Test Plan Document

for

Supermarket Automation Software (SAS)

by

Group-18

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TEST PLAN OUTLINE

(IEEE 829 FORMAT)

Contents

1 Test Plan Identifier

None identified.

2 References

The IEEE-829 standard structure: `https://jmpovedar.files.wordpress.com/2014/03/ieee-829.pdf` has been used for the making of this test plan document.

3 Introduction

This document provides an overview of the testing strategy for our Supermarket Automation Software (SAS). Its aim is to communicate project-wide quality standards and procedures. This document mainly addresses the various features of the software that will be tested. The document then lists down the various test cases that can arise for each of the mentioned features. The main motive of this test plan is to ensure that at the end of the testing process, the software performs all the tasks that are required and expected of it. This process will also ensure that the software never goes to an inconsistent state or crashes unexpectedly.

4 Test Items (Functions)

Testing is the process of analysing a software item to detect the differences between existing and required conditions and to evaluate the features of the software item. Specific test plan components include:

- The purpose for this level of test.
- Management and technical approach.
- Pass/Fail Criteria.
- Hardware/Software requirement.

5 Software Risk Issues

There are several parts of the project that are not within the control of the Supermarket Automation Software but have direct impacts on the process and must be checked as well.

1. A restart of the Billing process must be carefully checked.
2. The ability to restart the application in the middle of the process is a critical factor to application reliability.
3. Database security and access must be defined and verified, especially for user logins between different user profiles.

6 Features to be Tested

The following is a list of the areas to be focused on during the testing of the Supermarket Automation Software(SAS):

- Checking the Login with valid User Id and Password.
- Updating the product items information(quantity/price) in the inventory.
- Viewing the current inventory.

- Generating the bill for the sales transaction.
- Viewing the Transaction Database.
- Generating the required graphs to view the sales statistics

7 Features not to be Tested

The following is a list of the areas not to be focused on during the testing of the Supermarket Automation Software(SAS).

- Database capacity or possible overflow will not be tested.

8 Approach

8.1 Testing levels

Unit Testing is done at the source or code level for language-specific programming errors to test particular blocks of code. The unit test cases validate the program's correctness. This includes testing all the classes present in the program and the front end of our website.

We check if the Front-end of our website is working properly and that everything is positioned correctly on the screen like the text bars, buttons, etc. Since automating this test process is incredibly difficult, it is done manually. In such a case, we just go ahead and manually enter the different inputs from our Test Suite Document to see if the website is working properly.

For testing the components used in the back-end part, like the methods and modules in various classes we have written the various test methods. We test each method's functional logic and keep track of changes to the class data members and object states. Then the created output is automatically compared to the ideal output. If there is a mismatch then an appropriate message is displayed. Database searches and updates are typically performed simultaneously while updating the state of the objects inside the methods of the back-end classes. Unit testing can be used to write tests to ensure that the database is always up to date.

Acceptance testing will be performed by the actual end-users with the assistance of developers and test managers. The acceptance test will be done after the completion of the test process.

9 Item Pass/Fail Criteria

When we finally make a completely working software it should be able to fulfil the user demands and also it should be smooth in working.

When the user uses the software and they may find some things which needs to be updated or some small bugs which needs to be fixed. We will take the monthly data from the users and try to fix the updates where our software needs to be updated. In this way we can maintain a healthy and smoothly working software which stands right on the user demands and needs.

10 Suspension Criteria and Resumption Requirements

If the number or type of defects reaches a point where the follow on testing has no value, it makes no sense to continue the test; you are just wasting resources some examples of such errors that might come up with SAS are:

- inventory doesn't get updated because of database overflow.
- redirecting to incorrect pages in the front-end part.
- changes made in product price not being reflected in the inventory database.
- not recognising user inputs correctly.

11 Test Deliverables

11.1 User profiles page

- Login can be chosen from manager, employee and sales clerk using a menu. Upon selection user is directed to respective login page.

11.2 Login Page

- If correct Id and password are input, then it logs in to the respective manager/ employee/ sales clerk account.
- If incorrect id or password are input, it shows an error message.
- If we wish to create a new account, then we can click on Sign up button and it will take us to the register page.

