

Communities A Social Media Platform(SM02)

Test Plan

Harshit Pant CS21BTECH11021

Satpute Aniket Tukaram CS21BTECH11056

Mahin Bansal CS21BTECH11034

Burra Vishal Mathews CS21BTECH11010

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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
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- System Modules
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 - 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

Table 5: Post Record Module Unit Test

S.No	Module Name	Function	Conditions to be tested	Test Data	Expected Output	Status
UT-4.2.a	Post Module	get Post	Invalid PostID/Deleted PostID	post: unknown-post-id, DB-status: post-id-not-found	return: post-not-found	F
UT-4.2.b	Post Module	get Post By Community	Invalid CommunityID/ Deleted Community	community: unknown-community-id and sort: sort-by and filter: filter-by, DB-status: community-not-found	return: community-not-found	F
UT-4.2.c	Post Module	get Post By Community	Invalid Sort-By	community: community-id and sort: invalid-sort-by and filter: filter-by	return: invalid-sort	F

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Table 5: Post Record Module Unit Test (Continued)

S.No	Module Name	Function	Conditions to be tested	Test Data	Expected Output	Status
UT-4.2.d	Post Module	get Post By Community	Invalid Filter-by	community: community-id and sort: sort-by and filter: invalid-filter-by	return: invalid-filter-by	F
UT-4.2.e	Post Module	get Post By Community	Valid Request	community: community-id and sort: sort-by and filter: filter-by, DB-status: OK	return: OK and post-list	F
UT-4.2.f	Post Module	get Post By User	Invalid UserID	post: unknown-user-id and sort: sort-by and filter: filter-by, DB-status: user-not-found	return: user-not-found	F
UT-4.2.g	Post Module	get Post By User	Valid Request	post: user-id and sort: sort-by and filter: filter-by, DB-status: OK	return: OK and post-list	P
UT-4.2.h	Post Module	get Post By User	Invalid Sort-By	post: user-id and sort: invalid-sort-by and filter: filter-by	return: invalid-sort	F
UT-4.2.i	Post Module	get Post By User	Invalid Filter-by	post: user-id and sort: sort-by and filter: invalid-filter-by	return: invalid-filter-by	F
UT-4.2.j	Post Module	get Post By Score User	Invalid UserID (Used for user-feed generation)	post: unknown-user-id, DB-status: user-not-found	return: user-not-found	F
UT-4.2.k	Post Module	get Post By Score Trending	Valid Request	no-input	return: post-list	P
UT-4.2.l	Post Module	get Post By Tag	Invalid TagID	tag: unknown-tag-id and sort: sort-by and filter: filter-by, DB-status: tag-not-found	return: tag-not-found	F

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Table 5: Post Record Module Unit Test (Continued)

S.No	Module Name	Function	Conditions to be tested	Test Data	Expected Output	Status
UT-4.2.m	Post Module	get Post By Tag	Invalid Sort-By	tag: tag-id and sort: invalid-sort-by and filter: filter-by	return: invalid-sort	F
UT-4.2.n	Post Module	get Post By Tag	Invalid Filter-By	tag: tag-id and sort: sort-by and filter: invalid-filter-by	return: invalid-filter-by	F
UT-4.2.o	Post Module	get Post By Tag	Valid Request	tag: tag-id and sort: sort-by and filter: filter-by, DB-status: OK	return: OK and post-list	P
UT-4.2.p	Post Module	get Post By Query String	Invalid Sort-By	query-string: search-string and sort: invalid-sort-by and filter: filter-by	return: invalid-sort-by	F
UT-4.2.q	Post Module	get Post By Query String	Invalid Filter-By	query-string: search-string and sort: sort-by and filter: invalid-filter-by	return: invalid-filter-by	F
UT-4.2.r	Post Module	get Post By Query String	Valid Request	query-string: search-string and sort: sort-by and filter: filter-by, DB-status: OK	return: OK and post-list	P
UT-4.2.s	Post Module	update Post	Invalid PostID	post: unknown-post-id, DB-status: post-not-found	return: post-not-found	F
UT-4.2.t	Post Module	delete Post	Invalid PostID	post: post-id, DB-status: post-not-found	return: post-not-found	F
UT-4.2.u	Post Module	delete Post By User	invalid UserID	post: user-id, DB-status: user-not-found	return: user-not-found	F
UT-4.2.v	Post Module	delete Post By User	valid UserID	post: user-id, DB-status: OK	return: OK	P
UT-4.2.w	Post Module	delete Post By Community	invalid CommunityID	post: community-id, DB-status : community-not-found	return: community-not-found	F

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Table 5: Post Record Module Unit Test (Continued)

S.No	Module Name	Function	Conditions to be tested	Test Data	Expected Output	Status
UT-4.2.x	Post Module	delete Post By Community	valid CommunityID	post: community-id, DB-status: OK	return: OK	P

Comment Record Module

Table 6: Comment Record Module Unit Test

S.No	Module Name	Function	Conditions to be tested	Test Data	Expected Output	Status
UT-4.3.a	Comment Module	get Comment	Invalid CommentID	comment: unknown-comment-id, DB-status: comment-not-found	return: comment-not-found	F
UT-4.3.b	Comment Module	get Comment	Valid Comment	comment: known-comment, DB-status: OK	return: OK and comment	P
UT-4.3.c	Comment Module	get Comment By Post	Invalid PostID	post: unknown-post-id, DB-status: post-not-found	return: post-not-found	F
UT-4.3.d	Comment Module	get Comment By Parent	Invalid Parent CommentID	comment: unknown-comment-id, DB-status: comment-not-found	return: comment-not-found	F
UT-4.3.e	Comment Module	get Comment By Parent	Valid Comment	comment: known-comment, status: OK	return: OK and comment	P
UT-4.3.f	Comment Module	get Comments By Ancestor	Invalid Ancestor CommentID	comment: unknown-comment-id, DB-status: comment-not-found	return: comment-not-found	F
UT-4.3.g	Comment Module	get Comments By Ancestor	Valid Ancestor CommentID	comment: known-comment, status: OK	return: OK and comment	P

