

Derived Attributes

Derived attributes are user-defined attributes developed for a particular project. There are several different kinds of derived attributes, which are created based on primary attributes, i.e. raw data sent from the Online Information System.

- **Numeric ranges** refer to a primary attribute and indicate which samples lie in a numerical range
- **Lists** refer to a primary attribute and indicate which samples match any of a list of names
- **Double lists** refer to two primary attributes, and match samples from one list depending on the value in the other list
- **Deltas** refer to a primary attribute and use a table to flag cases for which there has been a significantly abnormal result or a significant change in values
- **Calculated values** are derived from combinations of primary attributes using the condition functions
- **Text attributes** are used for simple matching of text samples against lists of known keywords
- **Merged attributes** combine two or more attributes received from the Online Information System, possibly using different units, into a single attribute
- **Group attributes** refer to a collection of related primary attributes
- **Set attributes** also refer to a collection of related primary attributes, but where membership in the set is determined by conditions
- **Episode attributes** are used to make complex true or false assertions about individual episodes in a case and may involve multiple primary attributes

Uses of Derived Attributes

Derived attributes can be used in many different ways. The True, False or specific result of each derived attribute can then be used in rule building. This allows rules to be built that are based on unlimited values for each primary attribute.

Below are some examples of how each type of derived attribute can be used:

- **Numeric ranges**
 - Multiple ranges relating to one analyte can be created such as slightly, moderately and grossly elevated Glucose
 - Specific age ranges such as paediatric or child.
- **Lists**
 - Specific lists grouping doctor codes together such as specialists or GP's.
 - Lists grouping hospital or location codes.
- **Double lists**
 - Double lists to check requesting doctor codes against copy doctor codes for the same request.
 - Double lists to check billing codes against account types.
- **Deltas**
 - Deltas can be set for analytes that have different ranges depending not only on age and sex but any other parameter such as pregnancy, location, previous results etc.

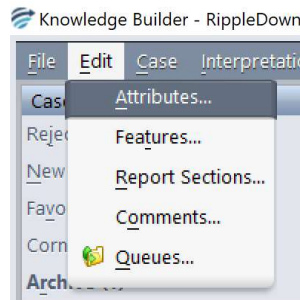
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- Deltas can be used to indicate changes in results in percentage or absolute and have different limits set for increases and decreases.
- **Calculated values**
 - Calculated attributes can be used for almost any type of function using any primary or derived attribute result.
 - Calculated attributes can look for trends in results such as an increase in Glucose results over the last 4 results.
 - Calculated attributes can be used to calculate eGFR, HDL/LDL ratios or any other calculated result.
- **Text attributes**
 - Text attributes can be used to indicate history of medication such as lipid or thyroid therapy within the clinical notes.
 - Text attributes can be used to indicate pregnancy or history of disease such as diabetes.
- **Merged attributes**
 - Used to combine results of the same analyte with different units or methods such as moving Creatinine results from mmol/L to umol/L.
 - Used to merge results of the same analyte when changing from one method to another such as Albumin BCG to Albumin BCP.
- **Group attributes**
 - Used to group primary attributes together which may have a similar outcome such as the combination of nut or animal allergens.
 - Group attributes can be used to indicate the presence or absence of certain tests for example checking for the presence of a 3 or 5 part differential.
- **Set attributes**
 - Used to indicate results from groups that satisfy certain conditions such as LFT results outside the normal range or Nut allergens above the a cut off.
- **Episode attributes**
 - Episode attributes can be used to indicate certain characteristics for each episode of the case such as Possible Iron Overload by using the Iron, Ferritin and Transferrin Saturation results.
 - Can be used in conjunction with other derived attributes to give episode related outcomes such as Gestational diabetes using text attributes interrogating clinical notes along with Glucose results.

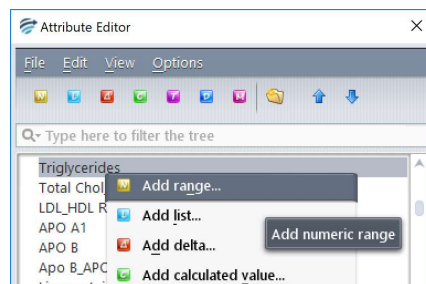
Creating Derived Attributes

To create a derived attribute, go to Edit | Attributes

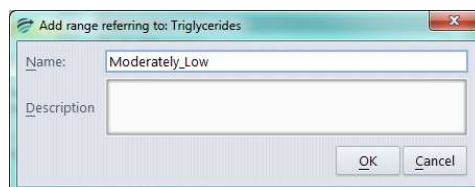


Create a Numeric Range Derived Attribute

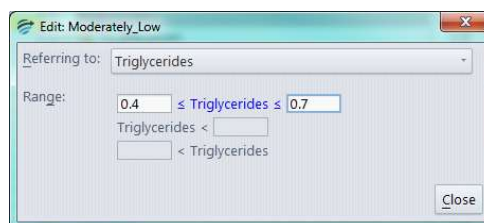
1. Select the Attribute for which the Numeric Range Derived Attribute will be linked.
2. Click on the icon  or right click on the Attribute and select Add range...