11.3 Edit Inventory

Quantity: A non-negative number (could be float in cases of Open Items such as rice).
Price: A positive number.

For Editing Existing Items: The Quantity, Price can be changed. If any of the below conditions is satisfied the SAVE CHANGES button will show an error:

- If Quantity entered is a non-positive integer.
- If the Price entered is a non-positive integer.

For any other case the result will be the changes made in the existing inventory also only the manager can change the price and only the employee can change the quantity or the sales clerk can also change the quantity during billing process.

For Adding New Items: A product ID, Product Name, Brand, Type, Quantity, and Price are entered. If any of the below conditions is satisfied the SUBMIT button will show an error:

- If the product ID entered already exists.
- If the Product Name entered already exists.
- If the Quantity entered is not a Positive number.
- If the Price entered is not a positive number.
- If any of the boxes is left empty.

For any other case not satisfying above the output will be the addition of a new item in the database.

11.4 Manager Profile Page

There are three button in the page namely:

- *Sales statistics Report*: If we click this link it directs us to the Reports page, where the manager can see the statistics for the various transactions made.
- *Sign out*: This link logs you out and takes you to the Home page with user profiles.
- *Edit Inventory*: This link takes us to a page where the price of different items in the inventory can be edited by the manager.

11.5 Sales Statistics Report page

It displays the total number of transactions made till date. There is a drop-down menu of clerks, using which the number of transactions for that clerk can be seen.

There are two input boxes where the start and the end dates can be input for viewing the reports. After inputting the dates, the Print Statistics button is pressed which shows us the various graphs for the transactions made in that period.

- If the start date is after than the end date, then it would be reported as an error.

11.6 Employee Profile page

There are three buttons in the page:

- *Edit Inventory*: On typing the respective product id, it takes us to a page where the quantity of a product in the inventory can be changed.
- *Add new product*: Takes to a page where the details for crating a new product is taken.
- *Sign out:* This link logs you out and takes you to the Home page with user profiles.

11.7 Sales Clerk Profile page

There are two links/button in the navigation bar namely:

- *Transaction*: if we click this link it directs us to the billing page where the clerk can begin with a new transaction by adding items to the cart and checking out and printing bills.
- *Sign out*: This link logs you out and takes you to the Home page with user profiles.

11.8 Billing Page

This is the page where the clerk will perform transactions.

Given below are the functionalities provided by this page and its uses:

- There will be a dynamic table.
- Columns of the table will be product name, quantity, price, total price.
- The last row of the dynamic table will be grand total.
- The page will have a print button which will print the current bill.
- There will also be a button for creating new bill.
- There will be a button which will take the clerk to the home page.

12 Remaining Test tasks

None Identified.

13 Environmental Needs

- A computer with *Windows*, *Linux* or *MacOS* operating system.
- Any machine that supports *HTML5* supports web browser.
- The hardware requirements to use the software are a *bar-code reader*, *weighing machine* and a *printer* for printing bills.

14 Staffing and Training Needs

- The users i.e the staffs are supposed to know the basics of using computers and be comfortable with the English Language, since the whole software is implemented in the English Language.
- A user's manual would be handy for quick references to the various features that the software has.
- A brief description and hands on tutorial would be sufficient for understanding the workings of the Supermarket Automation Software.

15 Responsibilities

- The constraints on the project is provision of the database resources.
- The more robust and fast the database, the better the performance of the software, also the storage of sales statistics should be done in a secure environment.
- Ensuring all required elements are in place for testing like on the hardware side , the barcode reader and the weighing machine should be compatible in order to operate smoothly.
- All features must be tested for errors and corrected before hand.

16 Schedule

- Review of Systems Requirements document (SRS) by test team personnel and initial creation of Inventory classes, sub-classes and objectives.
- Development of System/Integration and Acceptance test plans.
- Review of the software and conduct test processes and make correction if needed.

17 Planning risks and contingencies

None identified.

18 Approvals

None identified.

19 Glossary

None identified.