

CON Assignment- Software Bugs and their effects on system

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1 Introduction

The first question is that what exactly do we call a bug? Anything which doesn't work as it should is called a bug. These bugs cause vast problems in software when neglected. It can lead to failure of software and produce incorrect results. Software bugs are quite common when developing a software that is why for testing and removing these bugs, different software are made. Common reason of these bugs are mistakes in codes or software design.

2 Different Bugs

2.1 Logical Errors

This type of errors are very common. Whenever we code or design a software, we have to keep in mind its function and the procedure which the software will follow. But what happens is that we do not completely understand how a feature should be implemented. Even if we know, what we have to do, while coding it is possible that our software is doing a completely different job. Also at times, we do not completely code for all the various cases that our software has to face while working and we miss on some edge cases. It leads to bugs which get more difficult to figure out.

2.2 Interface Errors

Whenever we develop an application or a website for various purposes, this type of error can occur. We use APIs while developing interface in our website. At times, we make use of wrong API or we don't use its functionality properly which leads to bugs. Also whenever we are working on a team, different people are comfortable on different platforms, so that leads to less communication and bugs. We have to send HTTP requests to the server and that can fail if the server is shut down. So that causes errors. The systems on which the applications are working can be incompatible. Even the different versions of the same system do not necessarily respond to the same framework identically.

2.3 Compilation and Syntax Errors

These are the most common type of errors. Each and every type of programmer faces these errors. Some errors of this types are- buffer overflow where a program tries to store past data in system and it exceeds the available storage. This leads to storage violation and also known as security bugs. Sometimes our code runs in an infinite loop which causes stack overflow. If we forget semi-colon or use keywords for variables, these are called syntax errors. Also resource or memory leaks happen when we access more than available space.

3 Effects on the System

Software bugs have huge impacts on the companies who made them and also the people who use them. This loss can be in terms of money, security and even loss of lives all due to a minor software bug. Facebook had to pay million dollars when a platform made by it go shut down during the need. Bugs can lead to security issues, the hacker can use these bugs to hack the system and retain information from the system. A small bug in the software of automated vehicle can cause loss of life. That is why handling these bugs is also very important and a lot of money is spent in making software which help in testing and debugging of the bugs.