

Agenda

- Defect Reporting
- Defect Life Cycle Process
- Defect Removal Efficiency
- Test Closure Activity
- Test Execution Stop Criteria
- Test Summary Report Preparation



Notes

DEFECT REPORT, also known as **Bug Report**, is a document that identifies and describes a defect detected by a tester. The purpose of a defect report is to state the problem as clearly as possible so that developers can replicate the defect easily and fix it.

Defect Reporting template

ID	Unique identifier given to the defect. (Usually, automated)
Project	Project name.
Product	Product name.
Release Version	Release version of the product. (e.g. 1.2.3)
Module	Specific module of the product where the defect was detected.
Detected Build Version	Build version of the product where the defect was detected (e.g. 1.2.3.5)
Summary	Summary of the defect. Keep this clear and concise.
Description	Detailed description of the defect. Describe as much as possible but without repeating anything or using complex words. Keep it simple but comprehensive.
Steps to Replicate	Step by step description of the way to reproduce the defect. Number the steps.
Actual Result	The actual result you received when you followed the steps.
Expected Results	The expected results.
Attachments	Attach any additional information like screenshots and logs.
Remarks	Any additional comments on the defect.
Defect Probability	Probability of the Defect. (See Defect Probability)
Defect Severity	Severity of the Defect. (See Defect Severity)
Defect Priority	Priority of the Defect. (See Defect Priority)
Reported By	The name of the person who reported the defect.
Assigned To	The name of the person that is assigned to analyze/ fix the defect.
Status	The status of the defect. (See Defect Life Cycle)
Fixed Build Version	Build version of the product where the defect was fixed (e.g. 1.2.3.9)

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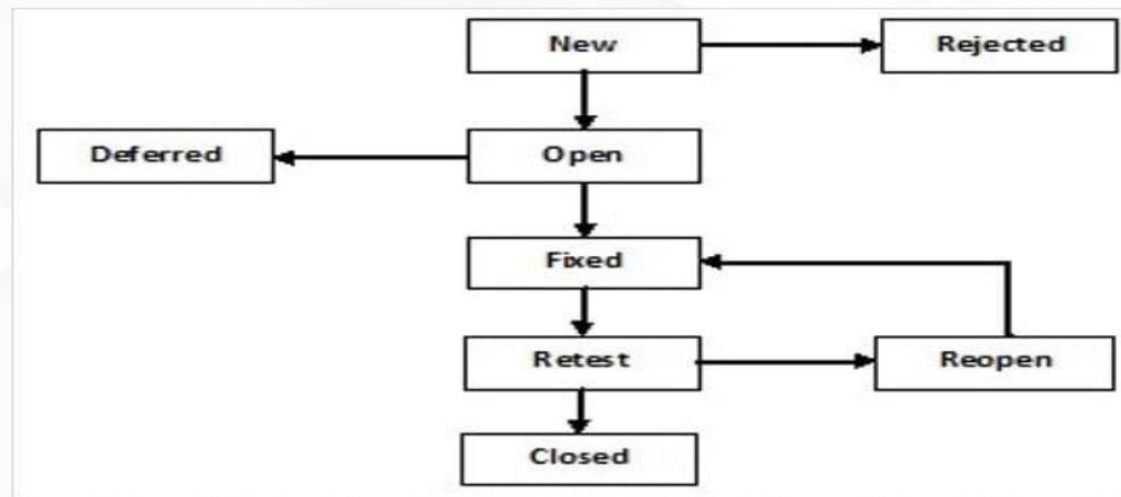
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Defect Life Cycle



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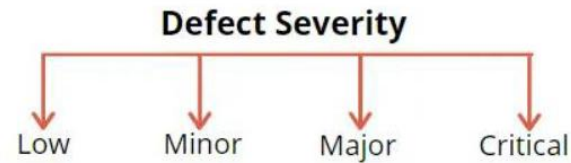
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Defect Life Cycle Process

Severity means – “The degree of impact that a defect has on the development or operation of a component or system.”

It is divided under 4 stages – low, minor, major, and critical.



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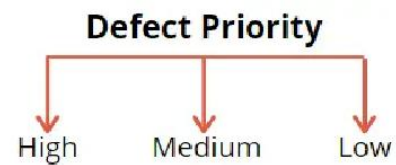


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Defect Life Cycle Process

Priority means – “The level of (business) importance assigned to an item, e.g., defect”.

We can divide priority into 3 levels – High, Medium, and Low.



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Defect Life Cycle Process

Bug Priority Levels

HIGH – Such defect needs immediate attention as it might lead to complete failure of the system. The earliest resolution of such defects should be conducted.

Delay in finding the solution might affect the system adversely. Often leading to even more complications

MEDIUM – Such bugs do not affect the working of the system. These can be solved simultaneously with the testing as well as the design phase. These bugs do need to be fixed but do not need any immediate attention.

LOW – These bugs are at the lowest priority. These are fixed once the developer is done with the high and medium-priority bugs.

