The IDE’s Object Editor and Class Grid

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Topics

- What are the Object Editor and the Class Grid?
- When are they useful?
- How to create them?
- How to customize them?
- Tools like the class interface editor.

The examples come from

The code is in
<allegro-directory>/examples/cg/object-editors-and-class-grids.cl
The object-editor and class-grid display class instances and slot values

- Created originally as an interface to AllegroCache databases (www.franz.com/products/allegrocache/) but can be used with any class
- We use the example of a set of medical patients
Here is the class-grid

We see slot names across the top and each row is an instance:

<table>
<thead>
<tr>
<th>First Name</th>
<th>Family Name</th>
<th>Access</th>
<th>Birth Date</th>
<th>Unpaid Balance</th>
<th>Friendly?</th>
<th>Fave Color</th>
<th>Best Friend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sarah</td>
<td>Somebody</td>
<td></td>
<td>1963/01/15</td>
<td>34.89</td>
<td></td>
<td>Blue</td>
<td>Anybody, Andy</td>
</tr>
<tr>
<td>Andy</td>
<td>Anybody</td>
<td></td>
<td>1971/03/02</td>
<td>.89</td>
<td></td>
<td>Yellow</td>
<td>Loom, Alice</td>
</tr>
<tr>
<td>Alice</td>
<td>Loom</td>
<td></td>
<td>1967/05/17</td>
<td>729.95</td>
<td></td>
<td>Blue</td>
<td>Nurbie, Helen</td>
</tr>
<tr>
<td>Helen</td>
<td>Nurbie</td>
<td></td>
<td>1959/04/29</td>
<td>8844.22</td>
<td></td>
<td>Red</td>
<td>Nurbie, Bill</td>
</tr>
<tr>
<td>Bill</td>
<td>Nurbie</td>
<td></td>
<td>1948/04/29</td>
<td>42000.03</td>
<td>✔️</td>
<td>Red</td>
<td>Piggedly, Higgedly</td>
</tr>
<tr>
<td>Higgledy</td>
<td>Piggedly</td>
<td></td>
<td>1968/06/12</td>
<td>123.45</td>
<td></td>
<td>Blue</td>
<td>Noof, Oof</td>
</tr>
<tr>
<td>Oof</td>
<td>Noof</td>
<td></td>
<td>1958/02/15</td>
<td>3600.00</td>
<td></td>
<td>Red</td>
<td>Somebody, Sarah</td>
</tr>
</tbody>
</table>
Here is the object-editor

We have the same slots as in the class-grid plus a prescriptions slot:
Both tools display instances of a class

- A selected subset of the slots are displayed.
- The class-grid is simple and quick, but does not easily display complex slot values (such as class instances which themselves have multiple slots).
- The object-editor, by using widgets to display slot values, is more complicated and powerful.
- Both tools can serve as user interfaces to data.
The Class Interface Editor

- The Class Interface Editor is a dialog you can use when designing a form.
- It works either with a Class Grid on a form or with an object-editor form.
- It facilitates selecting the slots of interest and deciding how they will be displayed on the dialog associated with the form.
The Class Interface Editor works on forms in projects

- The project system is the IDE’s application builder
- Windows and dialogs in projects are designed using forms
- The Class Interface Editor assists when designing a form
- If you do not use the project system, you must create class-grids and object-editors programmatically, mimicking example code
The Class Interface Editor

Class Interface Editor - patient

Slots
- access
- best-friend
- date-of-birth
- favorite-color
- first-name
- friendly
- last-name
- prescriptions
- static-note
- unpaid-balance

Widget
- Include
- Label
- Data Type
  - Type Name: Variable Char

Options
- Fixed-Width Font
- New Column

Buttons
- First
- Previous
- Next
- Last
- Select
- Search
- Save
- Revert
- New
- Delete
- Commit

Move All Included Slots to the Top

OK Cancel

Include Table of All Instances

Redo Entire Widget Layout
Edited-slots property

A key property when creating either tool is the edited-slots property. It specifies which slots to display and how they should be displayed:

:edited-slots
'((date-of-birth
  :edited-type (:date :yyyy/mm/dd)
  :label "Birth Date")
(favorite-color
  :edited-type (:single-choice (:red :green :blue :yellow))
  :on-print capitalize-object
  :label "Fave Color")
(best-friend
  :edited-type (:class-instance patient)
  :width 140)
;;...
When are these tools useful?

