1

manual testing: (what?)

This is a type of software test, manually executing test cases without the use of any automated tools.

Why Manual testing is very important?

Doing every important test.

1. manual testing from a human point of view.
2. Exploration testing (ad-hoc) are done only manually.

It answers What happens if I do like this?

1. Automated testing can include errors and holes. There may be bugs in the automated test script.
2. Some scenarios are not technically feasible to automate and cost too much
3. Manual testing helps us understand the whole problem.

Goal (what?)

To ensure the application is error free and working in standard to the specified functional requirement.

Note: (What kind of behavior?)

The manual test tester must be very patient, creative, open mind. Tester need to think from end user perspective.

2

How to perform Manual testing?

1. Understand Project documentation guide & study Application under Test ( AUT ) if available .
2. Write Test that covers requirement mentioned in documentation.
3. Review the test cases with team lead, client
4. Execute the test Cases,
5. Report bug
6. once bug fixed again execute failing test.

Types of manual testing (what types? )

1. Blackbox testing
2. white box testing
3. unit testing
4. System testing
5. Integration testing
6. Acceptance testing

3

Tools to automate Manual testing

F - Functional testing Nf - Non function )

Selenium ( F ) J-metre ( NF )

QTP ( F ) LoadRunner ( NF )

Quality Centre (Alm)

Difference between Manual testing & Automatic

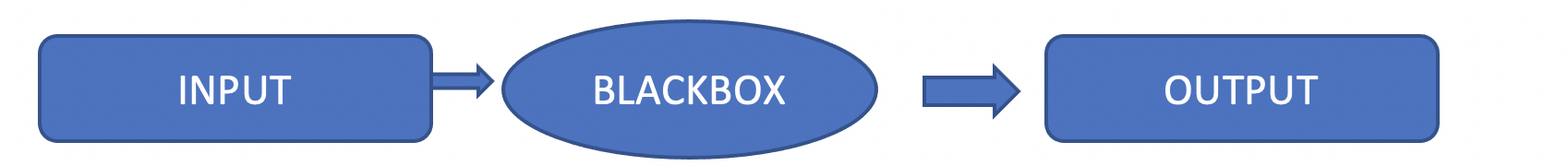
|  |  |
| --- | --- |
| M | A |
|  |  |
| → It requires human intervention. | It uses tool to execute for test execution test case . |
|  |  |
| → It requires high skill, more time & cost | Saves time & cost& manpower |
| →Any type of application can be tested manually | It is recommended for stable system |
| →It can be repetitive & Boring | boring executing of executing same test ease is handled by Automated testing ' |

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Type of testing ( details ) :

Black box testing: (what?)

It is a Type of testing by just focusing on the input & outputs without knowing internal code implementation.



How to do black box testing?

1. Requirement & Specification are examined
2. Tester choose valid input for success invalid for detection.
3. Tester determines expected outputs for all those inputs.
4. Tester construct test cases with selected inputs.
5. Test case executed.
6. Tester compares actual & expected outputs
7. Defects if any fixed & retested.

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Types Black box testing . ( what types ? )

1. functional testing

It is related to the functionality requirement of application under test .

Done by using QTP, Selenium

1. Non functional testing

type of black box testing related to non - functional requirement such as performance , scalability & usability . (done by tool : LoadRunner , j-metre )

1. Regression testing

Regression testing is done after code fixes , upgrades or any other maintainance to check system new code has not affected the existing code . ( Tool used : QTP, Selenium ) the 5 white

|  |  |
| --- | --- |
| Black box | White box |
|  |  |
| It test validation of functional requirement. | It deals with internal implementation. |
| It focuses system behavior. | For this programming knowledge is essential. |

6.

White box testing. What? ( clear box testing)

It is What do poorly structured path flow d . White box testing : ( light White box testing ( What )

It is testing of software solutions, internal structure, design , and coding .

What do you verify in white box testing?

1. Internal security hole
2. Broken or poorly structured path
3. Flow of specific input of code
4. Expected output
5. functionality of conditional loops

How do you perform white box testing?

Step1: Understand the source code

Step 2: Create test cases & execute.

Types White box testing ( What types?)

1. Unit testing
2. Testing for memory leaks.

white box testing tool (What tools ?)

Veracode

JUnit

Nunit

Rc unit

Ecl Emma

7.

Advantage of Whit box testing

1. Code optimization by finding hidden errors
2. white box test cases can be easily automated
3. Testing is more through as all codes path are usually covered
4. Test can start in early SDLC even if GUI is not available.

Disadvantages :

1. It can be quite complex & expensive
2. It requires programing knowledge
3. time consuming.

Note .

white box testing should be done on a software application as it is being developed after it is written and again after each modification.

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Unit testing

Unit testing:

It is a type of software testing where individual unit component of a software are tested.

It is done during coding of application

Why Unit testing ?

Because missing Unit testing leads to defect fixing cost during system testing , Integration testing & Beta testing after completion of application.

1. fix bug in early stage development cycle & Save cost
2. Good unit test serves documentation.
3. Unit test helps with code reuse

Types of unit testing

1. Manual testing
2. automated testing

unit testing ( How it is done ? .. )

It relies on mock objects being created to test section of code that are not yet part of complete application.

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Unit testing tool

1. Junit
2. Nunit
3. Junit
4. EMMA
5. PHP unit
6. Note Junit, Mockito, Power Mock & spring are popular open source framework

Test Driven Development ( Unit testing role )

1. Test are written before code.
2. Rely heavily on testing framework

Disadvantage : -

1. It can't catch every error in program.
2. It focus only on unit of code So can’t catch integration or broad level of error

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AAA Arrange , Act , Assert pattern is a common of writing unit test

Arrange :

Initializes objects and sets the value is passed to the method being tested

Act :

Invoke method being tested

Assert : Verifies that the method being tested behave as act

Example :

Assert . equals ( Expected , Actual )

Assert is false

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Integration testing

Integration testing ( what ? )

1. It is a type of testing where software modules are integrated and tested as a group .
2. It focus on data communication between software module present for testing.

why integration testing ?

Integration testing become necessary to verify software module work in unity as it is prepared by many developers.

Inadequate exception handling could cause issue

How to do integration testing ?

1. Prepare integration test plan
2. Design Test scenarios , Cases & Scripts
3. Executing the test case followed by reporting defect.
4. Tracking & retesting the defect
5. No 3 & 4 continue until completion

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Manual test case template:

Tools used word Excel etc. format Tost Scenario Test case Test dat Expected chhlogin " Agent Name PP junction est scenarin rest cose Precondition Test step Test data Expech

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System testing:

It is a testing of fully completed integrated software product.

The sole purpose is to exercise the computer-based system

It is done before app is introduced in market .

What do you verify in system testing?

1. Testing of user experience –
2. End to end testing scenario ( component interaction with one another and the system as a whole .
3. thorough testing of every input in application to check desired output

Different types of system testing

Usability testing : focus on user ease to use app

load testing focus on performance under real load

Regression. To make sure the changes doesn’t impact

Migration testing to ensure older to new system without issue

Functional testing: it involves trying to think of any possible missing function

Hardware /Software testing

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testing ( AT ) ( what ? ) client Acceptance testing pergormed by to contido the system with respect to requirement as ggreed . who performst AT End Users → Client Why it is needed ? care To checks the difference in expectation & ready sl To analyze requirement changes e effectively implimented Dy not , Development Acceptant testing → Unit Integration System Acceptany + Relse testing testing testing festing jde tine Acceptance testing types Alpha testing pergormed to identigy all possible bugs 3. Beta testing performed by real user in real environmad .