TEST PLAN DOCUMENT
ICTAK TECH BLOG

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1.INTRODUCTION

This test plan outlines the objectives, scope, approach, and focus of testing the ICTAK TechBlog website(http://64.227.132.106/) . It lists high-level features to be tested, non-tested features, the high-level testing schedule, resource responsible, pass/fail criteria, and associated risks. The plan is intended for the project manager, developer team, testing team, and software quality assurance member, ensuring a comprehensive and effective testing process.

2. OBJECTIVES

ICTAK tech blog aims to educate students about new technologies in Nanoscience, Space, Information Technology, Nanotechnology, and Robotics with trainers and users posting without admin approval, promoting open communication.

The main objectives of this test plan are:

- Identifying and addressing software errors and defects.
- Providing quality assurance of the website.
- Ensuring the end product meets business and user requirements.
- Satisfying with System Requirement Specifications(SRS).
- Identifying testing methods and conducting tests.
- Communicating project schedules and deadlines.
- Ensuring successful completion of all test cases.
- Define testing strategies and tools.
- Maintaining product quality throughout the testing life cycle.

3. SCOPE OF TESTING

The scope of a test outlines the areas of a customer's product to be tested, including functionalities, bug types, and features not to be tested. This document aims to test the ICTAK tech blog, allowing users and students to post articles without admin approval, component integration, and full system functionality.

Functions to be tested.

- Trainer Login
- User Login
- User article posting request
- Admin Login for approval
- Trainer article posting with admin approval
- Trainer article posting without admin approval
- User article posting with admin approval for posting articles
- Logout
- Ensure that menus, links, and buttons are functioning correctly.
- Test the blog's responsiveness on various devices (desktops, laptops, tablets, smartphones).
- Conduct performance testing to assess page loading times.

Function not to be tested.

- External links to social media need not be tested.
- Database testing need not to be done.

4. EXECUTION STRATEGY

- Testing will be focused on meeting the business objectives, cost efficiency, and quality.
- There will be common, consistent procedures for all teams supporting testing activities.
- Testing processes will be well defined, yet flexible, with the ability to change as needed.
- Testing activities will build upon previous stages to avoid redundancy or duplication of effort.
- Testing environment and data will emulate a production environment as much as possible.
- Testing will be a repeatable, quantifiable, and measurable activity.
- Testing will be divided into distinct phases, each with clearly defined objectives and goals.
- There will be entrance and exit criteria.

4. 1 APPROACH

The Test approach in a test plan refers to the overall strategy and methodology that will be used to carry out testing activities. It outlines how testing will be conducted, the resources involved, and the goals of the testing process. An approach in which the test design process is started as early as possible in order to identify and fix the defects before the build is created and the testing is not started until after design and coding are completed. Several different tests must be run to ensure that the ICTAK Tech blog website shares and disseminates information related to technology without any error and good performance.

4.1.1 FUNCTIONAL TESTING

Functional Testing checks if the website works in accordance with predetermined requirements.

PURPOSE: Functional testing will be performed to check the functions of the application. The functional testing is carried out by feeding the input and validates the output from the application.

Functional tests comprise a variety of sub-categories:

1. **Unit Testing**: Unit testing is the type of functional testing technique where the individual units or modules of the application are tested. It ensures that each module is working correctly.
2. **Integration Testing** Integration testing procedures incorporate system components and how they perform together functionally between one another. System parts are built together forming new interfaces and these are tested to determine.
3. **System Testing:** System testing is a type of software testing that is performed on the complete integrated system to evaluate the compliance of the system with the corresponding requirements.
4. **Regression Testing**: Regression testing is done to make sure that the code changes should not affect the existing functionality and the features of the application. It concentrates on whether all parts are working or not.
5. **User Acceptance Testing**: User acceptance testing is done by the client to certify that the system meets the requirements and works as intended. It is the final phase of testing before the product release.

4.1.2 NON-FUNCTIONAL TESTING

1. **Performance Testing**: Performance testing evaluates how a certain software performs under different conditions. Performance testing is necessary to ensure that software operates at expected quality levels at all times. It checks parameters such as application output, data transfer speed, data processing speed, network bandwidth use, load-bearing capacity, memory consumption, command response times, etc.

   Optimize page loading times to enhance user satisfaction. Perform load testing to assess the blog's performance under different traffic conditions. Optimize images, scripts, and other elements for faster loading.

2. **Security testing**: Security testing is to ensure that a software program or system is secure from unauthorized access or attack.

5. PASS/FAIL CRITERIA

Pass/Fail criteria are essential to ensure that users can securely access their accounts and the associated features. Three situations can be encountered, while executing the test plan– suspension, resumption and approval. The pass/fail criteria for a ICTAK Techblog application are

Suspension Criteria: Suspension criteria refer to predefined conditions or requirements that may include reaching a specified number of critical defects or uncovering severe performance issues. when met, trigger the temporary halt or suspension of a process or activity.

During testing of TechBlog, when a defect or bug is detected in any module which may restrict the testing process to proceed further or the output is not the same as expected, Suspension criteria may be triggered, leading to the temporary suspension until the defect is resolved.

Resumption Criteria: Redemption criteria typically relate to conditions that, when fulfilled, signify the successful recovery or improvement of a situation that was previously challenging or problematic.

If the blog experienced performance issues due to increased traffic, redemption criteria might involve successfully optimizing the website's performance, ensuring quick loading times, and providing a seamless user experience.

