TESTING

JEWELERY STORE MANAGEMENT SYSTEM

Aim:

To perform testing by developing test cases and test suites for the application Jewelery Management System.

Description:

Testing software is an important part of the development life cycle of a software. It is an expensive activity. Hence, appropriate testing methods are necessary for ensuring the reliability of a program. According to the ANSI/IEEE 1059 standard, the definition of testing is the process of analysing a software item, to detect the differences between existing and required conditions i.e. defects/errors/bugs and to evaluate the features of the software item. The purpose of testing is to verify and validate a software and to find the defects present in a software. The purpose of finding those problems is to get them fixed.

- **Verification** is the checking or we can say the testing of software for consistency and conformance by evaluating the results against pre-specified requirements.
- **Validation** looks at the systems correctness, i.e. the process of checking that what has been specified is what the user actually wanted.
- **Defect** is a variance between the expected and actual result. The defect's ultimate source maybe traced to a fault introduced in the specification, design, or development (coding) phases.

IEEE 829-1998 is known as the 829 Standard for Software Test Documentation. It is an IEEE standard that specifies the form of a set of documents for use in software testing. jUnit, Selenium, HPQC, IBM Rational are examples of testing frameworks.

Test Cases and Test Suite :

A test case describes an input descriptions and an expected output descriptions. Input are of two types: preconditions (circumstances that hold prior to test case execution) and the actual inputs that are identified by some

testing methods. The set of test cases is called a test suite. We may have a test suite of all possible test cases.

Types of Software Testing :

Testing is done in every stage of software development life cycle, but the testing done at each level of software development is different in nature and has different objectives. There are different types of testing, such as stress testing, volume testing, configuration testing, compatibility testing, recovery testing, maintenance testing, documentation testing, and usability testing. Software testing are mainly of following types

- Unit Testing
- Integration Testing
- System Testing

1.Unit Testing :

Unit testing is done at the lowest level. It tests the basic unit of software, that is the smallest testable piece of software. The individual component or unit of a program are tested in unit testing. Unit testing are of two types.

Black box testing: This is also known as functional testing ,where the test cases are designed based on input output values only.

White box testing: It is also known as structural testing. In this testing, test cases are designed on the basis of examination of the code.

TEST SUITE :

Module 1 : Verify “User” Login Functionality

#	TS1
Title	Verify “User Login” Functionality
Description	To test the different scenarios that might arise while an user is trying to login.

#	Summary	Dependency	Pre-condition	Post-condition	Execution Steps	Expected Output
TC1	Verify the user is able to login with correct user Id and password.		User login with correct password ‘Password’.	User is logged in.	1.Type in user_id is valid. 2.Type in password as Password 3.Click on the ‘Login’ button	‘Main Menu’ or index page for the user is displayed.
TC2	Verify the password entered by the user is correct or wrong.		Entered password is incorrect. So,unable to login	User is not logged in.	1.Type in user_id is valid. 2.Type in password whatever. 3.Click on the “Login” button.	The Login page shows “Warning Incorrect password”. Check your password or signUp here.

Module 2 : Validate user’s choice in main menu

#	TS2
Title	Validate user’s choice in main menu
Description	To test the different scenarios that might arise while an user is trying to to enter choice.

#	Summary	Dependency	Pre-condition	Post-condition	Execution Steps	Expected Output
TC1	Validate user’s choice entered in main menu is correct or wrong.		The entered choice is correct.	User is allowed into his/her desired choice entered.	1.Type in valid user id and correct password. 2.Type in the valid choice(Number between 1-7).	User is taken into the chosen module as per choice.

TC2	Validate user's choice entered in main menu is correct or wrong.		The entered choice is incorrect.	User is not allowed into his/her desired choice entered.	1.Type in valid user id and correct password. 2.Type in the valid choice(Number not between 1-7)	User is not allowed into the chosen module as it is incorrect choice.

Module 3 : Remove an item.

#	TS3
Title	Remove an item.
Description	To test the different scenarios that might arise while an user is trying to delete an item.

