

# Fundamental Test Process

September 2014

# Agenda

- *What is testing*
- *Why is testing necessary*
- *Main testing principles*
- *Key phases of Fundamental Test Process according to ISTQB standard*



What is testing  
Why testing is necessary

# What is Testing?

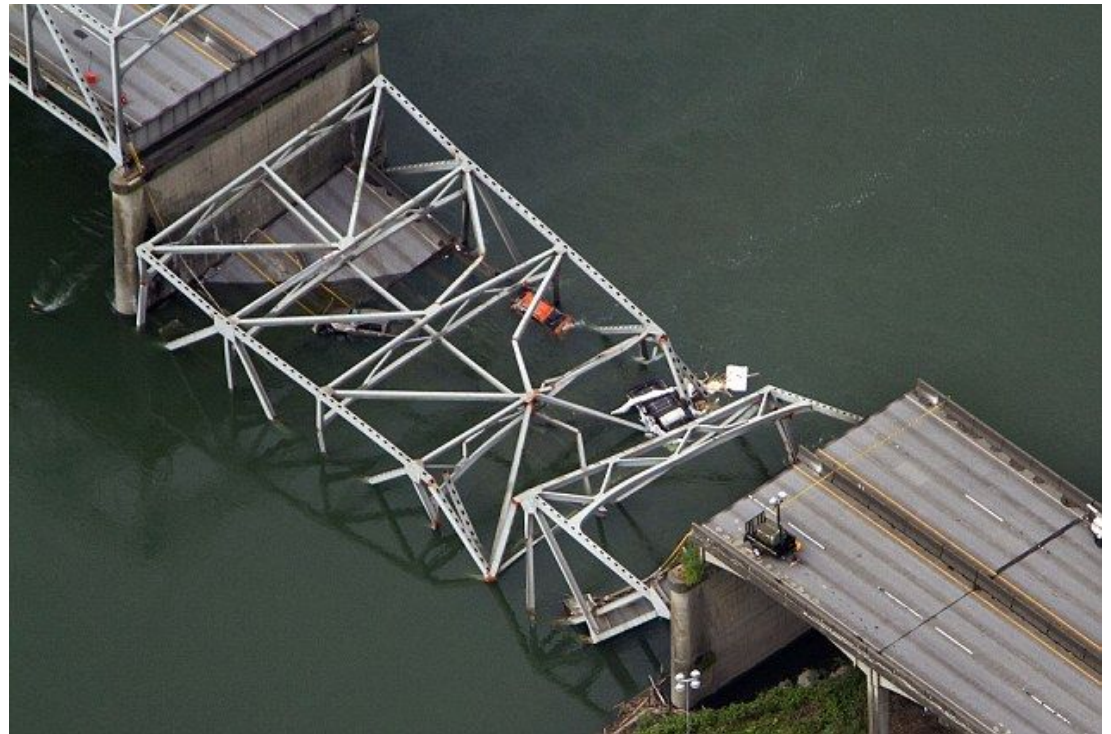


*When we are testing something we are checking whether it is OK*

# Why testing is necessary



People make mistakes



# Why testing is necessary



We should assume our work contains mistakes

# Why testing is necessary

Software is part of our life



# Why testing is necessary



Some of the problems might be trivial, but others can be costly and damaging – with loss of money, time or business reputation – and even may result in injury or death