3. Enter a name for the Numeric Range Derived Attribute and click OK.



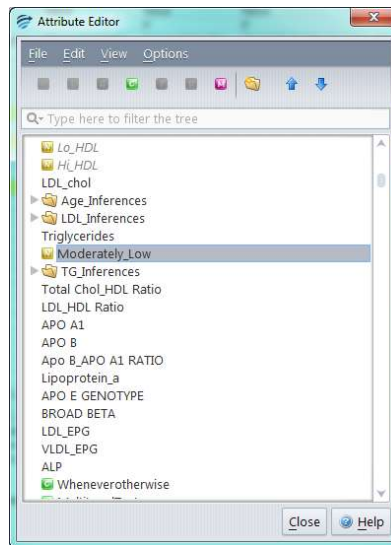
4. Add the result range for the selected Attribute to be included in the Numeric Range Derived Attribute.




5. Click on Close. The Numeric Range derived Attribute will now appear in the list.

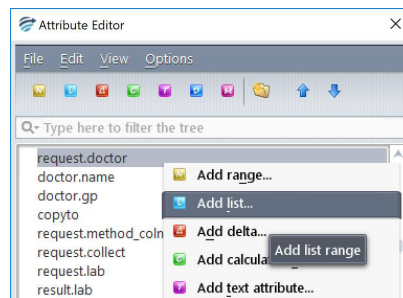
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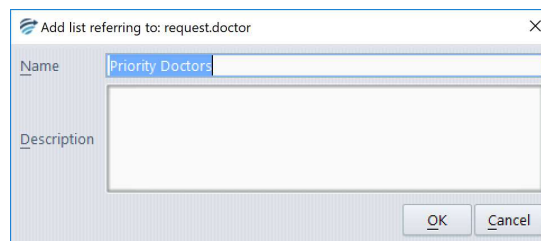


Create a List Derived Attribute

1. Select the Attribute for which the List Derived Attribute will be linked.
2. Click on the icon  or right click on the Attribute and select Add list...



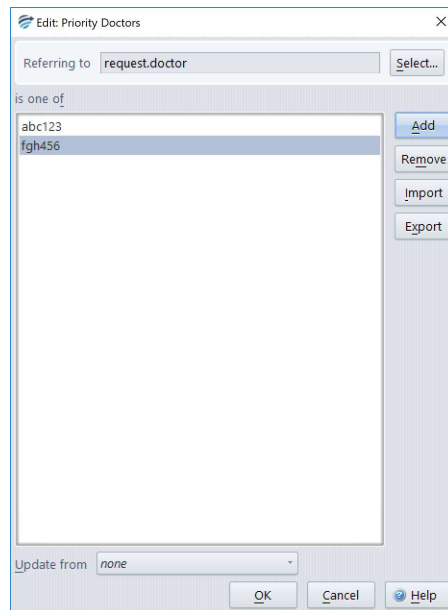
3. Enter a name for the List Derived Attribute and click OK.



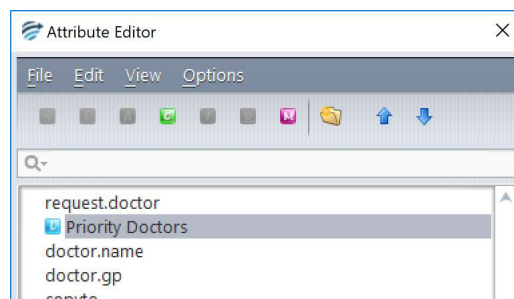
4. Add the entries for the selected Attribute to be included in the List Derived Attribute. Each entry must be entered one at a time.

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


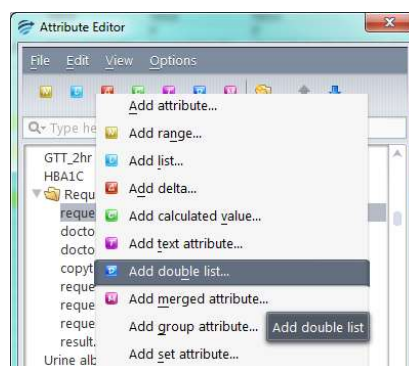
5. Click on OK. The List derived Attribute will now appear in the attribute list.



