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**(1) INTRODUCTION**

**Purpose**

This purpose of this test plan is to describes the testing approach and overall framework that will drive the testing of App.

**Analyze the Product**  
Who will use the website?

What is it used for?

How will it work

**Scope**  
The scope includes functional, performance, and usability testing of the application.

Anything not mentioned in this document is out of scope.

**The document introduces:**

● **Test Strategy**: The testing will be based on defined rules, encompassing the project's parameters such as start and end dates, objectives, and assumptions, description of the process to set up a valid test (e.g. entry / exit criteria, creation of test cases, specific tasks to perform, scheduling,).

● **Execution Strategy:** This describes how the test will be performed and process to identify and report defects, and to fix and implement fixes.

● **Test Management:** process to handle the logistics of the test and all the events that come up during execution (e.g.: communications, escalation procedures, risk and mitigation, team roster)

**Test Objectives**

The objective of the test is to verify that the functionality of App works according to the specifications and to also validate that it meets user’s expectations.

Tests will execute and verify manual test cases, identify, log, and retest all high and medium severity defects per the entrance criteria, and prioritize lower severity defects for fixing dependent on the time and resources in each sprint.

**The final product of testing is two-fold:**

● A production-ready software;

● A set of stable test scripts that can be reused for Functional and UAT test execution

**Test Assumptions**

● API testing will be carriend out once the Endpoints are ready, before it is integrated with the UI

● Exploratory Testing would be carried out once the build is ready for testing

● Performance testing is considered for this estimation.

● All the defects will be reported in Excel and JIRA along with a snapshot or video attachment

● The Test Team will be provided with access to Test environment

● The Test Team assumes all necessary inputs required during Test design and execution will be supported by Development

● The Test team will be provided with read and write access to relevant test databases otherwise the system will be treated as a black box; if the information shows correctly online and in the reports, it will be assumed that the database is working properly

● Test case design activities will be performed by QA team

● Test environment and preparation activities will be owned by Dev Team

● Dev team will provide Defect fix plans based on the Defect meetings during each cycle to plan. The same will be informed to Test team prior to start of Defect fix cycles.

● Product Management will review and sign-off all Test cases prepared by Test Team prior to start of Test execution

● The defects will be tracked through JIRA

● The project will provide test planning, test design and test execution support

● Test team will manage the testing effort with close coordination with PM

● Project team has the knowledge and experience necessary, or has received adequate training in the system, the project and the testing processes.

● There is no environment downtime during test due to outages or defect fixes

**Testing Process Test process followed by QA team will be categorized in to 2 ways:**

❖ Process to be followed when sufficient time is available for Testing

❖ Process to be followed when sufficient time is not available for Testing.

A) **Process to be followed when sufficient time is available for Testing Understanding Requirements:**

● Requirement specifications is sent by Program Management Lead

● Understanding of requirements is done by QA team along with development team and questions are asked due to in depth analysis of process flows, boundaries and use case scenarios

● Questions are collated and sent to Program Management Lead

● Response to questions asked are provided by Product Management team.

**Preparing Test Cases:**

QA team will author test cases based on the Acceptance Criteria. This will cover all scenarios for requirements.

**Preparing Test Matrix**:

QA team will author test matrix which maps test cases to respective requirements. This will ensure appropriate coverage of requirements.

**Reviewing test cases and matrix**:

Peer review will be conducted for test cases and test matrix by senior QA members on the QA team. Comments or suggestions on test cases and test coverage will be provided by a reviewer which is then followed by a re-work by the test author. This is then sent again for review and approval.

**Creating Test Data:**

Test data will be created by respective QA on test environment based on scenarios and Test cases.

**Executing Test Cases:**

● Test cases will be executed by respective QA on test environment based on designed scenarios, test cases and Test data.

● Test results (Pass/Fail/Blocked) will be updated in test case suite

**Defect Logging and Reporting:**

QA will be logging onto Excel spreadsheet/JIRA, all the defects/bugs found during execution of test cases and during verification of tickets in “Validation” will be on Excel Spreadsheet/JIRA

**Retesting and Regression Testing**:

Retesting for fixed bugs will be done by respective QA once it is resolved by the respective developer and bug/defect status will be updated accordingly. In certain cases, regression testing will be done if required.

