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Software Testing

Ensuring Quality and Reliability in Software Development

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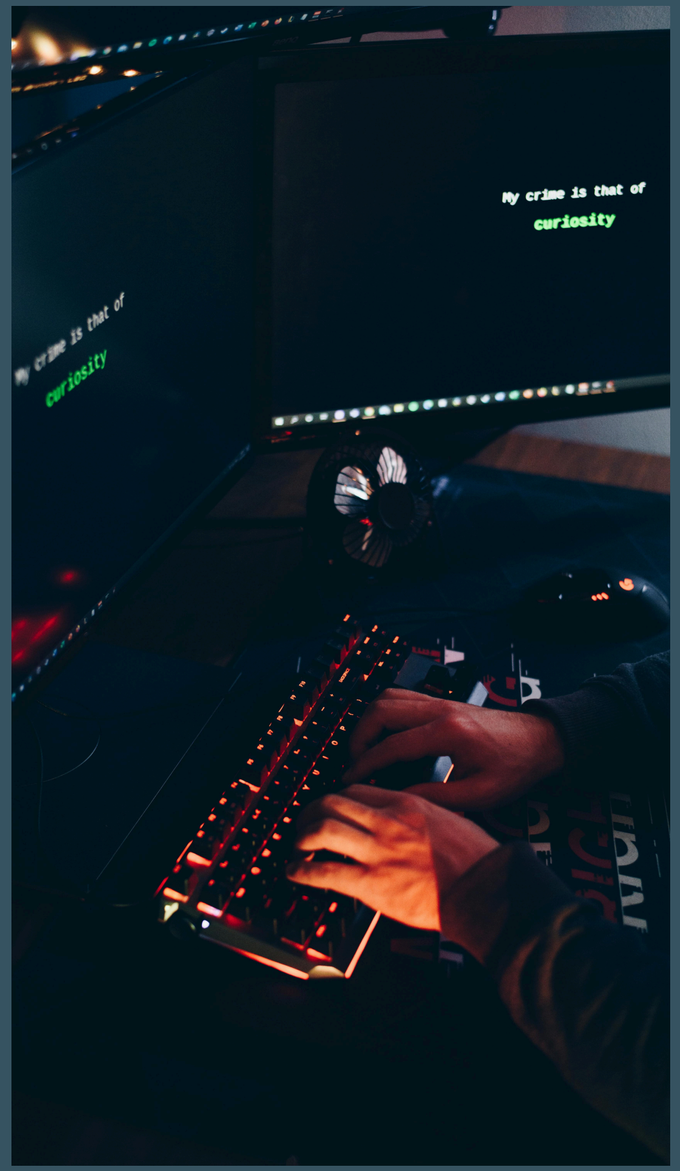


WHAT IS SOFTWARE TESTING

The process of evaluating a software application to detect errors, bugs, or missing requirements.

Ensures the software meets specified requirements and works as expected.

OBJECTIVES OF SOFTWARE TESTING

- Verify the functionality of the software.
- Detect and fix defects early.
- Validate that the software meets user requirements.
- Ensure software reliability, security, and performance.
- Improve overall product quality

TYPES OF SOFTWARE TESTING

1. Manual Testing
 - Performed by testers without automation tools.
- Example: Exploratory testing.
2. Automated Testing
- Uses scripts and tools to execute tests.
- Example: Selenium, JUnit.