Approval Criteria: Approval criteria are specific conditions or requirements that must be satisfied for a decision-maker or authority to grant approval for a certain action, project phase, or deliverable.

Before deploying a new feature, approval criteria may include successful completion of functional testing,

6. EXIT/ENTRY CRITERIA

ENTRY CRITERIA

- All the hardware platforms must have successfully installed, configured and functioning properly.
- All necessary requirements, user stories, and documentation related to the tech blog's features and functionalities are available.
- The test environment, including servers, databases, and necessary software, is set up and ready for testing and the QA team has proper knowledge about the functionalities.
- Test data required for testing scenarios is available and prepared.
- The test plan has been reviewed and approved by relevant stakeholders.
- Testers, testing tools, and any other necessary resources are available and ready for use

EXIT CRITERIA

- All planned test cases have been executed, including positive and negative scenarios.
- All identified defects have been addressed and verified.
- Performance testing has been conducted, and the blog meets predefined performance benchmarks.
- UAT has been successfully completed, and stakeholders have provided approval.
- All necessary testing documentation, including test cases, test results, and defect reports, is complete.
- Regression testing has been conducted, and existing functionalities remain unaffected by recent changes.
- All critical and high-priority defects have been resolved, and their fixes have been validated.
- The schedule has been achieved.

7. TEST DELIVERABLES

Test deliverables are provided as below:

Before testing phase

- Test plan document.
- Test case document.
- Test Design specifications.
- Test Data Management Plan.

During the testing

- Test Tool Simulators.
- Test Data
- Test Trace-ability Matrix – Error logs and execution logs.
- Execution Logs and Progress Reports

After the testing cycles is over

- Test Results/reports
- Defect / Bug Report
- Installation/ Test procedures guidelines
- Release note
- Test Summary Report

8. RESPONSIBILITIES

Test Manager:

- Responsible to create suitable Test plan
- Should assign roles and responsibilities to the members of the test team
- Manage the whole testing Process
- Review the the test scenarios, test cases and bug reports submitted by the test team individuals
- Prepare the test progress reports and test summary reports.

Testers:

- Prepare Test Scenarios
- Prepare Test Cases for each functionality that must be tested
- Prepare Bug Report
- Execute the tests.
- Data Management.

Developer in Test:

- Implement the test cases, test program, test suite etc
- Test Environment Setup and Maintenance.

Test Administrator:

- Builds up and ensures Test Environment and assets are managed and maintained.
- Support Tester to use the test environment for test execution.
- Security and Access Control.
- Tool Installation and Support.

SQA Member:

- Take in charge of quality assurance
- Check the testing process meets the specified requirements that the customer demanded in the software

9.Roles

This is the detailed summary of all the resources needed to successfully complete the test within the time schedule.

Sl No	Member	Member Task	Task
1	Abel Alexander	**Test Manager**	· Prepare Test plan · Define Project directions · Manage the whole testing process · Prepare Test Summary Reports and the weekly progress reports of the testing · Assign Role and Responsibilities to the Test Team Members
2.	Anagha P	**Tester**	· Execute the Tests · Prepare Test cases and Test Scenarios · Prepare bug reports
3.	Shabana S	**Tester**	· Take in charge of Automation
4	Anisha Raj	**Tester**	·Takes charge of Performance testing.

Test Environment

SLNO	**Resource**	**Description**
1	Computer	Personal Computer which users often use to connect with the website At least 4 computers of specification 8GB RAM , CPU 3.4 GHz, operating system Windows 10 or above.
2	Network	Internet to simulate the real business and user environment Minimum speed 100 mbps

10. SCHEDULES

TASK	**MEMBERS**	**ESTIMATE WORKS**
Create the test specification	Test Engineers	**100 hrs**
Perform Test Execution	Tester, Test administrator	**100hrs**
Test Report	Tester	**75hrs**
Test Delivery		**25hrs**
Total		**300hrs**

11.RISKS

- Project schedule is too tight. Delay in starting the testing phase due to design issues
- Not having sufficient resources, delay in on boarding process, or new team member lack the required skills for website testing
- Poor User Interface(UI): A confusing or unappealing UI can deter users from engaging with the platform.
- Though functionalities are completely defined, changes can be requested by the client
- Non availability of independent test environment and accessibility causing delays.

12. MITIGATION PLAN

- Starting early with static testing and document verifications and other preparation tasks. Set test priority for each test activity
- Some extra time added for contingencies while calculating time required to finish the testing tasks
- Use HTTPS to encrypt data in transmit and ensure secure communication
- Making sure boarding happens swiftly and ensuring proper knowledge transfer.
- Reallocating to other staff who might be free
- Plan training course to skill up your members
- Proper defect management plan in place
- Using the right tools to raise defects and mark priority for developers to fix

13. TEST CLOSURE

The test closure for testing the project ICTAK TECH BLOG will be finalized once the product quality is measured against the test completion criteria. The entry criteria is that execution of test cases is complete, test reports are available and the defects reports are ready.

The criteria for test completion includes the following:

- 90 % coverage has been achieved.
- No showstoppers or critical defects found.
- The medium and low priority defects are not severe.
- All Planned test cases executed during the test process.

- All defects found have been recorded.
- All high level risks have been resolved.
- Created Bug reports, Test Plan, Test Scenario, Test case Documents.
- Test Summary report issued to test holders.

The exit criteria for this phase is preparing test closure reports and matrices later signed off by the authorities and client. The test completion report is made ready in this stage which indicates quality, measures outstanding risks and identifies level of the tested software.