

Software Testing

CDT190

This course teaches the theory and practice of program testing. The differences between white box and black box testing are emphasized, as well as unit, integration, system, regression and acceptance testing. Labs include creation of test data for batch programs, and test scripts for online programs.

Audience

- Applications programmers
- Programmer analysts
- Test team/QA/QC members

Prerequisites

- Knowledge of a programming language

Course Length

- Two days

Learning Objectives

- Understand unit, integration, system, and acceptance testing
- Gain the ability to build white and black box test case worksheets
- Learn how to conduct and document structured unit testing
- Be able to develop online test scripts

Teaching Methods

- The first course day stresses highly graphic illustrations and group paper-and-pencil exercises illustrating testing concepts including levels of testing, white box and black box methods. The second and third days provide extensive guided hands-on exercises using a worksheet approach to batch and online unit testing.

Course Outline

QC2

The Role of Testing

- Why bugs exist
- Zero defect goals
- Defect clustering and metrics

Different Stages of Testing

- System development life cycle and testing
- Debugging vs. testing?
- Hierarchy of testing complexity

White Box Unit Testing

- Concepts of white box testing
- Measures of complexity
- White box test criteria: a worksheet approach
- Generating white box test cases

Black Box Unit Testing

- Concepts of black box testing
- Essential black box criteria
- Black box test criteria: a worksheet approach
- Generating black box test cases

Using Structured Worksheets

- Organizing the unit testing process
- Repeating tests after maintenance
- Cause-effect logic analysis

Online Program Testing and Scripts

- Testing an online program
- Elements of a structured script
- Composing test scripts
- Executing a test script
- Automating the testing process