Experiment No.:
Date: 30-11-2021

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Manual Testing

M.T is process of manually testing software for defects.

Why we go for Manual Testing?

1. Human Eye captures more defects.
2. Everything cannot be automated like Captcha, Image, Animation, Video, etc.
3. Report prepared by the Manual testers will be always detailed because Manual testers are strong in Domain Knowledge while Automation testers are strong in technical Knowledge.

Software Testing:-

Types

1. Functional Testing - Unit, Integration, Smoke, Sanity, Accept ance
2. non Functional Testing - Load, Performance, Usability, Scalability

1. Functional Testing:- - It uses black-box testing technique, checking the Functionalities of the application.
   * Manual Testing (Testing the Functionalities by manual)
   * Automation Testing (Testing the Functionalities by using tools/Scripts)
   * Webservices Testing (Validating request and response)

Automation Tools:-

1. Selenium - web Based Applications
2. Appium - Mobile Applications
3. QTP (Quick Test Professional) / UFT (Unified Functional Testing - Desktop Pebbled Applications [Ex: MS office Application, Web Browser etc]
4. Test Complete - Both web Based and Desktop Based Applications

2. Non Functional Testing :- is a Software testing technique that check the non-functional attributes of the system.
The checking the non-Functional aspects of the applications.

Types of non-Functional Testing :-

1. Performance Testing :

*They add virtual number of users accessing the application simultaneously and at a same time to check the performance of applications.

* Tools used (i) J-meter ----> Open Source Tool
(ii) Load Runner ----> Paid version

2. Load / Stress Testing :-

Process of adding load and making the application stress is called Load / stress Testing.

3. Usability Testing :-

To check how good the application is user friendly.

4. Accessibility Testing :-

#To check how good the application is accessible to different users.
[Note: this testing mainly focus on physically challenged people]

*Tools used : JAWS and NVDA

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Principles of Software Testing:-

1. Testing shows the presence of defect not their absence.
2. Exhastive testing is not possible
   (Testing all the combinations of valid or invalid data is impossible)
3. Early testing saves time and money.
4. Defects cluster together.
   (Concentrating the module even it is small which has more defects and testing it throughly will raise as more defect).
   It was found that 80% of defects comes from 20% of the modules.
5. Beware of pesticide Paradox
   (Aware of which module the testing is required. Don't spend time in testing the module which doesn't have any defects)
6. Testing is context dependent
   (whatever the application we are going to test, we have to act based on the context as what the application related to.
7. Absence of error is a fallacy.

   (Instead of telling bug free, make sure the environments are matching with the client requirement).

SDLC overview

1-12-2021

Software Development Life cycle (SDLC) is a Process used by the software industry to design, develop and test high quality software.

Phases of SDLC :-

1. Requirement gathering and analysis - Contract sign, client and marketing team. (BA)
2. Design - ~~theira document~~
3. Development - Developer develop the Program.
4. Testing - - -> ~~SDLC~~ STLC
5. Deployment - Live environment
6. Operation and maintenance.

2. Design :-

Then a document will be Prepared called Design Specification Document. details about Front and Back end how to work, could interact process.

Development

Then developers will develop the software by the user of any coding language and they will do test called Unit testing.

Testing:

STLC

Deployment :-

* Program is Passed it is ready for deployment
* Deploy the application in the live environment

Operation and maintance :

maintance of Software can include Software upgrades, repairs, and fixes of the Software if it breaks.

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STLC overview

--> Software Testing Life cycle (STLC) is designed as a sequence of activities conducted to perform software testing.
--> Each of these stages have a definite Entry and Exit criteria.

Entry criteria :-

Entry criteria gives the Prerequisite items that must be completed before testing can begin.

Exit Criteria :-

Exit criteria defines the items that must be completed before testing can be concluded.

Phases OF STLC :-

1. Requirement Analysis - Contracts, BR Document, Get Application access
2. Test Planning - Finalized Scope.
3. Test Design - Test Plan
4. Test execution - Test Scenarios, Test case, Test Data, Rtm
5. Sign off. - Execution Result, Defect Log.

