TEST PLAN

DOCUMENT

(Project X)

*Abstract*

This document provides an overview of the project and the product test strategy, a list of

testing deliverables and plan for development

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**VERSION HISTORY**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Version**  **#** | **Write by Revision** | **Date** | **Approved**  **By** | **Approval** | **Outline** |
| 1.0 | F. Shundovska | 2024/08/23 | Sanja Vasiljevska Stojanovska |  | Test Plan create |
|  |  |  |  |  |  |

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Test plan that can be adapted for multiple projects. (Possible to be included in different Test Plan: “Based on the information provided, here are some explanations for each point”)

1. **Analyze the product**

Introduction: This section provides an overview of the project, stating the purpose of the test plan, which is to ensure the quality and functionality of the software before deployment. The scope of testing is clearly defined to cover all modules and features of the software.

- Overview of the project: This Test Plan outlines the testing approach for Project X

- Purpose of the Test Plan: To ensure the quality and functionality of the software before deployment  
- Scope of testing: Testing will cover all modules and features of the software

2**. Design the Test Strategy – to guide QA teams to define Test Coverage and testing scope:** Well described document which clearly defines the exact software testing approach and testing objectives of the software application and guides the whole team about software testing approach and objectives for each activity in the software testing process:

- every organization has unique priority and set for software designing, their document needs to be compatible and to adds value to the software development before following the template.

Test Coverage to assure the quality of the test, determine the paths who are not tested, prevent Defect leakage, keep under control the time, scope and cost, defect prevention at early stage of the project lifecycle, determine all the decision points and paths used in the application to increase test coverage and to find in easy way the gaps in requirements, test cases and defects at the unit level and code level:

- executing the static review techniques (peer reviews, inspections, walkthrough)

- transforming the ad-hoc defects into executable test cases

- availing the automated code coverage or unit test coverage tools (at code level or unit test level)

- define proper test management tools

|  |  |  |  |
| --- | --- | --- | --- |
| TEST STRATEGY | - Automation Strategy | - Test Schedule | - Resource Planning |
| TEST DEVELOPMENT | - Test Plans | - Test Scripts | - Test Data |
| TEST EXECUTION | - Defects | - Test Reports | - Test Metrics |
| DEFECT MANAGEMENT | - Bug Fixing | - Bug Verification | - Bug Tracking |
| DELIVERY | - UAT | -Installation Testing | -Requirement Verification |

Step 1 – Scope: - who will review the document?

- who will approve the document?

- Software Testing Activities carried out with timelines

Step 2 – Test Approach:

- Process of Testing

- Testing Level

- Roles and Responsibilities of each team member

- Types of Testing (Load Testing, Security Testing, Performance Testing …)

- Testing approach & automation tool if applicable

- Adding new defects, re-testing, Defect triage, Regression Testing and Test Sign Off)

Step 3 – Test Environment:

- To define the number of requirement and setup required for each environment

- Define backup of test data and restore strategy

Step 4 – Testing Tools needed for test execution:

- Automation tools and Test Management tools

- A number of open-source and commercial tools and determination of how many users are supported on it and plan accordingly

Step 5 – Release Control:

- to release management plan with appropriate version history that will make sure test execution for all modification in the release

Step 6 – Risk Analysis:

- to list all risks that can estimate

- to give clear plan to mitigate the risks, as well as contingency plan

Step 7 – Review and Approvals:

- all the activities reviewed and signed off by the business team, project management, development team …

- summary of review changes traced at the beginning of the document, along with an approved date, name, and comment

3. **Define the Test Objectives**

Objectives: The specific goals and objectives of the testing process are outlined, including identifying and reporting defects, validating that the software meets requirements, and ensuring user-friendliness and performance standards.

- Specific goals and objectives of the testing process

- To identify and report defects in the software

- To validate that the software meets the specified requirements

- To ensure the software is user-friendly and meets performance standards

Objective: To ensure that the login functionality of the application is secure and user-friendly.

Explanation: The testing will focus on verifying that users can securely log in to the application using valid credentials and that any potential security vulnerabilities are identified and addressed. This is crucial to protect user data and maintain the integrity of the application.

Example 1:

Objective: The testing aims to verify the functionality of the payment processing system to ensure that transactions are processed accurately and securely.