Note: lists can be imported and exported if required using notepad

Create a Double List Derived Attribute

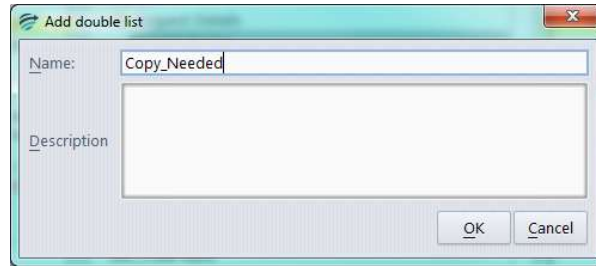
1. Select the Attribute for which the Double List Derived Attribute will be linked.
2. Click on the icon  or right click on the Attribute and select Add double list...



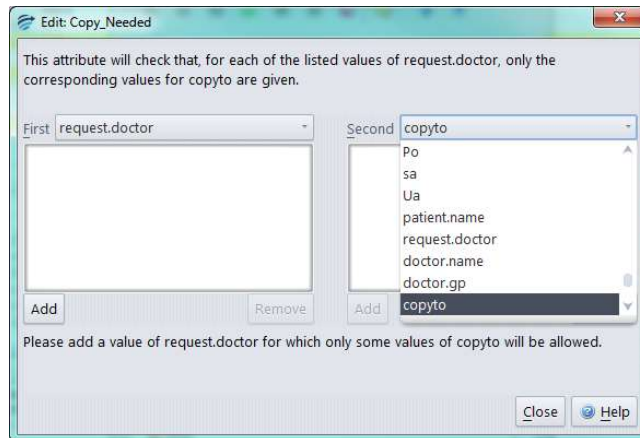
3. Enter a name for the Double List Derived Attribute and click OK.

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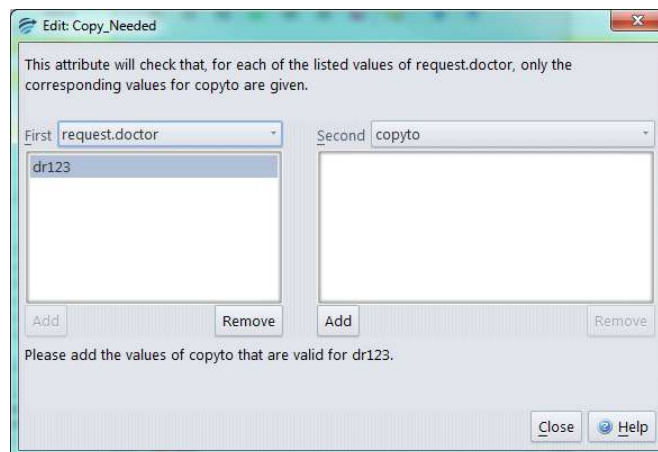
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4. Select the second attribute for which the first attribute will be checked against from the drop down box "Second"



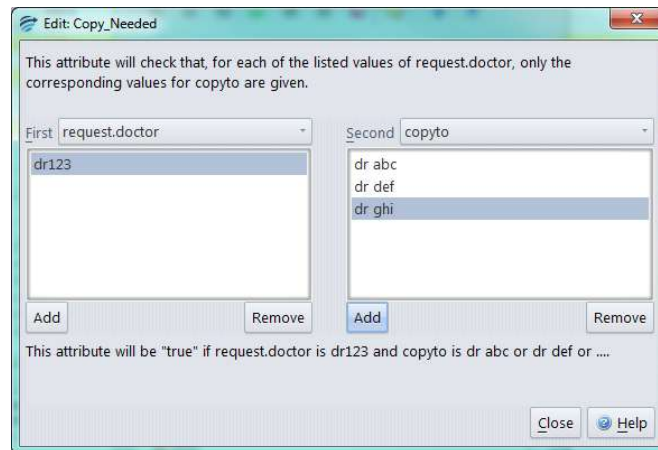
5. Click on Add under the First attribute column and add the first entry.



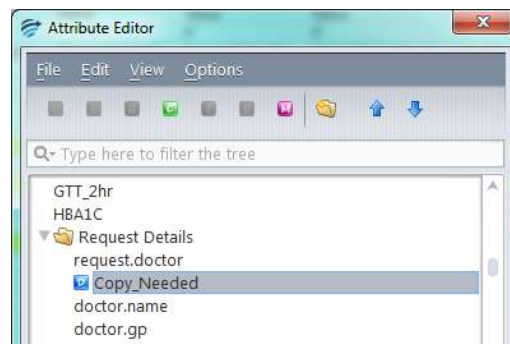
6. For each entry in the primary list, enter each applicable entry for the second list.

