Testing - Basic Concepts

Ice Breaker

What do you prefer, laugh movies or horror movies? And mention the last movie that you watched.

Today's **Agenda**

- What is testing?
  - QC vs QA
  - Verification vs Validation
  - Typical Objectives of Testing
- Main basic concepts
- Software Testing Principles
- What is a test case?
- What is a user story?

What is testing?

- Software testing is a **set of activities** that are performed with the purpose to **find defects or failures in the implementation** and quality of a program or system, testing the behavior of them.

- A common misperception of testing is that **it only consists of running tests** (, i.e., executing the software and checking the results)

- **Test execution** is only one of them, it also includes activities such as test planning, analyzing, designing, and implementing tests, reporting test progress and results, and evaluating the quality of a test object

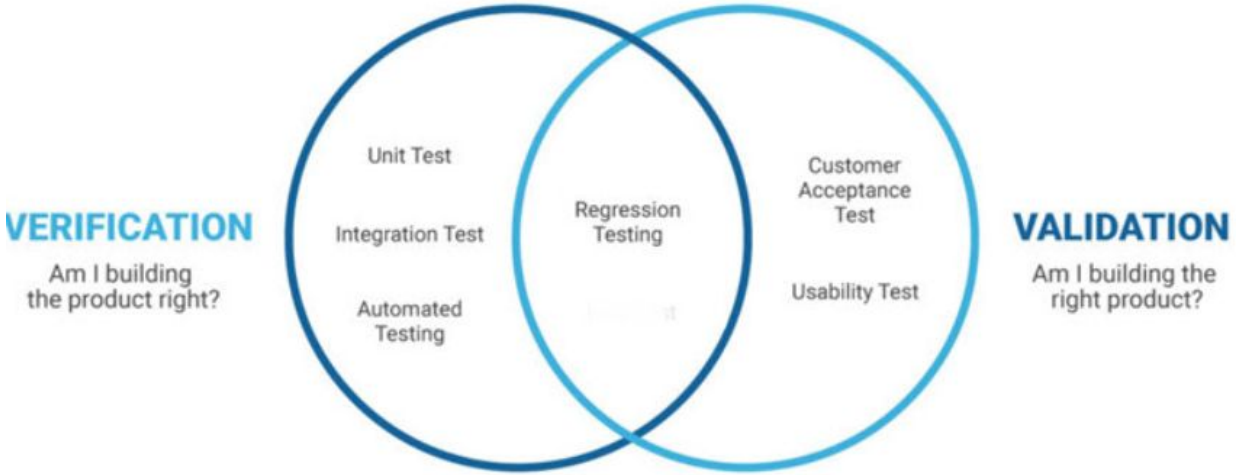
What is testing?

- Quality Control (**QC**): **Product**
- Quality Assurance (**QA**): **Process**

QA	QC
A managing tool	A corrective tool
Process-oriented	Product-oriented
Proactive strategy	Reactive strategy
Prevention of defects	Detection of defects
Everyone's responsibility	Testing team's responsibility
Performed in parallel with a project	Performed after the final product is ready

