Operation Manual

WAY4 Manager Form Editor

03.52.30

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Contents

WAY4 Manager client application users access information in database (DB) tables through editing windows:

- Grid forms in which DB records are represented as table rows and record fields as columns.
- Free forms that represent a single DB record. The sizes and location of fields in these forms are specified when designing the form.

Form Editor is used to create new forms and edit existing one that are used as WAY4 Manager editing windows.

This document is intended for WAY4 Cards system administrators (bank or processing center employees).

When working with this document, it is recommended to use the following resources from the OpenWay documentation series:

- "WAY4 Manager. Operation Manual".
- "WAY4 Manager Menu Editor"
- "Way User Management".

The following notation can be used in the document:

- Field labels in screen forms are shown in *italics.*
- Key combinations are shown in angular brackets, for example, <Ctrl>+<F3>.
- Names of screen form buttons and tabs are shown in square brackets, for example, [Approve].
- Sequences for selecting user menu items or context menu items are shown using arrows as follows: "Issuing → Contracts Input & Update".
- Sequences for selecting system menu items are shown using arrows as follows: Database => Change password.
- Variables that differ for each local instance, such as directory and file names, as well as file paths are shown in angular brackets, as in <OWS_HOME>.

Warnings and information are marked as follows:

Warnings about potentially hazardous situations or actions.

Messages with information about important features, additional options, or the best use of certain system functions.

1 Starting Form Editor

To start Form Editor, select the WAY4 Manager system menu item "Tools => Editors => Form Editor" or press <F3>.

The "Choose Form" window will open. This window contains a drop-down list of database table names and a list of forms based on these tables.

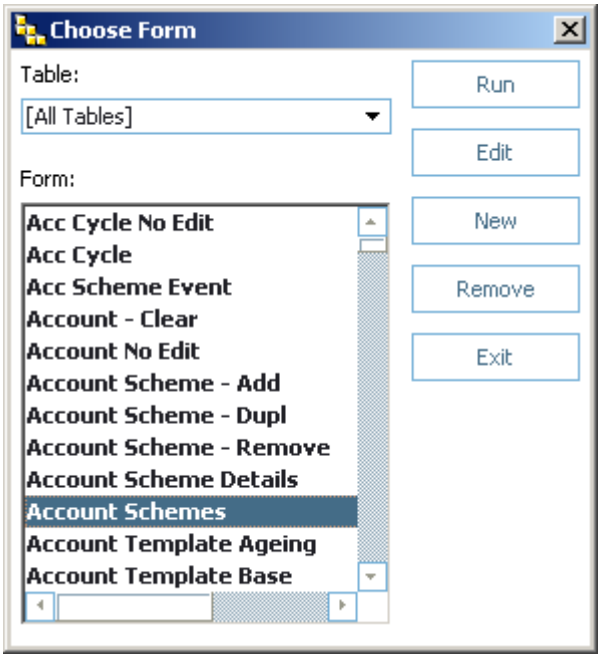


Fig. Window for selecting a form to be edited

By default, a list of forms for all tables will be displayed when the "Choose Form" opens. The list contains a large number of form names. To make it easier to search for the necessary form, first specify the name of the table on which it is based.

To select a form for editing, double-click on its name in the list of forms, or click on its name and then click [Edit].

To create a new form, click [New].

To delete a custom form (see "Restoring standard forms"), click [Remove].

Click [Run] to open the selected form.

Click [Exit] to close the "Choose Form" window.

1.1 Form Editor window

To open the Form Editor window, perform one of the following actions:

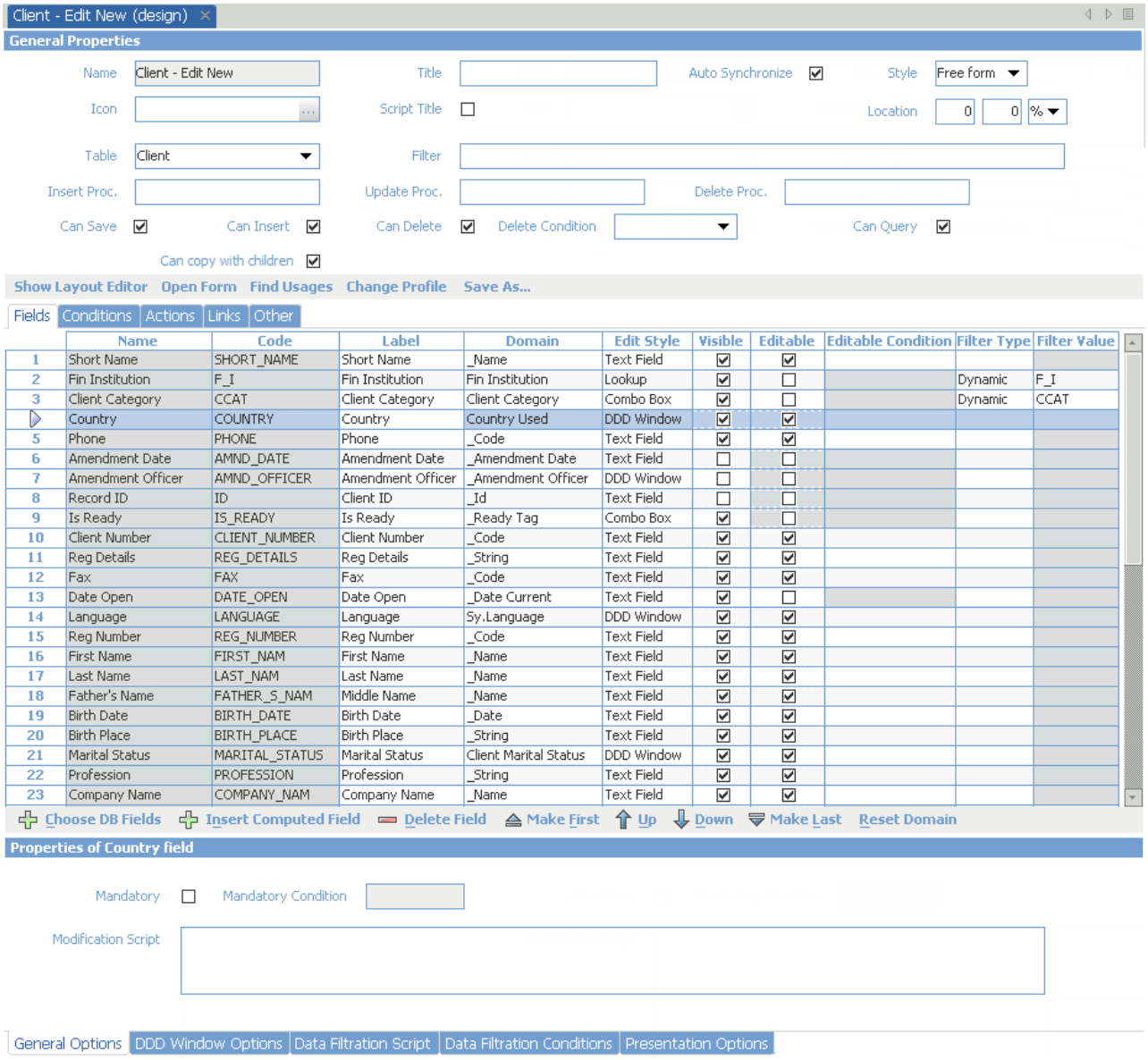
- In the "Choose Form" form, select the required form and click [Edit], or double click on the form's name.

- In the "Choose Form" form, click [New]. The "WAY4Manager" form will open. Enter the name of the form to be created and click [OK].

Fig. Entering the name of a new form

- In the context menu opened from anywhere in the form, select "Design → Open Data Form".

After one of the aforementioned actions has been performed, the "<Form name> (design)" form will open.



	Name	Code	Label	Domain	Edit Style	Visible	Editable	Editable Condition	Filter Type	Filter Value
1	Short Name	SHORT_NAME	Short Name	_Name	Text Field	☑	☑			
2	Fin Institution	F_I	Fin Institution	Fin Institution	Lookup	☑	☐		Dynamic	F_I
3	Client Category	CCAT	Client Category	Client Category	Combo Box	☑	☐		Dynamic	CCAT
	Country	COUNTRY	Country	Country Used	DDD Window	☑	☑			
5	Phone	PHONE	Phone	_Code	Text Field	☑	☑			
6	Amendment Date	AMND_DATE	Amendment Date	_Amendment Date	Text Field	☐	☐			
7	Amendment Officer	AMND_OFFICER	Amendment Officer	_Amendment Officer	DDD Window	☐	☐			
8	Record ID	ID	Client ID	_Id	Text Field	☐	☐			
9	Is Ready	IS_READY	Is Ready	_Ready Tag	Combo Box	☑	☐			
10	Client Number	CLIENT_NUMBER	Client Number	_Code	Text Field	☑	☑			
11	Reg Details	REG_DETAILS	Reg Details	_String	Text Field	☑	☑			
12	Fax	FAX	Fax	_Code	Text Field	☑	☑			
13	Date Open	DATE_OPEN	Date Open	_Date Current	Text Field	☑	☐			
14	Language	LANGUAGE	Language	Sy.Language	DDD Window	☑	☑			
15	Reg Number	REG_NUMBER	Reg Number	_Code	Text Field	☑	☑			
16	First Name	FIRST_NAM	First Name	_Name	Text Field	☑	☑			
17	Last Name	LAST_NAM	Last Name	_Name	Text Field	☑	☑			
18	Father's Name	FATHER_S_NAM	Middle Name	_Name	Text Field	☑	☑			
19	Birth Date	BIRTH_DATE	Birth Date	_Date	Text Field	☑	☑			
20	Birth Place	BIRTH_PLACE	Birth Place	_String	Text Field	☑	☑			
21	Marital Status	MARITAL_STATUS	Marital Status	Client Marital Status	DDD Window	☑	☑			
22	Profession	PROFESSION	Profession	_String	Text Field	☑	☑			
23	Company Name	COMPANY_NAM	Company Name	_Name	Text Field	☑	☑			

Fig. Form Editor window

The Form Editor window makes it possible to define a form's general properties and specify database objects required to create the form. This window contains the "General Properties" form with a description of the main properties of the form that is being edited and the following tabs:

- "Fields" – list of form fields and their properties.
- "Conditions" – list of conditions for working with the form.
- "Actions" – list of associated procedures (DB procedures, custom procedures, menu items).
- "Links" – list of links to other forms.
- "Other" – description of data query and sorting parameters.

