

SOFTWARE ENGINEERING-I

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Week 13

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Software Testing

- Testing is the process of evaluating a system or its component(s) with the intent to find whether it satisfies the specified requirements or not.
- Testing is executing a system in order to identify any gaps, errors, or missing requirements in contrary to the actual requirements.
- **Software Testing** is a method to check whether the actual software product matches expected requirements and to ensure that software product is Defect-free in order to produce a quality product..
- It involves execution of software/system components using manual or automated tools to evaluate one or more properties of interest.
- The purpose of software testing is to identify errors, gaps or missing requirements in contrast to actual requirements.

Why Software Testing is Important?

- **Software Testing is Important** because if there are any bugs or errors in the software, it can be identified early and can be solved before delivery of the software product.
- Properly tested software product ensures reliability, security and high performance which further results in time saving, cost effectiveness and customer satisfaction.

What are the benefits of Software Testing?

- Here are the benefits of using software testing:
- **Cost-Effective:** It is one of the important advantages of software testing. Testing any IT project on time helps you to save your money for the long term. In case if the bugs caught in the earlier stage of software testing, it costs less to fix.
- **Security:** It is the most vulnerable and sensitive benefit of software testing. People are looking for trusted products. It helps in removing risks and problems earlier.
- **Product quality:** It is an essential requirement of any software product. Testing ensures a quality product is delivered to customers.
- **Customer Satisfaction:** The main aim of any product is to give satisfaction to their customers.

White Box Testing

- The white box testing is done by Developer, where they check every line of a code before giving it to the Test Engineer.
- **White Box Testing** is software testing technique in which internal structure, design and coding of software are tested to verify flow of input-output and to improve design, usability and security.
- In white box testing, code is visible to testers so it is also called Clear box testing, Open box testing, Transparent box testing, Code-based testing and Glass box testing.

Black Box Testing

- The black box testing is done by the Test Engineer, where they can check the functionality of an application or the software according to the customer /client's needs.
- **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.
- In this, the code is not visible while performing the testing; that's why it is known as black-box testing.