

Advanced C++ Issues

Length: 24 – 32 hours, depending on the particular curricula

Required facilities: VGA projector, white board, one workstation (per two programmers), C++ development tools (text editor, compiler, linker, debugger, standard C++ libraries including STL). It's highly recommended using an IDE, a good (free) example is Microsoft Visual C++ Express Edition.

Who can participate: C++ programmers who want

- to familiarize themselves with more complex issues related to the language
- to exercise the language by solving interesting problems

Prerequisites: knowledge of C++, at least at medium level

Course objectives: learn and exercise more complex issues related to C++, use of C++ to solve practical problems.

Related courses: The C++ Programming Language (beginners), Object Oriented Analysis and Design, Design Patterns

Attendees' evaluation: optional, during the training and/or a final test

Bibliography: The C++ Programming Language, Third Edition, Bjarne Stroustrup, Addison-Wesley, ISBN 0-201-88954-4

Description: this course is targeted to C++ programmers who want to deep their knowledge about the language and ways to use it.

There are discussed complex issues related to inheritance, polymorphism, Real Time Type Information, operator overloading, templates implementation, multi-threading programming.

The training is highly interactive, the ideas and the discussed solutions are ultimately expressed in C++. The main purpose of this training is to exercise object oriented programming by using C++.

Note: the subjects are adapted to the attendees' profile, their background, experience and goals.



Example of issues to include in curricula:

1. Operator overloading- (), [], ->, Smart Pointer, implementations
2. Object Pool implementation – by overloading of new & delete operators
3. Inheritance, polymorphism, polymorphism implementation, virtual functions, Runtime Type Information (RTTI), applications
4. Short introduction to the Standard Template Library, hands on a STL container implementation
5. Threads, POSIX, specific issues
6. Garbage Collector implementation
7. Small object allocation
8. Policy based programming