

## EDIT - task #3722

### Using @OrderColumn does not work in trees

09/16/2013 10:57 AM - Andreas Müller

<b>Status:</b>	Closed	<b>Start date:</b>	05/23/2022
<b>Priority:</b>	Priority14	<b>Due date:</b>	05/27/2022
<b>Assignee:</b>	Andreas Müller	<b>% Done:</b>	100%
<b>Category:</b>	cdmlib	<b>Estimated time:</b>	0:00 hour
<b>Target version:</b>	Release 5.32		
<b>Severity:</b>	major		
<b>Description</b>			
<p>For TaxonNode trees and feature node trees we tried do use @OrderColumn annotation for automated sortindex. However this doesn't seem to work in the selfreferencing environment of a node. Maybe the fact that null values must be allowed for the root node is one reason for it.</p> <p>@OrderColumn work for Classification.rootNodes.</p> <p>This seems to be fixed since hibernate 4.1.11/4.2.0. We still use 4.1.10. So maybe an upgrade is enough.</p> <p><a href="https://hibernate.atlassian.net/browse/HHH-5732">https://hibernate.atlassian.net/browse/HHH-5732</a></p> <p>@IndexColumn does not work because not every FeatureNode has a parent. But only NotNull will solve the problem (otherwise we will need a join table)</p> <p><a href="http://stackoverflow.com/questions/2956171/jpa-2-0-ordercolumn-annotation-in-hibernate-3-5">http://stackoverflow.com/questions/2956171/jpa-2-0-ordercolumn-annotation-in-hibernate-3-5</a></p> <p><a href="http://docs.jboss.org/hibernate/stable/annotations/reference/en/html_single/#entity-hibspec-collection-extratyp-indexbidir">http://docs.jboss.org/hibernate/stable/annotations/reference/en/html_single/#entity-hibspec-collection-extratyp-indexbidir</a></p> <p><a href="https://forum.hibernate.org/viewtopic.php?p=2392563">https://forum.hibernate.org/viewtopic.php?p=2392563</a></p> <p><a href="http://opensource.atlassian.com/projects/hibernate/browse/HHH-4390">http://opensource.atlassian.com/projects/hibernate/browse/HHH-4390</a></p> <p>reading works, but writing doesn't</p> <p>The reason why the automated version is better is that we need some additional when adding, removing etc. nodes (e.g. in addChild(child, index) which is not nice. However it is not critical as it works the way it is implemented now.</p> <p>NOTE: remove the comments in both classes when this ticket is fixed</p> <p>see also #3719, #2031, #4200</p>			
<b>Related issues:</b>			
Related to EDIT - task #9359: Update cdmlib, taxeditor, cdmsserver etc. depend...		<b>Closed</b>	
Related to EDIT - task #8127: [Reminder] to check if Hibernate Null Value bug...		<b>Discussed</b>	05/23/2022 05/27/2022
Related to EDIT - task #10067: Update to hibernate 5.4 (or higher) and hibern...		<b>Closed</b>	05/23/2022 06/01/2022
Related to EDIT - bug #10101: Correct mapping and handling of sorted tree str...		<b>In Progress</b>	

### Associated revisions

#### Revision 56edf3ba - 05/24/2022 07:44 PM - Andreas Müller

ref #10067, ref #3722, ref #8127 adapt handling of sortIndex after upgrade to hibernate5.2

#### Revision 2e76ec21 - 06/01/2022 01:20 PM - Andreas Müller

ref #10067, ref #3722 add parent.childNodes to taxonNode property path to allow sortindex computation

- should be preliminary

#### Revision 77c9b8f8 - 06/17/2022 05:26 PM - Andreas Müller

ref #3722, ref #8127, ref #10067 fully remove sortindex updating and collection null handling workaround from TaxonNode

**Revision 5d6e72c2 - 06/17/2022 07:46 PM - Andreas Müller**

ref #10067, ref #3722 reenable and adapt readPolytomousKeyDataFromNodes() test

**Revision 7d595ebb - 06/17/2022 08:14 PM - Andreas Müller**

ref #3722, ref #10067, ref #8127 remove childnodes nullcheck in ChecklistEditorInput

**Revision e1fe2afa - 06/24/2022 01:19 PM - Andreas Müller**

ref #10067, ref #3722, ref #8127 fully remove TaxonNode sortindex code from TaxonNode and CdmLight

**Revision 172c0b19 - 06/24/2022 02:42 PM - Andreas Müller**

ref #10067, ref #3722, ref #8127 preliminary add sortIndex field again to avoid problem with model cache in TaxEditor

**Revision 7fd76b2b - 06/24/2022 03:13 PM - Andreas Müller**

ref #10067, ref #3722, ref #8127 preliminary add sortIndex field again to avoid problem with model cache in TaxEditor (cont. fix JAXB issue)

