## **ISTQB Foundation Notes**

##  Sean Butler 8/7/2021

## Overview

This is an aid to passing the ISTQB foundation certification based on the book Software Testing (An ISTQB-BCS Certified Tester Foundation guide by Brian Hambling ISBN 978-1-78017-299-6)

These are things to memorise not a summary of the book.

## Chapter 1 Fundamentals of testing

Page 10 figure 1.1 Effects of an error. Error -> Defect -> Failure

People make mistake – defect - failure.

In some questions that can be Error -> Fault -> Failure

Exhaustive testing of complex systems is not possible.

Testing and risk. (More on risk in chapter 5)

Page 12 resources triangle

 TIME

 Features

 Money Quality

Do important tests first.

Developers debug. Testing on the other hand is a systematic exploration of components or systems

 with the aim of finding and reporting defects.

**Testing covers static and dynamic testing.**

Static testing is the term used for testing where the code is not exercised.

This can include specification review.

Dynamic testing is to exercise the program under test with test data.

Static testing has a big return as early issues found are cheap to correct.

**Cost escalation model**

Know Defect Clustering

Know the pesticide paradox

NOTES: Chapter 1 Fundamentals of testing - Fundamental Test Process Figure 1.4 (Page 20)

|  |  |
| --- | --- |
| **1-Test planning** | **and control** |
| **2-Test analysis** | **and design** |
| **3-Test implementation** | **and execution** |
| **4-Evaluating exit criteria** | **and reporting** |
| **5-Test closure activities** |

Psychology of testing.

Code of ethics

Testing is context dependent.

Absence of errors fallacy.

Retesting is looking in fine details at the changed area of functionality.

Regression testing should cover all the main functions to ensure no unintended changes have occurred.y

## Chapter 2 Life Cycles

V-Model Waterfall/sequential development model

Figure 2.2 page 41. Learn this by heart.

Requirement Acceptance Test Acceptance

Specification planning testing

 Functional System test System

 Specification planning testing

 Technical Integration test Integration

 Specification planning testing

 Program Unit test Unit

 Specification planning testing

 Coding

Iterative development (Agile)

Figure 2.3 Page 43

 Requirements Design

 Test Code

Test levels from page 45

Read and understand the heads

Unit (Component) testing

Integration testing (Big-bang integration or Top-Down Integration or bottom-up integration)

(A stub is a passive component called by other components in top down)

(In bottom, up they are called Drivers) (More complex than stubs)

System testing

Acceptance testing

**Test types**

Functional testing

Non-functional testing (Not the code but the environment, load etc)

Structural testing (Measure your testing/progress)

Testing related to change (Regression testing (No new bugs) or retesting after a bug fix)

Maintenance testing

## Chapter 3 Static Testing

Static testing are those techniques that test software and work-products without executing the code.

Reviews and test process

Levels of review. Basic review process/formal review

Roles of reviewer

Formality of review pyramid

Informal->Walkthrough->Technical Review->Inspection

Static Analysis by tools

Airbus interface. (Different cad versions)

## Chapter 4 Test design techniques

The idea of test coverage (Quantitative measure)

1. Specification-based (black-box) techniques

 Equivalence partitioning

 Boundary value analysis

 Decision table testing

 Stat transition testing

 Use case testing

1. Structure-based (White-box) techniques

Flow charts

Control flow graphs (representing decision points)

Decision testing and coverage (tests both results of a decision true and false)

1. Other structure-based techniques

Experienced-based techniques (Error guessing, exploratory testing)

## Chapter 5 Test Management

Risk and testing

 Project risk

 Product risk

Test Organisation (Levels of independent testing)

Task of a test leader and tester

Test approaches (Test strategies)

Test Planning and Estimation

 Test planning (Entry criteria, exit criteria)

Test estimation

 Metric-based approach

 Expert-based approach

Test progress monitoring and control

Test progress monitoring

Test reporting and test control

Incident management

Configuration Management

## Chapter 6 Tool support for testing

What is a tool

Benefits and risks of using any type of tool

Test management tools

Incident management tools

Requirement management tools

Configuration management tools

Tools support for static testing

Review tools

Static analysis tools

Modelling tools

Tool support for test specification

Test design tools

Test data preparation tools

Tools support for test execution and logging

Test comparators

Execution tools

Record and playback tools

Test harness or unit test framework

Coverage measurement tools

Security testing tools

Tools supporting performance and monitoring

Dynamic analysis tools

Performance/load/stress testing tools

Monitoring tools.

Other tools

Introduction of tools into an organisation