

Communities A Social Media Platform(SM02)

Test Plan

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Test Overview

Communities is an online social media platform that allows users to create and join communities based on their interests. Users can create communities, post content, comment on posts, and interact with other users. The platform also includes other features such as chat, search, and recommendations and certain level of moderation.

This document outlines the test plan for Communities, including the modules to be tested, the types of tests to be conducted, and the test analysis.

The test plan includes the following operations/modules that will be tested:

- Authentication Modules
 - Login Module
 - Signup Module
 - Token Authentication Module
 - E2EE Module
- User Modules
 - Guest User Module
 - Registered User Module
 - Admin User Module
 - Moderator User Module
 - Superuser Module
- System Modules
 - Cache Manager Module
 - Recommender System Module
 - Job Scheduler Module
 - Services Module
 - * Feed Service
 - * Comments Service
 - * Post Service

- * Search Service
- * Votes Service
- * Chat Service
- * Connections Service
- * Scoring Service
- DB Access Modules
 - User Module
 - Post Module
 - Comment Module
 - Vote Module
 - Chat Module
 - Community Module
- UI Modules
 - Listing Module
- Other Modules
 - Notification Module
 - Reporting Module
 - Moderation Module

The test plan includes the following sections:

- Test Overview: A brief overview of the test plan which also lists the operations/modules that will be tested.
- Test Details: Detailed information about the unit tests, integration testing, system testing, and performance testing.
- Test Analysis: A summary of the test statistics, functional test report, and performance test report.
 - Test Statistics: The number of classes, methods, modules tested, test cases, and test cases failed.
 - Functional Test Report: A summary of the functional test cases for each module, including the type of testing method used.
 - Performance Test Report: A summary of the performance test plan and report.

Test Details

Integrating testing

The order in which you will integrate your modules and test cases for integrated modules.

System testing

Performance testing

Unit Tests

Authentication Module

Table 1: Authentication Module Unit Test

| S.No | Module Name | Function | Conditions to be tested | Inputs | Expected Output | Status |
|----------|--------------|-----------------------------------|-------------------------|--|-----------------------------|--------|
| UT-1.1.a | Login Module | Login user using Interanl sign-in | Incorrect Credentials | user: unknown-username or wrong-password, DB-status: user-not-found or wrong-password (from User Module) | return: invalid-credentials | F |

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Table 1: Authentication Module Unit Test (Continued)

| S.No | Module Name | Function | Conditions to be tested | Inputs | Expected Output | Status |
|----------|---------------|-------------------------------|-------------------------------|---|--|--------|
| UT-1.1.b | Login Module | Login User using Google OAuth | Incorrect Credentials (OAuth) | user: incorrect-email or wrong-password, OAuth-status: user-not-registered or wrong-password (from OAuth) | return: invalid-credentials | F |
| UT-1.1.c | Login Module | Login User | Correct Credentials | user: registered-username and correct-password, DB-status: OK (from User Module or OAuth) | return: OK and JSON Web-token | P |
| UT-1.2.a | Token Module | Validate JWT | Invalid Token | cookie: invalid-token | The module extracts the header and the payload from the request and recalculates the signature and matches it with the token, in this case it does not match and hence returns returns: invalid-token | F |
| UT-1.3.a | Signup Module | Signup User | Username already taken | user: already-taken-username and password and email-id, DB-status: username-taken | return: username-taken | F |
| UT-1.3.b | Signup Module | Signup User | Unverified email id | user: username and password and unverified-email-id, email-service-status: email-verification-timeout | return: email-unverified | F |
| UT-1.3.c | Signup Module | Signup User | Passwords Don't Match | user: username and invalid-password and email-id | return: password-mismatch | F |
| UT-1.3.d | Signup Module | Signup User | Valid Credentials | user: username and password and email-id, DB-status: user-created | return: user-created and JWT and redirects user to home page | P |
| UT-1.3.a | E2EE Module | TO-BE-FILLED | Invalid Key | | | F |

User Module

| S.No | Module Name | Conditions to be tested | Test Data | Expected Output | Status |
|----------|-------------|-------------------------|-----------|-----------------|--------|
| UT-2.1.a | | | | | |

System Module

| S.No | Module Name | Conditions to be tested | Test Data | Expected Output | Status |
|----------|-------------|-------------------------|-----------|-----------------|--------|
| UT-3.1.a | | | | | |