#	Summary	Dependency	Pre-condition	Post-condition	Execution Steps	Expected Output
TC1	Verify the item code entered to delete the item is correct or wrong.		Enter the item code 99.	Entered item code is unavailable. So,unable to delete item.	1.Type in valid user id and correct password. 2.Enter item code of item to delete. 3.Entered item is unavailable. So,unable to delete it.	Since item code is not available,it displays message of 'The item is unavailable'. And asks 'Do you want to delete another item?'

TC2	Verify the item code entered to delete the item is correct or wrong.		Enter the item code 77.	Entered item code is available. So,able to delete item.	1.Type in valid user id and correct password. 2.Enter item code of item to delete. 3.Entered item is available. So,able to delete it.	Since item code is available,it displays message of 'The item is available'. And displays the information about item we are going to delete. And asks 'Do you want to delete another

<u>Module 4</u> : Search an item.

#	TS4
Title	Search an item.
Description	To test the different scenarios that might arise while an admin is trying to search.

#	Summary	Dependency	Pre-condition	Post-condition	Execution Steps	Expected Output
TC1	Verify the item code entered to search the item is correct or wrong.		Enter the item code 66.	Entered item code is available. So,the item details are displayed.	1.Type in valid user id and correct password. 2.Enter item code of item to search.	Since item code is available,it displays message of 'The item is available'.

					3.Entered item is available. So,the item details are displayed.	And asks ‘Do you want to search another item?’
TC2	Verify the item code entered to search the item is correct or wrong.		Enter the item code 43.	Entered item code is unavailable. So,the item details are not displayed.	1.Type in valid user id and correct password. 2.Enter item code of item to search. 3.Entered item is unavailable. So,the item details are not displayed.	Since item code is not available,it displays message of ‘The item is unavailable’. And asks ‘Do you want to search another item?’

Module 5 : Edit an item.

#	TS5
Title	Edit an item.
Description	To test the different scenarios that might arise while an admin is trying to edit.

#	Summary	Dependency	Pre-condition	Post-condition	Execution Steps	Expected Output
TC1	Verify the item code entered to edit the item is correct or wrong.		Enter the item code 55.	Entered item code is available. So,the item details are displayed and able to edit.	1.Type in valid user id and correct password. 2.Enter item code of item to edit details. 3.Entered item is available. So,the item details are displayed and	Since item code is available,it displays message of ‘The item is available’. The item is also edited successfully. And asks ‘Do

					able to edit.	you want to edit another item?’
TC2	Verify the item code entered to edit the item is correct or wrong.		Enter the item code 11.	Entered item code is unavailable. So,the item details are not displayed and unable to edit.	1.Type in valid user id and correct password. 2.Enter item code of item to edit details. 3.Entered item is unavailable. So,the item details are not displayed and unable to edit.	Since item code is not available,it displays message of ‘The item is unavailable’. The item cannot be edited. And asks ‘Do you want to edit another item?’

2.Integration Testing :

Integration testing is performed when two or more tested units are combined into a larger structure. The main objective of this testing is to check whether the different modules of a program interface with each other properly or not. This testing is mainly of two types:

- Top-down approach
- Bottom-up approach

In bottom-up approach, each subsystem is tested separately and then the full system is tested. But the top-down integration testing starts with the main routine and one or two subordinate routines in the system. After the top-level ‘skeleton’ has been tested, the immediately subroutines of the ‘skeleton’ are combined with it and tested.

3.System Testing :

System testing tends to affirm the end-to-end quality of the entire system. System testing is often based on the functional / requirement specification of the system. Non-functional quality attributes, such as reliability, security, and maintainability are also checked. There are three types of system testing

- **Alpha testing** is done by the developers who develop the software. This testing is also done by the client or an outsider with the presence of developer or we can say tester.
- **Beta testing** is done by very few number of end users before the delivery, where the change requests are fixed, if the user gives any feedback or reports any type of defect.
- **User Acceptance testing** is also another level of the system testing process where the system is tested for acceptability. This test evaluates the system's compliance with the client requirements and assess whether it is acceptable for software delivery

An error correction may introduce new errors. Therefore, after every round of error-fixing, another testing is carried out, i.e. called regression testing. Regression testing does not belong to either unit testing, integration testing, or system testing, instead, it is a separate dimension to these three forms of testing.

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