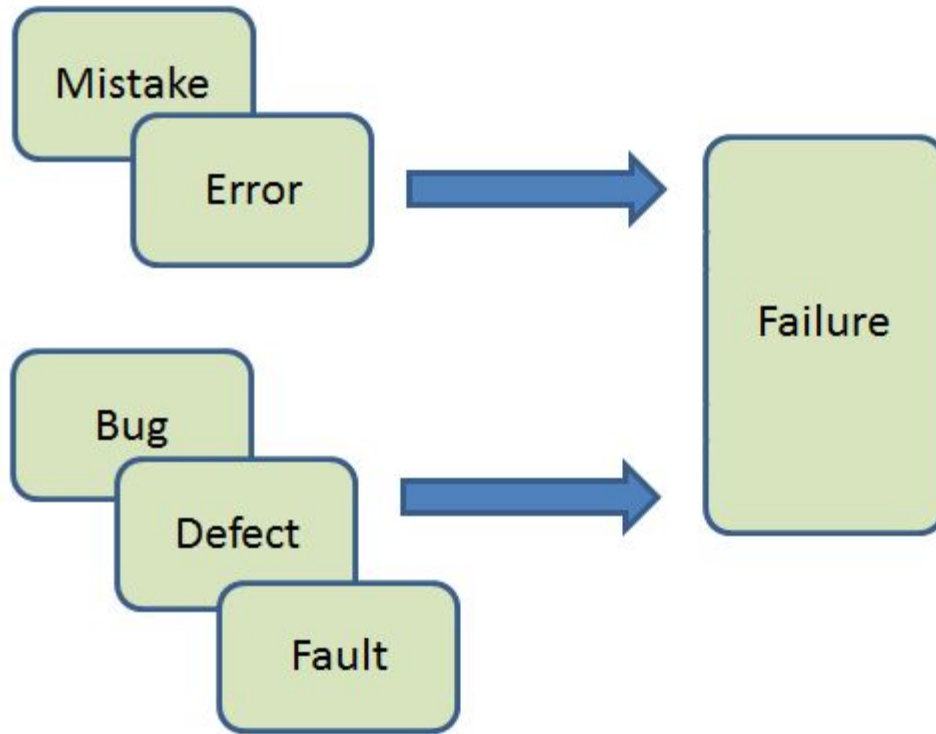
# Why testing is necessary



Not all software systems carry the same level of risk and not all problems have the same impact when they occur

# Causes of software defects

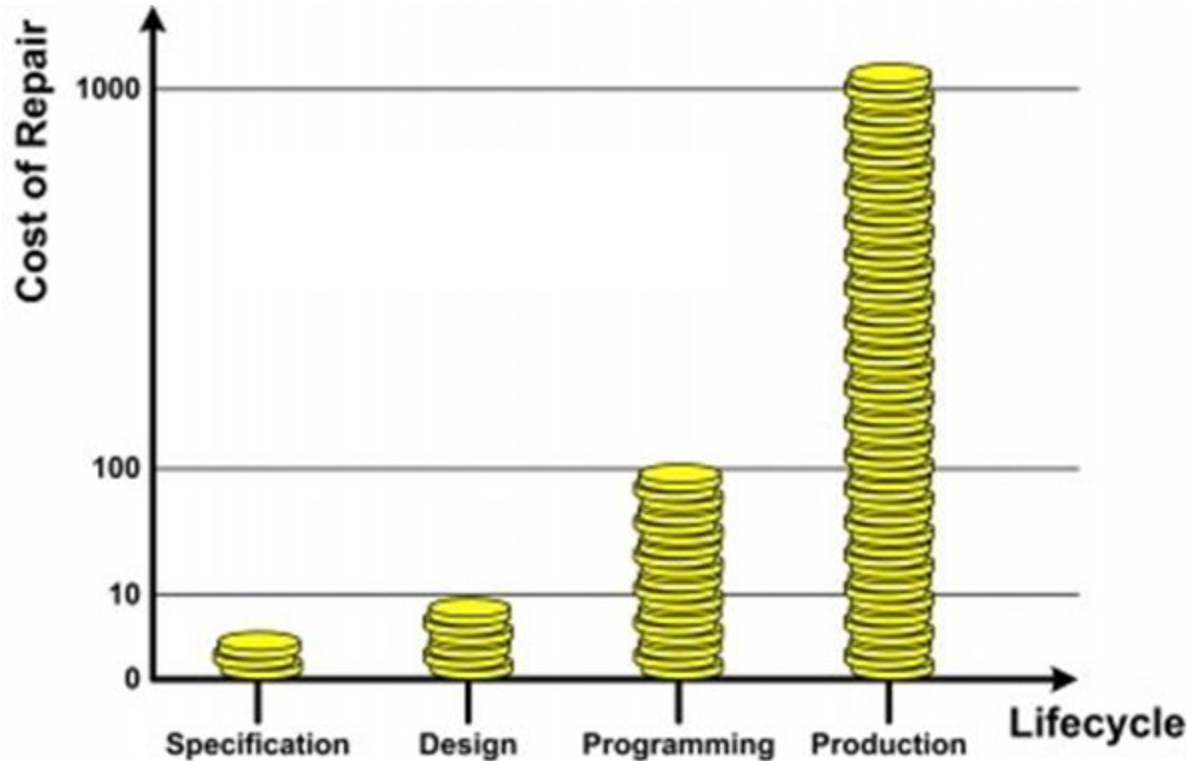
Human action that produces incorrect result



