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1. **Explain the steps for Bug Cycle.**

It is a process in which defects go through different steps in its entire life. The bugs go through the life cycle to be closed. Name of the bug steps may vary depending on the tools used in it.

The steps of bug cycle are shown below:

* New : When a tester finds a bug and posting it first time.
* Assigned: If the bug is valid, it will be approved and assigned to the development team by test lead or project lead or project manager.
* Open: If the development team accept the bug, the team start analyzing and work on the defect to be fixed.
* Fixed: When the developer makes necessary changes of code and fix the code.
* Test: It is ready to test if the defect is fixed or not.
* Verified: The tester retests the bug. If there is no bug detector in the software, then the bug is fixed.
* Closed: After verifying if the bug is no longer exist then the status of bug will be assigned as closed.
* Reopen: While doing retest we may encounter the same issue(bug) again. If the defect remains the same the tester posting it again for reopen.
* Duplicate: If the defect is repeated twice or defects corresponds the same concept as the bug.
* Deferred: In some cases, the status of bug may be assigned as deferred. The cases may be:
* If the bug found during end of release and not important to fix immediately.
* If the bug is not related to current build.
* If it is expected to get fixed in the next release.
* Customer is thinking to change the requirements.

1. **What is meant by boundary value analysis?**

It is a black box testing technique used to design test cases. It is used to test boundary values because the input values near the boundary have higher chances of error.

Example: One can do a job if he is between 18 and 60.

Now, we can make test cases using boundary value analysis like this:

|  |  |  |
| --- | --- | --- |
| Invalid Age  (Min -1) | Valid Age  (Min,Min+1,Max-1,Max) | Invalid Age  (Max+1) |
| 17 | 18,19,59,60 | 61 |

1. **What is Agile testing and what is the importance of Agile testing?**

Agile Testing is a testing practice that follows the rules and principles of agile software development. Agile Testing can begin at the start of the project with continuous integration between development and testing. Like agile development, agile testing includes an incremental approach to testing.

**Importance of Agile testing**

Agile testing enables higher returns as well as reduced production time. Some of its unique features are as follows:

* Bugs are detected early: as soon as the code is deployed, the testing process begins and it detects bugs from the very early phase
* Flexibility to Change: if there are new requirements, it can easily incorporate the changes
* Better Products: the process of development and testing go hand in hand. This reduces the testing time and improves the quality of the product
* Risk Management: since this process develops a product in small increments, it is possible to release a smaller version of the product first to test rather than the entire product at a time, thus it reduces risk
* Manageable: agile teams are usually made up with a small number of people and thus easily manageable

1. **Explain Low Severity and High Priority bug?**

Low Severity and High Priority bug means that the bug must be fixed immediately but it doesn’t affect the product too adversely.

For example: If the company logo has a spelling mistake in the home page of the website. It does not affect anything in terms of functionality, but it will affect the user experience. Therefore, this bug should be resolved with a high priority, even though it has a minimum impact on the product.

1. **List the basic components of the defect report format.**

It is a detail report of bugs which are identified during testing process.

The components are:

* Defect ID
* Project
* Product
* Release Version
* Module
* Summary
* Defect description
* Steps to reproduce
* Actual Result
* Expected Result
* Environment
* Reported By
* Reported Date
* Assigned To
* Severity
* Priority
* Status

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1. **How to you take screenshots in Selenium WebDriver?**

Using following steps, we can take screenshot in Selenium WebDriver:

* Import TakesScreenshot from openqa selenium
* Import WebDriver from openqa selenium
* Import OutputType from openqa selenium as well
* Import File from java.io
* Convert web driver object to TakesScreenshot

TakesScreenshot screenShot =((TakesScreenshot) webdriver);

* Call getScreenshotAs method to create image file

File screenshotFile = screenShot.getScreenshotAs(OutputType.FILE);

* Thus, the screenshot will be taken. The image file can be moved to desired location using FileUtils.copyFile method

1. **Explain regression and confirmation testing.**

**Confirmation Testing**

It is a software testing technique also known as re-testing which is used to check previously posted bugs are fixed or not. Whenever the dev team makes some changes in the code to fix a bug, confirmation testing or retesting is done.

There is no need to create new test cases for confirmation testing. Same test cases (test cases that were executed when the bug was found) can be executed to ensure the bug is fixed. It can be performed before regression testing.

It is done repeatedly on every new agile sprint.

**Regression Testing**

During confirmation testing the bug gets fixed but there might be a possibility that the fix introduces new bugs elsewhere in the software. Regression testing is used to ensures that no new bugs have been introduced after adding new functionalities to the system. It helps to maintain the quality of the source code.

Diagram

Description automatically generated

**Regression Testing**

1. **Explain how do you arrive at a project estimation?**

First the project scope needs to be defined based on the user requirements. This can be done through interactive workshops with the client. Once the scope is finalized and defined, next step is to estimate the project time and cost.

For the estimation of the project, followings are the basis points which need to be considered:

* Divide the whole project into smallest tasks: Split the project into few main pieces. Front end, back end, testing, deployment, integration, bug fixing etc. Then break those main pieces into smaller ones. Usually feature level size. List up all the task items.
* Allocate each task to team members.
* Effort required to complete each task should be estimated. This can be done in man-hour format (One man day is equal to 8 man hours).
* Add estimates for project management.
* Add some contingency or buffer time.
* List up assumptions, constraints, risk and mitigation plan
* Validate the estimation.

1. **What is the purpose of exit criteria?**

Exit criteria determines whether a given test activity has been completed or not.

Even after finding many bugs in the software, it cannot be guaranteed that the software is defect free now. There cannot be a situation where anyone can confidently say that they have completed testing, found all defects in the software and it does not have any more bugs. But testing cannot go on forever. Also, it can be complicated to come to a decision to stop testing. The purpose of exit criteria is to help with this situation.

Testing cycles will continue until a decision is made when and where to stop. The decision to stop testing depends on Exit criteria. Exit criteria can be defined for all the test activities from planning, specification, and execution. It should be part of test plan and decided in the planning stage.