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Defect Life Cycle Process

Severity and Priority Real-time Examples

The priority and severity are combined in four different ways to determine which defect needs immediate attention and which one the least. Let's look at some real-time examples to make this concept even clearer.

High Priority and High Severity Examples

1. The products added to the cart of an e-commerce website are not visible on the payment page.
2. The login button of the application is not working.

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Defect Life Cycle Process

High Priority and Low Severity Examples

1. The logo of the company's welcome page is distorted.
2. The action buttons are not visually appealing or the information on the page appears hazy.

Low Priority and High Severity Examples

1. If the application is crashing on passing very large input for processing (which is very rarely done).
2. There are some buttons on the website which are overlapping. Although clickable, are creating a fuss.

Low Priority and Low Severity Examples

1. A spelling mistake on the page of the site which is not frequently visited.
2. The color of any text does not match the theme of the website.

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Defect Removal Efficiency

Definition

The defect removal efficiency (DRE) gives a measure of the development team ability to remove defects prior to release.

It is calculated as a ratio of defects resolved to total number of defects found. It is typically measured prior and at the moment of release.

Calculation

To be able to calculate that metric, it is important that in your defect tracking system you track:

- affected version, version of software in which this defect was found.
- release date, date when version was released

$$\text{DRE} = \frac{\text{Number of defects resolved by the development team}}{\text{total number of defects at the moment of measurement.}}$$

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Defect Removal Efficiency

Dimensions

It should be possible to monitor Defect Detection Percentage in following dimensions:

- Affected version
- Priority

Presentation

DRE is typically measured at the moment of version release, the best visualization is just to show current value of DRE as a number.

Example

For example, suppose that 100 defects were found during QA/testing stage and 84 defects were resolved by the development team at the moment of measurement. The DRE would be calculated as $84 \text{ divided by } 100 = 84\%$

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Test Closure Activity

Test closure activities are those activities which are performed at the end of the testing process. These are usually performed after the product is delivered, like generating test report etc.

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Test Closure Activity

Need for Test Closure

- **Helps to create consolidated test results report:** In the test closure process, all the results of the tests that were performed are prepared. In this way, the QA team is able to detect the errors and bugs in the software system. All these errors/bugs are documented and can be referred to for future releases.
- **The official announcement of the end of the testing phase:** The test closure process proves to be a good medium for other members to know about the end of the testing phase.
- **Provide detailed analysis of the error:** Test closure provides a complete report of all the errors discovered and resolved so the source of origin can be located in case of error and resolution can be provided.
- **Showcase the metrics to the customer:** Presenting test metrics to the customer representatives, will help them understand more about the software system, the details of the features, the number of errors discovered, and how they were fixed.
- **Assessment of Risk Factor:** The most important part of the test closure process is the assessment of the risk factor with respect to the software system as a whole. This also helps the client to know the strength as well as weaknesses of the software program.

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Test Closure Activity

There are four types of Test Closure Activities:

- **Validating completion of test cases:** During this activity, the manager or the lead of the testing team validates that all test work has been completed.
- **Handing over test artifacts:** After the test work is validated by the manager of the testing team, they are handed over to the concerned people, who require them in the future.
- **Archiving Test Work:** The final task of the testing team is to archive all the significant test work, documents, reports, logs of the tests, test artifacts, test plans, and work of configuration management.

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When are Test Closure Activities Performed?

- 1.After Identification of errors/bugs:** When the testing team acknowledges the errors and bugs in the software system, along with their source of origin. Then test closure activities are performed.
- 2.Achievement of target:** When the testing team is able to achieve the particular goal or target, as desired by the client, this marks the completion of testing, and thus, test closure activities need to be performed.
- 3.When modifications are required:** Test Closure activities are used when some modifications are required to be done.
- 4.Lessons learned are completed:** The completion and documentation of learning experiences mark the completion of the testing process and thus the team needs to perform test closure activities
- 5.Maintenance:** Test Closure activities are done when some maintenance work is required to be done
- 6.Project Cancellation:** When some project gets canceled due to specific reasons, test closure activities are performed.

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Entry and Exit Criteria for test closure

The Entry Criteria for test closure: The entry criteria in testing give us all the necessary conditions that need to be satisfied before the actual testing can begin. It involves:

- Test cases are completed
- We have obtained the results of the test cases.
- We have obtained the logs of the defects
- Reports of errors/bugs found are ready

The Exit Criteria for test closure: The entry criteria in testing give us all the necessary documents or items that need to be completed before the actual testing can end. It involves:

- The test Closure report has been delivered.
- The report has been approved as well as signed off officially by the client.

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Test Summary Report Preparation

- **A test closure report is a formal document that contains a summary of all test cases of a testing project and their final test results.**
- **The test report is an assessment of how well the testing is performed.**
- **Based on the test report the stakeholders can examine the quality of the tested product and make a decision on its release.**

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Test Summary Report Preparation

The test closure report includes the following:

1. Test Summary Report.
2. Identifier.
3. Test Summary.
4. Variances.
5. Comprehensive Assessment.
6. Summary of Results.
7. Evaluation.
8. Summary of Activities.
9. Approval.

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