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Table 6: Comment Record Module Unit Test (Continued)

S.No	Module Name	Function	Conditions to be tested	Test Data	Expected Output	Status
UT-4.3.h	Comment Module	update Comment	Invalid CommentID	comment: unknown-comment-id, DB-status: comment-not-found	return: comment-not-found	F
UT-4.3.i	Comment Module	update Comment	Valid Comment	comment: known-comment, status: OK	return: OK	P
UT-4.3.j	Comment Module	delete Comment	Invalid CommentID	comment: unknown-comment-id, DB-status: comment-not-found	return: comment-not-found	F
UT-4.3.k	Comment Module	delete Comment	Valid Comment	comment: known-comment, status: OK	return: OK	P
UT-4.3.l	Comment Module	delete Comment By Post	Invalid PostID	post: unknown-post-id, DB-status: post-not-found	return: post-not-found	F
UT-4.3.m	Comment Module	delete Comment By Post	Valid PostID	post: known-post-id, DB-status: OK	return: OK	P

Vote Record Module

Table 7: Vote Record Module Unit Test

S.No	Module Name	Function	Conditions to be tested	Test Data	Expected Output	Status
UT-4.4.a	Vote Module	get Vote	Invalid VoteID	vote: unknown-vote-id, DB-status: vote-not-found	return: vote-not-found	F
UT-4.4.b	Vote Module	get Vote	Valid Vote	vote: known-vote, DB-status: OK	return: OK and vote	P
UT-4.4.c	Vote Module	get Vote By Post	Invalid PostID	post: unknown-post-id, DB-status: post-not-found	return: post-not-found	F

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Table 7: Vote Record Module Unit Test (Continued)

S.No	Module Name	Function	Conditions to be tested	Test Data	Expected Output	Status
UT-4.4.d	Vote Module	get Vote-count By Post	Invalid PostID	post: unknown-post-id, DB-status: post-not-found	return: vote-not-found	F
UT-4.4.e	Vote Module	get Vote-count By Post	Valid PostID	post: known-post-id, DB-status: OK	return: OK and vote-count	P
UT-4.4.f	Vote Module	get Vote By Post	Valid PostID	post: known-post-id, DB-status: OK	return: OK and vote-list	P
UT-4.4.g	Vote Module	get Vote By Post-User	Invalid PostID	post: unknown-post-id and user: user-id, DB-status: post-not-found	return: post-not-found	F
UT-4.4.h	Vote Module	get Vote By Post-User	Invalid UserID	post: post-id and user: unknown-user-id, DB-status: user-not-found	return: user-not-found	F
UT-4.4.i	Vote Module	get Vote By Post-User	Valid Request	post: post-id and user: user-id, DB-status: OK	return: OK and vote	P
UT-4.4.j	Vote Module	update Vote	Invalid VoteID	vote: unknown-vote-id, DB-status: vote-not-found	return: vote-not-found	F
UT-4.4.k	Vote Module	update Vote	Valid Vote	vote: known-vote, DB-status: OK	return: OK	P
UT-4.4.l	Vote Module	delete Vote	Invalid VoteID	vote: unknown-vote-id, DB-status: vote-not-found	return: vote-not-found	F
UT-4.4.m	Vote Module	delete Vote	Valid Vote	vote: known-vote, DB-status: OK	return: OK	P
UT-4.4.n	Vote Module	delete Vote By Post	Invalid PostID	post: unknown-post-id, DB-status: post-not-found	return: post-not-found	F
UT-4.4.o	Vote Module	delete Vote By Post	Valid PostID	post: known-post-id, DB-status: OK	return: OK	P

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Table 7: Vote Record Module Unit Test (Continued)

S.No	Module Name	Function	Conditions to be tested	Test Data	Expected Output	Status
UT-4.4.p	Vote Module	delete Vote By Post-User	Invalid PostID	post: unknown-post-id and user: user-id, DB-status: post-not-found	return: post-not-found	F
UT-4.4.q	Vote Module	delete Vote By Post-User	Invalid UserID	post: post-id and user: unknown-user-id, DB-status: user-not-found	return: user-not-found	F
UT-4.4.r	Vote Module	update Vote By Post-User	Invalid PostID	post: unknown-post-id and user: user-id, DB-status: post-not-found	return: post-not-found	F
UT-4.4.s	Vote Module	update Vote By Post-User	Invalid UserID	post: post-id and user: unknown-user-id, DB-status: user-not-found	return: user-not-found	F
UT-4.4.t	Vote Module	update Vote By Post-User	Valid Request	post: post-id and user: user-id, DB-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
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
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

S.No	Module Name	Function	Conditions to be tested	Test Data	Expected Output	Status
UT-4.1.a.j	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

S.No	Module Name	Function	Conditions to be tested	Test Data	Expected Output	Status
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
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, error guessing, state based testing, cause-effect graphing, pair-wise testing, and special cases.

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
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Performance Test Report