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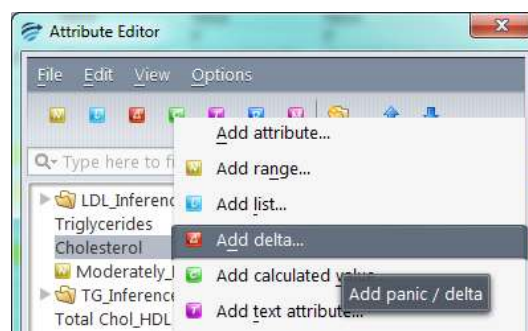


7. Click on Close. The List derived Attribute will now appear in the list.



Create a Panic/Delta Derived Attribute

1. Select the Attribute for which the Panic/Delta Derived Attribute will be linked.
2. Click on the icon  or right click on the Attribute and select Add delta...



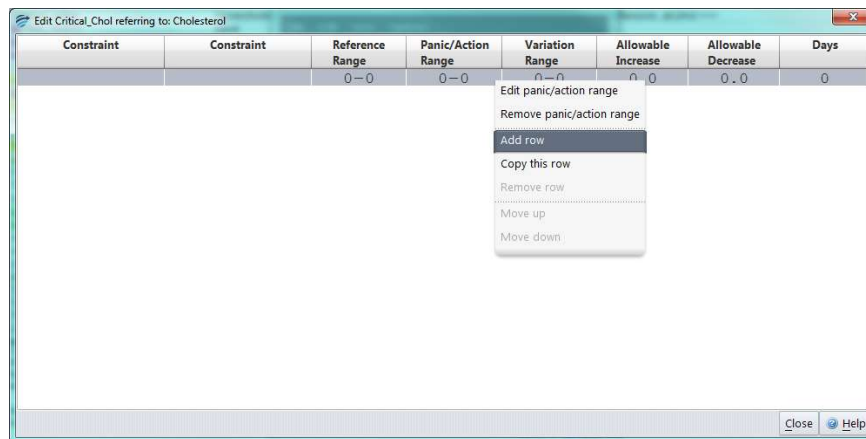
3. Enter a name for the Panic/Delta Derived Attribute and click OK.

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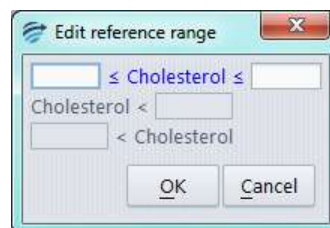
- Right click and select Add a row to create a new entry in the Panic/Delta derived attribute.



- Right click in the Constraint column to add a constraint to the Panic/Delta derived attribute.



- Right click in the Reference Range column to add a reference range to the Panic/Delta derived attribute.



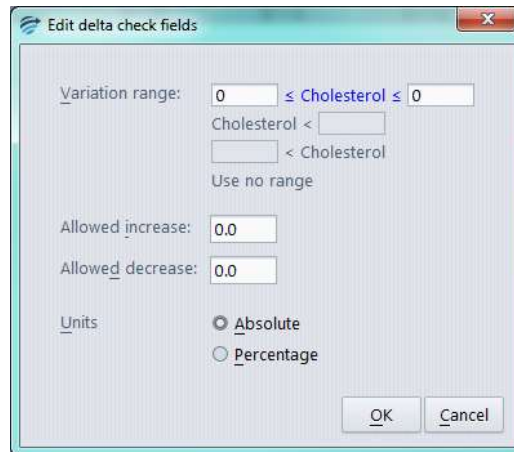
- Right in the Panic/Action Range column to add a critical range to the Panic/Delta derived attribute.

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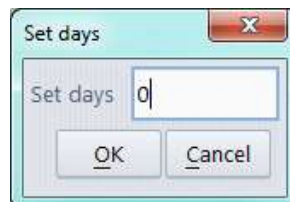
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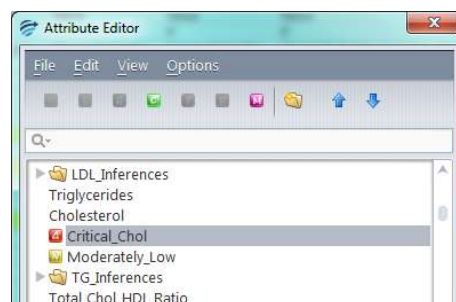
- Right in the Variation Range/Allowable Increase/Allowable Decrease columns to add a delta check to the Panic/Delta derived attribute.



