoints enforce authorization and data integrity

**2.** Test Scope

| **Entity** | **Covered Features** |
| --- | --- |
| Users | CRUD, field validations, unique constraints |
| Posts | CRUD, user relation, field presence |
| Comments | Create/Delete, post relation, email format validation |
| Todos | CRUD, user relation, due date handling, status updates |

3. Test Cases

* **Users**

| **TC ID** | **Test Description** | **Method** | **Expected Result** | **NOTE** |
| --- | --- | --- | --- | --- |
| U01 | Create user with valid fields | POST | 201 Created, JSON with new user ID | POSITIVE |
| U02 | Create user with missing email | POST | 422 Unprocessable Entity | NEGATIVE |
| U03 | Create user with invalid gender | POST | 422 Unprocessable Entity | NEGATIVE |
| U04 | Create user with duplicate email | POST | 422 Unprocessable Entity | NEGATIVE |
| U05 | Get list of users | GET | 200 OK with list of users | NEGATIVE |
| U06 | Update user name with valid ID | PUT | 200 OK, user data updated | POSITIVE |
| U07 | Update user with invalid ID | PUT | 404 Not Found | NEGATIVE |
| U08 | Delete existing user | DELETE | 204 No Content | POSITIVE |
| U09 | Delete non-existent user | DELETE | 404 Not Found | NEGATIVE |

* **Posts**

| **TC ID** | **Test Description** | **Method** | **Expected Result** | **NOTE** |
| --- | --- | --- | --- | --- |
| P01 | Create post with valid user ID | POST | 201 Created | POSITIVE |
| P02 | Create post without title | POST | 422 Unprocessable Entity | NEGATIVE |
| P03 | Create post with invalid user ID | POST | 422 Unprocessable Entity | NEGATIVE |
| P04 | Get list of posts | GET | 200 OK with posts | POSITIVE |
| P05 | Update post title and body | PUT | 200 OK | POSITIVE |
| P06 | Delete post with valid ID | DELETE | 204 No Content | NEGATIVE |

* **Comments**

| **TC ID** | **Test Description** | **Method** | **Expected Result** | **NOTE** |
| --- | --- | --- | --- | --- |
| C01 | Create comment with valid data | POST | 201 Created | POSITIVE |
| C03 | Create comment with missing fields | POST | 422 Unprocessable Entity | NEGATIVE |
| C04 | Create comment with invalid post ID | POST | 422 Unprocessable Entity | NEGATIVE |
| C05 | Delete existing comment | DELETE | 204 No Content | POSITIVE |

* **Todos**

| **TC ID** | **Test Description** | **Method** | **Expected Result** | **NOTE** |
| --- | --- | --- | --- | --- |
| T01 | Create todo with valid due date and user | POST | 201 Created | POSITIVE |
| T02 | Create todo with past due date | POST | 422 Unprocessable Entity | NEGATIVE |
| T03 | Create todo with invalid user ID | POST | 422 Unprocessable Entity | NEGATIVE |
| T04 | Update todo status to completed | PUT | 200 OK, status changed | POSITIVE |
| T05 | Delete todo by valid ID | DELETE | 204 No Content, todo deleted | POSITIVE |

**4.** Non-Functional Testing Suggestions

* **Authorization**: Attempt restricted actions without Bearer token → expect 401
* **Rate Limiting**: Try burst requests (if limits enforced)
* **Field Limits**: Test long string fields (e.g., 255+ characters)
* **Response Times**: Validate responses are returned within acceptable time

**5**. Entry Criteria

Testing will begin only after the following conditions are met:

* ✅ The API service is live and accessible at https://gorest.co.in/public/v2
* ✅ API documentation is available, outlining request and response formats
* ✅ A valid Bearer Token is provided for authorized actions (POST/PUT/DELETE)
* ✅ Test data is defined and includes valid and invalid scenarios
* ✅ Test cases are reviewed, documented, and approved
* ✅ Test environment is stable and allows all types of CRUD operations

**6**.Exit Criteria

Testing will be considered complete when:

* ✅ All high-priority and critical test cases have passed successfully
* ✅ No open **Critical** or **High** severity bugs remain unresolved
* ✅ Minimum 90% test coverage is achieved across all endpoints
* ✅ All failed tests have been re-tested and verified
* ✅ Final test report and defect summary are submitted and approved