Importance: Ensuring the accuracy and security of payment transactions is crucial for maintaining customer trust and preventing financial losses. Any errors or vulnerabilities in the payment processing system could lead to customer dissatisfaction, loss of revenue, and potential security breaches.  
  
Example 2:

Objective: The testing aims to assess the performance of the website under heavy traffic conditions to identify potential bottlenecks and optimize load times. Importance: With the increasing reliance on online platforms, it is essential to ensure that the website can handle high volumes of traffic without experiencing slowdowns or crashes. Optimizing load times can improve user experience, increase customer retention, and ultimately drive business growth.

Example 3:

Objective: The testing aims to validate the compatibility of the software application with different operating systems and devices to ensure a seamless user experience across various platforms.  
Importance: In today's digital landscape, users access applications on a wide range of devices and operating systems. Ensuring compatibility across platforms is essential for reaching a larger audience, enhancing user satisfaction, and maintaining a competitive edge in the market.

4**. Define Test Criteria**

5. **Scope:** This section defines the in-scope and out-of-scope items for testing, specifying the features and functionalities to be tested.

- In-scope and out-of-scope items for testing

- Features and functionalities to be tested

6. **Include detailed test cases:** Break down each test case into smaller steps and provide explanations for each step to ensure clarity.

Test Case: Verify user can log in with valid credentials

Steps:  
1. Navigate to the login page

2. Enter valid username and password

3. Click the login button

4. Verify successful login message is displayed

3. Cover various scenarios:

Scenario: Test login functionality with incorrect password

Explanation: This scenario tests how the application handles login attempts with incorrect passwords, ensuring that appropriate error messages are displayed and user accounts are not compromised.

7. **Cover various scenarios:** Include a variety of scenarios in your test plan to test different aspects of the system or application.

8. **Provide rationale for test decisions:**

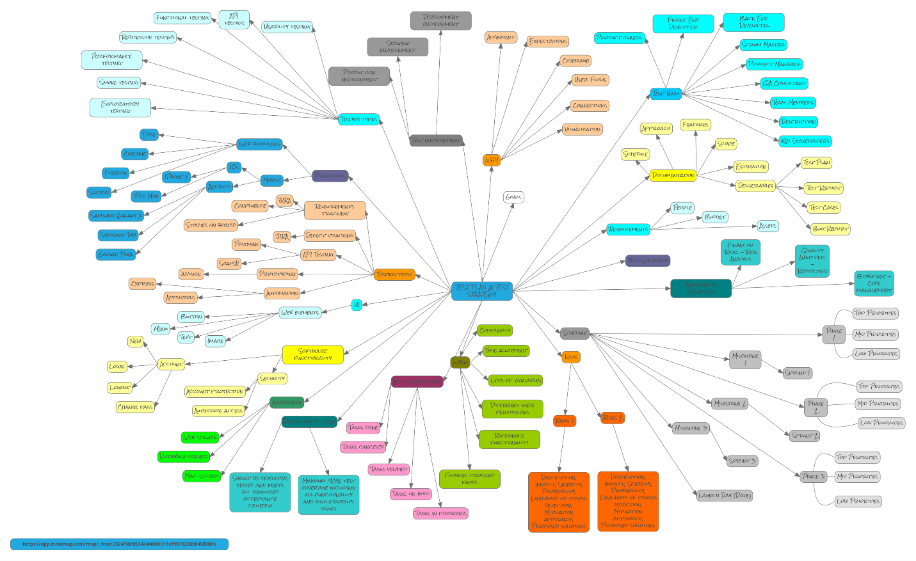
Rationale: Including a stress testing scenario to simulate high traffic conditions and explain why certain tests are included in the plan and how they contribute to the overall testing goals.

Explanation: By conducting stress testing, we can assess the application's performance under heavy load and identify any potential bottlenecks or performance issues that may arise in real-world usage scenarios.

9. **Use visuals or diagrams and mind-maps:**

Diagram: Flowchart illustrating the login process

Explanation: This visual aid provides a clear and concise overview of the steps involved in the login process, helping stakeholders understand the sequence of actions and potential decision points within the application. (For different Project, need to be included plus flowchart/mind-map with all the steps for the login process and functionality od the new software).