**Revision 3dc1adc5 - 07/05/2022 01:24 PM - Andreas Müller**

ref #10067, ref #3722, ref #8127 remove all manual sortindex and null value handling from term node

**Revision 5c45a99a - 07/05/2022 01:28 PM - Andreas Müller**

ref #10067, ref #3722, ref #8127 remove all manual sortindex and null value handling from polytomous key (node)

**Revision 3b4b9e2f - 07/05/2022 01:52 PM - Andreas Müller**

ref #10067, ref #3722, ref #8127 remove null value handling from PolytomousKeyGraphContentProvider in taxEditor

**Revision 35105144 - 07/05/2022 10:20 PM - Andreas Müller**

ref #10067, ref #3722, ref #8127 remove remaining sortindex handling from polytomous key node

**Revision 5e19d1f7 - 07/27/2022 09:38 AM - Andreas Müller**

ref #3722, ref #8127, ref #10067 fully remove sortindex and OrderBy comments

**Revision c8d47a7c - 07/27/2022 08:56 PM - Andreas Müller**

ref #3722, ref #8127, ref #10067, ref #5536 add orphan removal to ordered lists to avoid null value, sortindex and record not deleted issues

**Revision 88b53ac2 - 07/27/2022 09:08 PM - Andreas Müller**

ref #3722, ref #8127, ref #5536 add test for PKNode merge

**Revision 3bfeb049 - 07/27/2022 09:26 PM - Andreas Müller**

ref #3722, ref #8127, ref #5536 remove sortindex in jaxb annotations for tree lists

**Revision 7161f1ec - 07/27/2022 11:44 PM - Andreas Müller**

ref #3722, ref #8127, ref #5536 preliminary make TaxonNode.children not orphanRemoval again

**Revision a405f029 - 07/28/2022 12:29 AM - Andreas Müller**

ref #3722, ref #8127, ref #5536 remove sortIndex field check from SortIndexUpdaterWrapperTest

**Revision 473eee48 - 07/28/2022 12:47 AM - Andreas Müller**

ref #3722, ref #8127, ref #5536 preliminary make TermNode.children not orphanRemoval again

**Revision 8f79b3aa - 07/28/2022 04:47 PM - Andreas Müller**

ref #3722, ref #8127, ref #5536, ref #10101 adapt test for removing PKNode and add new test for moving node and add LIE handling for node removal

**Revision cb923587 - 07/29/2022 02:04 PM - Andreas Müller**

ref #10101, ref #8127, ref #3722, ref #5536 remove HHH\_9751\_Util class as it is not used anymore

## History

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**#1 - 02/04/2021 09:40 PM - Andreas Müller**

- Related to task #9359: Update cdmlib, taxeditor, cdmsserver etc. dependencies added

**#2 - 11/23/2021 08:45 PM - Andreas Müller**

- Description updated

- Target version changed from cdmlib - Old Next Major Release to Unassigned CDM tickets

**#6 - 05/20/2022 07:30 PM - Andreas Müller**

- Description updated

**#7 - 05/23/2022 10:57 AM - Andreas Müller**

- Target version changed from Unassigned CDM tickets to Release 5.32

sortIndex needs to be handled newly in hibernate5.2 so we can try to handle this ticket, too.

**#8 - 05/23/2022 03:56 PM - Andreas Müller**

- Due date set to 05/27/2022

- Status changed from New to In Progress

- Start date set to 05/23/2022

- % Done changed from 0 to 20

**#9 - 05/23/2022 04:19 PM - Andreas Müller**

- Related to task #8127: [Reminder] to check if Hibernate Null Value bug still exists added

**#10 - 05/25/2022 10:49 AM - Andreas Müller**

- Status changed from In Progress to Resolved

- % Done changed from 20 to 50

Probably solved, still needs intensive testing and code cleanup.

**#11 - 05/25/2022 10:49 AM - Andreas Müller**

- Private changed from Yes to No

**#12 - 05/25/2022 10:55 AM - Andreas Müller**

- Related to task #10067: Update to hibernate 5.4 (or higher) and hibernate search 5.11 and lucene 5.5 added

**#13 - 06/22/2022 07:35 PM - Andreas Müller**

- Assignee changed from Andreas Müller to Katja Luther

- % Done changed from 50 to 70

Please review.