- Right in the Days column to set the days applicable for the delta checks for the Panic/Delta derived attribute.




- Click on Close. The Panic/Delta derived Attribute will now appear in the list.

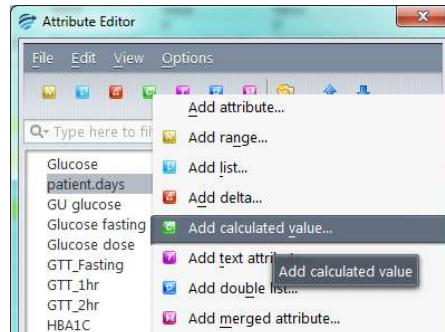


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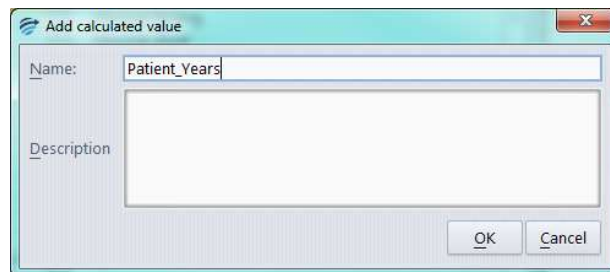
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Create a Calculated Value Derived Attribute

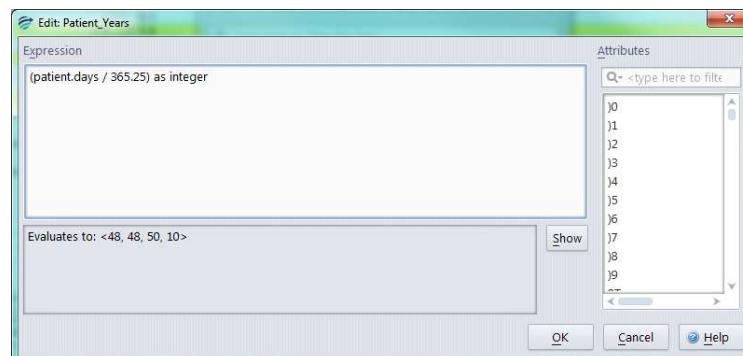
1. Select the Attribute at which the Calculated Value Derived Attribute will be positioned.
2. Click on the icon  or right click on the Attribute and select Add calculated value...



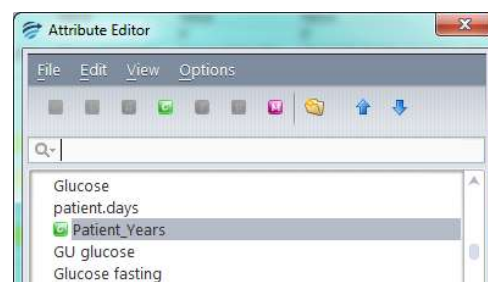
3. Enter a name for the Calculated Value Derived Attribute and click OK.



4. Add the syntax for the Calculated Value Derived Attribute.




5. Click on Close. The Calculated Value derived Attribute will now appear in the list.

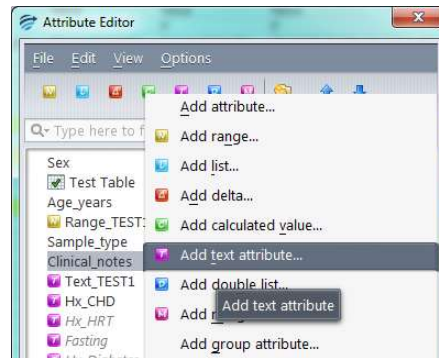


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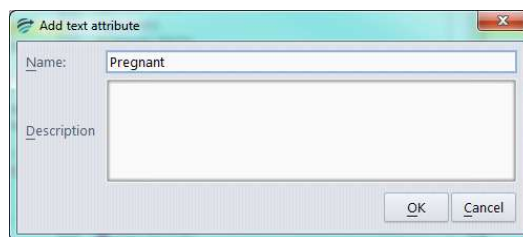
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Create a Text Derived Attribute

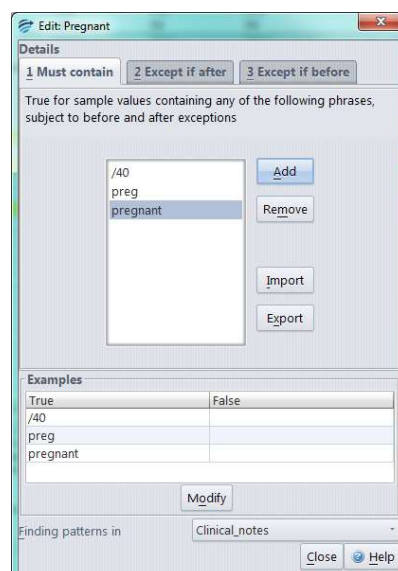
1. Select the Attribute for which the Text Derived Attribute will be linked.
2. Click on the icon  or right click on the Attribute and select Add text attribute...