2 Form parameters

2.1 Form Editor window. "General Properties" form

A form's main parameters are set in the "General Properties" form.

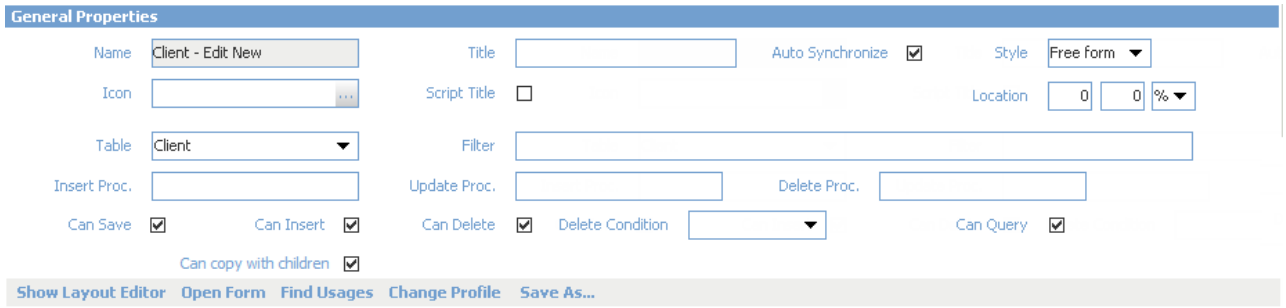


Fig. Form's main parameters

This form contains the following fields:

- *Name* – form name.
- *Icon* – name of a graphic file with an icon; to select a file, click ... button. An icon is used, for example, for a form that is part of a screen.
- *Table* – name of the DB table used to build the form.
- *Title* – form label. Note that a form's label can be redefined for a menu item that opens this form.
- *Script Title* – when this check box is selected, the *Title* field value will be interpreted as JavaScript script.
- *Filter* – additional condition for selecting data that will be displayed in the form; this expression will be included in the "WHERE" clause of the SQL query.
- *Auto Synchronize* – when this checkbox is checked, form data will be synchronized (see "Synchronizing custom forms"). To start form synchronization, run the system menu item "Tools => Synchronization => Synchronize Forms" or press <Shift>+<F11>.
- *Style* – form style; this field can have one of the following values:
  - "Grid" – grid form.
  - "Free Form" – free-format form.
- *Location* – group of fields to set parameters for a form's location on the screen. The first field sets the horizontal offset of the form's top left corner relative to the top left corner of the screen's working area, the second field sets the vertical offset. The third field is used to set the unit of measurement for the offset:
  - "%" – the offset is specified as a percentage of the size (horizontal and vertical) of the screen's working area.

  - "px." – the offset is specified in pixels.
- *Insert Proc.* – name of the stored procedure that redefines the standard procedure for creating a new record in the DB. This field is only available when the *Can Insert* checkbox is checked.
- *Update Proc.* – name of the stored procedure that redefines the standard procedure for editing records.

  This procedure is run when the button (save changes) is shown in the form.
- *Delete Proc.* – name of the stored procedure that redefines the standard procedure for deleting records from the DB. This field is only available when the *Can Delete* checkbox is checked.
- *Can Save* – when this checkbox is checked, the button (save changes) is shown in the form. If this checkbox is not selected, the button will not be shown in the form, and furthermore, the <Ctrl>+<S> key combination will not save form data.
- *Can Insert* – when this checkbox is checked, the button will be shown in the form; this button can be used to create a new record in the DB. The *Can Insert* checkbox cannot be selected for forms created on the basis of automatically updated DB tables.
- *Can Delete* – when this checkbox is checked, the button will be shown in the form; this button can be used to delete a DB record. The *Can Delete* checkbox cannot be selected for forms created on the basis of automatically updated tables.
- *Delete Condition* – drop-down list of special conditions that must be met to delete a record from the database. These conditions are set on the "Conditions" tab of the Form Editor window (see "Form Editor window. "Conditions" tab). The *Delete Condition* field is only available when the *Can Delete* checkbox is checked. For an example of how a condition is used to delete a record from the database, see the section "Appendix 2 Script examples".
- *Can Query* – when this checkbox is checked, the query button is shown in the form; if it is necessary to change query conditions, click this button.
- *Can copy with children* – when this checkbox is checked, the system menu item "Special → Copy With Children" will be shown in the form; this item is used to create a copy of a record which includes child records.

The [Show Layout Editor] button in the "General Properties" form is used to switch to form design mode (see "Form design").

The [Open Form] button opens the editable form.

The [Find Usages] button is used to search the user menu for the path to the form being edited (see "Form path search").

The [Change Profile] button is used to set the way the form will be displayed according to the screen resolution. Clicking this button opens the "WAY4Manager" form.

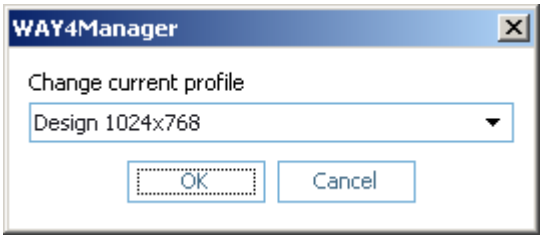


Fig. Selecting form resolution

The *Change current profile* field can have one of the following values:

- "Design 1024x768" – form design when screen resolution is 1024x768 pixels.
- "Design 1280x1024" – form design when screen resolution is 1280x1024 pixels.

The [Save As...] button is used to save a form with a different name. Clicking this button opens the "WAY4Manager" form. In this form's *Form Name* field, enter the name of the form being created and click [OK].

2.1.1 Form path search

To search the user menu for a form path, click [Find Usages] in the "General Properties" form. The "<form name> Usages" window will open.

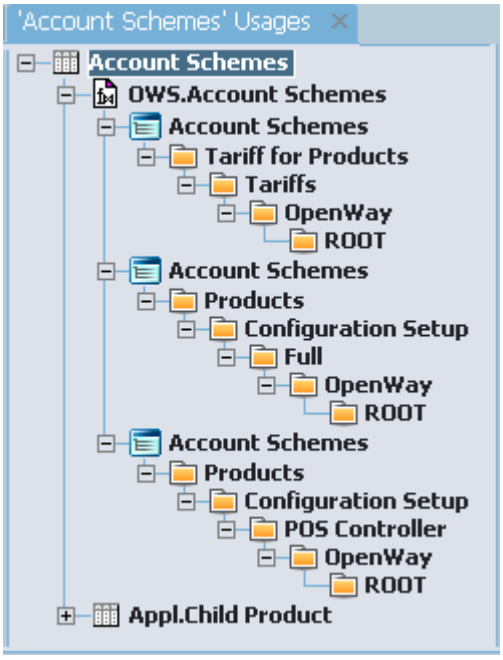


Fig. Form in the user menu hierarchy

This window shows a hierarchy of forms and menu items up to the root level. The following icons are used to indicate objects:

- – menu folder
- – menu item
- – menu item definition
- – form.

2.2 Form Editor window. "Fields" tab

The "Fields" tab of the Form Editor window contains a list of fields and their properties for the form being edited.

