

Difference Between Testing and Debugging

The main difference between testing and debugging is that during the process of testing, errors are displayed, whereas, during the process of debugging, errors are subtracted and dissolved. We have provided the other differences between these two in the table below.

Testing vs Debugging	
Testing	Debugging
There is no requirement for design knowledge during the testing procedure.	Debugging is impossible without adequate design knowledge.
It is the method by which we discover faults and bugs.	It is the method through which we fix the bugs discovered during the testing process.
Testing can be performed by both insiders and outsiders.	Insiders are the only ones that can debug. Outsiders are unable to debug.
After the code is written, testing begins.	The execution of a test case starts the debugging.
Using this method, we can determine the failure of any implemented code.	We use this procedure to provide absolution for code failure.
Testing can be done manually or automatically.	Debugging cannot be done automatically. It is always done manually.
During this process, errors are displayed.	In this process, errors are subtracted and dissolved.

What is Testing?

Testing is the process of checking and confirming that software or application is bug-free, that it meets the technical requirements as led by its design and development, and that it meets the user needs effectively and efficiently while handling all exceptional and borderline instances.

It is essentially a procedure by which we verify and validate that an application or program is bug-free, meets all technical criteria, abides by all development and design requirements, and meets all user needs. Testing guarantees that the proposed software/application fits these requirements in an efficient and effective manner and that all boundary cases and exceptional cases are handled.

What is Debugging?

Debugging is the process of repairing a software bug. It is the process of finding, evaluating, and eliminating errors. This activity begins when the software fails to execute properly and ends with the problem being resolved and the software is successfully tested. It is considered an exceedingly complex and time-consuming operation because problems must be fixed at all debugging levels.

Debugging begins when the intended software fails to execute properly. We finish the challenge by solving it and successfully testing the software. Because we must discover and rectify faults at every stage of debugging, this procedure is regarded as exceedingly tedious and complex.

Key Difference Between Testing and Debugging

The main components of the software testing life cycle are testing and debugging, both of which are essential for finding flaws and problems in the software. The key difference between testing and debugging are given below.

- Testing is done to identify the errors, whereas debugging is done to resolve those errors.
- Testing can be done manually or automatically using certain tools, while debugging cannot be automatically performed.
- Testing is carried out by a team of test engineers, however a programmer or developer performs debugging.