**Deployment/Delivery**:

Release/Launch date to Production will be determined by Project stakeholders.

**B) Process to be followed when sufficient time is not available for Testing Understanding requirement:**

Tickets will be groomed by Product Managers with developers and QAs in attendance. Acceptance criteria are analyzed, discussed, and written by the all team members. Incompleteness, ambiguities, or defects in the user story are resolved during this process.

**Creating Test Data:**   
Test data will be created by respective QA on test environments based on scenarios and test cases.

**Executing test scenarios:**

QA will be doing adhoc testing (i.e. testers will use their intuition, experience and creativity to identify defects and issues that more formal testing methods may not find) based on requirements and acceptance criteria set in individual tickets.

**Defect logging and reporting:**

QA will be logging the defects/bugs found during execution of the test on respective Excel Spreadsheet/JIRA Board.

**Retesting and regression testing:**

Retesting for fixed bugs will be done by respective QA once it is resolved by respective developer and bug/defect status will be updated accordingly and the regression test is carried out.

**Deployment/delivery:**

Once all bugs/defects reported after complete testing are fixed and no other bugs are found, deployment will be done on day and time specified by Product Management.

**Preparing Test Cases:**

QA team will create test cases based on the Acceptance criteria set during the grooming session. This will cover all scenarios for requirements.

1. API testing
2. Web Testing
3. Mobile Testing
4. Performance Test (Load/stress)
5. Browser display in mobile mode
6. Browser display in tablet mode

**TESTING APPROACH**

**Types of Testing**

* **Exploratory** - the purpose of this test is to make sure critical defects are removed before the next levels of testing can start. the type of test will be done by a tester who is experienced, has domain knowledge and has a high degree of essential skills, like analytical skills, curiosity and creativeness. This will include positive and negative tests.
* **Functional & Graphical User Interface (GUI)** - This type of testing ignores the internal parts and focuses on whether the output is per requirement or not. It pays particular attention to GUI mockups.
* **Negative testing** - This calls out the “attitude to break”. These are functional and non-functional tests that are intended to break the software by entering incorrect data like incorrect date, Naira value or string, negative numbers, etc... It is also a positive test for an error condition.
* **End-to-end testing** – This is siimilar to system testing, involves testing of a complete application environment in a situation that mimics real-world use. For this app, we will include interacting with a database.
* **Smoke testing** – This testing is done to determine if a new software version is performing well enough to accept it for a major testing effort. If the critical functionalities are not working fine/application is crashing for initial use then system is not stable enough for further testing. Then the build or application is assigned back to the developer in charge.
* **Regression testing** – This testing is done after a bug/defect has been fixed and a confirmation testing has been done to assert that the bug(s) have been fixed. This testing is done to confirm
* **Load/Stress/Performance testing** – performance testing to check system the behavior under varying load. This will involve testing under varying loads with several customers using the application simultaneously. The purpose of performance testing is to evaluate the system's responsiveness, stability, scalability, and overall behavior under different levels of workload..
* **Usability testing** – This tests focuses on evaluating how user-friendly and easy it is to use a software application. Can new user understand the application easily? This will also include verification of landing pages and relevant help documents to be published e.g. FAQ
* **Compatibility testing** – This test is done is to ensure a software application or system functions correctly across different environments, devices, browsers, and operating systems. The goal of compatibility testing is to verify that the software delivers a consistent and reliable user experience regardless of the user's hardware, software, or network configuration.
* **Security testing** – Can system be penetrated by any hacking way. Testing how well the system protects against unauthorized internal or external access. Will include checks to verify that database is safe from external attacks. —-NO EXPERTISE YET

