**1> Test scenarios to test these APIs**

***a) Authenticate API***

> Functional Testing :

> Post correct username and password. Check if it generates a token.

> Send random bearer token value too along with POST request.

> Negative Testing:

> Send blank username and check that auth fails.

> Send wrong username and check that auth fails.

> Do not send "username" field in body and check that auth fails.

> Send blank password and check that auth fails.

> Send wrong password and check that auth fails.

> Do not send "password" field in body and check that auth fails.

> Send additional JSON fields and check that auth works.

> Check if SQL injection can hamper security.

> Performance/Load testing

> Repeatedly post token request and check that its not hung.

> Check validity of a token after same username generates another token.

***b) Users API***

> Functional Testing:

> Send request and check all records are displayed or not.

> Check for number of records and record data as per database.

> Check output of request when there is no data in database.

> Negative testing

> Send wrong Auth token.

> Send random body fields.

> Performance/Load testing

> Keep sending GET requests, and add a new user while GET requests are being

sent.

> Send multiple GET and test for equality of records everytime.

***c) Find User API with phone***

> Functional Testing :

> Check if correct phone number results in correct user data being printed.

> Check if multiple users have same phone number, all results are displayed.

> Negative Testing :

> Send request for non existing phone number

> Send request with wrong auth token

> Send request for non numeric input

> Send extra fields in body

2> Execute test cases and document defects and suggestions.

a) Authenticate API

> API returns proper token when username and password is given

> Suggestion : Proper error message can be returned back, saying "username/password"

is wrong or absent when authentication fails.

b) Users API

> API returns data of all 3 users.

> Suggestions : There should be capability to set output format.

> Body of request should have capability to set/unset which fields should be returned

c) User search API

> API returned proper search result

> Suggestions : Even when user is not found, STATUS\_OK is received. That too, without

any data.

> We can either send message "No users found" or send and error status.