Verification vs Validation

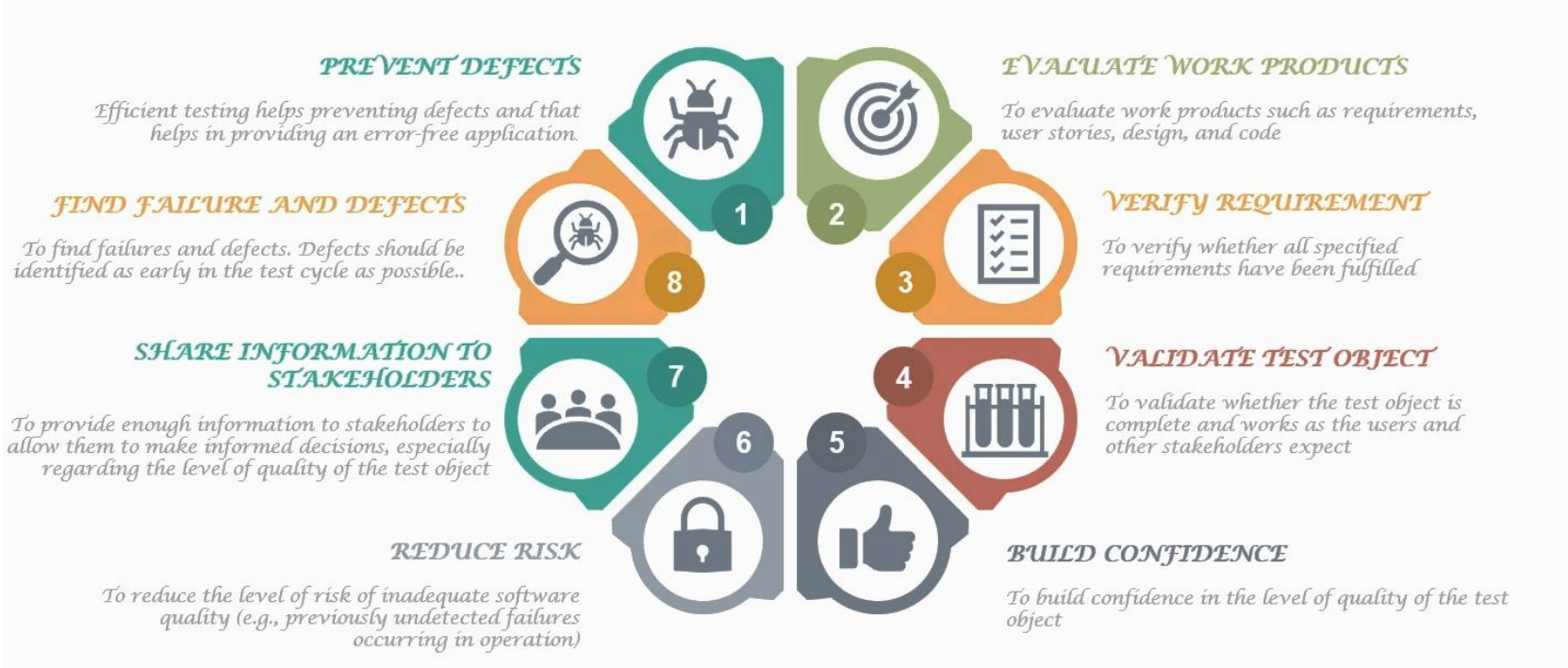
- The software testing belongs to an activity or phase in software development named as Verification and Validation (V&V) process.
- **Verification**: are we building **correctly** the product?
- **Validation**: are we building the **right product**?



Typical Objectives of Testing

- To prevent defects
- To find defects and failures
- To check whether the test object is complete and validate if it works as the users and other stakeholders expect
- To comply with contractual, legal, or regulatory requirements or standards

Typical Objectives of Testing



Main Basic Concepts

Test Plan

- Documentation describing the test objectives to be achieved and the means and the schedule for achieving them, organized to coordinate testing activities.

Test Scope

- The scope of a test defines what areas of a customer's product are supposed to get tested, what functionalities to focus on, what bug types the customer is interested in, and what areas or features should not be tested by any means.

Main Basic Concepts

Test Data

- Data created or selected to satisfy the execution preconditions and inputs to execute one or more test cases.

Test Schedule

- The scope of a test defines what areas of a customer's product are. A list of activities, tasks or events of the test process, identifying their intended start and finish dates and/or times, and interdependencies

Main Basic Concepts

Risk Matrix

- A risk matrix allows the tester to evaluate and rank potential problems by giving more weight to the probability or severity value as necessary.

Exit Criteria

The set of conditions for officially completing a define

Main Basic Concepts

Test Suite

A set of test cases or test procedures to be executed in a specific test cycle.

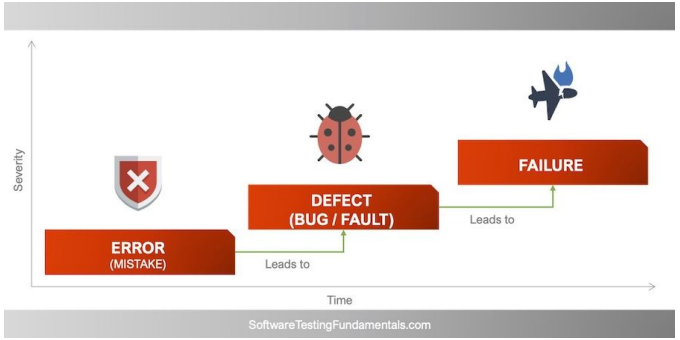
Test Case

A set of preconditions, inputs, actions (where applicable), expected results and postconditions, developed based on test conditions.

Other basic concepts - ISTQB

Error - Defect - Failure

- **Error**: A human action or misunderstanding that produces an incorrect result.
- **Defect**: Incorrect execution result produced by a software artifact other than the expected result.
- **Failure**: An event in which a component or system does not perform a required function within specified limits.



