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LCG Applications Area Workbook

Getting Started

Takes the user through getting an account, desktop setup and account setup.

- Getting started at CERN

Getting an Account and Logging In

- Getting an Account
- Checking your account exists
- Connecting to LXPLUS from your desktop computer

Developing Software

This section covers the basic tasks without going into design issues.

Edit, Compile, Link and Run

- Editing, compiling and running code on Unix
- Editing, compiling and running code on Windows

Debugging Applications

Watching the code execute, and basic problem solving.

- Introduction
- Compile options for Debugging
- Command Line debugger: gdb
- GUI debugger: ddd

Setting up your software project

- Software Tools and Packages available
- A bug tracker for your application
- How to get a CVS repository: the CERN CVS Central Service
- AFS central files system?
- Setting up XWindows?

The CERN central computing services

- CERN Computing Rules
 - Linux Central Services
 - Windows Central Services
 - Mail Services
-

Ideas for further sections

- Getting started with the LCG environment

Programming languages and common packages

- C++
- Python
- XML

- Boost, Root, Clhep,...

Developing C++ Applications (TO BE DONE)

Using an OO design approach to make proper use of C++.

- OO Courses and References [↗](#)
- LCG C++ Coding Conventions [↗](#)
- External Class Libraries [↗](#)
- Warning and Error Messages [↗](#)
- Code Wizard: a Tool for Checking Coding Style [↗](#)
- Valgrind: a Tool for Finding Memory Leaks [↗](#)
- Insure++: a Tool for Checking for Memory Misuse [↗](#)

Testing Software Applications

Testing Frameworks

- CppUnit, PyUnit, Oval, QMtest
- Valgring, callgrind, kchachegrind

Procedures for Testing (ON THE WAY)

- Introduction
- Types of Testing
- Test Cases

Documentation

Documentation Templates (ON THE WAY)

Templates for the documents needed in software development

- Task lists, project documents
- Use cases, user requirements
- Work plans and reports

Documentation Tools (TO BE DONE)

Procedures and tools for creating documentation

- Introduction
- Use of Doxygen - simple example
- External Class Libraries

Configuring your hardware

Configuring your computer

- Security Recommendations
- Registering your portable computer
- Installing a computer at CERN

Useful Links

- PH-SFT group Web Site [↗](#)
- LCH Applications Area Web Site [↗](#)
- SPI Workbook [↗](#)

-- AlbertoAimar - 05 Aug 2005

This topic: LCG > LCGAAWorkbook

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