



Software Testing – Starter Class
Content Preview





INTRODUCTION

Who is this workshop for?

This workshop targets developers with no, vague or only punctual knowledge about software testing.

What can you expect from this Workshop?

This workshop will give you a general overview of different approaches, techniques & tools that are used to test software and will do a deep dive into the fundamental testing strategies.

It will give you reasons why software testing is an important part of the software development discipline. You will get an understanding of which cases require intensive testing and which not.

This workshop comes in **three sessions** à four hours.

In the first session it will guide you through the **theoretical basics** of software testing, as well as an introduction to **tools and their setup** which then will be used throughout the following two practical sessions.

The second session will show you how to organise test suites and **test the smallest units of your software** in all relevant layers. It continues with **testing integrated units** that build greater logical or functional parts of your software.

The third session will introduce you to the testing of whole functionalities or **behaviours of contexts** in your software. The last part will discuss test **results and metrics** and how you can interpret, but more importantly use them to maintain the quality of your software.

What will be the takeaways?

As we do this workshop **individually on your codebase**, you'll learn on **real-world examples** you already know.

Together we will produce test suites that you can directly integrate to your code via **pull/merge requests**. This immediately adds value to the maintainability of your product and increases the **team confidence**. You will be able to extend these test suites by yourself to gain all implied advantages.

You will get new possibilities to **automate checks in your pipelines** with the tooling that was introduced in this workshop. (Pipeline integration is not part of this workshop.)



SESSIONS

First session

- Theory: Why testing software?
- Theory: Types of testing
- Theory: Technical testing approaches
- Theory: Methodical testing approaches
- Tooling: Chosen testing tools for your project
- Tooling: Setup of testing tools

Second session

- Team agreement: Organising test suites
- Writing unit tests for each layer of your application
- Writing data driven unit tests
- Writing integration tests for interconnected units

Third session

- Writing functional tests for contexts of your application
- Exploring results & metrics
- Discussing metric interpretation and usage

Topics covered

Bug detection
Reliability
Compatibility
Compliance
Upgrading
Maintainability

Team Confidence
Automated testing
Unit testing
Integration testing
Functional testing
Test coverage

Test Execution time
Branch coverage
Cyclomatic complexity
Defect density
Code churn



REQUIREMENTS

Access

- We need access to your software in a version controlled manner
- We need the authorization to create branches and pull/merge requests

Time

- We need **3 days of preparation** in advance to the first session
- We need **2 days of post-processing** after the third session in order to hand over the workshop results
- Each session of 4 hours takes place **on a separate day**, preferably 3 days in a row

Participants

- We need at least 3 participating developers
- Each participant needs a computer with a running development environment and the authorization to install new tooling to this environment
- Each participant needs access to the software in a version controlled manner
- Each participant needs the authorization to create branches and pull/merge requests

Equipment (only if workshop is on-site)

- Beamer & canvas or a large screen with HDMI connector
- Power outlets for computers
- Internet connection

IMPRINT & LEGAL NOTES

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