Deviation from expected result

A flaw in a component or system that can cause the component or system to fail to perform its required function

# Cost of defect



The cost of finding and fixing defects rises considerably across the life cycle

# Testing and Quality

Testing helps us to measure the quality of software in terms of:

- the number of defects found,
- the tests run,
- and the system covered by the tests.



# Software Quality – ISTQB definition

**Quality:** the degree to which a system, component, or process meets:

- specified requirements
- customer or user needs or expectations



# Software Testing – ISTQB definition

**Testing** is the process consisting of:

- all lifecycle activities,
- both static and dynamic,
- concerned with planning, preparation and evaluation of software products and related work products

*Description of testing as a process*

- to determine that software products satisfies specified requirements,
- to demonstrate that they are fit for purpose,
- and to detect defects.

*Objectives of the test process*

# Quality assurance- ISTQB definition

**Quality assurance:** Part of quality management focused on providing confidence that quality requirements will be fulfilled

Quality Assurance

Quality Management

Quality Control

# Quality Assurance/ Quality Control

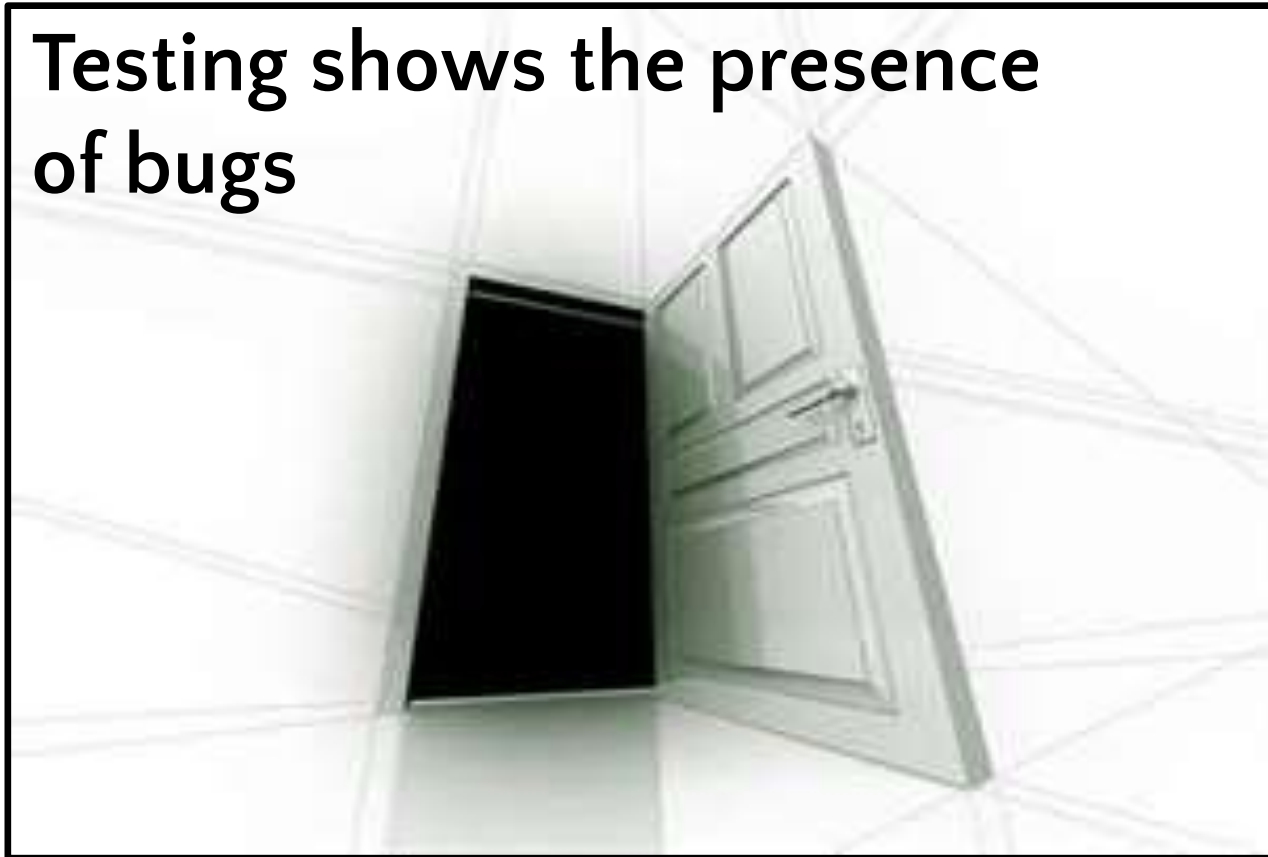
	QA	QC
What it is	Ensure quality in software <b>development process</b>	Ensure quality in software <b>products</b>
Aim	Improve development and test processes	Identify failures/ defects
Approach	Proactive	Reactive
Responsibility	Project Team	Testing Team
Lifetime	<b>Before</b> software development process	<b>Post</b> software development
Activities	Process Definition and Implementation Audits Trainings	Reviews Testing