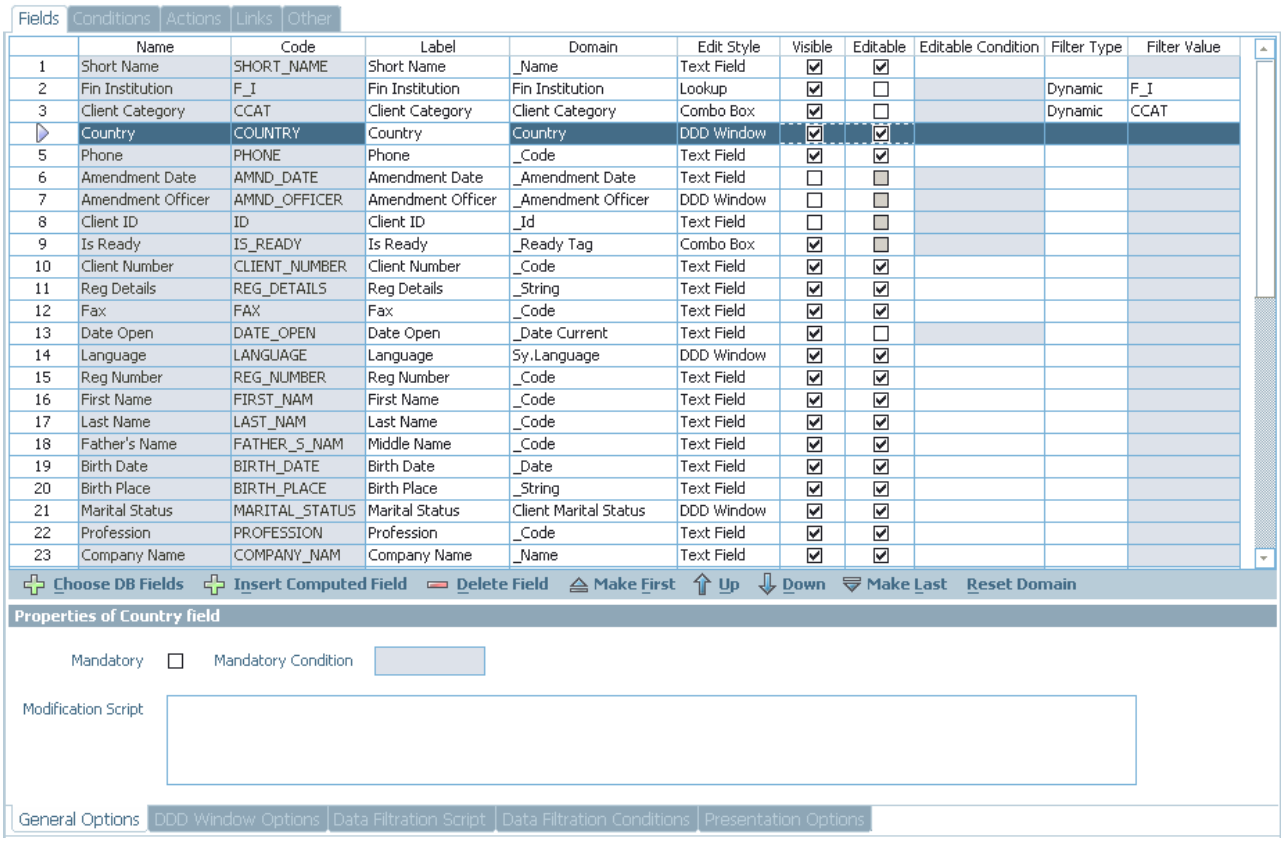


Fig. List of form fields and their properties

The following fields are used on this tab:

- *Name* – name of a DB table field included in the list of fields used in the form being edited.
- *Code* – DB table field code.
- *Label* – form field label.
- *Domain* – data domain to which the DB table field belongs.
- *Edit Style* – drop-down list of types for the field being edited. Note that the properties of a field for the form being edited; i,e, the number of tabs in the "Properties of <field name> Field" form, depend on the field's style type. The *Edit style* field can have one of the following values:
  - "Text Field" – free format text field.
  - "Combo Box" – editable drop-down list.
  - "Check Box" – checkbox with two states: "checked" and "not checked".
  - "DDD Window" (Drop Down Data Window) – drop-down list of items stored in the database.
  - "Check Box List" – field in which several elements can be selected from a list stored in the database.
  - "Lookup" – field with selection from a list of database values, displayed as a dialog box (see the section "Field editing methods" of the document "WAY4 Manager Manual") or selection tree.
  - "Password" – text field where input data is displayed as "*" characters; for instance, used to enter passwords.

- *Visible* – determines whether the field is shown in the form; if the checkbox is not checked, the corresponding field will not be visible when the form is displayed.
- *Editable* – indicates whether the form field is editable (only available if the *Visible* checkbox is checked); if this checkbox is checked, values in the field can be edited.
- *Editable Condition* – drop-down list of conditions that must be met to allow the field to be edited. This value is set on the "Conditions" tab of the Form Editor window (see "Form Editor window. "Conditions" tab); The *Editable Condition* field is only available if the *Editable* check box is checked. For an example of using a field editing condition, see the section "Appendix 2 Script examples".
- *Filter Type* – rule (type) for filtering data by database table column. The form will only show records for which the value of this DB field matches the value in the *Filter Value* column. The *Filter Type* field can have one of the following value:
  - "None" (or if the field is not filled in) – no filtering.
  - "Static" – filtering according to a constant value that must be selected in the *Filter Value* field. The list of *Filter Value* field values is generated according to the data domain to which the DB table field belongs.
  - "Dynamic" – filter by a so-called local constant obtained from the "Local Constants" DB table when the form is opened. The name of the local constant is selected from the list in the *Filter Value* field. For more information about local constants, see the section "Initializing local constants" of the document "Way4 User Management".
- *Filter Value* – column for showing the value of the field for filtering. Depending on the *Filter Type* value, either a field value is shown or the name of the local constant whose value will be used for filtering data when the form is displayed.

> Note that when adding new records while working with the form, the field according to which data is filtered cannot be edited and its value will be determined by filtering conditions.

Data filtering by the values *Filter Type* and *Filter Value* column cells is a property of the form being edited and is performed when the form is displayed on the screen regardless of user actions.

User-defined filters are described in the section "Queries" of the document "WAY4 Manager Manual".

Click 

opens the "Form Fields" window. DB table fields that will be used in the form can be selected in this window.

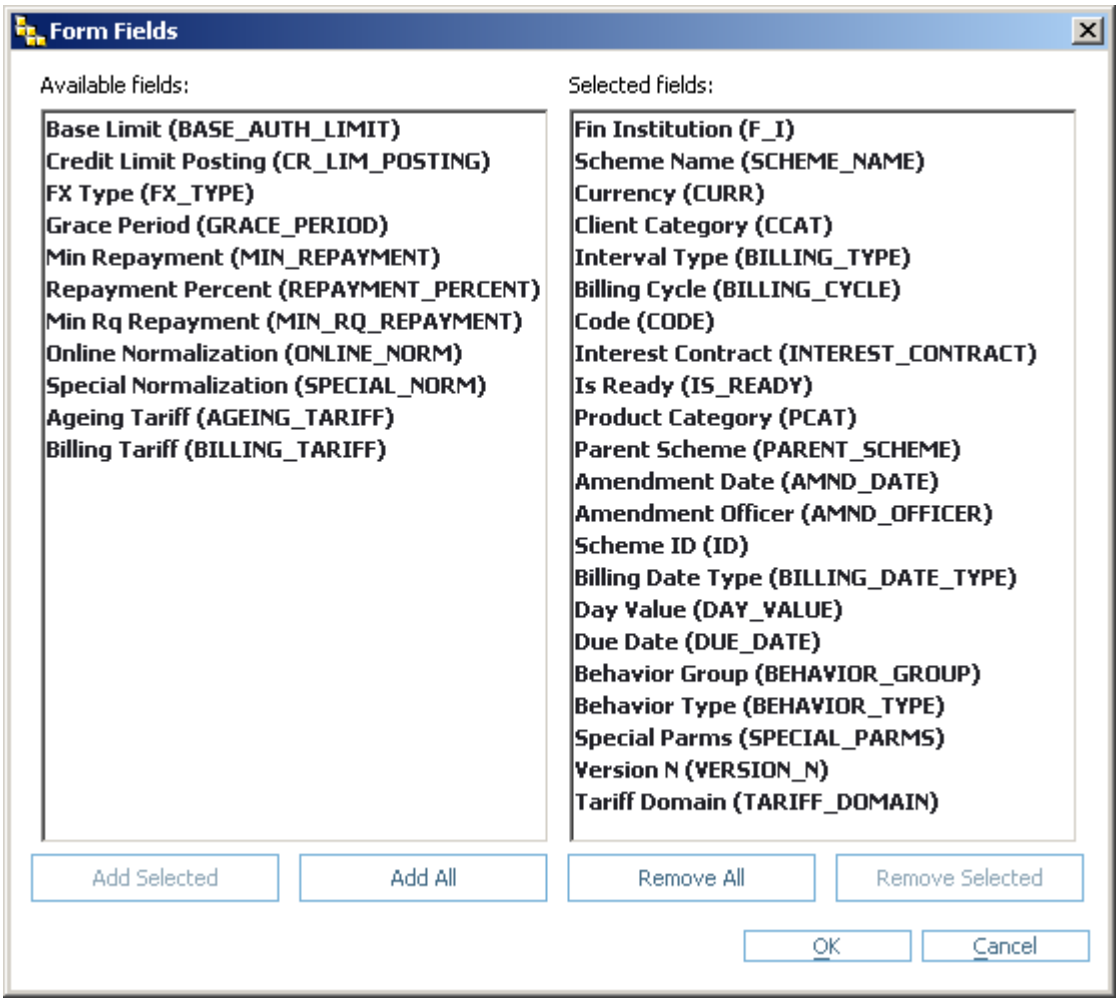


Fig. Window for selecting DB table fields

The *Available fields* field contains a list of all DB fields that are not used in the form and the *Selected fields* field contains fields that are used in the form.

To add a field click on its name in the *Available fields* list and click [Add Selected]. To remove a field from the form, click on its name in the *Selected fields* list and click [Remove Selected]. To add all DB table fields to the form, click [Add All], to remove all fields from a form, click [Remove All]. After adding or removing DB table fields, click [OK]; to cancel the changes, click [Cancel].

The Insert Computed Field button is used to add a computed expression (see "Adding computed fields").

To remove a selected field from the form, click Delete Field button.