3. Enter a name for the List Derived Attribute and click OK.



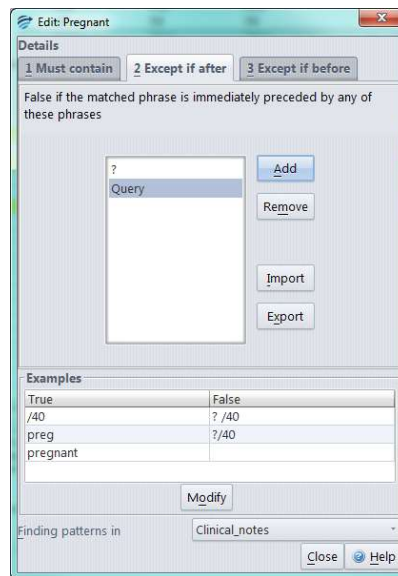
4. Add the text strings for the selected Attribute to be included in the Text Derived Attribute. Each entry must be entered one at a time.



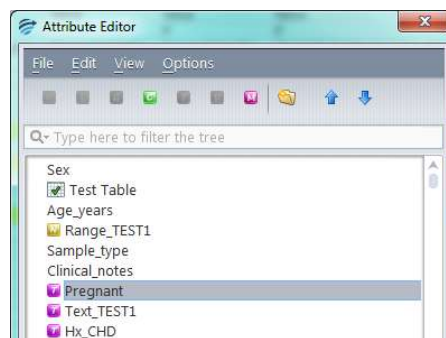
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5. Add any exceptions for before or after the text strings to be excluded from the Text Derived Attribute.




6. Click on Close. The Text derived Attribute will now appear in the list.



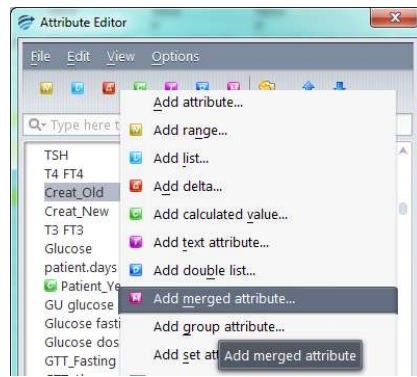
Note: text values can be imported and exported if required using notepad

Create a Merged Derived Attribute

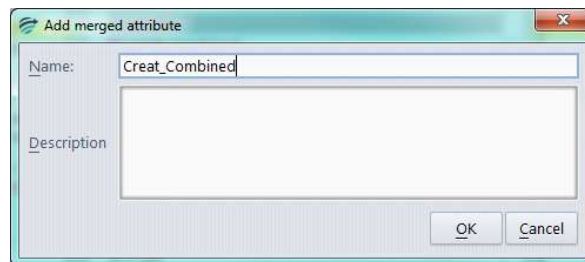
1. Select the Attribute at which the Merged Attribute will be positioned.
2. Click on the icon  or right click on the Attribute and select Add merged attribute...

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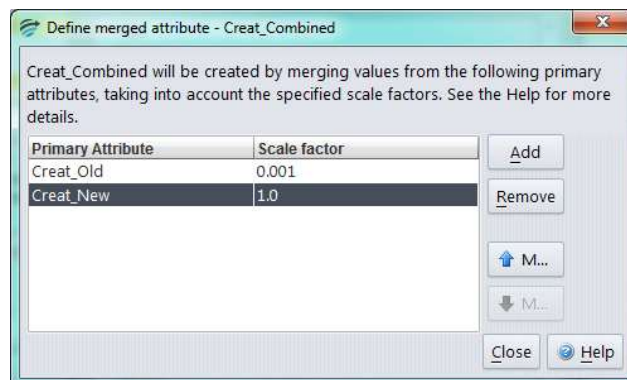
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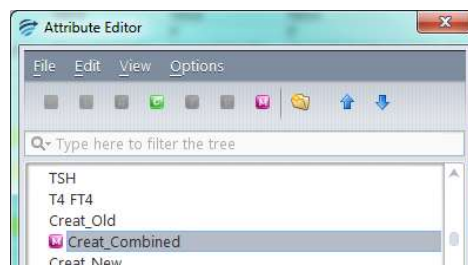
3. Enter a name for the Merged Derived Attribute and click OK.