Database Access Module

User Record Module

Table 4: User Record Module Unit Test

| S.No | Module Name | Function | Conditions to be tested | Test Data | Expected Output | Status |
|----------|-------------|------------|--|---|--------------------------------------|--------|
| UT-4.1.a | User Module | getUser | Invalid Username | user: invalid-user-name | return: invalid-user-name | F |
| UT-4.1.b | User Module | getUser | No User by this Username | user: unknown-user, DB-status: no-such-user | return: no-such-user | F |
| UT-4.1.c | User Module | getUser | Exisiting username | user: username, DB-status: OK | return: OK and user-record | P |
| UT-4.1.d | User Module | updateUser | Invalid Username | user: invalid-user-name | return: invalid-user-name | F |
| UT-4.1.e | User Module | updateUser | No User by this Username | user: username, DB-status: OK | return: OK | F |
| UT-4.1.f | User Module | updateUser | Edit User Settings (User setting is a 6-tuple) - Invalid Tuple - Invalid Profile Visibility | user: new-user-record (invalid integer for profile visibility) | return: invalid-profile-visibility | F |
| UT-4.1.g | User Module | updateUser | Edit User Settings (User setting is a 6-tuple) - Invalid Tuple - Invalid Chat Request Setting | user: new-user-record (invalid integer for chat request) | return: invalid-chat-request-setting | F |
| UT-4.1.h | User Module | updateUser | Edit User Settings (User setting is a 6-tuple) - Invalid Tuple - Invalid Notification Setting - remaining 4 values | user: new-user-record (invalid 4-tuple for notification) | return: invalid-notification-setting | F |
| UT-4.1.i | User Module | updateUser | Edit User Settings (User setting is a 6-tuple) - Valid Tuple | user: username | return: OK | P |

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Table 4: User Record Module Unit Test (Continued)

| S.No | Module Name | Function | Conditions to be tested | Test Data | Expected Output | Status |
|----------|-------------|------------|----------------------------------|---|---------------------------|--------|
| UT-4.1.j | User Module | updateUser | Edit email-id - Invalid email-id | user: new-user-record (email-id: invalid) | return: invalid-email | F |
| UT-4.1.k | User Module | updateUser | Edit email-id - Valid email-id | user: valid-new-user-record | return: OK | P |
| UT-4.1.l | User Module | updateUser | Edit user bio | user: username, DB-status: OK | return: OK | P |
| UT-4.1.m | User Module | deleteUser | Invalid Username | user: invalid-user, DB-status: user-not-found | return: invalid-user-name | F |
| UT-4.1.n | User Module | deleteUser | No User by this Username | user: username, DB-status: no-such-user | return: no-such-user | F |
| UT-4.1.o | User Module | deleteUser | Exisiting username | user: username, DB-status: OK | return: user-deleted | P |

Post Record Module

| S.No | Module Name | Function | Conditions to be tested | Test Data | Expected Output | Status |
|----------|-------------|-----------------------|------------------------------------|---|-----------------------|--------|
| UT-4.1.e | Post Module | Access Post Info | Invalid Post, Access not available | post: unknown-post, status: access-denied | return: access-denied | F |
| UT-4.1.f | Post Module | Access Post Info | Valid Post, Access available | post: known-post, status: OK | return: OK | P |
| UT-4.1.g | Post Module | Access Post Comments | Invalid Post, Access not available | post: unknown-post, status: access-denied | return: access-denied | F |
| UT-4.1.h | Post Module | Access Post Comments | Valid Post, Access available | post: known-post, status: OK | return: OK | P |
| UT-4.1.i | Post Module | Access Post Votes | Invalid Post, Access not available | post: unknown-post, status: access-denied | return: access-denied | F |
| UT-4.1.j | Post Module | Access Post Votes | Valid Post, Access available | post: known-post, status: OK | return: OK | P |
| UT-4.1.k | Post Module | Access Post Community | Invalid Post, Access not available | post: unknown-post, status: access-denied | return: access-denied | F |
| UT-4.1.l | Post Module | Access Post Community | Valid Post, Access available | post: known-post, status: OK | return: OK | P |

Comment Record Module

| S.No | Module Name | Function | Conditions to be tested | Test Data | Expected Output | Status |
|----------|----------------|----------------------|---------------------------------------|---|-----------------------|--------|
| UT-4.1.m | Comment Module | Access Comment Info | Invalid Comment, Access not available | comment: unknown-comment, status: access-denied | return: access-denied | F |
| UT-4.1.n | Comment Module | Access Comment Info | Valid Comment, Access available | comment: known-comment, status: OK | return: OK | P |
| Ut-4.1.o | Comment Module | Access Comment Votes | Invalid Comment, Access not available | comment: unknown-comment, status: access-denied | return: access-denied | F |
| UT-4.1.p | Comment Module | Access Comment Votes | Valid Comment, Access available | comment: known-comment, status: OK | return: OK | P |
| UT-4.1.q | Comment Module | Access Comment Post | Invalid Comment, Access not available | comment: unknown-comment, status: access-denied | return: access-denied | F |
| UT-4.1.r | Comment Module | Access Comment Post | Valid Comment, Access available | comment: known-comment, status: OK | return: OK | P |

