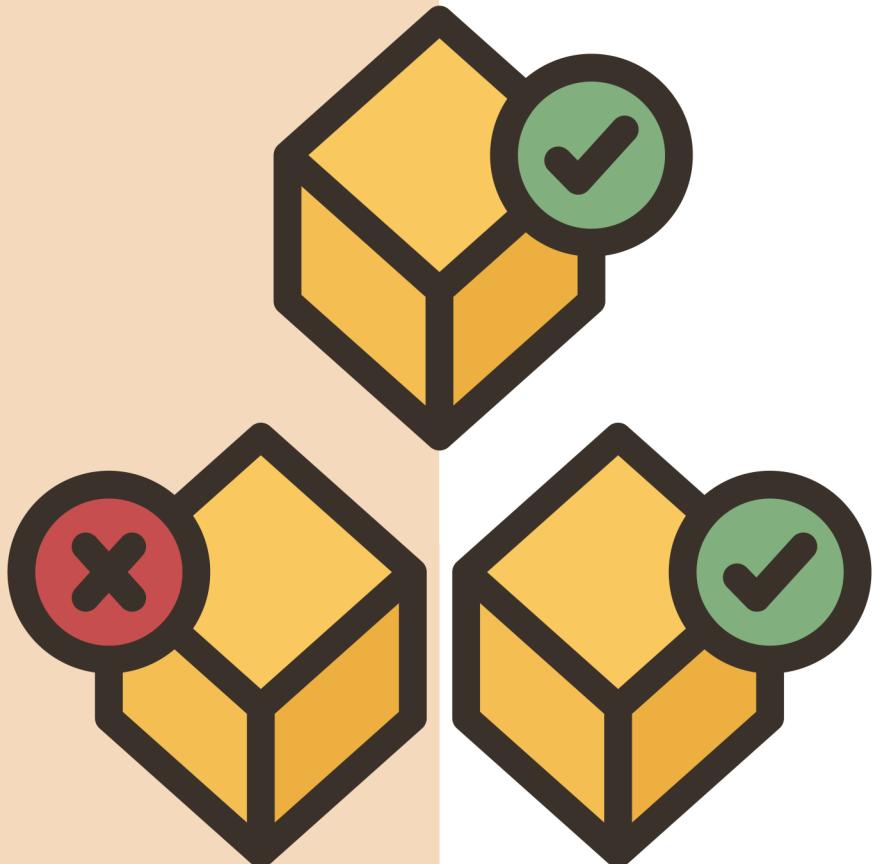


6

UNIT TESTING



WHAT TO EXPECT

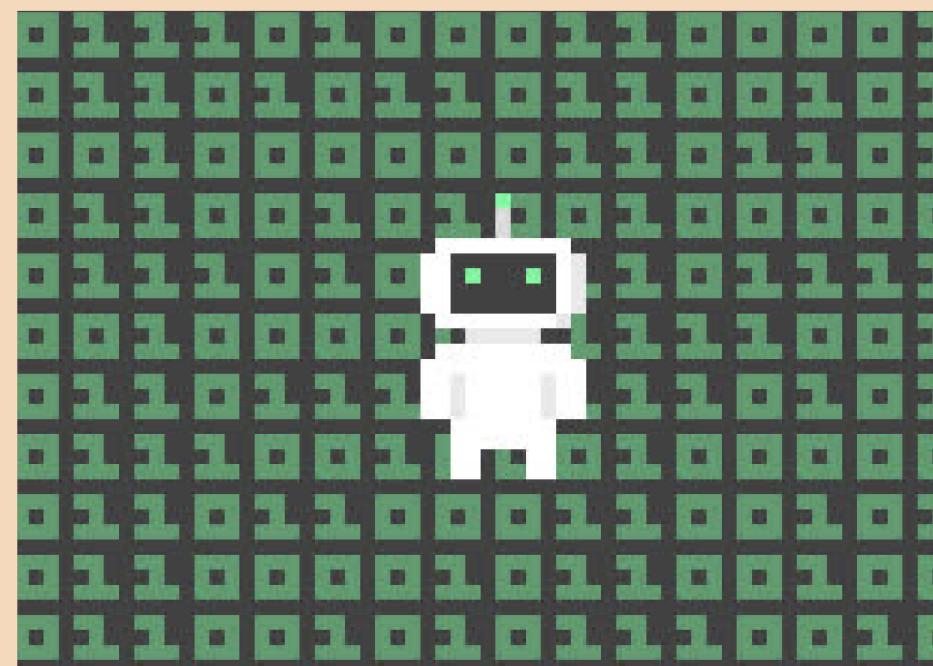


- 1 Scope
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Though Unit Testing doesn't come under the scope of QA, It is important we understand the concept, process, value & advantages of Unit Testing



What is Unit Testing ???



What is Unit Testing ???

Usually performed by developers, Unit testing is a fundamental practice in software development that involves testing individual units or components of a software application in isolation. The goal of unit testing is to ensure that each isolated unit of code, often a function or method, works correctly and produces the expected output when provided with specific inputs. It forms the foundation of a robust testing strategy and helps identify defects early in the development process.

How is it done ?

In unit testing, each unit of code is tested in isolation from the rest of the application. Dependencies, such as external services or databases, are usually replaced with mock objects or stubs to ensure that the focus remains solely on the unit being tested.



