Homework 12: Test Planning

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Introduction:

In this report, we are going write down a detailed test plan for testing a new Banking ATM application that will be installed on kiosks and smart phone applications.

Executive Summary:

Banking ATM application will be for all the users who use bank credit and debit cards. They will be able to check balances, withdraw cash, transfer money, deposit cash and check on iOS, Android devices and Kiosks. This will be delivered before August as the site testing has to start in August. Using agile methodologies, testing will be done in parallel to development. Starting from unit tests, we will reach performance and security testing which will make sure a smooth transition of the application from each phase.

Development Approach:

We will be using Agile development approach in this project as it will help us to test along the development phase.

Impact on Testing:

Using an agile approach will have a great impact on testing. As we know that using a waterfall, we usually test the product at the end of the development phase. But on the other hand, using an Agile approach we will be testing and developing side by side. This will make sure that the product that will be released at the end is ready and can makeup to the expectations of users.

References:

We will be using the following documents to refer during the testing phase:

1. Systems Requirements
2. Software Design Document
3. Interface Design Document
4. Use Cases Design Document

Testing Scope:

In this section we will be defining what needs to be tested and what needs not to be tested.

Features to be tested:

Features not to be tested:

We will be using the following criteria for prioritizing tests:

1. Testing high priority requirements first.
2. Testing high risks areas first as it will contain more problems.
3. Using boundary analysis to reduce effort.
4. Orthogonal Array testing to reduce number of combinations.

Testing Approach:

We will be mentioning the main components of the test plan in this section. Let's start from

Key Factors:

- Availability – available to all customers at once
- Security – passes all security tests without even one defects
- Response Time – response time should be according to requirements

Key Risks:

- Technology – will we be able to transfer same app from iOS to Android
- Schedule – will we be able to deliver before September
- Fraud – will we be able to complete security testing in July

Success Criteria:

- High Priority Functionalities – they are being passed and tested before site testing
- Required Number of Users – an exact number of users are using application
- High Feedback Reviews – not less than 4 stars out of 5 in alpha/beta testing

Contingency Plan:

- Extra Time in Schedule – We will change the release date to October, but this must be forwarded before July.
- Drop Low Priority Functionalities – we might functions which have low priority

Item Pass/Fail Criteria:

- Result Equals Expected Result – exact results will be mentioned in unit tests which should be met
- Blockers – if blockers are found, they should be solved first

Entry/Exit Criteria:

- Unit Tests First – unit tests will be performed at the same time as development
- High Priority First – high priority functions will be tested first and foremost

Testing Criteria and Checkpoints:

- System Test – it will not be performed until metrics are met and unit plus integration is complete
- Acceptance Test – will wait for the results of Alpha/Beta testing

Test Deliverables:

- First Deliverable – includes unit plus integration and system testing
- Second Deliverable – includes performance and security testing
- Third Deliverable – includes Alpha/Beta and Site testing

Testing Budget:

For this project, testing budget has been set to $500K. $300K for in house testing, 100K for Alpha/Beta testing and $100K for Site testing.

Testing Tools:

- Unit Testing Tools – JUnit, TestNG
- Bug Tracking Tools – Github, JIRA
- Performance Tools - JMeter

Automation Strategy:

“Automate everything” it is this simple. We will try to automate as many things as possible. It might seem strange, but it is best goal to strive for. If we find areas which can not be automated for some reasons, we will do manual testing on that part. Following tools will be used for automation testing on smart phones and kiosks

- Appium – open source tool to test iOS and Android applications
- UI Automator – detailed UI testing

Types of Testing:

In this project, we will be conducting following tests strategies over the course of the project

- Unit Testing
- OATS
- Integration Testing
- Usability Testing
- System Testing
- Acceptance Testing
- Performance Testing
- Alpha / Beta Testing

Test Platform:

Platform used for testing will be iOS, Android devices as well as in-house kiosks machines. These will be used to test application so that it can be delivered to customers in the best possible way.

Measuring Progress:

We will be using following metrics for reliability and system testing

- Reliability Testing – <=1 failure per day expected in operation
- System Testing - >=98% tests executed, >=96 tests passed, <= 30 defects open

Shipping the System:

Shipping of the system will be determined based on the metrics define in the previous section. If the tests are passing these progress measures, then system will be moved to Alpha/Beta Testing and eventually shipped.

Schedule:

The project started on 1st January and we must deliver it to customers before 1st September. For this we will be having following dates to deliver testing reports and analysis.

1. Development Phase – Jan to May
2. Unit Test Phase – Jan to May
3. Integration Test Phase – Feb - May
4. System Test Phase - June
5. System Walkthrough and Security Test - July
6. Site Testing - August

Approvals:

In this project, test plan will be approved by following managers.

1. Development Lead
2. Testing Lead
3. Project Lead

This is the end of test plan document.

Honor Pledge:

"I pledge my honor that I have abided by the Stevens Honor System."