Vote Record Module

| S.No | Module Name | Function | Conditions to be tested | Test Data | Expected Output | Status |
|----------|-------------|---------------------|------------------------------------|---|-----------------------|--------|
| UT-4.1.s | Vote Module | Access Vote Info | Invalid Vote, Access not available | vote: unknown-vote, status: access-denied | return: access-denied | F |
| UT-4.1.t | Vote Module | Access Vote Info | Valid Vote, Access available | vote: known-vote, status: OK | return: OK | P |
| UT-4.1.u | Vote Module | Access Vote Post | Invalid Vote, Access not available | vote: unknown-vote, status: access-denied | return: access-denied | F |
| UT-4.1.v | Vote Module | Access Vote Post | Valid Vote, Access available | vote: known-vote, status: OK | return: OK | P |
| UT-4.1.w | Vote Module | Access Vote Comment | Invalid Vote, Access not available | vote: unknown-vote, status: access-denied | return: access-denied | F |
| UT-4.1.x | Vote Module | Access Vote Comment | Valid Vote, Access available | vote: known-vote, status: OK | return: OK | P |

Chat Record Module

| S.No | Module Name | Function | Conditions to be tested | Test Data | Expected Output | Status |
|----------|-------------|------------------|------------------------------------|---|-----------------------|--------|
| UT-4.1.y | Chat Module | Access Chat Info | Invalid Chat, Access not available | chat: unknown-chat, status: access-denied | return: access-denied | F |
| UT-4.1.z | Chat Module | Access Chat Info | Valid Chat, Access available | chat: known-chat, status: OK | return: OK | P |

| S.No | Module Name | Function | Conditions to be tested | Test Data | Expected Output | Status |
|-----------|-------------|----------------------|------------------------------------|---|-----------------------|--------|
| UT-4.1.aa | Chat Module | Access Chat Messages | Invalid Chat, Access not available | chat: unknown-chat, status: access-denied | return: access-denied | F |
| UT-4.1.ab | Chat Module | Access Chat Messages | Valid Chat, Access available | chat: known-chat, status: OK | return: OK | P |

Message Record Module

| S.No | Module Name | Function | Conditions to be tested | Test Data | Expected Output | Status |
|-----------|-------------|---------------------|---------------------------------------|---|-----------------------|--------|
| UT-4.1.ac | Chat Module | Access Message Info | Invalid Message, Access not available | message: unknown-message, status: access-denied | return: access-denied | F |

Group Record Module

| S.No | Module Name | Function | Conditions to be tested | Test Data | Expected Output | Status |
|-----------|-------------|-------------------|-------------------------------------|---|-----------------------|--------|
| UT-4.1.ad | Chat Module | Access Group Info | Invalid Group, Access not available | group: unknown-group, status: access-denied | return: access-denied | F |

User_chat Record Module

| S.No | Module Name | Function | Conditions to be tested | Test Data | Expected Output | Status |
|-----------|-------------|-----------------------|------------------------------------|---|-----------------------|--------|
| UT-4.1.ae | Chat Module | Access User Chat Info | Invalid User, Access not available | user: unknown-user, status: access-denied | return: access-denied | F |

User_group Record Module

| S.No | Module Name | Function | Conditions to be tested | Test Data | Expected Output | Status |
|-----------|-------------|------------------------|------------------------------------|---|-----------------------|--------|
| UT-4.1.af | Chat Module | Access User Group Info | Invalid User, Access not available | user: unknown-user, status: access-denied | return: access-denied | F |

Community Record Module

| S.No | Module Name | Function | Conditions to be tested | Test Data | Expected Output | Status |
|-----------|------------------|-----------------------|---|---|-----------------------|--------|
| UT-4.1.ac | Community Module | Access Community Info | Invalid Community, Access not available | community: unknown-community, status: access-denied | return: access-denied | F |

| S.No | Module Name | Function | Conditions to be tested | Test Data | Expected Output | Status |
|-----------|------------------|------------------------|---|---|-----------------------|--------|
| UT-4.1.ad | Community Module | Access Community Info | Valid Community, Access available | community: known-community, status: OK | return: OK | P |
| UT-4.1.ae | Community Module | Access Community Posts | Invalid Community, Access not available | community: unknown-community, status: access-denied | return: access-denied | F |
| UT-4.1.af | Community Module | Access Community Posts | Valid Community, Access available | community: known-community, status: OK | return: OK | P |
| UT-4.1.ag | Community Module | Access Community Users | Invalid Community, Access not available | community: unknown-community, status: access-denied | return: access-denied | F |
| UT-4.1.ah | Community Module | Access Community Users | Valid Community, Access available | community: known-community, status: OK | return: OK | P |
| UT-4.1.ai | Community Module | Access Community Mods | Invalid Community, Access not available | community: unknown-community, status: access-denied | return: access-denied | F |
| UT-4.1.aj | Community Module | Access Community Mods | Valid Community, Access available | community: known-community, status: OK | return: OK | P |

