Communities A Social Media Platform(SM02)
Test Plan

Harshit Pant CS21BTECH11021   Satpute Aniket Tukaram CS21BTECH11056

Mahin Bansal CS21BTECH11034   Burra Vishal Mathews CS21BTECH11010

Table of Contents

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

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** unverfied-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

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	getPost	Invalid PostID	post: unknown-post, status: access-denied	return: access-denied	F
UT-4.1.f	Post Module	getPostByCommunity	Valid Post, Access available	post: known-post, status: OK	return: OK	P
UT-4.1.g	Post Module	getPostByUser	Invalid Post, Access not available	post: unknown-post, status: access-denied	return: access-denied	F
UT-4.1.h	Post Module	getPostByScore	Valid Post, Access available	post: known-post, status: OK	return: OK	P
UT-4.1.i	Post Module	getPostByTag	Invalid Post, Access not available	post: unknown-post, status: access-denied	return: access-denied	F
UT-4.1.j	Post Module	getPostByQueryString	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, bou
```

```
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