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| **#** | **Black Box Testing** | **White Box Testing** |
| 1 | Black box testing is the [Software testing method](https://www.softwaretestingclass.com/what-is-software-testing/)which is used to test the software without knowing the internal structure of code or program. | White box testing is the software testing method in which internal structure is being known to tester who is going to test the software. |
| 2 | This type of testing is carried out by testers. | Generally, this type of testing is carried out by software developers. |
| 3 | Implementation Knowledge is not required to carry out Black Box Testing. | Implementation Knowledge is required to carry out White Box Testing. |
| 4 | Programming Knowledge is not required to carry out Black Box Testing. | Programming Knowledge is required to carry out White Box Testing. |
| 5 | Testing is applicable on higher levels of testing like System Testing, Acceptance testing. | Testing is applicable on lower level of testing like Unit Testing, Integration testing. |
| 6 | Black box testing means functional test or external testing. | White box testing means structural test or interior testing. |
| 7 | In Black Box testing is primarily concentrate on the functionality of the system under test. | In White Box testing is primarily concentrate on the testing of program code of the system under test like code structure, branches, conditions, loops etc. |
| 8 | The main aim of this testing to check on what functionality is performing by the system under test. | The main aim of White Box testing to check on how System is performing. |
| 9 | Black Box testing can be started based on Requirement Specifications documents. | White Box testing can be started based on Detail Design documents. |
| 10 | The Functional testing, Behavior testing, Close box testing is carried out under Black Box testing, so there is no required of the programming knowledge. | The Structural testing, Logic testing, Path testing, Loop testing, Code coverage testing, Open box testing is carried out under White Box testing, so there is compulsory to know about programming knowledge. |

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| **Criteria** | **Black Box Testing** | **White Box Testing** |
| *Definition* | Black Box Testing is a software testing method in which the internal structure/ design/ implementation of the item being tested is NOT known to the tester | White Box Testing is a software testing method in which the internal structure/ design/ implementation of the item being tested is known to the tester. |
| *Levels Applicable To* | Mainly applicable to higher levels of testing:[Acceptance Testing](http://softwaretestingfundamentals.com/acceptance-testing/)  [System Testing](http://softwaretestingfundamentals.com/system-testing/) | Mainly applicable to lower levels of testing:[Unit Testing](http://softwaretestingfundamentals.com/unit-testing/)  [Integration Testing](http://softwaretestingfundamentals.com/integration-testing/) |
| *Responsibility* | Generally, independent Software Testers | Generally, Software Developers |
| *Programming Knowledge* | Not Required | Required |
| *Implementation Knowledge* | Not Required | Required |
| *Basis for Test Cases* | Requirement Specifications | Detail Design |

**What are different techniques of Software Testing?**

Software techniques can be majorly classified into two categories:

1.**Black Box Testing:** The technique of testing in which the tester doesn’t have access to the source code of the software and is conducted at the software interface without concerning with the internal logical structure of the software is known as black box testing.

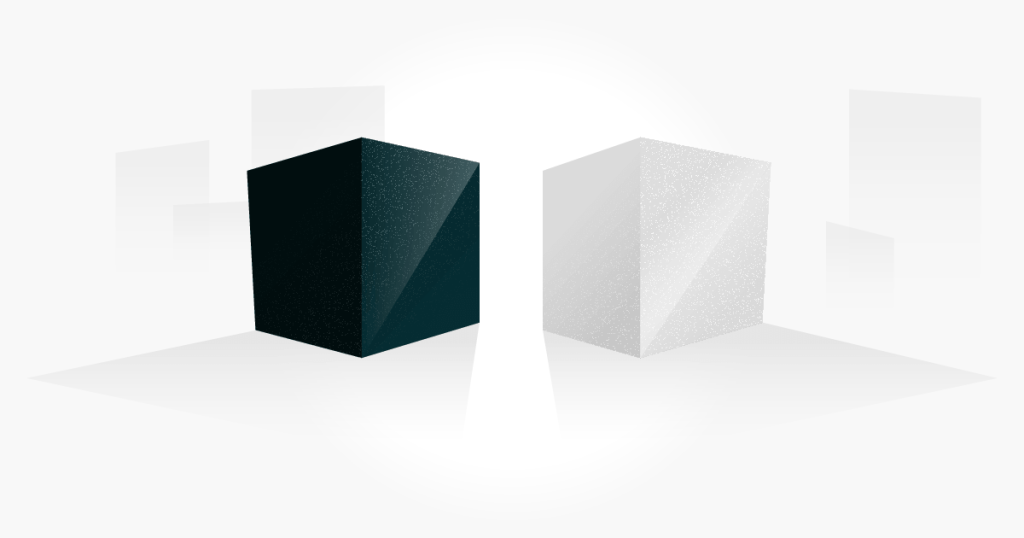
2. **White-Box Testing:** The technique of testing in which the tester is aware of the internal workings of the product, have access to it’s source code and is conducted by making sure that all internal operations are performed according to the specifications is known as white box testing.

