



BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY

PROGRAMMING PROJECT: BIT 2206

**SAVINGS AND CREDIT COOPERATIVE MANAGEMENT SYSTEM FOR
LOCA SAVINGS AND CREDIT COOPERATIVE**

BY

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**PROJECT TESTING SPECIFICATION IN PARTIAL FULFILMENT FOR THE
REQUIREMENTS FOR THE AWARD OF A DEGREE IN INFORMATION
TECHNOLOGY**

PRESENTED TO: Dr. LUCY MBURU

Declaration

I declare that this project is my original work and has not been presented in any other college or university for the award of a Diploma or a Degree.

Student

Name..... Date.....

Signature.....

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Abstract

This document shows in detail all the testing that will be done on the new system for LOCA SACC0 so as to ensure that the system meets the users' requirements. A test plan will be drawn to show testing schedules of testing and the methods that will be implemented to ensure successful module testing.

1.0 Introduction

Software testing is the process of running software with the aim of finding bugs within its code, checking to ensure that the software meets its requirements and is running as expected.

With increase of the complexity and size of software each day, it is paramount that an organization assesses the new software products it produces will be accepted by the intended users, purchasers and other stakeholders. Software testing is the process of attempting to make this assessment.

1.1 Goals and Objectives

The goal of the test plan is to:

- Ensure the end result meets the business and user requirements.
- Ensure the system satisfies the stated functions in the SRS (System Requirement Specification).
- Find and eliminate errors in the system.
- Delivering a high quality product.

1.2 Purpose

This document serves as a draft test approach for the SACCO Management System. There will be three stages in the preparation for the test:

- **Test Approach:** Sets the scope of system testing, the overall strategy, activities to be completed, resources needed and the methods to be used to test the release.
- **Test Planning:** Details the activities, dependencies and effort needed to conduct the test.
- **Test Conditions/Cases:** States the tests to be applied, data to be processed and the expected results

1.2 Purpose

This document serves as the draft test approach for the LOCA SACCO Management System.

Preparation for the test consists of the following stages:

1. **Test approach:** It sets the scope of testing the system, general resources needed, strategy to be taken up, activities to be completed and the methods to be employed to test the release.
2. **Test Planning:** It profiles the activities, dependencies and effort required to conduct the system test.
3. **Test Conditions/Cases:** documents the tests to be applied, the data to be processed, the automated testing coverage and the expected results.

1.3 Statement of the scope

- Before granting a user access to the system it must first prompt the user for a username and password.
- The system to eliminate redundancy of unique records by implementing the use of primary keys.
- Data searches and processing should be fast and efficient.

1.4 Major Constraints

- ❖ **Time:** The system is very extensive hence full testing will require more time than is available.
- ❖ **Funds:** Thorough and satisfactory testing will require a large amount of money which may not be practically possible.
- ❖ **Cooperation:** The testing team and the users of the system need to be ready to work together during this exercise. Their availability is key but they may not avail themselves at the required time hence important parts will be overlooked.

1.5 Formal Reviewing

There will be several formal review points before and during system tests which is very important to ensure that the product is of required quality.

1.5.1 Formal Review Points

1. Design Documentation
2. Testing Approach
3. Unit Test Plans
4. Unit Test Conditions and Results
5. System Test Conditions
6. System Test Progress
7. Post System Test Review

2.0 Test Plan

It is an organized approach to testing a specific hardware or software product. It contains a detailed understanding of the eventual workflow. With significant input from test engineers, the test plan is a strategy that is used to check whether the product (either hardware or software) meets design specifications among other requirements.

The goal here is to make sure that the product does what the stakeholders and users intended it to do and that the products does not have any defects.

2.1 Software to be tested

The software to be tested is the LOCA SACCO Management System for LOCA SACCO.

2.2 Testing Strategy

The system test will be done in the following steps:

- ❖ Unit testing
- ❖ Integration testing
- ❖ Validation testing
- ❖ High-Order testing

2.2.1 Unit Testing

The system is composed of multiple modules. In unit testing, each individual module is tested to verify and validate its results. This is done by the programmer because it requires detailed knowledge of the internal structure of the code.

Area Being Tested	Expected Results	Actual Results	Comments
Passwords	Should mask characters		
Username	Correct usernames		
Alphabetic Fields	Input restricted to alphabets		
Numeric fields	Input restricted to numeric		
Alphanumeric fields	Input alphanumeric		
Date	Only specified date structure is accepted.		

2.2.2 Integration Testing

This is the phase in software testing where the individual components of the software are combined and tested as a unit. This testing is very necessary in client-server systems because it ensures that both systems are communicating. The process of integration is done by adding together the modules and then running them together.

Area Being Tested	Expected Results	Actual Results	Comments
Add one module after another to the system and check if it interacts well with other modules.	All the modules should interact without any problems.		
Install the system into the client's network to check for collision with other applications also running on the client's network by running the system concurrently with other applications.			