The order of fields on the "Fields" tab determines their default order in the queries window (see the section "Queries" of the document "WAY4 Manager Manual"). Click Make First to move the necessary field to the first position in the list; click Make Last to move it to the last position. The Up button moves the selected field up one position; the Down button moves it down one position.

The [Reset Domain] button is used to restore default settings related to the data domain that the DB table field belongs to.

2.2.1 Field properties

The "Properties of <field name> Field" is used to specify the main properties of form fields.

2.2.1.1 "General Options" tab

The "General Options" tab is used to specify a form field's additional properties. This tab is available for all editable field style types.

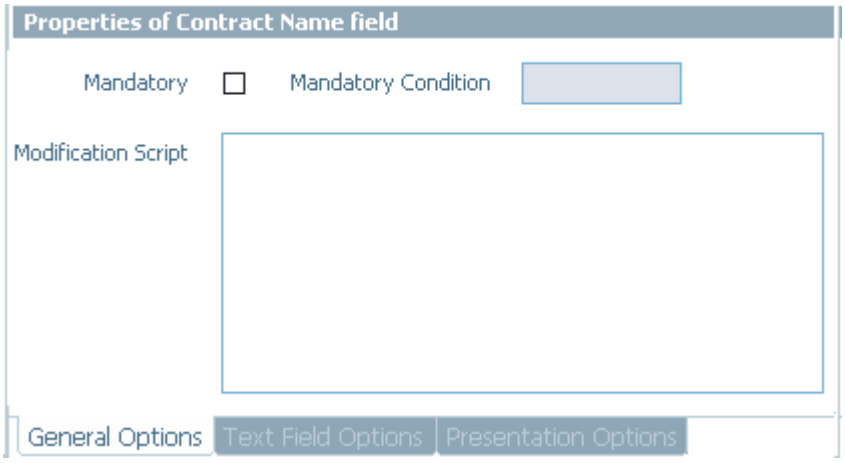


Fig. "General Options" tab

This tab contains the following fields:

- *Mandatory* – checkbox that determines whether this field is mandatory. If this checkbox is checked and the field is left empty, an error messages will be displayed. The *Mandatory* checkbox is only available when the *Editable* checkbox on the "Fields" tab is selected (see "Form Editor window. "Fields" tab).
- *Mandatory Condition* – drop-down list of conditions which must be met in order for this field to be mandatory in the form being edited. This condition is set on the Form Editor window's "Conditions" tab (see "Form Editor window. "Conditions" tab). The *Mandatory Condition* field is only available if the *Mandatory* checkbox is checked.
- *Modification script* – JavaScript script that will be run each time the edited form's field content changes.
  For an example of using the script, see the section "Appendix 2 Script examples".

2.2.1.2 "Presentation Options" tab

The "Presentation Options" tab is used to define parameters for showing the field in a form. This tab is available for all editable field style types.

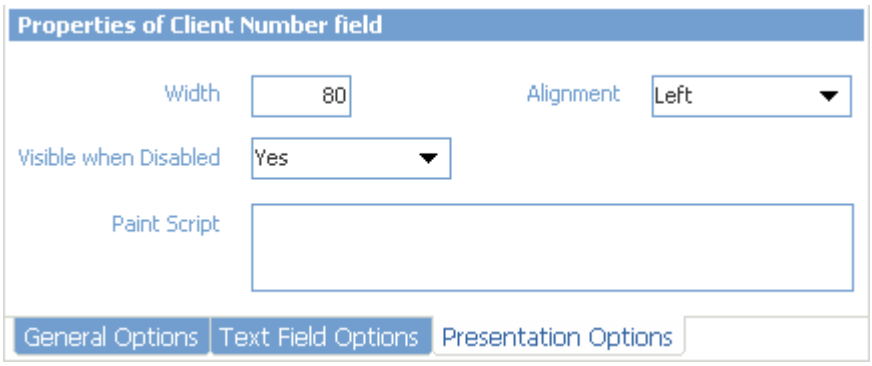


Fig. "Presentation Options"

This tab contains the following fields:

- *Width* – field width in pixels.
- *Visible when disabled* – drop-down list of conditions for showing the field in a form if the field is inactive:
  - "Yes" – the field will be shown in the form being edited.
  - "No" – the field will not be shown in the form being edited.
  - "By Paint Script" – the field will be shown in the form being edited when the script specified in the *Paint script* field is run.
- *Alignment* – type of text alignment in the field:
  - "Left"
  - "Right"
  - "Center"
- *Paint script* – JavaScript script. This script can be used, for instance, to set font and background colors, as well as conditions that must be met for the field to be shown in the form when the field is inactive.
  For an example of using the script, see the section "Appendix 2 Script examples".

2.2.1.3 "Text Field Options" tab

The "Text Field Options" tab is only available for fields with the "Text Field" style type. It is used to set text field properties.

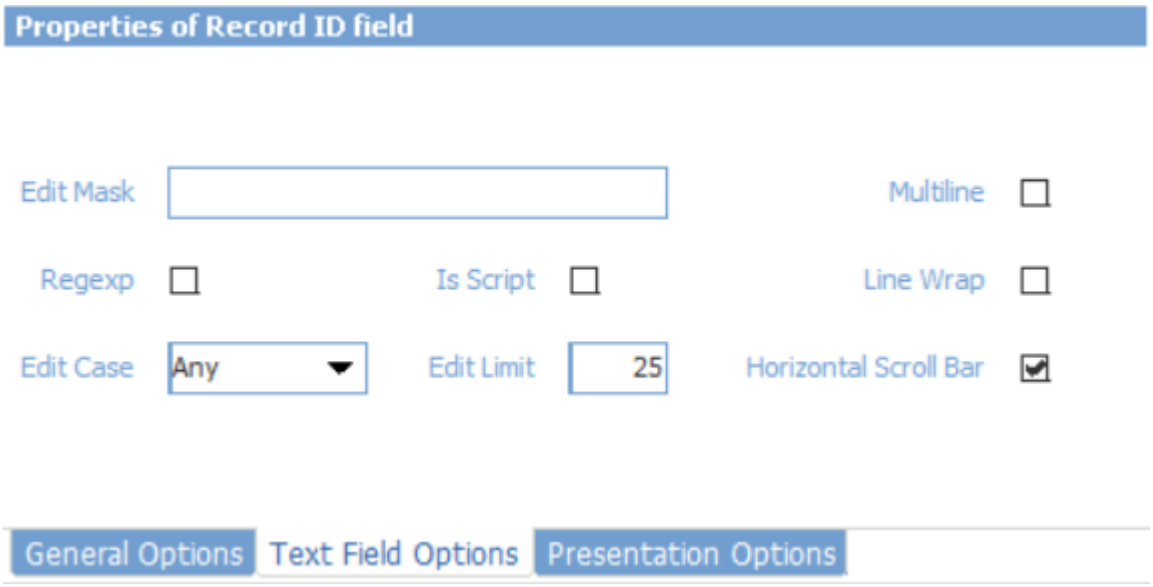


Fig. "Text Field Options" tab

The tab contains the following fields:

- *Edit Mask* – field to specify the format for entering data (date, time, amount formats, etc.). Depending on the data domain (value of the *Domain* field on the "Fields" tab of the Form Editor window) to which a field with this type belongs, text fields can be split into three categories: text strings, numbers and dates. If the *Regexp* checkbox is not checked, format can be set using the following characters:
  - Text strings:
    - "A" – alphanumeric
    - "H" – hexadecimal digit
    - "L" – letter; when entered, the letter is converted to lowercase
    - "U" – letter; when entered, the letter is converted to uppercase
    - "#" – digit
    - "*" – any characters
    - "?" – any letters.

  Accordingly, the input mask "UU-####" allows two letters to be entered (which are converted to uppercase) and 4 digits; as a result, the field will contain, for example, "HW-1234".

  - Numbers:
    - "0" – digit; this character will be present in the field
    - "#" – digit
    - "." or "," – decimal separator.
    - "," or " " (space) – separates groups of digits.

Accordingly, if the user didn't enter any digits, the input mask "###,##0.00" will be shown as "0.00"; the user can enter, for example, "123,456.78", and the maximum possible value in this field will be "999,999.99".

- Dates. Date input mask: "dd/MM/yy[yy] [hh:[mm:[ss:[fff]]]]", where "dd" is the day of the month, "MM" is the month, "yyyy" is the year, "hh" – hours, "mm" – minutes, "ss" – seconds, "fff" – milliseconds. A mask's optional parameters are specified in brackets "[" and "]". For example, the input mask "dd/MM/yyyy" allows a user to enter the value "16/03/2011", and the mask "dd/MM/yy hh:mm:ss", the value "18/04/11 11:15:35".

If the *Is Script* checkbox is checked, the format for data input can be set using a script written in JavaScript. Input format can be set in a data domain or separately for each field with the "Text Field" style type, but the value in the *Edit Mask* field will have priority.

Sample script:

```
<p class="paragraph">var fi = Condition.getLocalConstant('F_I');</p><p class="paragr
aph">if(fi!="1"){"###,###,###,##0.000";}else{"###,###,###,##0.0";}</p>
```

Note that the operating system's Regional and Language Options influence the format in which dates and numbers are displayed. If "English (United States)" is specified in these settings, regardless of the specified mask, a period (".") will be used as a decimal separator; a comma to separate groups of digits; the first pair of digits in a date will indicate the month, and the second pair of digits will indicate the day of the month.