1. Requirements Analysis:
   - -> Understand the requirements
   - -> clarification of doubts in Query logs through walk through session.
   - -> Identify types of tests to be performed
   - -> Get application access.

2. Test Planning:-

* Preparation of test Plan document for various types of testing.
* Test Tools selection.
* Resource Planning.

3. Test design:-

-> Create test scenarios, test cases, automation script, RTM
-> Create Test data.
-> Review test cases with Peer or lead.
-> Get Approval.

4. Test Execution:-

-> Execute tests as Per Plan
-> Document test results. failed cases
-> Retest the Defect fixes.

5. sign off:-

Execution Result Defect log

-> Test result Analysis

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Levels of Testing

--> The testing done at various levels and by whom it is done is called levels of testing.
---> There are 4 levels of testing. If these 4 levels of testing is completed only, we can say the application is ready for release.

1. unit testing
2. Intergration Testing
3. System Testing
4. Acceptance Testing

1. unit Testing:-
---> Testing an individual module in an application.
---> Done by developers
---> Test based on white Box Testing Technique.
---> The Purpose of unit-testing is to test the correctness of isolated code.

2. Intergration Testing:-
-> UT is compared with specified functional requirement.
---> Combination or merging two modules
---> Done by Testers
---> Test based on Black Box Testing Techniques
---> Big Bang Approach - combing all combination of units.
---> Top-down Approach - Higher level " "
---> Bottom-up " - Lower level " "

3. System Testing:

---> Complete Application Testing
---> Done by Testers.

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--> Test based on Black Box Testing Technique

--> Types of System Testing:-

-> Functional Testing - To test the functionalities of the application

-> Usability Testing - to test whether the application is user friendly and it is easily understandable.

---> Performance testing - to test whether the application is not getting Crashed or down when there is load / stress.

---> Security Testing - To test whether the application is secure or not.

--> If these 4 levels of testing is completed only, we can say System testing is completed.

4. Acceptance Testing:-

* Getting approval from Client
* Done by client side
* Testing will be done at Development / Testing Environment
* Satisfying Client Requirement.

UI Testing

* UI testing is about checking two things:
  1. how your application handles user actions Performed via mouse, keyboard and other input devices.
* UI testing is performed manually or with an Automated Testing tool.

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Test Scenario:-

It is high level Testcase.
It is an idea of what we are going to test.

Test case:-

It is an idea of how we are going to test, it includes test data, expected & actual results, Status, etc..

Test Data:-

The actual input which we are going to use in the application for testing.

Defect:-

when the expected and actual is not matching, then it is a desect. In other words, when the application

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(high level testing)

1) Black Box-testing: It's also called behavioural testing. It focus on the functional requirements of the software.
.. is a method of software testing that the functionality of an application without peering into its internal structures or workings.
- used for unit, integration, System, Acceptance testing.

2) white box-testing: It is also called as glass box testing.
is an approach that allows testers to inspect and verify the inner workings of a software System. control flow testing.
* Exercise all logical decisions on their true or false sides.

3) Alpha testing:
* Alpha testing is a type of software testing performed to identify bugs before releasing the product to real users or to the public.
* Alpha testing is one of the User Acceptance testing.

4) Beta testing: is a type of user acceptance testing.
* Beta testing is one of the final steps in your software development life cycle before a product goes live.
* Customer Validation.
* The group of target users to evaluate product performance in the real world.

New: (match again)
when the defect is found and posted for the first time.

Assigned:
once the defect is posted (bug), the testing team lead will assign it to developing team.

Defect life cycle - open and close kulla nadakuthu thae

Open:
once the developer opens the bug and works on to fix it.

Fixed:
when developer fix the bug with appropriate codes.

Pending Retest:
once the developer fix the bug, it will be moved to testing team.

Retest:
when the tester retesting whether the bug raised was fixed or not.

Verified:
If the tester confirms that the bug is fixed.

Reopen:
If the tester confirms that the bug is not yet fixed and found the same defect. Again it will to moved to Assigned stage and the flow continous.

Closed:
once the tester verified that the bug is fixed, then the defect raised will be closed.