10**. Approach – Plan Test Environment:** The testing methodologies and techniques to be used, such as a combination of manual and automated testing, are detailed. The setup of the test environment, including the use of virtual machines and synthetic data, is also explained.

- Testing Methodologies and techniques to be used: Combination of manual and automated testing  
- Test Environment setup: Use of virtual machines for testing different configurations

- Test Data requirements: Synthetic data will be used for testing

11**. Resource planning:** The roles and responsibilities of team members, training needs, and tools required for testing are clearly defined, including the use of Jira for defect tracking and Selenium for automated testing.

- Test Lead: Name & Surname

- Testers: Team of 3 testers

- Roles and responsibilities of team members

- Training needs for team members

- Tools and software required for testing: Jira for defect tracking, Selenium for automated testing

12. **Schedule & Estimation:** A timeline for testing activities, milestones, and deliverables is provided, outlining the different testing phases and the final testing and bug fixing phase.

- Timeline for testing activities

- Milestones and deliverables

- Testing Phase 1: Week 1-2

- Testing Phase 2: Week 3-4

- Final Testing and Bug Fixing: Week 5

13**. Risks:** Potential risks and challenges in the testing process are identified, along with mitigation strategies to address them. This section ensures that risks are proactively managed to prevent any delays or issues during testing.

- Delay in delivery of test environment setup

- Inadequate test coverage due to time constraints

- Communication gaps between development and testing teams

- Potential risks and challenges in the testing process

- Mitigation strategies

14. **Determine Test Deliverables - Sign-off:** The criteria for test completion and acceptance are specified, along with the sign-off process involving approval from the project manager and stakeholders. This ensures that all critical defects are fixed and test cases are executed successfully before deployment.

- Test completion criteria and acceptance: All critical defects fixed, test cases executed successfully   
- Sign-off process: Approval from project manager and stakeholders

Overall, this test plan provides a comprehensive framework for testing multiple projects, ensuring thorough testing and successful software deployment. Before every Project, it will need further assistance or modifications to the test plan.

**\* INTRODUCTION**

The Test Plan is designed to prescribe the scope, approach, resources and schedule of all testing activities of the Project X.

The plan identifies the items to be tested, the features to be tested, the types of testing to be performed, the personnel responsible for testing, the resources and schedule required to complete testing, and the risks associated with the plan.

**1 BUSINESS BACKGROUND**

A crucial part of any test plan is spelling out the company history and telling the origin story to show potential teammates and investors how the company landed on specific business idea and why the company is uniquely qualified to pursue it.

1. **TEST STRATEGY** 
   1. **Scope of Testing**

**2.1.1 Feature to be tested**

All the feature of website Project X which were defined in software requirement specs are need to bested

|  |  |  |
| --- | --- | --- |
| **Module Name** | **Applicable Roles** | **Description** |
| **Enquiry** | Manager  Customer | **Customer:** A customer can have multiple accounts. He can view his accounts only  **Manager:** A manager can manage with the problem with login of all the customers, who are under his supervision |
| **New Customer** | Manager | **Manager:** A manager can add a new customer |
|  | Manager | **Manager:** A manager can edit details like address, email, telephone of a customer |
| **New account** | Manager | The current system provides 2 types od accounts: Saving and Current  **Manager:** A manager can add a new account for an existing customer |
| **Change Password** | Manager  Customer | **Customer:** A customer can change password of only his account  **Manager:** A manager can change password of only his account. He cannot change passwords of his customers |
| **Edit account** | Manager | **Manager:** A manager can add and edit account details for an existing account |
| **Delete account** | Manager | **Manager:** A manager can delete an account for a customer |
| **Delete customer** | Manager | A customer can be deleted only if he/she has no active account  **Manager:** A manager can delete a customer |

* + 1. **Feature not to be tested**

These futures are not to be tested because they are not included in the software requirement specs

- User interfaces

- Hardware interfaces

- Software interfaces

- Database logical

- Communications interfaces

- Website Security and Performance

**2.2 Test Type**

In the Project X, 3 type of testing should be conducted:

- **Integration** testing (Individual software modules are combined and tested as a group)

- **System** testing: Conducted on a **complete**, **integrated** system to evaluate the system’s compliance with its specified requirements