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fake code sending usually same output

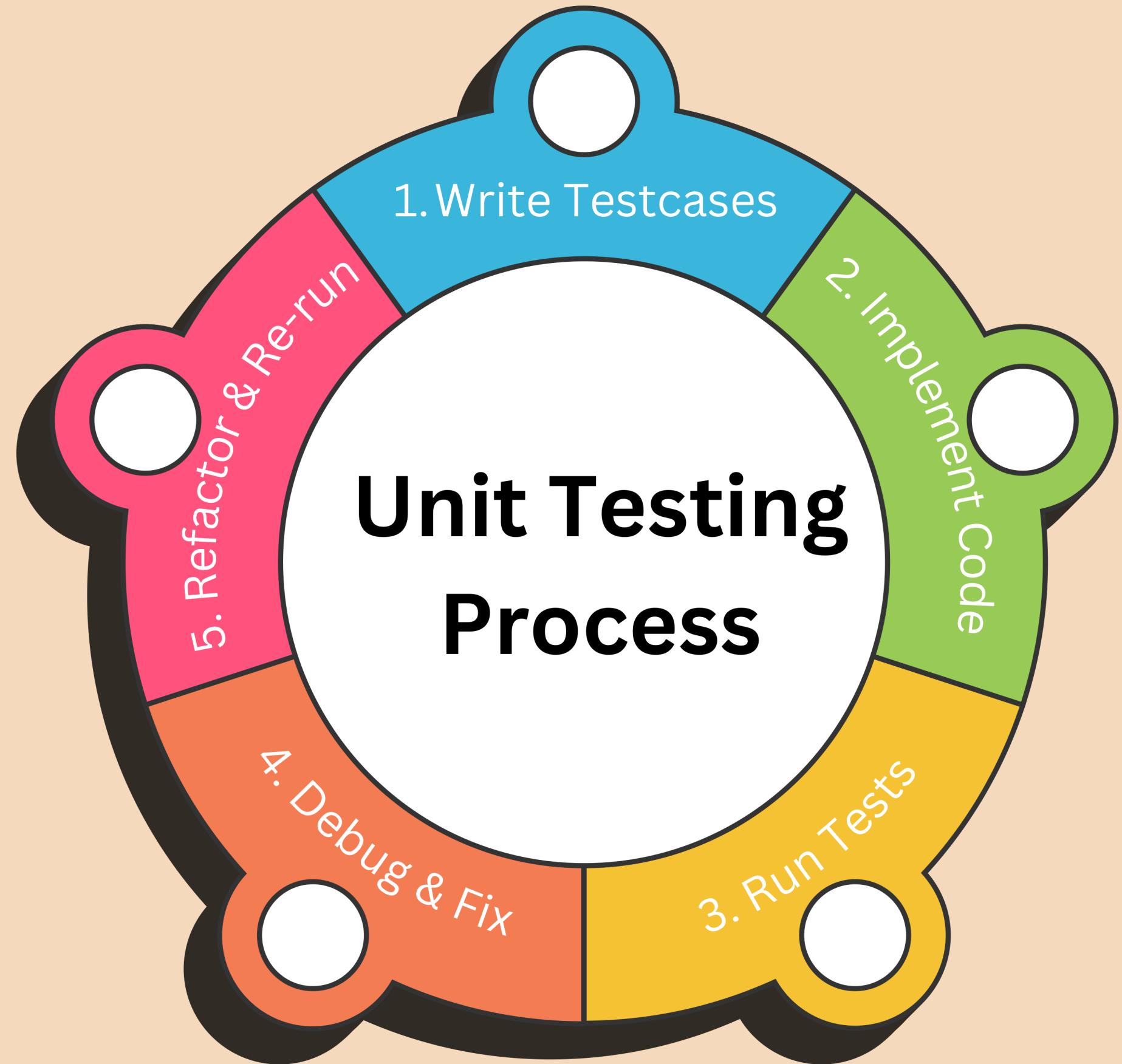
Benefits of Unit Testing

- Early Detection of Defects
- Improved Code Quality
- Enhanced Refactoring
- Documentation
- Regression Prevention



Characteristics of Effective Unit Tests

- **Isolation** : Unit tests should focus on a specific unit of code without relying on other components.
- **Independence** : Tests should be independent of each other to ensure that failures in one test don't affect others.
- **Fast Execution** : Unit tests should run quickly to provide rapid feedback during development.
- **Repeatable and Deterministic** : Tests should produce consistent results regardless of when or where they are run.



Key Considerations

- While unit testing is essential, it doesn't replace other testing types like integration, system, and acceptance testing.
- A comprehensive testing strategy often includes a combination of unit, integration, and other types of testing.



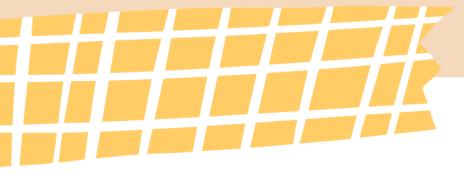
Summary

Unit testing is a foundational practice in software ***development*** that ensures the correctness of individual components. It is usually performed before the QA cycle.

It contributes to

- higher code quality,
- easier maintenance and
- faster development cycles

by catching defects early and preventing regressions.



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See you in Next Video