**#14 - 06/23/2022 10:45 AM - Katja Luther**

- File Screenshot 2022-06-23 104359.png added

For polytomouskey nodes there are still null values, after creating a new alternativ and saving the rootnode contains three null values at the beginning of the array.

```
protected void assertElementsNotNull(Object[] elements) {
    Assert.assertNotNull(elements);
    for (int i = 0, n = elements.length; i < n; ++i) {
        Assert.assertNotNull(elements[i]);
    }
}

if (InternalPolicy.
    && elements
    CustomHashtable
    for (int i = 0;
        Object elem
        Object old
        if (old !=
            String
```

```
elements= Object[6] (id=496)
  [0]= null
  [1]= null
  [2]= null
  [3]= PolytomousKeyNode (id=499)
  [4]= PolytomousKeyNode (id=510)
  [5]= PolytomousKeyNode (id=367)
```

```
Problems Progress
taxeditor.product [Eclipse Application
org.eclipse.equinox.lau
org.eclipse.equinox.lau
org.eclipse.equinox.lau
: org.eclipse.core.runtim
org.eclipse.core.runtim
org.eclipse.core.runtim
org.eclipse.jface.viewe
org.eclipse.jface.viewe
```

```
[null, null, null, PolytomousKeyNode#163cf68ef0c3-b2a1-48e3-8eb4-a8b5835k
```

**#15 - 06/23/2022 12:20 PM - Andreas Müller**

Katja Luther wrote in [#note-14](#):

For polytomouskey nodes there are still null values, after creating a new alternativ and saving the rootnode contains three null values at the beginning of the array.

Did you also test for TaxonNodes? PolytomousKeyNodes maybe still need cleanup. I cleanup TaxonNodes already and tested a bit with TaxEditor and did not get any errors. But we definitely need more testing and also debugging like you did to verify no null values exist.

Which data did you test?

**#16 - 06/23/2022 01:06 PM - Katja Luther**

Andreas Müller wrote in [#note-15](#):

Katja Luther wrote in [#note-14](#):

For polytomouskey nodes there are still null values, after creating a new alternativ and saving the rootnode contains three null values at the beginning of the array.

Did you also test for TaxonNodes? PolytomousKeyNodes maybe still need cleanup. I cleanup TaxonNodes already and tested a bit with TaxEditor and did not get any errors. But we definitely need more testing and also debugging like you did to verify no null values exist.

Which data did you test?

Yes TaxonNodes work as expected, I tested creation of a new node, moving and deleting a node.

I tested with local copy of caryophyllales\_spp

**#17 - 07/05/2022 06:15 PM - Andreas Müller**

SQL for testing persisted Polytomous Key Nodes:

```
SELECT pkn.id, pkn.created, nodenumber, KEY_id, parent_id, sortindex
FROM PolytomousKeyNode pkn
ORDER BY key_id, parent_id, sortindex
```

**#18 - 07/05/2022 06:15 PM - Andreas Müller**

Term trees/nodes also seem to work. Katja, can you please double check this?

**#19 - 07/06/2022 09:56 AM - Katja Luther**

Andreas Müller wrote in [#note-18](#):

Term trees/nodes also seem to work. Katja, can you please double check this?

I tested term trees with moving nodes, creating new nodes and deleting nodes and everything works as expected.

## #20 - 07/06/2022 10:11 AM - Andreas Müller

On PolytomousKeys:

