

CANTATA

Online Public Training Course for C++ Outline

Course Title	Cantata Online Public Training Course for C++
Versions covered	9.x
Duration	2 Days
Location	Online (via Go To Meeting web sessions)
Format	Instructor-led lectures and hands-on lab exercises
Availability	On dates published on QA Systems website
Price Per Person	€ 600 (net) for 2 Days



Driving Embedded Software Quality

This document outlines the Cantata on-line public training course for users testing C++ code.

It describes the format and agenda of the course, the training materials provided, and requirements for on-line attendance.

Cantata Online Public Training Course Outline

Course Description

The Cantata Training Course significantly increases the productivity of engineers with the Cantata tool and accelerate your unit and integration level testing.

The course covers the use of the Cantata tool for testing C and C++ code with hands-on lab sessions examples guided by easy to use Eclipse cheat sheets. The course is delivered live on-line over 3 full days (starting at 8:00am UK time).

After this course, students will be able to:

- > Understand the theory and objectives for unit and integration testing
- > Use best practice unit and integration testing techniques with Cantata

Course Format

- > Instructor-led course consisting of lectures and interactive lab sessions
- > Students gain hands-on experience with personal guidance from expert QA Systems instructors
- > Specific questions are addressed
- > Lab sessions allow hands-on application of the course concepts with supplied examples

Training Course Instructor

All Instructors are experts in testing C and C++ with the Cantata tool. They are current Cantata Technical Support Engineers.

Who Should Attend?

- > C++ code developers
- > Test engineers performing C++ unit and/or integration testing
- > Quality Assurance personnel
- > No prior experience of Cantata is required

Requirements

Workstation

- > PC with at least 4GB of RAM available
- > Peripherals: web cam, headphones and microphone
- > Ability to install the "Go To Meeting" app on workstation*
- > Ability to install Cantata and Cantata Training Plug-ins and example code on workstation*
- > Ability to install / use a g++ compiler*

** Supplied after registration.*

Student Skills:

- > Basic understanding of C++ programming
- > Functional knowledge of UNIX or Windows
- > Notions of software testing

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Materials Provided

Cantata Installation

- > Cantata 9.x installation for Windows or Linux workstation
- > Bundled GNU 8.2 C++ compiler
- > Temporary Cantata license for use with the training course

Training Course Plug-ins (as appropriate)

- > Cantata 9.x Training Course Eclipse Cheat Sheets for C++
- > Lab Exercises source code provided as plug-ins

Training Presentation Slides

- > Supplied as PDF

Training Course certificate

- > Recorded qualification issued for each student

Topics Covered

- > Theory of unit testing
- > Understanding the Cantata IDE
- > What to check for and how in Cantata
- > Code coverage analysis (theory & Cantata practice)
- > Isolation unit testing
- > Multi-unit integration testing
- > How to control function calls for simulation and interception
- > Positive (requirements-based) & Negative (robustness) testing
- > Testing Global Data
- > Automatic test case generation from source code
- > Testing templates
- > Testing Abstract classes and inheritance
- > Associations between functional requirements and test cases/scripts

The course topics give a good grounding in how to use Cantata. The instructor can additionally address any specific questions on testing challenges and how to meet these in Cantata.

Follow on dedicated consultancy engagements and corporate training courses are also available. Contact sales@qa-systems.com for more information.



AGENDA

Day 1


Unit Testing Theory

- > What is a unit?
- > What is unit testing?
- > Different approaches to unit testing
- > What does a unit test look like?
- > Identifying test cases
- > Types of unit test cases

Cantata Eclipse UI


- > Using the Cantata IDE
-  Introduction to the IDE Lab
-  Further IDE Lab

Cantata Test Harness


- > Cantata test structure
-  Test Harness Basics Lab

Lunch Break (1 hour)


Code Coverage Analysis

- > Coverage Analysis Theory
- > Cantata Coverage analysis
-  Code Coverage Analysis Lab

Stubbing Calls


- > Simulating calls
-  Stubbing Lab

Wrapping Calls


- > Intercepting calls
-  Wrapping Lab

Day 2


Class Testing

- > Test Classes
-  Class Testing Lab

AutoTest C++


- > Automatic Test Case Generation
-  AutoTest Demo

Integration Testing C++


- > Integration Testing Approaches
-  Integration Testing Lab

Lunch Break (1 hour)


Dependency Resolver

- > Link dependencies
-  Dependency Resolver demo


Testing Templates

- > Instantiated templates
-  Testing Templates Lab

ABCs and Inheritance

- > Managing abstract classes and inheritance
-  Abstract Classes and Inheritance Lab

Requirements Tracing

- > Cantata Trace
-  Cantata Trace Lab

Q&A session