

ROOT R

A R Interface for ROOT



Student

Omar A. Zapata M.



Mentor

Lorenzo Moneta



About this project

- ROOTR is an R interface for ROOT that works in two ways, calling R from ROOT (Cling) or Calling ROOT from R.
- It is based in the packages Rcpp and Rinside, which lets use R from C++ interface and call C++ stuff from R.
- It is being developed with support for the new interface Cling in contrast to Cint wich was implemented since last year.



What is good for?

- You can to use the entire set of statistics routines from R in C + + :
 - Without having to rewrite them for ROOT.
 - With Cling support to do interactive work.
 - With support to use the graphic system of R in ROOT.
- You can to use ROOT's classes from R's interpreter:
 - Calling R's package ROOT: `require(ROOT)`
 - With support to use the graphic's system of ROOT in R: TCanvas, TGraph, TPad, etc.
 - With support to Write/Read *.root files with the classes that were wrapped in ROOTR.

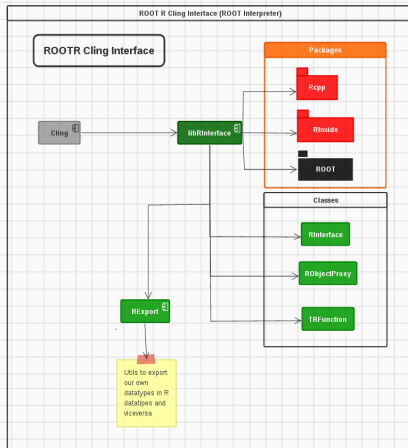


What has been made?

- Basic design in UML. (Require some improvements)
- Infraestructure to call R interpreter in Cling with support to put/get `std::vector`, `std::array`, `TVectorT`, `TMatrixT`, scalars from/to R's environment.
- R's packages with some classes partially wrapped. (`TCanvas`, `TGraph`, `TFile`, `TF1`, `TRint`, `TSystem`)
- Wikis, tests and some tutorials.



More Information

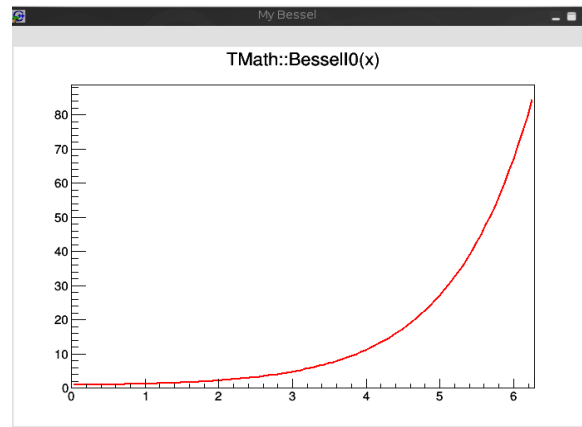


```
require(ROOT)

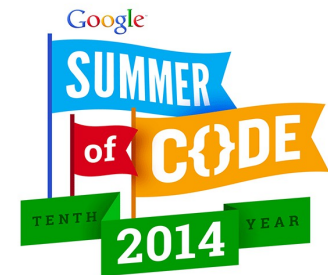
c1 <- TCanvas('c1', 'My Bessel')
bessel<- TF1('bessel', 'TMath::BesselI0(x)')
bessel$SetRange(0,2*pi)
bessel$Draw('') #plotting with ROOT's graphics system
c1$update()
```



Website



Tutorial



GSoC



What's next?

- To finish the design.
- To write a system that wraps ROOT's classes for R.
- To improve the R's package which loads dynamic libraries from ROOT.
- To improve the system that enables eventloops for both graphics system(R/ROOT).
- To enable support for cmake's compilation system.
- A lot of work wrapping ROOT's classes.
- To migrate to other platforms.
- Write documentation, examples, etc.
- More coffee and late nights...



Thanks

ROOT

An Object-Oriented
Data Analysis Framework