TYPES OF TESTING METHODS

White Box testing

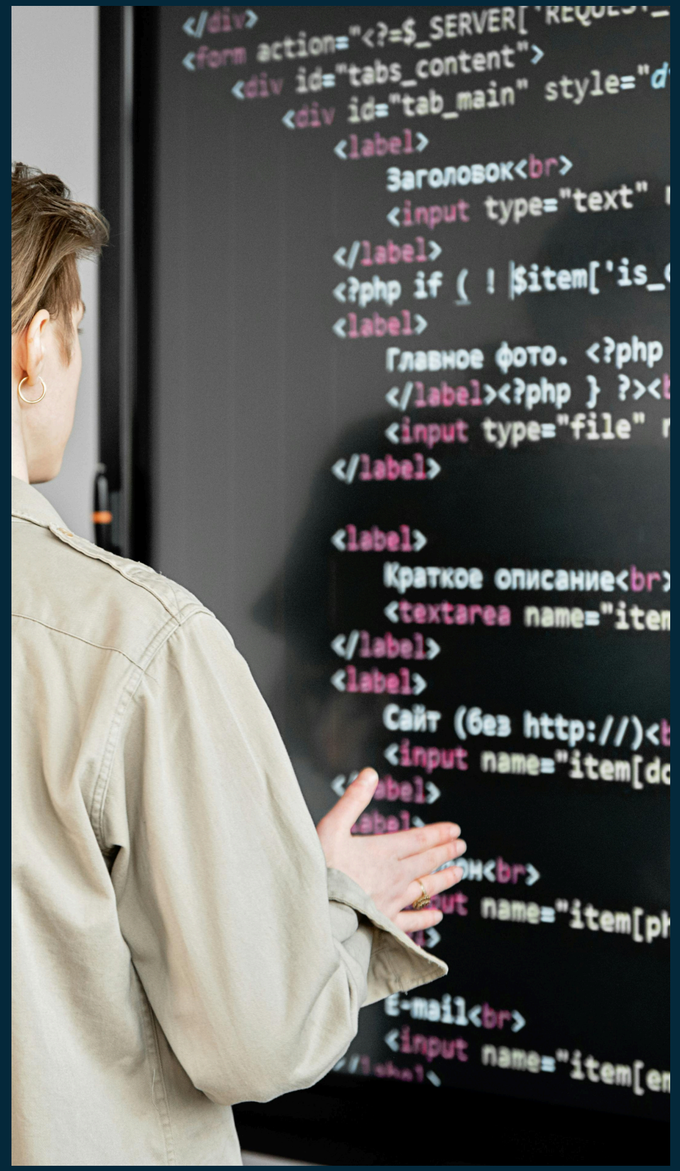
- Tests internal logic and structure

Black Box Testing

- Focuses on software functionality without looking at internal code.

Security Testing

- Ensuring that all sensitive information is encrypted and properly protected.



LEVELS OF SOFTWARE TESTING

1. Unit Testing:
- Tests individual components or modules.
2. Integration Testing:
- Tests interactions between modules.
3. System Testing:
- Verifies the complete and integrated system.
4. Acceptance Testing:
- Validates the software against user requirements

COMMON SOFTWARE TESTING TOOLS

For Manual Testing:

- TestLink, Zephyr

For Automation Testing:

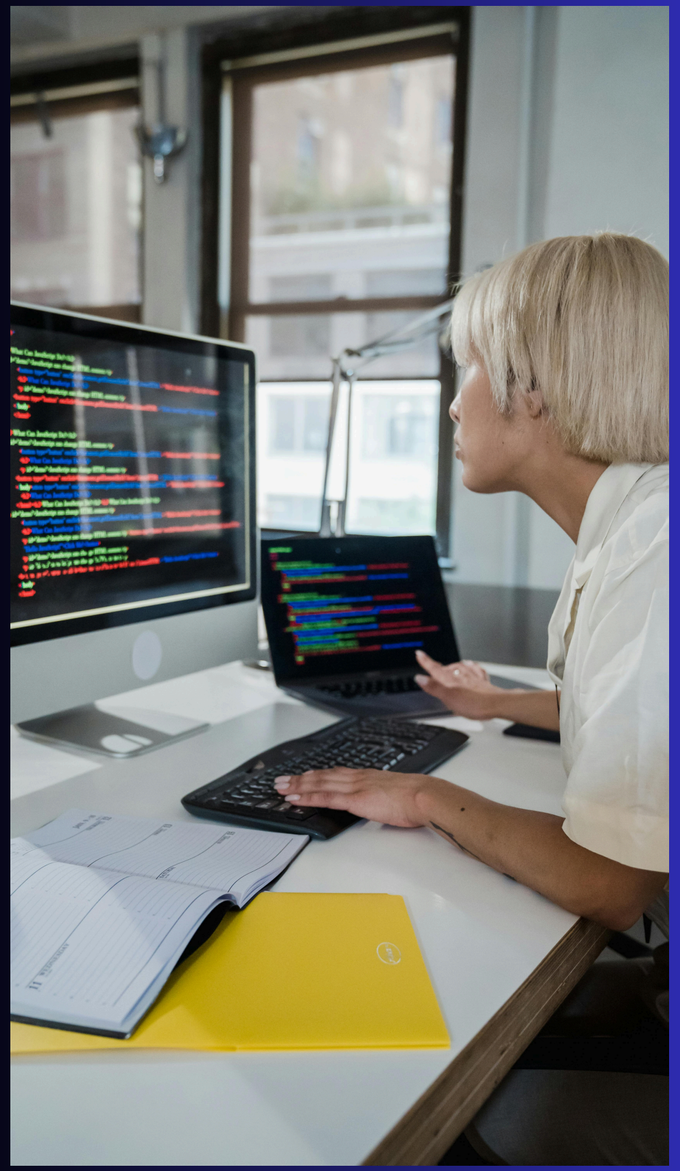
- Selenium, JUnit, Appium.