- *Regexp* – when this checkbox is checked, the content of the *Edit Mask* field is interpreted as a Java regular expression.
- *Is Script* – when this checkbox is checked, the content of the *Edit Mask* field is interpreted as a script written in JavaScript.
- *Edit Case* – drop-down list for specifying the case of displayed characters:
  - "Upper"
  - "Lower"
  - "Any"
- *Edit Limit* – maximum number of characters that can be specified in a field. If the field is not filled in, there will be no limit to the number of characters. If, for example, "4" is specified in the *Edit Limit* field for a form field, if an attempt is made to enter a fifth character in the field while editing the form, the "Text field is full" message will be displayed.
- *Multiline* – when this checkbox is checked, information in a form field will be displayed in several lines if there is insufficient space in a single line. When the checkbox is not checked, information will be displayed in a single line.
- *Line Wrap* – when this checkbox is checked, text that was too long to fit in the field will be wrapped. If necessary, a vertical scroll bar will appear in the field.

- *Horizontal Scroll bar* – when this checkbox is checked, a horizontal scroll bar will appear in the field if the text was too long to fit in this field.

2.2.1.4 "Combo Box Options" tab

The "Combo Box Options" tab is only available for fields with the "Combo Box" style type. It is used to specify properties for editable drop-down lists.

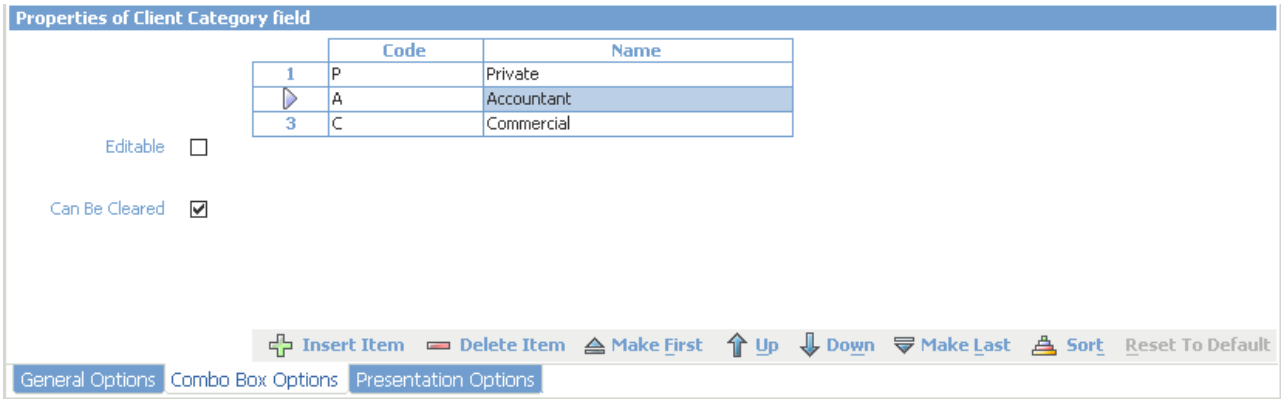


Fig. "Combo Box Options" tab

The tab contains the following fields and buttons:

- *Editable* – when this checkbox is checked, a field value can be specified by selecting it from a list or by entering it manually.
- *Can Be Cleared* – when this checkbox is checked, the list of field values will contain the value [None]. When this value is selected, the field is left blank.
- The data table to the right of the checkboxes contains an ordered list of selectable data. The *Name* field contains the value that will be specified in the list, and the *Code* field contains the value that will be passed to the system when this list item is selected.

  To add a new row to a grid form, click Insert Item; to delete a selected row, click Delete Item button. The Make First and Make Last buttons move a selected field to the first or last position in the list, respectively; the Up or Down buttons move the field one position up or down.

  Click Sort to sort grid form data in ascending order by *Name* field value.
  Click [Reset To Default] to restore the default values used in a grid form. These values will be taken from the data domain to which the form field belongs.

2.2.1.5 "DDD Window Options" tab

The "DDD Window Options" tab is only available for fields with the "DDD Window" style type. It is used to specify properties for fields with drop-down lists of values stored in the DB.

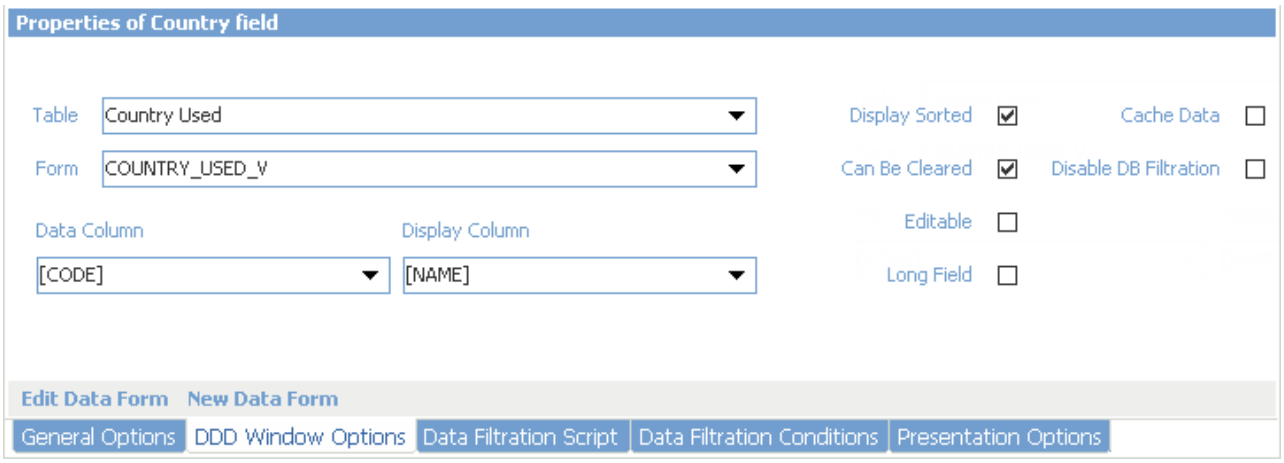


Fig. "DDD Window Options" tab

The tab contains the following fields:

- *Table* – DB table from which values will be selected.
- *Form* – form based on the DB table specified in the *Table* field.
- *Data Column* – field of the table specified in the *Table* field; this field's value will be passed to the system when the corresponding list item is selected.
- *Display Column* – field of the table specified in the *Table* field; the value of the selected field will be shown in the drop-down list.
- *Display Sorted* – when this checkbox is checked, drop-down list values will be sorted in ascending order by values of the *Display Column* field.
- *Can Be Cleared* – when this checkbox is checked, the list of field values will contain the value [None]. When this value is selected, the field will be left blank.
- *Editable* – when this checkbox is checked, a field value can be specified by selecting it from a list or by entering it manually; for example a currency code instead of selecting its abbreviation from the list.
- *Long Field* – when this checkbox is checked, the list of values will be generated when the form field is selected. If the checkbox is not checked, the list of values will be generated when the form is opened.
  It is recommended to check this checkbox if the table from which values will be selected contains a large number of records. If the *Long Field* checkbox is checked, it will not be possible to filter using the script specified in the *Data Filtration Script* field of the "Data Filtration Script" tab (see the section ""Data Filtration Script" tab).
- *Cache Data* – if the checkbox is not checked, the list of values will be generated every time the form field is selected.
- *Disable DB Filtration* – when this checkbox is checked, data displayed in the drop-down list will only be filtered using the script from the *Data Filtration Script* field of the "Data Filtration Script" tab (see the section ""Data Filtration Script" tab). If no script is specified, data will not be filtered. The *Disable DB Filtration* checkbox is only available if the *Long Field* checkbox is not checked.

The [Edit Data Form] button is used to edit the form whose name is specified in the *Form* field. Clicking this button opens the "<form name> Editing" form.

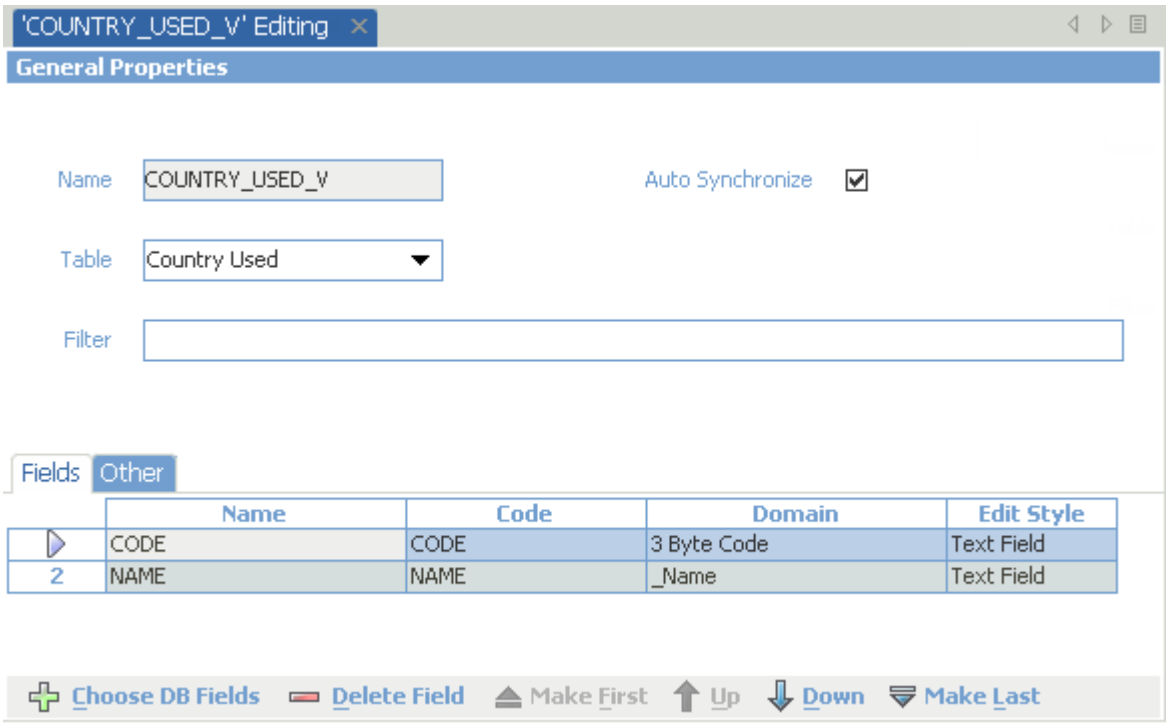


Fig. Editing the form from which DDDW values will be selected

The purpose of this form's fields is similar to that of the fields with the same names in the Form Editor window (see the section "Form Editor window").

