Subject: Sorting objects
Posted by Marcel Tiemens on Fri, 08 Jan 2016 16:03:51 GMT

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Hello everyone, it's me again, with hopefully a simple problem:

- I have a tree with some objects in it (in my case, EmcClusters), where each event in the tree has some of these objects in it.
- Next, I would like to sort them all (not just within an event) in some way.
- And then write the sorted stream of objects back into a tree, where I group the objects in some way to form a new event for that tree.

That was it. I know there is something called FairRingSorter, but does that also work for objects that aren't hits? And one more thing, there is second branch with objects that are linked to the objects I would like to sort. Will the sorting respect those links?

Cheers,
Marcel

Subject: Re: Sorting objects
Posted by Tobias Stockmanns on Fri, 08 Jan 2016 16:36:44 GMT

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Dear Marcel,

what is your sorting parameter? TimeStamp? Is your data object (EmcCluster) derived from FairTimeStamp? If the answer is yes for all questions, than you can use the RingSorter. In addition I have written a MapSorter using std::map for sorting.

The output is a (TimeStamp) sorted data stream without an event structure. If you want to have them packaged into events you need to run an additional algorithm. There is a GapEventBuilder which looks for the time between two events and, if this is larger than a threshold, puts everything before in an event.

How are the links between your two branches done? FairLinks? Are this bidirectional links or single direction? From your sorted branch or from your unsorted branch? If it goes from your sorted branch to your unsorted one with FairLinks than they still hold.

Cheers,

Tobias

Subject: Re: Sorting objects
Posted by Marcel Tiemens on Mon, 11 Jan 2016 10:27:03 GMT

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Hi Tobias,

Thanks for replying so quickly. Yes, I would like to sort using the timestamp. I'm not sure if the

object derives from FairTimeStamp, but I think so, since the tasks creating the EmcClusters use calls like FairRunAna::Instance()->IsTimeStamp()... If this isn't related, can you tell me if there's an easy way to check this? And if it does use FairTimeStamp, then how do you use the RingSorter?

Thank you for the GapEventBuilder suggestion, I was aware that I would need to run an additional algorithm for the packaging.

I indeed intend to use FairLinks for the linking, but have no idea if it's bidirectional or not. I use something like cluster->SetLink(FairLink("EmcDigi", iDigi)) to make the links for each cluster (and use the corresponding AddLink function for digis that are added to this cluster). It would go from the sorted branch to the unsorted one.

Subject: Re: Sorting objects
Posted by Tobias Stockmanns on Mon, 11 Jan 2016 11:37:41 GMT
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Dear Marcel,

a few answers to your questions:
a) Does PndEmcCluster derive from FairTimeStamp? Yes, have a look at the header of PndEmcCluster (class PndEmcCluster : public FairTimeStamp).

b) How to use the RingSorter? Please have a look at the presentation I gave at the PANDA computing week in Torino 2012 :
https://indico.gsi.de/conferenceOtherViews.py?view=nicecompact&confI d=1602. As an alternative you can also use the PndMapSorter.

c)Are FairLinks bidirectional? No, they are not. They can only be used in one direction. In your SetLink you should also add the event number (via FairRootManager::GetEntryNr()) in the FairLinks otherwise the connection will be lost after sorting.

Cheers,

Tobias

Subject: Re: Sorting objects
Posted by Marcel Tiemens on Mon, 11 Jan 2016 13:26:29 GMT
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Aha. Thanks a lot for these answers, they're very helpful. Unfortunately, I can't access the presentation, I get the following message: The specified event with id "1602." does not exist or has been deleted. Perhaps you can email it to me?

Subject: Re: Sorting objects
Posted by Marcel Tiemens on Wed, 13 Jan 2016 10:26:13 GMT
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Okay, I tried copying what Philipp had done for the digi sorting (which is what you show in your presentation), replacing references to PndEmcDigi's with PndEmcCluster's, but then I get the error that the input branch is not registered, followed by a segmentation violation. The branch is in the input tree, so I don't understand what's wrong. The error is given by the FairRootManager when the SorterTask tries to get the input branch - beyond that I don't have a clue about what's going on.

Subject: Re: Sorting objects
Posted by Marcel Tiemens on Mon, 25 Jan 2016 15:58:17 GMT
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Some additional information: The BranchList, Folder (cbmout, with subfolders) and Tree (cbmsim, with the branch I want to access) are all there.

Does anyone know what could be wrong? Perhaps I'm missing something basic.

Subject: Re: Sorting objects
Posted by Tobias Stockmanns on Wed, 03 Feb 2016 13:12:56 GMT
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Dear Marcel,

can you please send the source code of your sorter (or better create an own folder in the development branch of SVN)?

Cheers,

Tobias

Subject: Re: Sorting objects
Posted by Marcel Tiemens on Thu, 19 May 2016 12:00:13 GMT
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Hi everyone,

An update and a follow-up on this topic. Update: With the help of Tobias, the sorting is working. Thanks again!

Then, the follow-up. After sorting the EmcCluster objects, I want to group them according to their timestamp. Each new group is put as an entry into a new ROOT tree - this seems to work. However, it looks like I lose the connection to the digis that belong to each cluster. That association is made when the clusters are created. After this, the cluster objects are sorted and regrouped, and I would expect that the association is maintained. But it looks like this is not the case. Does anyone know how to remedy this?