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Software Test Estimation
Course Outline

General Description

How long will the testing take? That's a question we test professionals often struggle to answer, and, when we do, the response is often, "That's too long!"

In this practical, hands-on course, Rex Black, President of RBCS, Inc. (www.rbcs-us.com), guides you through the tricky questions of test estimation. Can we use risk to determine what we should test—and how extensively? What tasks must we carry out to be ready to perform those tests when the time comes? Can we combine techniques like work-breakdown-structures, historical project data, and rules of thumb to estimate the time and money required for those tasks? How can we respond to management requests to compress testing efforts into pre-existing schedule or budget targets? Rex's experience-based presentation, lively group discussion, hypothetical case study, and a realistic running exercise will put the essential estimation tools in your hands so you'll be ready for your next testing project.

This course draws on Rex's best-selling book, *Managing the Testing Process, 2e*, his new book, *Critical Testing Processes*, and over two decades of software, hardware, and systems experience.

Learning Objectives

Through presentation, discussion, and hands-on exercises, attendees will learn to:

- Analyze risks to system quality to determine what should be tested—and to what degree—in a test subproject.
- Use work-breakdown-structures to create an actionable, realistic estimate of the tasks, dependencies, resources, and time required for the testing subproject.
- Refine estimates using developer/tester ratios, industry averages, historical data, and test point analysis.
- Sell the estimate to management on a dollars-and-cents, risk-management basis.

- Adjust the estimated schedule and budget to fit project constraints without undermining accuracy or unduly increasing risk.

Course Materials

This course includes the following materials:

Name	*Description*
Course Outline	A general description of the course along with learning objectives, course materials and an outline of the course topics, including approximate timings for each section.
Noteset	A set of approximately 130 PowerPoint slides covering the topics to be addressed.
Project Source Documents for Course Exercises	Specifications used in the realistic example project used in exercises for the course.
Estimation Factors	Factors that influence test estimation
Test Estimation	Tools and techniques for realistic predictions of your test effort
Bibliography and resources	A set of further readings, Web sites, tools and other resources to help implement the concepts.

The printed course materials are provided in a binder in a way which makes it convenient for course attendees to remove portions as needed for reference; e.g., during exercises.

Session Plan

Day One

Introduction

Deciding what you should test
- Quality
- Quality and customer usage
- Quality risk analysis
- Case study

Exercise: Quality risk analysis

Estimating what you can test: Fundamentals
- Work-breakdown-structures
- Deliverables
- Delphic oracle, three-point, and wideband
- Dependencies and resources
- Case study

Estimating what you can test: Important considerations
- Test execution time
- Bug removal time
- People, process, and materials factors

Day Two

Estimating what you can test: Refinements
- Historical-data framework
- Industry averages
- Developer/tester and project effort ratios
- Test point analysis
- Uses and misuses of these techniques
- Sticky-note work-breakdown-structure technique

Exercise: Developing an estimate

Selling your estimate
- Cost of quality—and poor quality
- The value of known bugs
- Testing as an insurance substitute
- Test information as a project guide
- Case study

Exercise: Presenting and defending a budget

Exercise: Calculating costs of failure

Adapting to project constraints
- Overlap phases
- Add staff
- Reduce test execution time
- Use risk as a guide
- Drop features
- The risks of overtime and stretch goals

Exercise: Risk-driven reductions in test subproject scope

Bibliography

Recommended Readings

The class materials include a bibliography of books related to software testing, project management, quality, and other topics of interest to the test professional.