Error / Mistake	Defect / Bug/ Fault	Failure
Found by	Found by	Found by
Developer	Tester	Customer

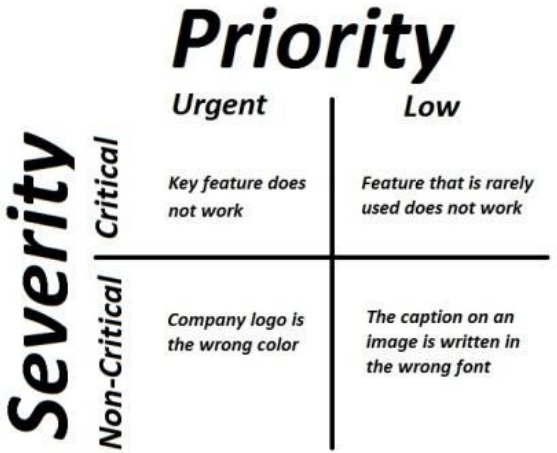
Other basic concepts

Severity vs Priority

Severity has to do with the impact of a defect occurring.

The priority s given by the business and is related to the urgency of resolution.

The severity is usually assigned by the tester while the priority is usually assigned by the leader or the product owner.



Other basic concepts

Smoke test

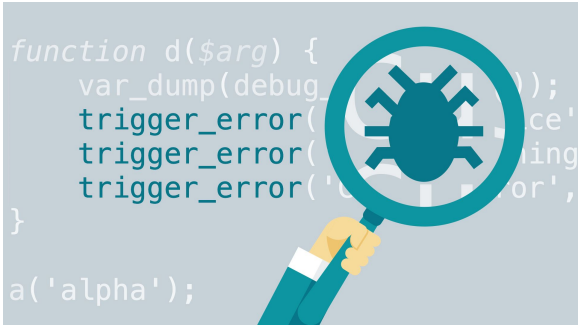
- A test suite that covers the main (critical) functionality of a component or system to determine whether it works properly before planned testing begins.

Sanity Test

- Sanity testing is a kind of Software Testing performed after receiving a software build, with minor changes in code, or functionality, to ascertain that the bugs have been fixed and no further issues are introduced due to these changes.

Debugging

- The process of finding, analyzing and removing the causes of defects, or failures in a component or system artifact.



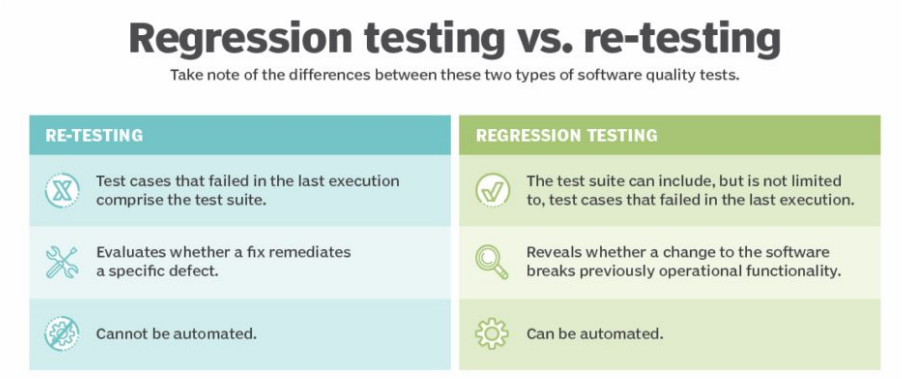
Other basic concepts

Retest

- It is a type of testing performed to check the test cases that were unsuccessful in the final execution are successfully pass after the defects are repaired.

Regression Testing

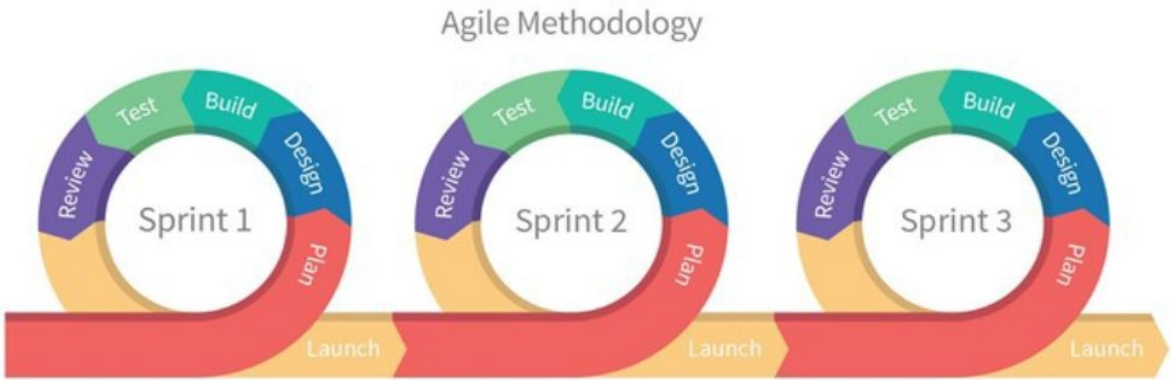
- A type of change-related testing to detect whether defects have been introduced or uncovered in unchanged areas of the software.



