Plan of Work Retreat

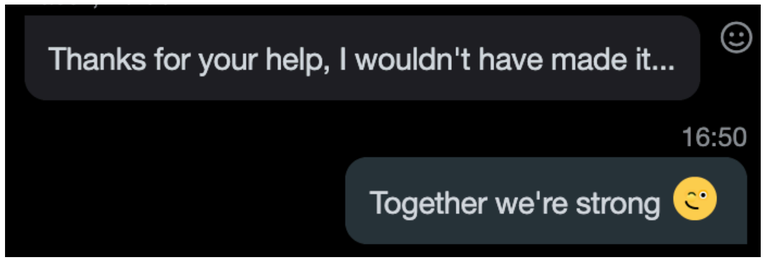
Axel, 2019-12-18

Plan of Work?

- List of items we want to accomplish
  - See https://root.cern/program-work for previous ones
  - 2019 detailed items here: https://docs.google.com/spreadsheets/d/1u5R-YIOMDb-SXqVa4acUFOIcIn2U4thH-Aa0l0kG-ag/edit?usp=sharing
- To discuss with experiments what we will work on
- To agree and with contributors who does what

Review Aspect

- Plan of work contains technical goals
- Team and team work is much more than that
- Retreat allows to look at the ***current*** bigger picture, review:
  - What we do
  - How we do it
- Today, no "sigh" please, but state your thoughts!



Today's Agenda

- Different main parts of ROOT championed by team members
  - Serves as condensed feedback, extracting themes
  - Basis for discussion and convergence on a plan of work
- Next is discussion with experiments and contributors
- Finally, EP-SFT presentation on Jan 27
- Also serves as input for CERN performance milestones

ROOT in 2020

Driving Factors

The best ROOT, as quickly as possible

Limited by available people and expertise

The Limits

- A question of
  - Compromises?

The Limits

- A question of
  - ~~Compromises?~~
  - Optimization!

Optimization

- We can decide on priority and relevance
- We need convincing arguments
  - To ***not do*** something
  - But even more to ***do*** something

Raison d'être (1)

- LHC and CERN as a whole is a physics production machine
- ROOT is a main engine in that clockwork
- ROOT's impact
  - Experiments' data, 1Exabyte and counting
  - High energy physics' central standard library, from framework to analysis, from histogramming to graphics

Raison d'être (2)

- Experiments' frameworks benefit from ROOT
- ROOT's most relevant impact is with approx 30'000 physicists
  - Improves physics results: uncertainties, parametrizations, convincing peers of the best analysis approach
  - Makes physicists more productive: less coding or debugging, more thinking and trying approaches
- Can justify even build system + test improvements, but 2nd order

Cost

- Whenever we invest we need to know ***why***
- Physics is what counts, not lines of code
  - Bugs that silently give the wrong result are a disaster
  - OTOH, each new line / feature introduced will incur ***30 years*** of integrated maintenance

Suggested Guidelines

- Reduce complexity: of ROOT to the outside, also of ROOT to the inside
- Reduce feature wish list by 1/2: agree on the key items (and do more if time permits)
- Visibility (and communication!) of changes matters

Project Feedback

Strengths

Support. Forum. Stability. I/O. @ the heart of HEP. Dedicated to HEP.
Large Datasets. Heavy-duty C++. Interpreter. Closeness to experiments.
Analysis and stat tools. Coherence. Versatility.

Tasks for Axel

- Need more developers.

Tasks for Axel

- Need more developers.
- Need more developers.
- Need more developers.
- Need more developers.
- Need more developers.
- Need more developers.
- Need more developers.
- Need more developers.
- Need more developers.

Tasks for Axel

- Need more developers.
- Succession planning (see also: "need more developers")
- Prioritize:
  - Bugs, maintainability, tests / testability, benchmarking, tooling R&D
  - ROOT Trainings

Today's Logistics

- Coffee breaks: serve yourself bananas + cookies! Coffee machine outside (Euros)
- Door lock: needs CMS access rights
- Invited for lunch @ L'Incontro
- Will end at 17:15 sharp; stick to agenda slots
  - overflow discussions into subsequent team meetings