- **API** testing: Test all the API’s create for the software under tested

**2.3 Risk and Issues**

|  |  |
| --- | --- |
| Risk | Mitigation |
| Team member lack the required skills for website testing | Plan training course to skill up your members |
| The project schedule is too tights; it’s hard to compete this project on time | Set Test Priority for each of the test activity |
| Test Manager has poor management skills | Plan leadership training for manager |
| A lack of cooperation negatively affects the employees’ productivity | Encourage each team member in his task, and inspire them to greater efforts |
| Wrong budget estimate and cost overruns | Establish the scope before beginning work, pay a lot of attention to project planning and constantly track and measure the progress |

**2.4 Test Logistics**

**2.4.1 Who will test?**

The project should use outsource members as the tester to save the project cost

**2.4.2 When will test occur?**

The tester will start the test execution when the following inputs are ready

- Software is available for testing

- Test Specification is created

- Test Environment is built

- Enough human resource for testing

**3 TEST OBJECTIVES**

The test objectives are to verify the Functionality of the Project X, the project should focus on testing the operation such as …. To guarantee all these operations can work normally in real business environment.

**4 TEST CRITERIA**

**4.1 Suspension Criteria**

In the team members report that there are 40% of test cases failed, suspend testing until the development team fixes all the failed cases.

**4.2 Exit Criteria**

Specifies the criteria that denote a successful completion of a test phase

**- Run** rate is mandatory to be 100% unless a clear reason is given

**- Pass** rate is 80%, achieving the pass rate is mandatory

**5 RESOURCE PLANNING**

**5.1 System Resource**

|  |  |  |
| --- | --- | --- |
| **No.** | **Resources** | **Descriptions** |
| **1** | Server | Need a Database server which install MySQL server Web server which install Apache Server |
| **2** | Test Tool | Develop a Test tool which can auto generate the test result to the predefined form and automated test execution |
| **3** | Network | Setup a LAN Gigabit and 1 internet line with the speed at least 5 Mb/s |
| **4** | Computer | At least 4 computer rum Windows 7, Ram 2GB, CPU 3.4 |

**5.2 Human Resource**

|  |  |  |
| --- | --- | --- |
| **No.** | **Member** | **Tasks** |
| **1** | Test Manager | Manage the whole project  Define project directions  Acquire appropriate resources |
| **2** | Test | Identifying and describing appropriate test techniques / tools / automation architecture  Verify and access the Test Approach  Execute the tests, Log results, Report and defect  Outsourced members |
| **3** | Developer in Test | Implement the test cases, test program, test suite etc. |
| **4** | Test Administrator | Builds up and ensures test environment and assets are managed and maintained  Support Tester to use the test environment for test execution |
| **5** | SQA members | Take in charge of quality assurance  Check to confirm wheter the testing process is meeting specified requirements |

**6 TEST ENVIRONMENT**

The Test Environment should be setup as:

User

User Internet Web Server Database Server

User

User

**7 SCHEDULE & ESTIMATION**

**7.1 All project task and estimation**

|  |  |  |
| --- | --- | --- |
| **Task** | **Members** | **Estimate effort** |
| **Create the test specification** | Test designer | 170 man-hour |
| **Perform Test Execution** | Tester, Test Administrator | 80 man-hour |
| **Test Report** | Tester | 10 man-hour |
| **Test Delivery** |  | 20 man-hour |
| **Total** |  | **280 man-hour** |
|  |  |  |
|  |  |  |

**7.2 Schedule to complete these tasks**

|  |  |  |  |
| --- | --- | --- | --- |
| Task Name | Start Date | End Date | Calendar |
| Making Test  Specification |  |  |  |
| Milestone |  |  |  |
| Perform Test  Execution |  |  |  |
| Milestone |  |  |  |
| Test Report |  |  |  |
| Milestone |  |  |  |
| Test Delivery |  |  |  |
| Milestone |  |  |  |

**8 TEST DELIVERABLES**

Test deliverables are provided as:

**8.1 Before Testing Phase**

- Test plans document

- Test cases documents

- Test Design specifications

**8.2 During the testing**

- Test Tool

- Simulators

- Test Data

- Test Trace-ability Matrix

- Error logs and execution logs

**8.3 After the testing cycles is over**

- Test Results / Reports

- Defect Report

- Installation / Test procedures guidelines

- Release notes