



Contribution ID: 255

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Cling - The LLVM-based C++ Interpreter

Monday, May 21, 2012 1:30 PM (25 minutes)

Cling (<http://cern.ch/cling>) is a C++ interpreter, built on top of clang (<http://clang.llvm.org>) and LLVM (<http://llvm.org>). Like its predecessor CINT, cling offers an interactive, terminal-like prompt. It enables exploratory programming with rapid edit / run cycles.

The ROOT team has more than 15 years of experience with C++ interpreters, and this has been fully exploited in the design of cling. However, matching the concepts of an interpreter to a compiler library is a non-trivial task; we will explain how this is done for cling, and how we managed to implement cling as a small (10,000 lines of code) extension to the clang and llvm libraries.

The resulting features clearly show the advantages of basing an interpreter on a compiler. Cling uses clang's praised concise and easy to understand diagnostics. Building an interpreter on top of a compiler library makes the transition between interpreted and compiled code much easier and smoother. We will present the design, e.g. how cling treats the C++ extensions that used to be available in CINT. We will also present the new features, e.g. how C++11 will come to cling, and how dictionaries will be simplified due to cling. We describe the state of cling's integration in the ROOT Framework.

Student? Enter 'yes'. See <http://goo.gl/MVv53>

yes

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