

# Introduction

This is a book on advanced software testing for test analysts. By that I mean that I address topics that a practitioner who has chosen software testing as a career should know. I focus on those skills and techniques related to test analysis, test design, test execution, and test results evaluation. I assume that you know the basic concepts of test engineering, test design, test tools, testing in the software development lifecycle, and test management. You are ready to mature your level of understanding of these concepts and to apply these mature, advanced concepts to your daily work as a test professional.

This book follows the International Software Testing Qualifications Board's (ISTQB) Advanced Level Syllabus, with a focus on the material and learning objectives for the advanced test analyst. As such, this book can help you prepare for ISTQB Advanced Level Test Analyst exam. You can use this book to self-study for those exams or as part of an e-learning or instructor-lead course on the topics covered in those exams. If you are taking an ISTQB-accredited Advanced Level Test Analyst training course, this book is an ideal companion text for that course.

However, even if you are not interested in the ISTQB exams, you will find this book useful to prepare yourself for advanced work in software testing. If you are a test manager, test director, test analyst, technical test analyst, automated test engineer, manual test engineer, programmer, or in any other field where a sophisticated understanding of software testing is needed, then this book is for you.

This book focuses on test analysis. The book consists of 11 chapters, addressing the following material:

1. Basic aspects of software testing
2. Testing processes
3. Test management

4. Test techniques
5. Testing of software characteristics
6. Reviews
7. Incident (defect) management
8. Standards and test process improvement
9. Test tools and automation
10. People skills (team composition)
11. Preparing for the exam

Since that structure follows the structure of the ISTQB Advanced Syllabus, some of the chapters address the material in great detail, as they are central to the test analyst role. Some of the chapters address the material in less detail, as the test analyst need only be familiar with it. For example, I cover test techniques in detail in this book because that is central to what a test analyst does, while I spend less time on test management.

If you also read the companion volume to this book, which is for test managers, you'll find parallel chapters that address the material in detail but with different emphasis. For example, test analysts need to know quite a bit about incident management. Test analysts spend a lot of time creating incident reports, and you need to know how to do that well. Test managers also need to know a lot about incident management, but they focus on how to keep incidents moving through their reporting and resolution lifecycle and how to gather metrics from such reports.

What should a test analyst be able to do? Or, to ask the question another way, what should you have learned to do—or learned to do better—by the time you finish this book?

- Implement the test strategy with a focus on business domain requirements
- Analyze the system based on user quality expectations and apply that analysis to the testing to be done
- Evaluate the system requirements to determine whether the business objectives can be met by that system
- Prepare and execute adequate testing activities, and report on the progress of these activities
- Provide the necessary evidence and data to support evaluations and findings
- Implement the necessary tools and techniques to achieve the defined goals

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In this book, we focus on these main concepts. I suggest that you keep these high-level objectives in mind as we proceed through the material in each of the following chapters.

In writing this book and the companion volume on test management, I've kept foremost in my mind the question of how to make this material useful to you. If you are using this book to prepare for an ISTQB Advanced Level Test Analyst exam, then I recommend that you read chapter 11 first, then read the other 10 chapters in order. If you are using this book to expand your overall understanding of testing to an advanced level but do not intend to take an ISTQB Advanced Level Test Analyst exam, then I recommend that you read chapters 1 through 10 only. If you are using this book as a reference, then feel free to read only those chapters that are of specific interest to you.

Each of the first 10 chapters is divided into sections. For the most part, I have followed the organization of the ISTQB Advanced Syllabus to the point of section divisions, but subsections and sub-subsection divisions in the syllabus might not appear. You'll also notice that each section starts with a text box describing the learning objectives for this section. If you are curious about how to interpret those K2, K3, and K4 tags in front of each learning objective, and how learning objectives work within the ISTQB syllabus, read chapter 11.

Software testing is in many ways similar to playing the piano, cooking a meal, or driving a car. How so? In each case, you can read books about these activities, but until you have practiced, you know very little about how to do it. So I've included practical, real-world exercises for the key concepts. I encourage you to practice these concepts with the exercises in the book. Then, make sure you take these concepts and apply them on your projects. You can become an advanced software testing professional only by doing software testing.

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