| **BLACK BOX TESTING** | **WHITE BOX TESTING** |
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| Internal workings of an application are not required. | Knowledge of the internal workings is must. |
| Also known as closed box/data driven testing. | Also knwon as clear box/structural testing. |
| End users, testers and developers. | Normally done by testers and developers. |
| THis can only be done by trial and error method. | Data domains and internal boundaries can be better tested. |

**Differences between Black Box Testing vs White Box Testing:**

| **BLACK BOX TESTING** | **WHITE BOX TESTING** |
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| It is a way of software testing in which the internal structure or the program or the code is hidden and nothing is known about it. | It is a way of testing the software in which the tester has knowledge about the internal structure r the code or the program of the software. |
| It is mostly done by software testers. | It is mostly done by software developers. |
| No knowledge of implementation is needed. | Knowledge of implementation is required. |
| It can be referred as outer or external software testing. | It is the inner or the internal software testing. |
| It is functional test of the software. | It is structural test of the software. |
| This testing can be initiated on the basis of requirement specifications document. | This type of testing of software is started after detail design document. |
| No knowledge of programming is required. | It is mandatory to have knowledge of programming. |
| It is the behavior testing of the software. | It is the logic testing of the software. |
| It is applicable to the higher levels of testing of software. | It is generally applicable to the lower levels of software testing. |
| It is also called closed testing. | It is also called as clear box testing. |
| It is least time consuming. | It is most time consuming. |
| It is not suitable or preferred for algorithm testing. | It is suitable for algorithm testing. |
| Can be done by trial and error ways and methods. | Data domains along with inner or internal boundaries can be better tested. |
| **Example:** search something on google by using keywords | **Example:** by input to check and verify loops |
| **Types of Black Box Testing:**   * A. Functional Testing * B. Non-functional testing * C. Regression Testing | **Tyeps of White Box Testing:**   * A. Path Testing * B. Loop Testing * C. Condition testing |

As a software tester, chances are you’ve heard the terms “black box testing” and “white box testing” before. In the past, we’ve written about [functional testing](https://blog.testlodge.com/what-is-functional-testing/) and [smoke testing](https://blog.testlodge.com/what-is-smoke-testing/) as part of our [Types of Testing](https://blog.testlodge.com/types-of-software-testing/) blog posts. In this post, we’re going to talk about the differences between black and white box testing. Both types of testing are vital in producing quality software, but the difference is the approach to these testing methods is considerable.



Here’s the short answer to this question:

**Black box testing validates the requirements and specifications, where as white box testing validates the code.**

Lets take a closer look at both.

## What is Black Box Testing?

Black box testing is a method of testing software in which the internal workings, (code, architecture, design, etc), are NOT known to the tester. Black box testing focuses on the behavior of the software and involves testing from an external or end-user perspective. With black box testing, the tester is testing the functionality of the software without looking at the code or having any knowledge of the application’s internal flows. Inputs and outputs are tested and compared to the expected output and if the actual output doesn’t match the expected output, a bug has been found.

The term “black box” is used because in this type of testing, you don’t look inside of the application. For this reason, non-technical people often conduct black box testing. Types of black box testing include functional testing, system testing, usability testing, and regression testing.

## What is White Box Testing?

White box testing is a method of testing software in which the internal workings, (code, architecture, design, etc), are known to the tester. White box testing validates the internal structure and therefore often focuses primarily on improving security, and making the flow of inputs/outputs more efficient and optimized. In white box testing, the tester is often testing for internal security holes and broken or poorly structured coding paths.

The term “white box” is used because in this type of testing, you have visibility into the internal workings. Because of this, white box testing usually requires a more technical person. Types of white box testing include unit testing and integration testing.

## Conclusion

Black box and white box testing have the same goal; to improve and maintain quality in the application. However, because of their different approaches, they require both technical and non-technical individuals. When you combine both methods of testing, your test coverage will be wider and you’ll find an increase in overall quality.

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