Streaming Vector

2024-12-03

- Idea developed by Peter van Gemmeren
- Special purpose container that behaves like `std::vector` but uses a sliding window over the data
  - Useful to load huge vectors in memory-bounded environment
  - Application in DUNE
  - Can be relatively easily implemented using the RNTuple public API
    https://github.com/root-project/root/blob/570e576480f8427ee0c1d14c3c2a19d3ba78c981/tutorials/v7/ntuple/ntpl015_streaming_vector.C

- Questions:
  - For DUNE, is the simple implementation enough? Do we need bulk reading, caching, etc?
  - Is there more than one user for this class?
  - Where is the best place for useful data structures and other classes on top of the RNTuple core API?
    - The framework?
    - A tutorial?
    - An "add-on" repository within the github root project?
    - The ROOT source tree?
    - Things to consider:
      - Classes on top of the core API may have a different lifetime than RNTuple/ROOT at large
      - It can be substantial effort to build a *general* class, rather than solving a particular problem