# Testing Principles

# Principle 1

**Testing shows the presence  
of bugs**



If no defects are found, it is not a proof of correctness

# Principle 2

**Exhaustive testing is impossible**



Instead of exhaustive testing, use risks and priorities to focus testing efforts

# Principle 3

## Early testing



Find defects early on when they are cheap to find and fix

# Principle 4

## Defect clustering



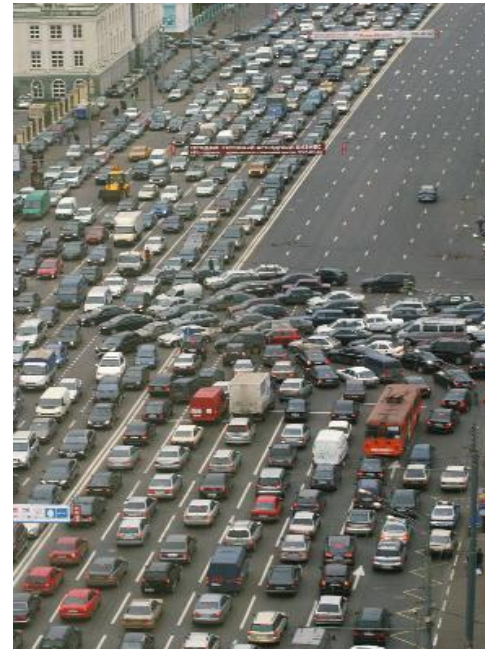
Review defects and failures in order to improve processes

# Principle 5

## Pesticide paradox



Updated or NEW  
test cases  
potentially find  
more defects



Test cases need to be regularly revised, new and different tests need to be written

# Principle 6

## Testing is context dependent

The image illustrates the concept of context-dependent testing by showing a website (my wardrobe) overlaid on a background of an airplane flying through a sky. The website content includes:

- Header: my wardrobe, The home of accessible designer fashion, 0845 260 3880 International +44 (0) 845 260 3880, customerservice@my-wardrobe.com
- Navigation: my, my-wardrobe, my-loyalty
- Main Content: WOMEN SHOP NOW, MEN SHOP NOW
- Product Listings: By Malone Birger, J Brand, Twenty8Twelve, Vivienne Westwood Anglomania and many more; Acne, D&G Dolce&Gabbana, Lyle & Scott, Nudie Jeans, Paul Smith and many more.
- Footer: FOLLOW US ON TWITTER, JOIN US ON FACEBOOK, GET FA FASHIONABLE REWARDS FOR FREE WITH MY LOYALTY, SEE WHY OUR CUSTOMERS WANT OUR SERVICE AS EXCELLENT.

