Software Testing   Software Engineering

In Software Testing, what is the difference between an error, a fault, and a failure?

✏️ Answer   📶 Follow · 28   👤 Request ⌄   💬 ⬇️ f 🐦 ↗ •••

15 Answers

👤 **Xabriel J Collazo-Mojica**, works at Florida International University
Answered Sep 22, 2011

Although these words are used interchangeably by developers, they do have precise meanings.

A software failure is a deviation between the specified and the actual behavior. In other words, the software does not do what the requirements describe.

A software fault, or more commonly a "bug", is a mistake that *may* cause a failure. There are many types of faults: algorithmic faults (i.e. wrong branch logic), precision faults (i.e. 3.14 instead of 3.1415), etc.

An error, or more precisely an *erroneous state*, is a *manifestation* of a fault. In other words, the software execution is in a state such that further processing *will* lead to failure.

Sources: Pleeger and Atlee. Software Engineering Theory and Practice, 3rd Ed. and Sadjadi's lecture notes: http://users.cis.fiu.edu/~sadjad...

16.2k Views · View Upvoters

⬆️ Upvote · 8   ⬇️ Downvote   f 🐦 ↗ •••

👤   Recommended   All

👤 **Rahul Verma**, गुणवत्तान्वेषी | Tester, Author, Entrepreneur
Answered Aug 18, 2014

Originally Answered: What is the difference between defect, bug, error, fault, and failure with respect to software testing?

Related Questions

What is agile methodology?

What is the difference between unit testing, functional testing, and integration testing?

What is the difference between computer science, computer engineering, and software engineering? How is the scope of IT in comparison to SE or...

Software Testing: What is the difference between Error, Defect, and Failure?

Software Testing: What is the difference between Mocks and Stubs?

What makes software testing difficult?

What is the purpose of software testing?

How do alpha and beta testing differ?

What is the difference between manual testing and ETL testing?

What is the difference between test strategy and test approach in software testing?

+ Ask New Question

More Related Questions

Question Stats

27 Public Followers

27,468 Views

Last Asked Aug 31, 2016

1 Merged Question

Edits

(source:Cem Kaner?) as calling something defective vs calling it buggy have different legal meaning. Failure is a manifestation of the bug happening in production when the conditions for the bug get realized (which may never happen at all).
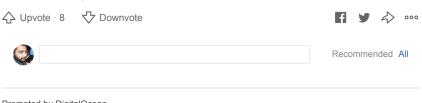
Fault is used interchangeably with bug, although a fault could be an accidental condition which was never planned for. That's where fault tolerance as a term was coined.

Would you agree to the above explanation? I don't know. Do you need to? Ofcourse not.

Having said that, there are definitely overlaps in the terms and the way different testers interpret them. My suggestion? Don't spend too much energy on understanding them unless you are doing a research in this area in terms of correlation between them.

8.6k Views · View Upvoters

⬆ Upvote · 4   ⬇ Downvote   [f]   [twitter]   [share]   ⦁⦁⦁

Recommended All

Lavanya Naidu, works at LG Soft India
Answered Feb 26, 2015

Originally Answered: What is the difference between defect, bug, error, fault, and failure with respect to software testing?

A mistake in coding is called error ,error found by tester is called defect, defect accepted by development team then it is called bug ,build does not meet the requirements then it Is failure.

2.8k Views · View Upvoters

⬆ Upvote · 8   ⬇ Downvote   [f]   [twitter]   [share]   ⦁⦁⦁

Recommended All

Deepanshu Agarwal, www.SoftwareTestingStudio.com
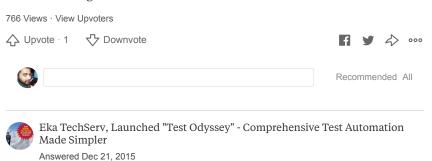Answered Oct 5, 2016

Defect & Failure

Say you are testing an e-commerce checkout functionality. You observe that even after selecting 'Debit card' as the payment method, you are being navigated to Bank's Net Banking login page.

- **Mistake:** There was a slipup by the developer hence the issue

- **Defect**: Once the bug is identified during testing, it is logged as a 'Defect' in the tracking system

- **Fault**: Now this is tricky. Pay attention! As an end-user of the application, the User clicks on the 'Debit card' option at checkout. The erroneous code has been triggered. But when will the end-user come to know of the defect? Yeah! When he sees the Net Banking login page. The duration from clicking on the 'Debit card' option till the User lands on the Net Banking page – there was a 'Fault' in the system.

- **Failure**: Literally a disappointment or a letdown. And no one wants to do business with a failure!

Visit 'www . SoftwareTestingStudio . com' for more such informative articles on Software Testing!

766 Views · View Upvoters

⬆ Upvote · 1   ⬇ Downvote   Recommended   All

Eka TechServ, Launched "Test Odyssey" - Comprehensive Test Automation Made Simpler
Answered Dec 21, 2015

Fault : An incorrect step, process, or data definition in a computer program which causes the program to perform in an unintended manner.

Failure: The inability of a system or component to perform its required functions within specified performance requirements.

Error : A discrepancy between a computed, observed, or measured value or condition and the true, specified, or theoretically correct value or condition.

47 Views

⬆ Upvote   ⬇ Downvote   Recommended   All

Crystal Pellitier
Answered Aug 28, 2015

Bug:-A software bug is an error, flaw, failure, or fault in a computer program or system that causes it to produce an incorrect or unexpected result, or to behave in unintended ways.

Error:-Error refers to a missing or wrong person action resulting in certain fault being injected into software.

Defect:-Commonly refers to several troubles with the software products, with its external behavior or with its internal features. @http://www.softwaretesting-certi...

1k Views

⬆ Upvote   ⬇ Downvote

Tejas Vaidya, Test Engineer
Answered Nov 13, 2016　　　　　　　　　　　　　　　　　　　　　4/4

*__ERROR__ : It is mistake done in the program because of which we are not able to compile or run the program.

*__FAULT__ : it is condition that causes software to fail to perform its required function.

*__FAILURE__ : It is inability of a system or to perform its required function.

Defect causes failure.Chances are there 1 defect might lead to 1 failure or multiple failures.

*__Defect__ : The Variation between the actual results and expected results is known as defect.

97 Views

　△ Upvote　　　▽ Downvote　　　　　　　　　　　　　　　　　f　🐦　↱　⚬⚬⚬

　　　　　　　　　　　　　　　　　　　　　　　　　Recommended　All

Top Stories from Your Feed