

Teaching Root

the fast lane on the learning curve

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curve

Fermi ROOT class

- Started in 1999
- Evolved into a 3-Day Class
- Given 18 times – 400 people
- ROOT The Movie

Why teach ROOT?

- Speed up learning (20 hours vs. 80 hours)
- Propagate good practices and intended use with examples.
- Hear the issues specific to the experiment and ROOT
- Spread knowledge about new features

Class Schedule - Day 1

- Overview of the ROOT Framework
- GUI basics
- Command line basics
- Finding Information (class reference guide)

- Hands on exercises

Class Schedule - Day 2

- ROOT Commands and CINT
- Discuss Exercises
- Functions and Fitting
- The Tree Viewer

Class Schedule - Day 3

- Building ROOT Trees
- Reading Trees
- Using Trees in Analysis
- How to add your Own Class
 - With the Interpreter
 - With the compiler (shared library)
 - With ACLiC

Exercises

- Session A
 - Use the Root Command line
 - Write an un-named and named script
 - Use the GUI to create objects and change their attributes
 - Fit a graph

Exercises

- Session B
 - Use the Browser and Tree Viewer
 - Make a Profile and Contour Graph
 - Build an Event List from a Cut
 - Fill a histogram with random numbers
 - Use ACLiC

Exercises

- Session C
 - Study an example analysis from Desy
 - Learn about `TTree::MakeSelector`
 - Save and retrieve a canvas to and from a Root File
 - Compute the integral of a function within a range

References

- Class Site:
<http://www-pat.fnal.gov/root/>
- Exercises (link on Class Site):
<http://www-pat.fnal.gov/root/class/exercises.htm>
- C++ is a prerequisite. Refresher site at:
<http://www-pat.fnal.gov/root/CPlusPlus/index.html>

Users Guide 3.01a

- New section on Folders and Tasks
- New section on The Role of TObject (RTTI)
- New section on Object Ownership
- Updated I/O chapter
 - Streamers
 - Schema Evolution
 - MakeProject example

Users Guide 3.01a

- New Tree chapter
 - 4 new examples on how to write a tree and read it back
 - tree1.C: several simple variables
 - tree2.C: a tree built with a C structure (Geant3)
 - tree3.C: using the new Friends feature
 - tree4.C: a tree with a class Event.
 - Added 35 examples of the Draw command expressions.

ROOT Problems/Limitations

- For comments/suggestions on the Users Guide – rootdoc@root.cern.ch
- Would like to see:
 - Chapter on 3D Graphics
 - Chapter on writing ROOT application with a GUI