2.2.3 Validation Testing

The software must also be checked to see if it meets the specifications of its intended purpose.

Area Being Tested	Expected Results	Actual Results	Comments
Forms			
Add	Insert a new record to the database		
Delete	Removes a specified record		
Menus	Must open the required areas.		
Update	Change an existing record		
Save	Enforce changes done to data or commit new data to the database.		
Data			
Input data with known output will be entered into the system for processing	The output should match the expected output.		

2.2.4 High Order Testing

Several methods of testing will be combined in this test with the aim to test different conditions by utilizing different test methods. These tests will include:

2.2.4.1 Stress Testing

It's a test that is used to ensure that the system will remain stable and will not breakdown in strenuous conditions.

Area Being Tested	Expected Results	Actual Results	Conclusions
Create many concurrent users.	The system should handle the users		
Reduce system resource to bare minimum, e.g. reduce the system's memory.	The system should keep running normally even with diminished resources.		

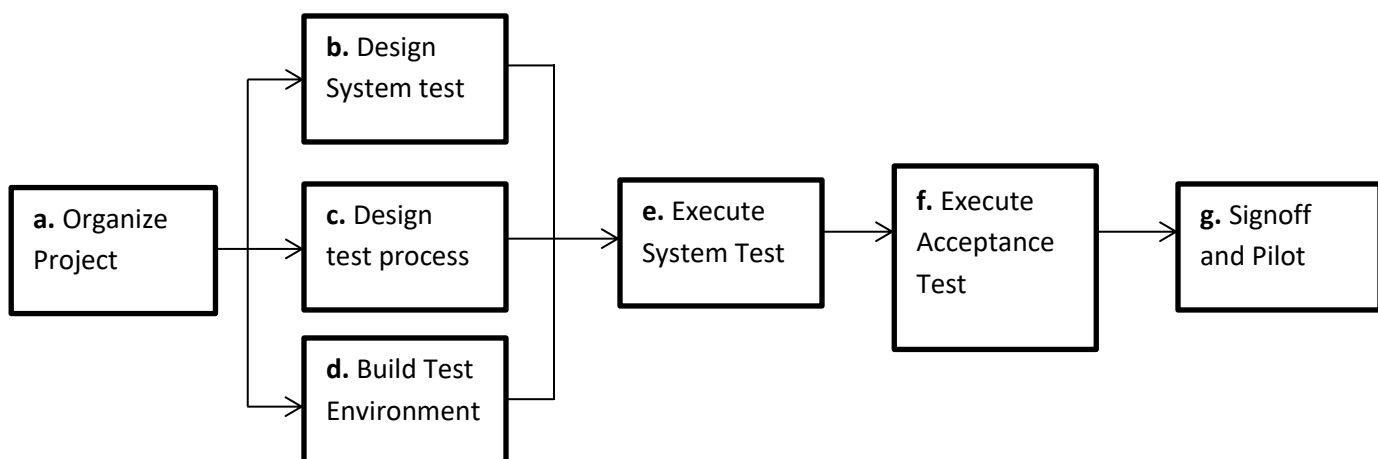
2.2.4.1 Security Testing

It should cover the following areas:

- Confidentiality
- Integrity
- Authentication
- Authorization
- Availability
- Non-repudiation

It will ensure that the security parameters are functional and no unauthorized actions on the data can be performed.

2.3 Testing Process



- a. **Organize project:** involves creating a System Test Plan, schedule and test approach and requesting/assigning resources.
- b. **Design System Test:** identification of Test Cases, Expected results is done in this stage. This will also include the test data required for this purpose all of which will be done by the test team.
- c. **Design Test Procedures:** Procedures such as Error Management, Status reporting and setting up data tables for automate data testing tools.
- d. **Build a test environment:** involves requesting hardware, software and data set-ups
- e&f. **Executable integration and acceptance test:** Combination of all the units and ensuring they are functioning well together.
- g. **Signoff:** When all requirements are met, the testing can be concluded.

2.4 Test Schedule

Activity	Planned Date From	Planned Date To	Actual Date From	Actual Date to
Design test plan				
Design test procedures				
Create test environments				
Execute predefined tests				
Generate test report				

2.5 Testing Resources and Funding

A number of resources are mandatory to have in order to test the software entirely. The services of the end users of the system will also be very useful in testing the system thoroughly and complete testing.

2.5.1 Testing Teams

Resource Type	Name	Title
Test Controller	Morris Kimani	Programmer & Developer
	Delvin Otunga	Manager
	Ismael Bukina	Attendant
	Andrea Nelly	Teller

3.0 Conclusion

Testing is an integral part of system development because it determines the usability of the software product and ensures that the product is ready for the real world. This therefore means that it has to be planned well and documented with due diligence.

4.0 References

1. Frank B. Watts (2004) Engineering documentation control handbook
2. www.tutorialspoint.com