The [New Data Form] button on the "DDD Window Options" tab is used to create the form whose name is specified in the *Form* field. Clicking this button opens a window; in the *Enter DDD Form Name* field of this window, specify the name of the created form and click [OK]. The "<form name> Editing" window will open.

2.2.1.6 "Check Box List Options" tab

Fields with the "Check Box List" style type are used to select several items from a list stored in the database. The figure below shows an example of this field.

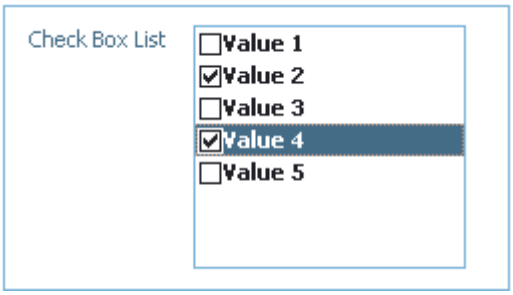


Fig. Field with the "Check Box List" style type

The "Check Box List Options" tab is only available for fields with the "Check Box List" style type and determines field properties.

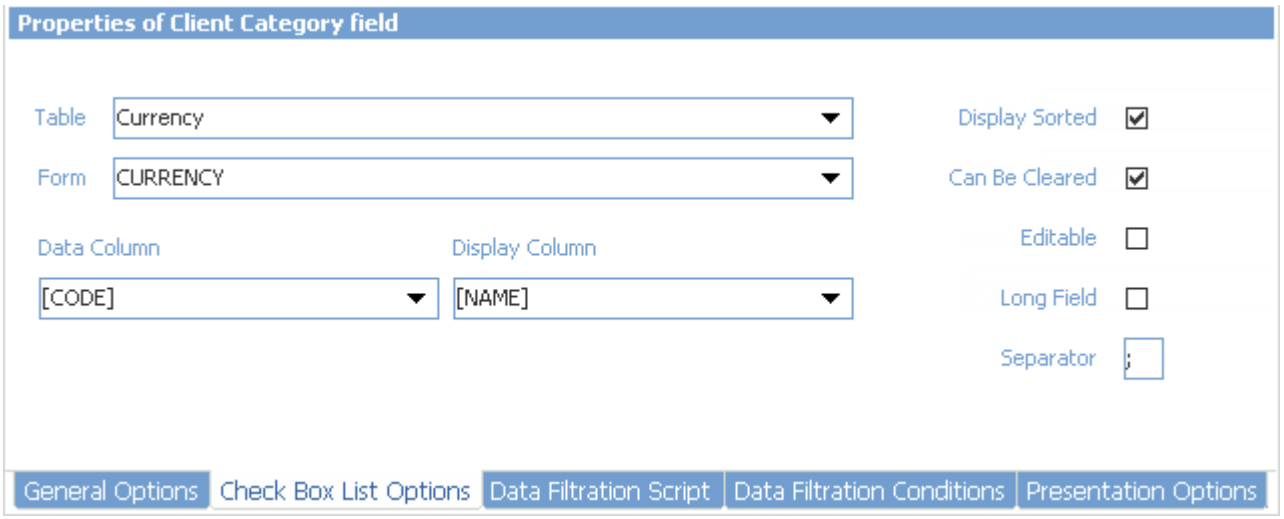


Fig. "Check Box List Options" tab

The *Separator* field is used to specify the character that will be used to separate selected values in a DB table field.

The other fields on the tab are the same as the fields in the "DDD Window Options" tab (see "DDD Window Options" tab).

2.2.1.7 "Lookup Options" tab

The "Lookup Options" tab is only available for fields with the "Lookup" style type.

The system uses two types of "Lookup" fields, which are specified in the tab's *Lookup Type* field:

- "List" – a list of values stored in the database will be presented as a dialog box (see the section "Field editing methods" of the document "WAY4 Manager Manual"). This type of field is used, for example, to select a client when registering an account contract.
  The figure below shows "List" type field properties specified on the "Lookup Options" tab.

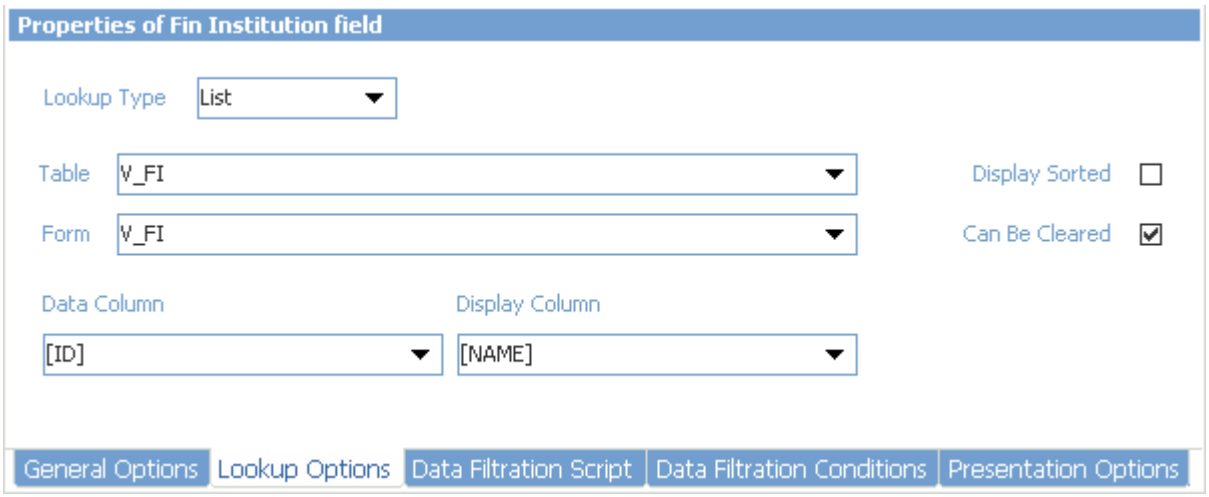


Fig. "Lookup Options" tab for a "List" type field

The *Lookup Type* tab is used to specify the "Lookup" field type.

The other fields on the tab are the same as the fields in the "DDD Window Options" tab (see ""DDD Window Options" tab).

- "Tree" – tree for selecting values from the database. The source table of the values displayed in the list must have a hierarchical structure. Fields of this type are used, for example, to select a financial institution.
  The figure below shows "Tree" type field properties specified on the "Lookup Options" tab.

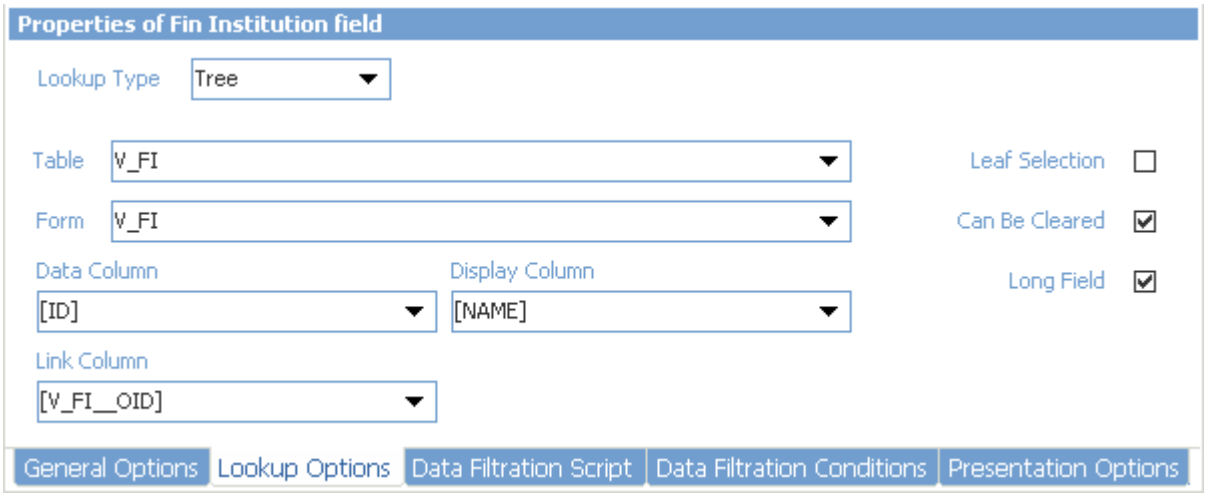


Fig. "Lookup Options" tab for a "Tree" type field

The fields on the tab are the same as the fields in the "DDD Window Options" tab (see ""DDD Window Options" tab), with the exception of the following fields:

- *Lookup Type* – "Lookup" field type
- *Link Column* – field of the table specified in this tab's *Table* field; the value of the selected field is used as a link to the parent item when generating a hierarchical list.
- *Leaf Selection* – when this checkbox is checked, the user can only select a final element (tree leaf) from the list. If the checkbox is not selected, there are no restrictions on selection.