For Performance Testing:

- JMeter, LoadRunner.

For Bug Tracking:

- Jira, Bugzilla.

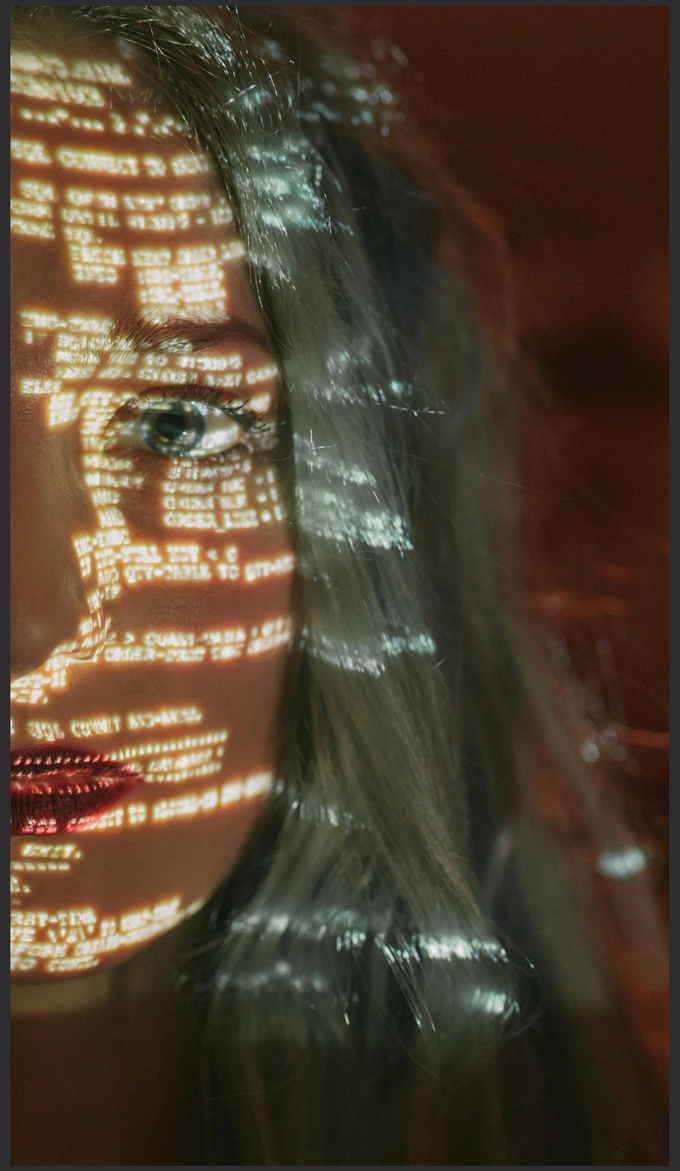


BENEFITS OF SOFTWARE TESTING

-Reduces development costs by identifying issues early.
-Enhances software reliability and performance.
-Builds customer trust by delivering high
-quality products.
-Improves user satisfaction with a bug
-free experience

CHALLENGES IN SOFTWARE TESTING

Incomplete Requirements: Leads to ambiguous test cases.
Time Constraints: Rushed schedules may affect quality.
Complex Systems: Increase in testing complexity.
Dynamic Requirements: Frequent changes disrupt testing



Software testing is a critical part of the software development lifecycle.
Ensures the delivery of high-quality, reliable, and secure software.
Investing in comprehensive testing leads to long-term cost savings and enhanced user satisfaction

THANK YOU!