**Test Levels**

* **API testing** - testing of individual software components or modules. This is done ticket by ticket on each of the boards and per API specifications.
* **Incremental integration testing** - bottom up approach for testing i.e continuous testing of an application as new functionality is added.
* **System testing** – The entire system is tested as per the requirements. Black-box type testing and Experience-based test technique are used here.
* that no adverse consequences have been caused by the bug fix. Regression tests will be automated.
* **User Acceptance** - this test focuses on validating the business logic i.e if the product meets users expectation. It allows the end users to review the system prior to deployment

**Test Deliverables**

* Test Plan
* Functional Test Cases
* Logged defects on Excel Spreadsheet
* Weekly status reports
* Test closure report

**2) FEATURES TO BE TESTED**

Every feature on this application will be tested

**Out of scope**

Anything not mentioned in this document is out of scope

**(3) TEST SCHEDULE**

* **Planning Phase**: This includes hiigh-level test planning activities, which include preliminary development of Master Test Plan (this document and a Test schedule)
* **Design Phase:** Development and Test engineers participate actively in feature design by inspecting and reviewing the requirements and design documents. As the design documents are completed, the test engineers are encouraged to start working on the Test Plan document and test design planning.
* **Code Complete-Infrastructure:** The Test Engineers should have completed or be in the final stages of their preliminary Infrastructure Test Plan, test cases and other Test documents related to test execution for each feature or component such as test scenarios, expected results, data sets, test procedures, scripts and applicable testing tools.
* **Test Environment**: The development team will provide access to Test environment for the Test Team
* **Feature Complete:** All features tested, all bugs verified and test documentation is finalized. The test Engineers should assess that the system is ready for Beta regression and have started their preliminary Test Summary Reports.
* **Regression Test:** Complete regression test execution of complete system and update Test Summary Reports for regression

**(4) CONTROL PROCEDURE**

**Reviews:** Reviews will be done on following documents and review report will be prepared for each work products

• Test cases

• RTM(Requirement Traceability Matrix)

**Bug Review Meetings:**

Bug review meeting will be held for every test cycle conducted during the following phases:-

• GUI Testing

• Report Output/Data Testing In case of critical / show stopper bugs.

**Change Request:**

Change requests will be handled using following process:

• Understanding the change request and its impact on existing report functionality

• If the change is major, test cases will be updated

• If the change is minor, test cases may not be updated

• Retesting and regression testing will be done as per change request

**(5) DEPENDENCIES**

Internet connectivity

**(6) ROLES AND RESPONSIBILITIES**

**Product Manager (PM)**

•Acts as a primary contact for development and test team.

•Responsible for Project schedule and the overall success of the project.

**Quality Assurance (QA)**

•Understands requirements

•Writes and executes Test cases

•Prepares Requirement Traceability Matrix (RTM)

•Reviews Test cases, RTM

•Defect reporting and tracking

6. Retesting and regression testing

7. Bug Review meetings

**(7) TEST CYCLE & DATE**

* **Test Cycle 1:** This will be done while feature development is ongoing and will be based on each ticket that is assigned to a developer. It will consist of Unit testing (done by the developer), API testing, Load test.
* **Test Cycle 2:** This will be done once development of an epic is completed and will consist of Smoke testing, Functional testing, Integration testing and Regression testing
* **Test Cycle 3:** This will be done once more than one epic has been deployed and will consist of Functional testing, Integration testing, Regression testing, Smoke testing, Usability testing, Compatibility testing, Load testing, System testing and Exploratory testing
* **Test Cycle 4:** This will be done once all epics have been deployed and only bug fixing is the focus of development team. This will consist of all forms of testing with emphasis on end-to-end testing, exploratory testing, compatibility testing, usability testing and performance testing.

**(8) DEFECT MANAGEMENT**

* Excel Spreadsheet
* JIRA board for bug tracking

**(9) Risks and Risk Management**

* The project schedule is too tight, therefore it’s hard to complete this project within the allocated time.
* No workflow was given to the test team order tohelp simplify the project.

**(10) Exit criteria:**

* There will be extensive and different testing done on staging including regression testing before deployment to production.
* All API tests should be automated.
* Regression tests should be automated.
* Performance tests must be carried out.