



---

## Welcome to the Class

# Welcome to the Class

---



**Department of Computing and Information System**



---

# Software Processes Model

**Md. Selim Hossain**

Senior Lecturer

Department of Computing and Information System

Daffodil International University (DIU), Dhaka, Bangladesh

# Black Box Testing

**Black Box Testing** is a software testing method in which the functionalities of software applications are tested without having knowledge of internal code structure, implementation details and internal paths. Black Box Testing mainly focuses on input and output of software applications and it is entirely based on software requirements and specifications. It is also known as Behavioral Testing.





# How to do BlackBox Testing

Here are the generic steps followed to carry out any type of Black Box Testing.

- Initially, the requirements and specifications of the system are examined.
- Tester chooses valid inputs (positive test scenario) to check whether SUT processes them correctly. Also, some invalid inputs (negative test scenario) are chosen to verify that the SUT is able to detect them.
- Tester determines expected outputs for all those inputs.
- Software tester constructs test cases with the selected inputs.
- The test cases are executed.
- Software tester compares the actual outputs with the expected outputs.
- Defects if any are fixed and re-tested.



## Types of Black Box Testing

There are many types of Black Box Testing but the following are the prominent ones -

- **Functional testing** - This black box testing type is related to the functional requirements of a system; it is done by software testers.
- **Non-functional testing** - This type of black box testing is not related to testing of specific functionality, but non-functional requirements such as performance, scalability, usability.
- **Regression testing** - Regression Testing is done after code fixes, upgrades or any other system maintenance to check the new code has not affected the existing code.

# Tools used for Black Box Testing:

---



Tools used for Black box testing largely depends on the type of black box testing you are doing.

- For Functional/ Regression Tests you can use - [QTP](#), [Selenium](#)
- For Non-Functional Tests, you can use - [LoadRunner](#), [Jmeter](#)



## Black Box Testing Techniques

Following are the prominent Test Strategy amongst the many used in Black box Testing

- **Equivalence Class Testing:** It is used to minimize the number of possible test cases to an optimum level while maintains reasonable test coverage.
- **Boundary Value Testing:** Boundary value testing is focused on the values at boundaries. This technique determines whether a certain range of values are acceptable by the system or not. It is very useful in reducing the number of test cases. It is most suitable for the systems where an input is within certain ranges.
- **Decision Table Testing:** A decision table puts causes and their effects in a matrix. There is a unique combination in each column.

# Advantages and Disadvantages of Black Box Testing:



## Advantages

- Well suited and efficient for large code segments.
- Code access is not required.
- Clearly separates user's perspective from the developer's perspective through visibly defined roles.
- Large numbers of moderately skilled testers can test the application with no knowledge of implementation, programming language, or operating systems.

## Disadvantages

- Limited coverage, since only a selected number of test scenarios is actually performed.
- Inefficient testing, due to the fact that the tester only has limited knowledge about an application.
- Blind coverage, since the tester cannot target specific code segments or error-prone areas.
- The test cases are difficult to design.



---

# Thanks to All