Duplicate:
If the bug is already raised by someone, and if it is raised again means it is duplicate.

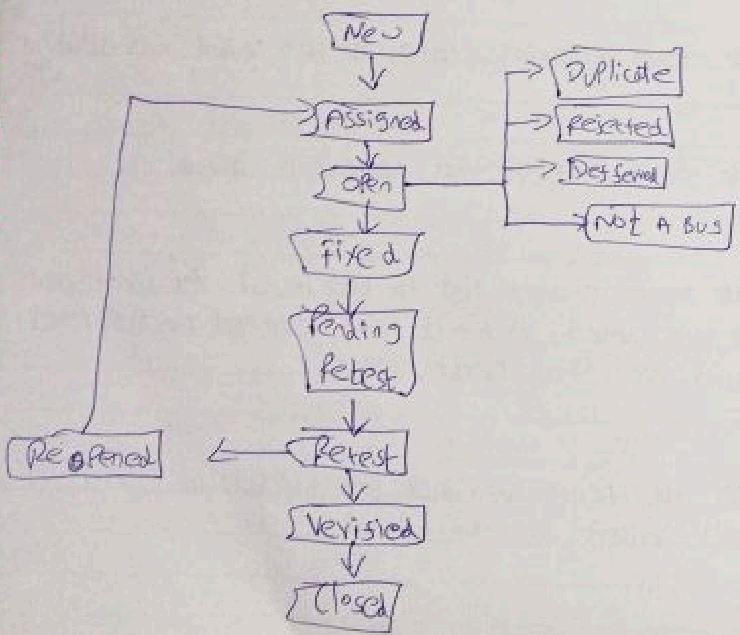
Rejected /Not a Bug :-

when the developer feels that the bug is not genuine.

Deferred :-

The bug which developer feels that it can be fixed later on the upcoming sprints.

Defect life cycle



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is defined as the order in which the defects should be resolved.
↑ status is usually set by the testing team while raising the defect against dev team.

Priority and Severity :-
↳ means how severe defect is affecting the functionality.

Severity :- (Testers)
↳ is defined

Explaining how severe the defect is going to impact the application.

Priority :- (Developers or Po)

How soon the defect is going to be fixed.

High severity, Low Priority - Links, websites, etc.

High severity, High Priority - login, search, Payment, etc

Low severity, Low Priority - Content Validation

Low severity, High Priority - Logo, colours.

Bug leakage :-

without knowing the testing knowledge the bug end user

Bug Release :-

with knowing the tester knowledge defect the live environment

So stopper Defect :-

The defect build stop the

bug age :-

Time Period between open close (or) defect.

SDLC Methodologies

9-12-2021

1. Waterfall model :-
2. V-model of Testing - It is also Verification and validation model.
3. * Iterative Model - Each functionality is to each part and design, develop and test and deploy.
4. Asile model

1. Waterfall model :-

* Simple and easy to understand and use.
* Each Phase has specific deliverables and review
* Waterfall is still widly used in traditional Organizational environments and Processes.

Requirement Analysis
↓
System Design
↓
Implementation
↓
Testing
↓
Deployment
↓
Maintenance.

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Agile na meeting. main

4. Agile Model :-

AGILE methodology is a Practice that Promotes Continous iteration of development and testing throughout the software development lifecycle of the Project. Here both development and testing activities are concurrent unlike the waterfall model.

Why we go for Agile?

* more control
* Better Productivity
* Better Quality
* Higher Customer Satisfaction
* Higher Return on Investment

Agile

Agile is Software testing that follows the best practices of Agile development.

for Ex

Agile development takes an incremental approach to design. Similarly,

Agile testing includes an incremental approach to testing

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Testing Techniques

15-12-2021

1. Equivalence case Partitioning Technique. – Positive and negative inputs.
2. Decision Table Technique - used to test system behavior for different input combinations.
3. State Transition Technique
   ↳ basically b-box testing technique. behavior of the system or application for different inputs
4. Boundary Value Analysis ↳ representatives of boundary values
5. Error Guessing Technique. Condition passed in a secure manner
6. Ad-hoc Testing.