- added a fresh PK
- added a new top level node (like always) results in a sortindex 1 for this node but should be 0
- reverting this to 0 in DB, loading the key again, adding an alternative and save results in sortindexes 2 and 3 for the resulting 2 alternatives
- reverting this again to 0 and 1 in DB, loading the key, adding a further alternative and save results in sortindexes 3, 4 and 5 for the resulting 3 alternatives.
- only changing the statement for the 3rd alternative and saving again result in the following exception which seems to show that the data already has the null values in the list. Is this because the save/merge result is merged into the session or is there something wrong in the node handling it self on taxeditor side?

```
last remote method : https://test.e-taxonomy.eu:443/cdmserver/rem_conf_am/remoting/polytomouskey.service
last remote request client time : 2022-07-06T10:02:45.609
last remote request response header time : Wed, 06 Jul 2022 08:02:45 GMT
client error time : 2022-07-06T10:04:13.387
login : admin
editor version : 5.32.0.202207052247
server : test.e-taxonomy.eu (edit-test) / rem_conf_am
schema version : 5.29.0.0.20211122
os : Windows Server 2012 R2 6.3 amd64
java : 1.8.0_131
org.eclipse.core.runtime.AssertionFailedException: null argument:
    at org.eclipse.core.runtime.Assert.isNotNull (Assert.java:85)
    at org.eclipse.core.runtime.Assert.isNotNull (Assert.java:73)
    at org.eclipse.jface.viewers.StructuredViewer.assertElementsNotNull (StructuredViewer.java:586)
    at org.eclipse.jface.viewers.StructuredViewer.getRawChildren (StructuredViewer.java:1002)
    at org.eclipse.jface.viewers.ColumnViewer.getRawChildren (ColumnViewer.java:701)
    at org.eclipse.jface.viewers.AbstractTableViewer.getRawChildren (AbstractTableViewer.java:1037)
    at org.eclipse.jface.viewers.StructuredViewer.getFilteredChildren (StructuredViewer.java:907)
    at org.eclipse.jface.viewers.StructuredViewer.getSortedChildren (StructuredViewer.java:1084)
    at org.eclipse.jface.viewers.AbstractTableViewer.internalRefreshAll (AbstractTableViewer.java:666)
    at org.eclipse.jface.viewers.AbstractTableViewer.internalRefresh (AbstractTableViewer.java:614)
    at org.eclipse.jface.viewers.AbstractTableViewer.internalRefresh (AbstractTableViewer.java:606)
    at org.eclipse.jface.viewers.StructuredViewer.lambda$0 (StructuredViewer.java:1519)
    at org.eclipse.jface.viewers.StructuredViewer.preservingSelection (StructuredViewer.java:1458)
    at org.eclipse.jface.viewers.StructuredViewer.preservingSelection (StructuredViewer.java:1419)
    at org.eclipse.jface.viewers.StructuredViewer.refresh (StructuredViewer.java:1519)
    at org.eclipse.jface.viewers.ColumnViewer.refresh (ColumnViewer.java:523)
    at org.eclipse.jface.viewers.StructuredViewer.refresh (StructuredViewer.java:1478)
    at eu.etaxonomy.taxeditor.editor.key.polytomous.e4.PolytomousKeyListEditorE4.changed (PolytomousKeyListEdit
orE4.java:305)
    at eu.etaxonomy.taxeditor.view.e4.AbstractCdmEditorPartE4.changed (AbstractCdmEditorPartE4.java:198)
    at eu.etaxonomy.taxeditor.view.e4.AbstractCdmDataViewer.markViewPartDirty (AbstractCdmDataViewer.java:110)
    at eu.etaxonomy.taxeditor.view.e4.details.DetailsViewerE4.markViewPartDirty (DetailsViewerE4.java:232)
    at eu.etaxonomy.taxeditor.view.e4.AbstractCdmDataViewer$1.dirtyStateChanged (AbstractCdmDataViewer.java:80)
    at org.eclipse.ui.forms.AbstractFormPart.markDirty (AbstractFormPart.java:93)
    at eu.etaxonomy.taxeditor.view.detail.CdmSectionPart.propertyChange (CdmSectionPart.java:206)
    at eu.etaxonomy.taxeditor.ui.element.AbstractCdmFormElement.firePropertyChangeEvent (AbstractCdmFormElement
.java:230)
    at eu.etaxonomy.taxeditor.ui.element.MultilanguageTextElement.propertyChange (MultilanguageTextElement.java
:210)
    at eu.etaxonomy.taxeditor.ui.element.KeyStatementElement.propertyChange (KeyStatementElement.java:96)
    at eu.etaxonomy.taxeditor.ui.element.AbstractCdmFormElement.firePropertyChangeEvent (AbstractCdmFormElement
.java:230)
    at eu.etaxonomy.taxeditor.ui.element.TextWithLabelElement.modifyText (TextWithLabelElement.java:180)
    at eu.etaxonomy.taxeditor.ui.element.LanguageStringWithLabelElement.modifyText (LanguageStringWithLabelElem
ent.java:93)
    at org.eclipse.swt.widgets.TypedListener.handleEvent (TypedListener.java:180)
    at org.eclipse.swt.widgets.EventTable.sendEvent (EventTable.java:84)
    at org.eclipse.swt.widgets.Display.sendEvent (Display.java:4418)
    at org.eclipse.swt.widgets.Widget.sendEvent (Widget.java:1079)
    ...
```

## #21 - 07/08/2022 10:53 PM - Andreas Müller

- Status changed from Resolved to Feedback

- Assignee changed from Katja Luther to Andreas Müller

**#22 - 07/27/2022 09:13 AM - Andreas Müller**

- Status changed from Feedback to Closed

- % Done changed from 70 to 100

This ticket is more about @OrderColumn generally does not work which is not the case. The remaining issue is a NULL-Value issue related to #5536 which is more or less independent of the @OrderColumn itself. We removed the workaround created for #5536 as we hoped that the issue was solved on hibernate side ([#8127](#), <https://hibernate.atlassian.net/browse/HHH-9751>), which is not the case as HHH-9751 seems to be closed only as duplicate and the ticket it duplicates <https://hibernate.atlassian.net/browse/HHH-9979> is still open. And anyway it is not sure if HHH-9979 is the reason for our problem at all.

So I close this ticket and handle the issue in [#8127](#) or a newly created ticket.

**#23 - 07/28/2022 09:27 AM - Andreas Müller**

- Related to bug #10101: Correct mapping and handling of sorted tree structures added

**Files**

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Screenshot 2022-06-23 104359.png	38.9 KB	06/23/2022	Katja Luther
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