Other main basic concepts

Agile

- practice for a project using Agile software development methodologies, incorporating techniques and methods, such as extreme programming (XP), emphasizing the test-first design paradigm.



Other main basic concepts

Web Testing

- Web testing is a software testing practice to test websites or web applications for potential bugs, simulate spikes in user traffic, explore security vulnerabilities in an application server, and test application functionality.

Globant

Other main basic concepts

Mobile Functional Testing

- Consists of testing user interactions as well as testing the transactions, the appropriate tests for each environment (iOS, Android, etc) ensure that they run correctly and work well on different platforms and devices, providing end-users with a positive experience.

Seven Software Testing Principles


Testing shows a presence of defects


Absence of Error - fallacy 


Early Testing


Exhaustive testing is not possible


Defect Clustering


Pesticide Paradox


Testing is context dependent 

What is a test case?

A test case is a **group of conditions** or variables under which we can determine if a **system requirement** has been partially or completely **covered**.

It predicts the **expected result** after having executed a **series of steps** starting from an **initial known state**.

Test Case Components

1 Test Case ID
A code to identify each test case.

2 Description
A brief description of the test case's goal.

3 Pre-Conditions
Description of the state of the system prior to executing the test.

4 Test inputs
Lists the input data to use during the execution.

5 Steps
Each specific action to perform on the system.

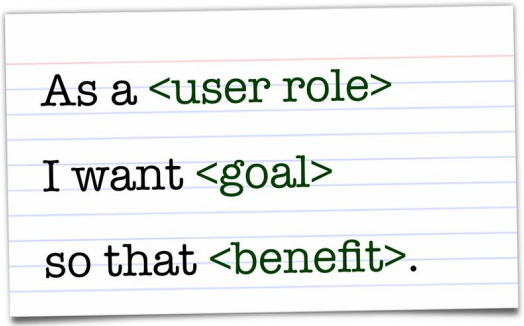
6 Expected Results
It is the behavior or the response that we expect to obtain from the system after the test has been executed.

7 Post-Conditions
Description of the state of the system after executing the test.

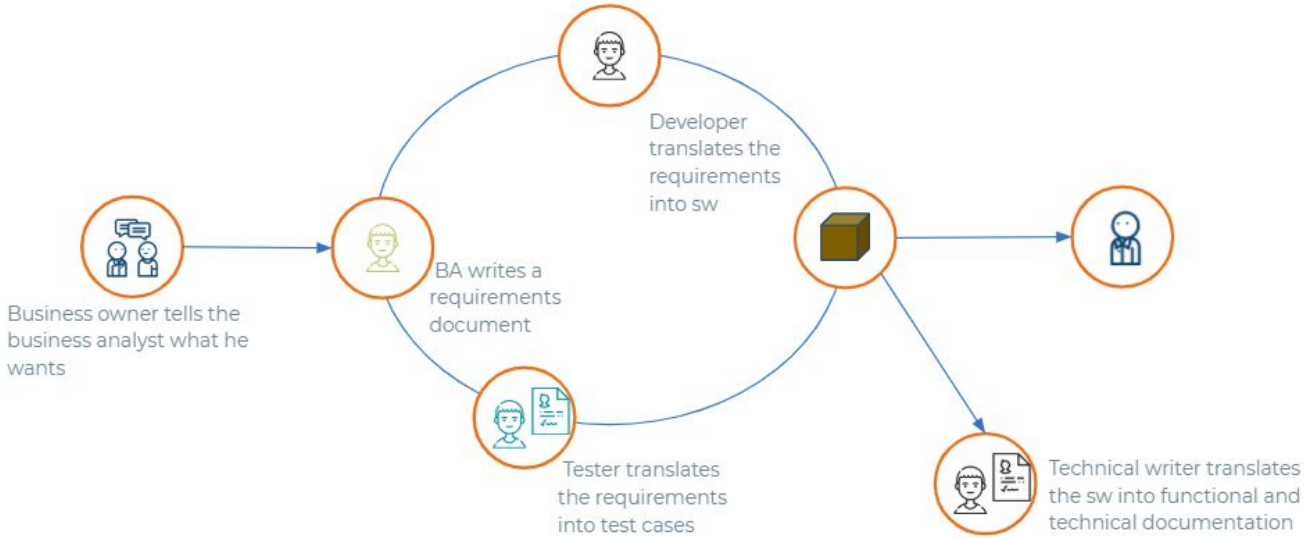
What is a User Story

- User stories are short and simple descriptions of a feature, told from the perspective of the person who wants the new capability through a functionality or behavior, usually a user or customer of the system.

- User stories are used in agile development methodologies for the specification of requirements (accompanied by discussions with users and validation tests). Each user story must be limited.



What is a User Story - Process



Basic Concepts Quiz

Send Google-Form

Thank You!