4. Add each Attribute to be included in the Merged Derived Attribute. Select the Attribute from the drop down menu and enter the scale factor to be applied.

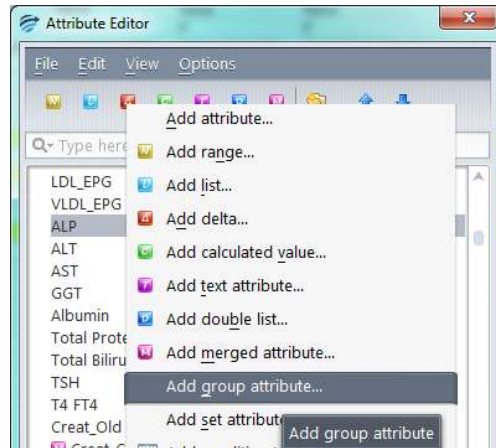


5. Click on Close. The Merged derived Attribute will now appear in the list.

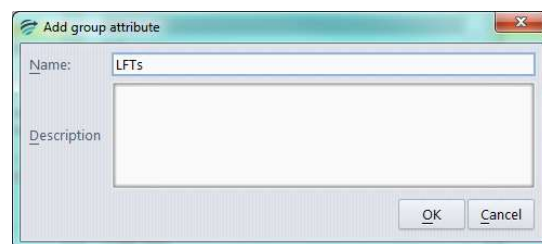


Create a Group Derived Attribute

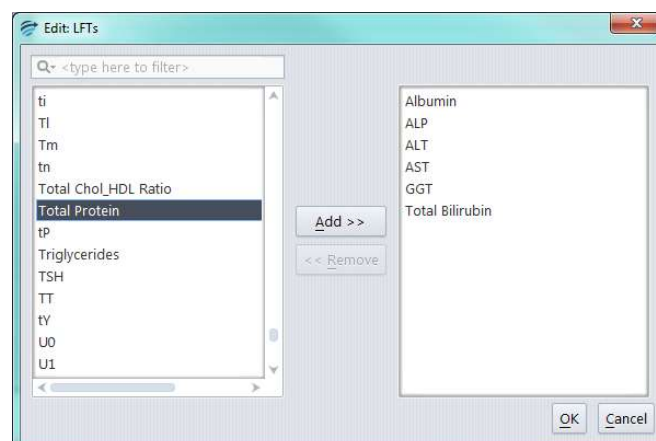
1. Select the Attribute at which the Group Attribute will be positioned.
2. Right click on the Attribute and select Add group attribute...



3. Enter a name for the Group Derived Attribute and click OK.



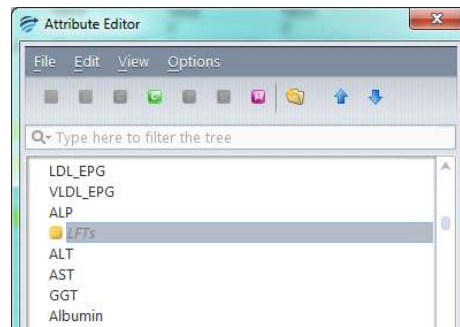
4. Add each Attribute to be included in the Group Derived Attribute. Select the Attribute from the left hand list and enter click Add to move it to the right hand list.



5. Click on OK. The Group derived Attribute will now appear in the list.

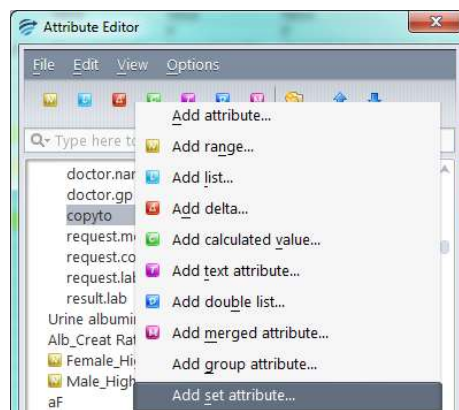
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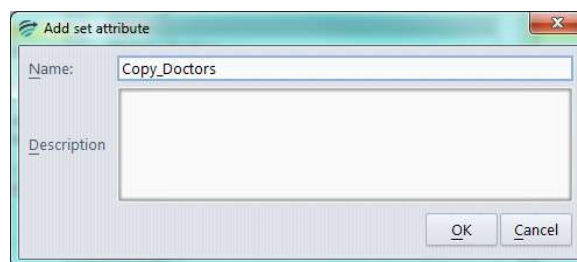


Create a Set Derived Attribute

1. Select the Attribute at which the Set Attribute will be positioned.
2. Right click on the Attribute and select Add set attribute...



