



# Improve Cling's packaging system, Cling Packaging Tool

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# Background

- I'm a Computer Sciences major at University of Wisconsin-Madison
- I'm interested in compilers research
- My mentors are Vassil Vassilev and David Lange



# Introduction to Cling

- Cling is an interactive C++ interpreter/compiler that utilizes the REPL (read-evaluate-print-loop) paradigm for fast development and testing as well as immediate feedback and runtime-generated code
- Cling is built on top of Clang and LLVM compiler infrastructure, and as a result, has many useful features such as expressive compiler diagnostics, and in addition, also has its own command line prompt and uses a JIT (just-in-time) compiler
- Not only is Cling useful for rapid development, the functionality of an application can be improved by embedding Cling



# Introduction to the Cling Packaging Tool

- Cling Packaging Tool (CPT) is a command line utility that can easily build Cling from source and generate installer bundles for a variety of platforms including:
  - Ubuntu
  - Debian-based platforms
  - Windows
  - Red Hat Linux based distributions
  - Mac OS X
  - Unix-like platforms
- CPT is an incredibly useful and flexible tool, but there are several improvements that can be made to make the user's experience with the CPT even more seamless



# Planned Project Objectives

- Improvements to be made
  - Fixing platform issues
    - This mostly entails fixing builds with LLVM on Linux and Mac OS
    - Debian packaging creation
    - Fixing Windows builds
  - Rewriting the CPT itself
    - A full rewrite of the CPT, fixing old features as well as adding new features, and getting rid of non-functional options
  - Rewriting documentation
    - Adding new documentation for rewrite and fixes, as well as rewriting old documentation for overriding variables
  - Fixing miscellaneous issues
    - Fixing specific software dependency issues



Thank you!