Joined Community Record Module

| S.No | Module Name | Function | Conditions to be tested | Test Data | Expected Output | Status |
|-----------|------------------|-------------------------|---|---|-----------------------|--------|
| UT-4.1.ak | Community Module | Access Joined Community | Invalid Community, Access not available | community: unknown-community, status: access-denied | return: access-denied | F |

Blocked User Record Module

| S.No | Module Name | Function | Conditions to be tested | Test Data | Expected Output | Status |
|-----------|-------------|---------------------|------------------------------------|---|-----------------------|--------|
| UT-4.1.al | User Module | Access Blocked User | Invalid User, Access not available | user: unknown-user, status: access-denied | return: access-denied | F |

Reported User Record Module

| S.No | Module Name | Function | Conditions to be tested | Test Data | Expected Output | Status |
|-----------|-------------|----------------------|------------------------------------|---|-----------------------|--------|
| UT-4.1.am | User Module | Access Reported User | Invalid User, Access not available | user: unknown-user, status: access-denied | return: access-denied | F |

Roles Record Module

| S.No | Module Name | Function | Conditions to be tested | Test Data | Expected Output | Status |
|-----------|-------------|-------------------|------------------------------------|---|-----------------------|--------|
| UT-4.1.an | User Module | Access User Roles | Invalid User, Access not available | user: unknown-user, status: access-denied | return: access-denied | F |

UI Module

| S.No | Module Name | Function | Conditions to be tested | Test Data | Expected Output | Status |
|----------|----------------|----------------|--|---|-----------------------------|--------|
| UT-5.1.a | Listing Module | List Community | Invalid Communities | community: unknown-community, status: community-not-found | return: community-not-found | F |
| UT-5.1.b | Listing Module | List Community | Valid Communities | community: known-community, status: OK | return: OK | P |
| UT-5.1.c | Listing Module | List Posts | Invalid Posts, Access not available | post: unknown-post, status: access-denied | return: access-denied | F |
| UT-5.1.d | Listing Module | List Posts | Valid Posts, Access available | post: known-post, status: OK | return: OK | P |
| UT-5.1.e | Listing Module | List Comments | Invalid Comments, Access not available | comment: unknown-comment, status: access-denied | return: access-denied | F |
| UT-5.1.f | Listing Module | List Comments | Valid Comments, Access available | comment: known-comment, status: OK | return: OK | P |
| UT-5.1.g | Listing Module | List Users | Invalid Users | user: unknown-user, status: user-not-found | return: user-not-found | F |
| UT-5.1.h | Listing Module | List Users | Valid Users | user: known-user, status: OK | return: OK | P |

Other Module

| S.No | Module Name | Conditions to be tested | Test Data | Expected Output | Status |
|----------|---------------------|-------------------------|--|--------------------------------|--------|
| UT-6.1.a | Notification Module | Invalid Notification | notification: unknown-notification, status: notification-not-found | return: notification-not-found | F |
| UT-6.1.b | | Valid Notification | notification: known-notification, status: OK | return: OK | P |
| UT-6.1.c | Reporting Module | Invalid Report | report: unknown-report, status: report-not-found | return: report-not-found | F |
| UT-6.1.d | | Valid Report | report: known-report, status: OK | return: OK | P |
| UT-6.1.e | Moderation Module | Invalid Moderation | moderation: unknown-moderation, status: moderation-not-found | return: moderation-not-found | F |

| S.No | Module Name | Conditions to be tested | Test Data | Expected Output | Status |
|----------|-------------|-------------------------|--|-----------------|--------|
| UT-6.1.f | | Valid Moderation | moderation: known-moderation, status: OK | return: OK | P |

Integration Testing

Integrating different modules and testing
Unit tested submodules combined and tested
Use bottom-up approach for integration of modules

| S.No | Modules Integrated | Condition to be tested | Test Data | Expected Output | Status |
|------|--------------------|------------------------|-----------|-----------------|--------|
| 1.1 | | | | | |

System Testing

Testing of system as a whole

Performance Testing

Performance testing plan

Test Analysis

We discussed the following seven types of black box testing in the class: equivalence class partitioning, boundary value analysis, decision table testing, state transition testing, error guessing, cause-effect graphing, and pair-wise testing.

Performance test plan/report

Test Statistics

- Number of classes:
- Number of methods:
- Number of modules tested:
- Number of test cases:
- Number of test cases failed:

Functional Test Report

Functional test summary in the form of a table

Test case count for each module

Type of testing method used

equivalence class partitioning

boundary value analysis

cause-effect graphing

pair-wise testing

special cases

error guessing

state based testing

| S.No | Module Name | Test Case Count | Testing Method |
|------|-------------|-----------------|----------------|
|------|-------------|-----------------|----------------|

Performance Test Report