2.2.1.8 "Data Filtration Script" tab

The "Data Filtration Script" tab is available for fields with the "DDD Window", "Check Box List", and "Lookup" style types. The*Data Filtration Script* field contains a JavaScript script used to specify additional conditions for filtering data displayed in a selection list.

> For fields with the "DDD Window" style type, if the *Long Field* checkbox is checked in the "DDD Window Options" form (see the section ""DDD Window Options" tab), it will not be possible to filter using the script from the *Data Filtration Script* field.

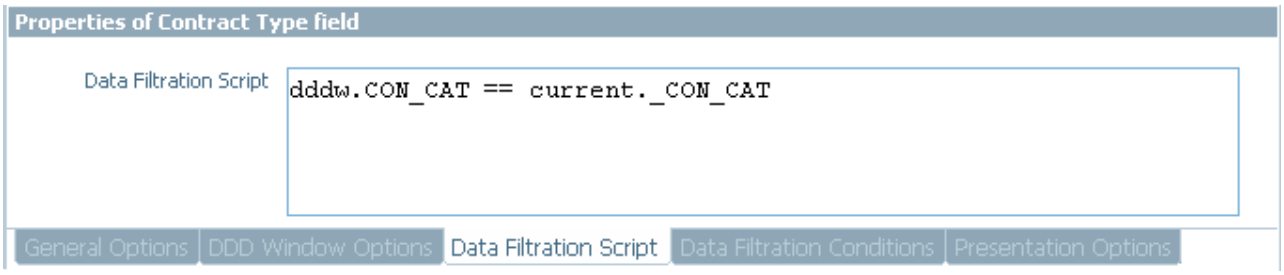


Fig. "Data Filtration Script" tab

For an example of using the script, see the section "Appendix 2 Script examples".

2.2.1.9 "Data Filtration Conditions" tab

The "Data Filtration Conditions" tab is available for fields with the "DDD Window", "Check Box List", and "Lookup" style types. Rules for filtering data displayed in a selection list are set on the tab.

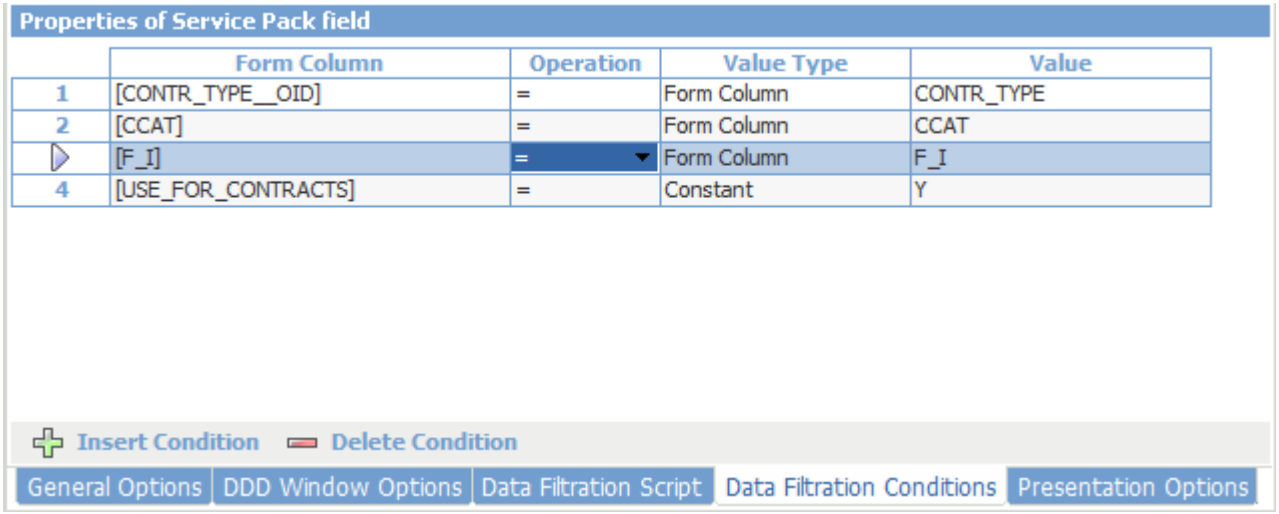


Fig. "Data Filtration Conditions" tab

The tab contains the following fields (formats for filtering rules and field values are shown in the Table):

- *Form Column* – field of the DB tables specified in the *Table* field of the "DDD Window Options", "Check Box List Options" or "Lookup Options" tab (the tab name depends on the field style type).
- *Operation* – operation for the filtering rule.
- *Value Type* – type of value that will be specified in the *Value* field.
- *Value* – value that corresponds to the type specified in the *Value Type* field.

The Insert Condition and Delete Condition buttons are used, respectively, to add and delete data filtering rules.

The table shows filtering rule formats.

Table Filtering rule formats

Operation	*Value type*	*Value*	**Description**
=	Form Column	Code of the field in the form being edited.	Format "<*Form_Column_value*>=<*_Value_column_ref*>". The list of possible values will contain source table records for which the *Form Column* field value is equal to the value in the *Value* field of the form being edited.
	Constant	Constant.	Format "<*Form_Column_value*>=<*_Constant*>". The list of possible values will contain source table records for which the *Form Column* field value is equal to the constant in the *Value* field.
	Local Constant Column	Name of the LOCAL_CONSTANTS table field.	Format "<*Form_Column_value*>=<*_Local_Constant*>". The list of possible values will contain source table records for which the *Form Column* field value is equal to the value of the local constant specified in the *Value* field.
!=	Form Column	Code of the field in the form being edited	This operation ("!=") is the same as the "=" operation, except the "not equal to" condition is checked instead of "equal to".
	Constant	Constant.	
	Local Constant Column	Name of the LOCAL_CONSTANTS table field.	
IS NULL	–	–	Format "<*Form_Column*> IS NULL". The list of possible values will contain source table records for which the *Form Column* field does not contain a value (NULL). Note that the *Value Type* and *Value* fields cannot be edited.

Operation	*Value type*	*Value*	Description
IS NOT NULL	–	–	Format "<*Form_Column*> IS NOT NULL". The list of possible values will contain source table records for which the *Form Column* field contains a value. Note that the *Value Type* and *Value* fields cannot be edited.
IN	List of Values	<Value_1>, <Value_2>...	Format "<*Form_Column*> IN (<SQL_IN_Values_List>)". The list of possible values will contain source table records for which the value of the *Form Column* field matches a value in an <SQL_IN_Values_List> set; i.e. "<Value_1>, <Value_2>,..." (comma-separated). Only literals (constants) can be used in the set.
NOT IN	List of Values	<Value_1>, <Value_2>...	This operation ("NOT IN") is similar to the "IN" operation, only the *Form Column* field value must not match any value from the "<Value_1>, <Value_2>,..." list.
LIKE	Pattern	<SQL_LIKE_Pattern>	Format "<*Form_Column*> LIKE <SQL_LIKE_Pattern>". The list of possible values will contain source table records for which the *Form Column* field value corresponds to a specific "<SQL_LIKE_Pattern>" pattern defined in SQL LIKE notation. For example, the pattern '%abc%' means that the character sequence "abc" is found in the "<*Form_Column*>" field.

Example:

- "[LANGUAGE]=LANGUAGE", "Local Constant Column" is specified in the *Value Type* value type field
- "[APPL_PRODUCT__OID] IS NOT NULL"

- "[SHORT_NAME] LIKE Jo%"
- "[COUNTRY] IN Brazil, Argentina, Venezuela".

2.3 Form Editor window. "Conditions" tab

The "Conditions" tab is used to create conditions according to which a form will contain or not contain buttons for calling associated procedures and opening child forms depending on whether a record corresponds to a specific condition. In addition, conditions are set that determine whether a form field is mandatory or optional and whether records can be edited or deleted.