The higher the possibility of losses, the more we need to invest in testing

# Principle 7

## Absence of errors fallacy

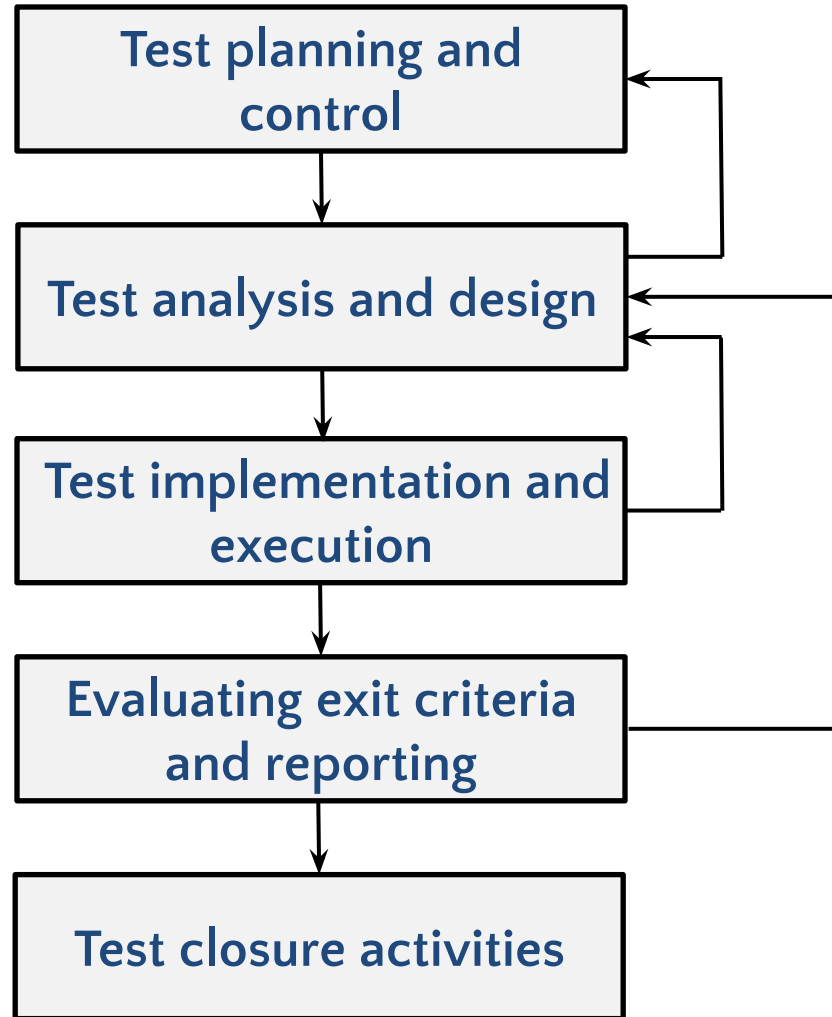


The fact that no defects are outstanding is not a good reason to ship the software



# Fundamental Test Process

# Fundamental Test Process



# Fundamental Test Process

## Planning

- ⦿ Determine scope
- ⦿ Determine risks
- ⦿ Identify objectives
- ⦿ Select test approach
- ⦿ Use test policy/strategy
- ⦿ Required resources
- ⦿ Schedule tasks
- ⦿ Exit criteria

## Analysis

- ⦿ Review test basis
- ⦿ Identify test conditions
- ⦿ Evaluate testability requirements/system

## Implementation

- ⦿ Develop/prioritize test cases
- ⦿ Create test suits
- ⦿ Implement/verify environment

## Evaluating exit criteria

- ⦿ Check test logs against exit criteria
- ⦿ Assess if more test are needed

## Test closure activities

- ⦿ Check which planned deliverables we actually delivered
- ⦿ Finalize and archive testware
- ⦿ Hand over testware to the maintenance organization
- ⦿ Evaluate how the testing went and analyze lessons learned for future releases and projects.

## Design

- ⦿ Design tests
- ⦿ Design test environment

## Execution

- ⦿ Execute test suits/cases
- ⦿ Log the outcome
- ⦿ Compare actual/expected results
- ⦿ Report discrepancies
- ⦿ Confirmation/re-testing

## Reporting

- ⦿ Write a test summary report for stakeholders

## Control

- ⦿ Measure/analyse results
- ⦿ Monitor/document progress
- ⦿ Provide information on testing
- ⦿ Initiate corrective actions
- ⦿ Make decisions



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through Software Development*

# Thank you

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