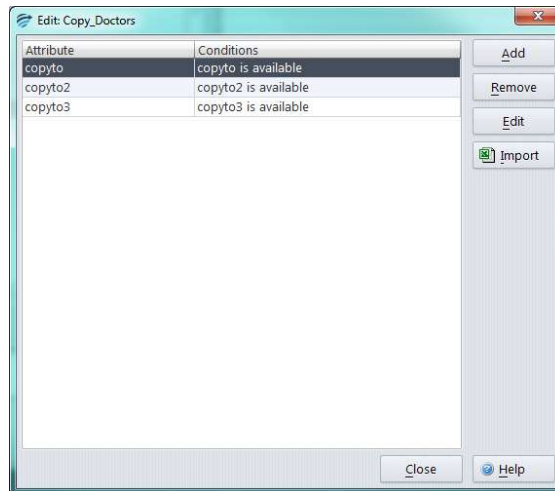
3. Enter a name for the Set Derived Attribute and click OK.



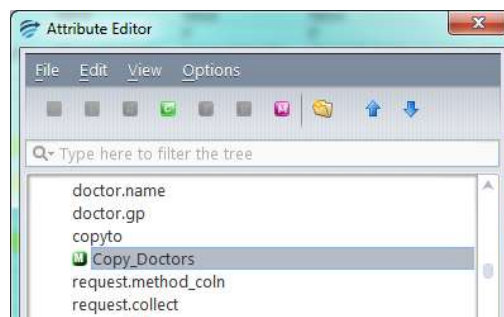
4. Add each Attribute to be included in the Set Derived Attribute along with the conditions applicable for its addition.

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5. Click on OK. The Set derived Attribute will now appear in the list.

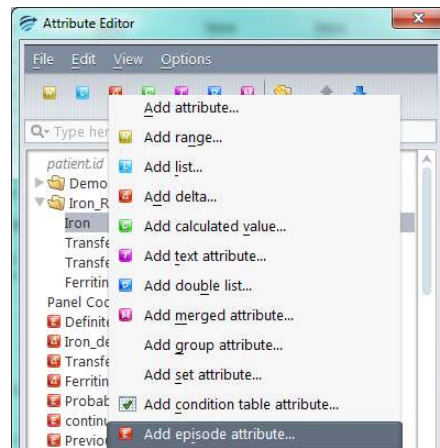


Create a Episode Derived Attribute

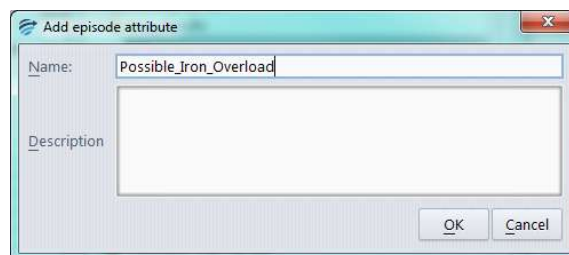
1. Select the Attribute at which the Episode Attribute will be positioned.
2. Right click on the Attribute and select Add episode attribute...

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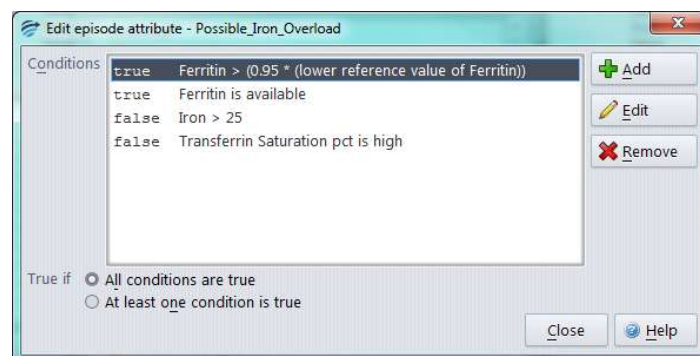
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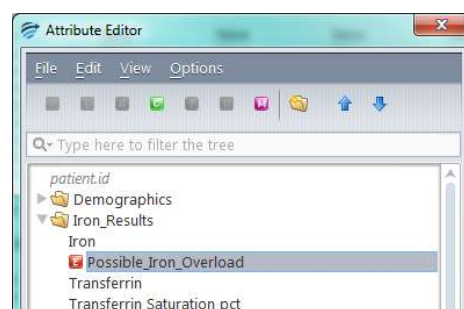
3. Enter a name for the Episode Derived Attribute and click OK.



4. Add each condition to be used for the Episode Derived Attribute.



5. Click on Close. The Episode derived Attribute will now appear in the list.



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