These tools provide dialogs which display information about class instances. They are suitable for providing an interface to a set of data. They have a standard model for display and so can be created quickly and easily. You can control content and appearance and also editability, so good for user information and user input.
How to create class-grids and object-editors

- Mimic the code in the examples
- Use the Class Interface Editor dialog
Dialog customization options

- A class-grid is a grid-widget so grid-widget options work for it (except column-sections and row-sections are computed and should not be modified)
- Standard dialog properties work for both the object-editor and the class-grid
Some special class-grid properties

These special properties allow you to control certain row and column properties:

- row-header-font
- column-header-font
- body-row-height
- default-column-width
- row-header-width
- column-header-height
- row-header-justification
- row-header-value-type
- rows-are-movable
- rows-are-resizable
- rows-are-selectable
Displaying the Class Interface Editor

Create an *object-editor* dialog form or a regular *dialog* form on which you put a class-grid (File | New Form):
For an object-editor, you are asked for a class to edit (choose patient for our example):
Then choose Edit Class Interface from the right button menu:
The Class Interface Editor
The object-editor again

Not what editor on previous slide would create, but showing choices (buttons, etc.)
You choose which slots to include

- You select a slot from the list of the left (access is selected)
- You click on the Include check box
- You add information about what is displayed and how for that slot
For a class-grid:

- You create a dialog form
- You add a class grid from the widget palette
- You specify the class to display
- Right click over the class grid to display the object editor
The Class Interface Editor for the class-grid has fewer options.
Class-grid again

Again, just to show what the choices are, not what previous slide would produce:

<table>
<thead>
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<th>Family Name</th>
<th>Access</th>
<th>Birth Date</th>
<th>Unpaid Balance</th>
<th>Friendly?</th>
<th>Fave Color</th>
<th>Best Friend</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sarah</td>
<td></td>
<td>1963/01/15</td>
<td>34.89</td>
<td>✓</td>
<td>Blue</td>
<td>Anybody, Andy</td>
</tr>
<tr>
<td>2</td>
<td>Andy</td>
<td></td>
<td>1971/03/02</td>
<td>.09</td>
<td></td>
<td>Yellow</td>
<td>Loom, Alice</td>
</tr>
<tr>
<td>3</td>
<td>Alice</td>
<td></td>
<td>1967/05/17</td>
<td>729.95</td>
<td></td>
<td>Blue</td>
<td>Nurble, Helen</td>
</tr>
<tr>
<td>4</td>
<td>Helen</td>
<td></td>
<td>1959/04/29</td>
<td>8844.22</td>
<td>✓</td>
<td>Red</td>
<td>Nurby, Bill</td>
</tr>
<tr>
<td>5</td>
<td>Bill</td>
<td></td>
<td>1948/04/29</td>
<td>42000.03</td>
<td>✓</td>
<td>Red</td>
<td>Piggledy, Higgledy</td>
</tr>
<tr>
<td>6</td>
<td>Higgledy</td>
<td></td>
<td>1968/06/12</td>
<td>123.45</td>
<td></td>
<td>Blue</td>
<td>Noof, Oof</td>
</tr>
<tr>
<td>7</td>
<td>Oof</td>
<td></td>
<td>1958/02/15</td>
<td>3600.00</td>
<td></td>
<td>Red</td>
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</tbody>
</table>

Pages for class-grid and object-editor classes

Page for Class Interface Editor

Pages for properties of the classes
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