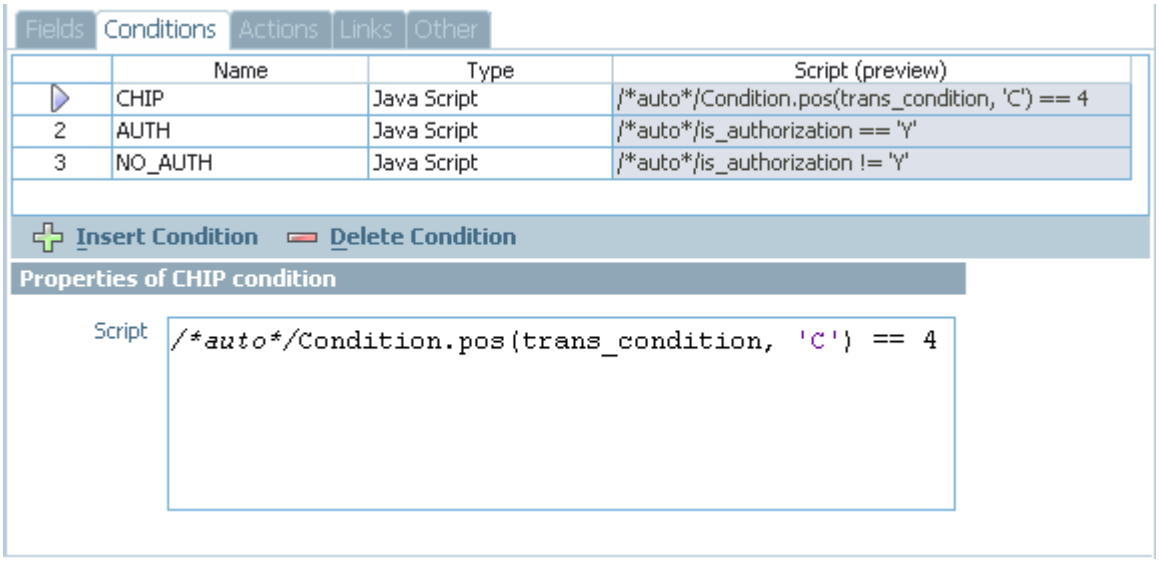


Fig. "Conditions" tab"

The tab contains the following fields:

- *Name* – condition name.
- *Type* – condition type:
  - "Java Script" – the condition is specified as a script in JavaScript.
  - "Screen" – the condition is defined at the level of a form, which is a set of grouped forms (Screen), one of which is this form.
  - "Menu Item" – this condition is specified for the menu item that opens the form.
- *Script (preview)* – for the "Java Script" condition type, this field contains a script set in the *Script* field of the "Properties of <condition name> condition" child form; for the "Screen" ("Menu Item") type, the field contains the message "See corresponding condition with the same name at a screen (menu item) that uses this form".

The Insert Condition and Delete Condition buttons are used to add and delete conditions, respectively.

The *Script* field of the child form "Properties of <condition name> condition" is used to specify a script written in JavaScript. Note that the condition specified by the script must return a Boolean value (1-true, 0-false).

2.4 Form Editor window. "Actions" tab

The "Actions" tab is used to specify parameters for calling an associated procedure.

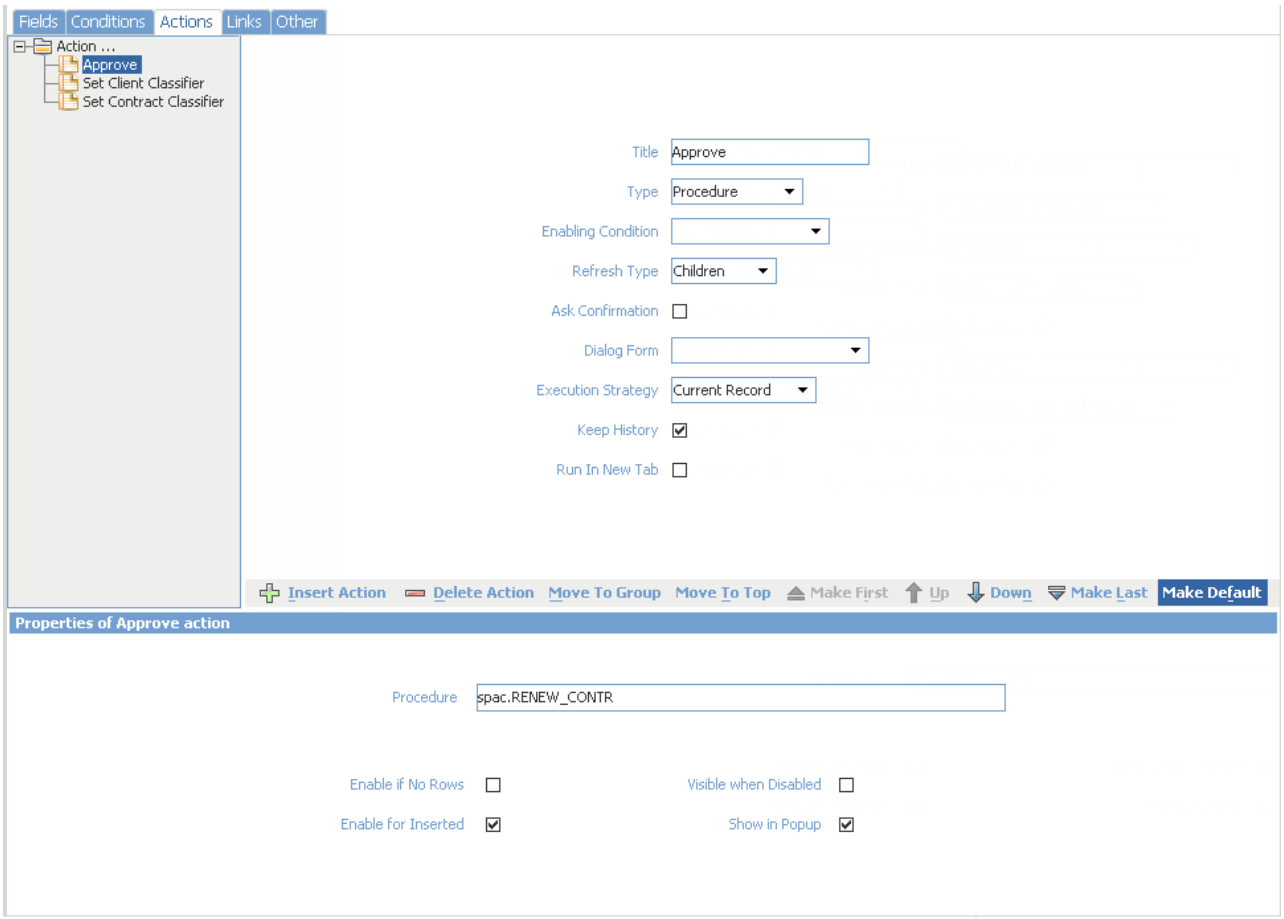


Fig. "Actions" tab

The left window contains an ordered structure of buttons for calling associated procedures. The icon indicates a group of buttons for calling procedures and the icon indicates a button for calling an associated procedure.

The tab contains the following fields:

- *Title* – label of the button that calls the associated procedure; Labels can contain the "&" character. In this case, the letter that follows the "&" character in the button name will be underlined and pressing the <Alt>+<underlined letter> keys will be the same as clicking the button.
- *Type* – drop-down list for selecting the type of associated procedure:
  - "Procedure" – calls a stored database procedure.
  - "Menu Item" – calls a menu item.
  - "Java Script" – calls a script written in JavaScript.
  - "Free" – calls a custom procedure.

- *Enabling Condition* – drop-down list of conditions according to which the associated procedure will be present in the form (see "Form Editor window. "Conditions" tab).
- *Refresh Type* – drop-down list of conditions for refreshing the form after the associated procedure has been run:
  - "None" – the contents of the form are not refreshed.
  - "Row" – only the current record is refreshed.
  - "Children" –the current record and its child records are refreshed.
  - "Current Set" – all this form's records are refreshed.
  - "Parent" – the parent, current, and child records of the form are refreshed.
  - "All" – the entire contents of the form are refreshed, as well as all child and parent records.
- *Ask Confirmation* – when this checkbox is checked, a dialog box prompting users to confirm execution of the associated procedure will be displayed on the screen.
- *Dialog Form* – name of the modal form in which criteria are set (e.g. a processing date) for executing an associated procedure.
- *Execution Strategy* – specifies the records for which this procedure will be executed:
  - "Current Record" – for the current record.
  - "Each Record" – for all the form's records; the procedure is called as many times as there are records.
  - "Pack Records IDs" – for all the form's records; the procedure is called once and a string containing the identifiers of all records, separated by commas (",") is passed as a parameter.
- *Keep history* – when this checkbox is checked, the changes made by the associated procedure to the corresponding record will be logged.
- *Run In New Tab* – when this checkbox is set, a form opened when the procedure is executed (when a menu item is called or a script is run) will open in a new tab.

The child form "Properties of <button label> action" contains the following fields:

- *Procedure* – name of the associated procedure; the field is named *Menu Item* for the "Menu Item" type, *Script* for the "Java Script" type and *Task* for the "Free" type.
- *Enable if No Rows* – when this checkbox is checked, the associated procedure can be executed even if there are no records in the form.
- *Visible when Disabled* – when this checkbox is checked, the associated procedure button will be displayed in the form even if it is inactive.
- *Enable for Inserted* – when this checkbox is checked, the associated procedure will be available for new records that haven't been saved in the database yet.
- *Show in Popup* – when this checkbox is checked, an item for executing this associated procedure will be added to the form's context menu.

To add and delete associated procedure buttons, click 

(

to add to a selected group) and 

respectively.

To add and delete groups containing associated procedure buttons, click 

or 

respectively.

The Make First moves a selected associated procedure button to the first position in the corresponding group, Make Last , to the last position. Click Up or Down to move an associated procedure button up or down one position, respectively.

Click Move To Top to move an associated procedure button from its current group to the top level (i.e. to make it independent and exclude from the current group).

The Move To Group button is used to specify the group to which the associated procedure button will belong.

2.5 Form Editor window. "Links" tab

The "Links" tab contains an ordered list of forms that can be opened from the form that is being edited. The form being edited is the parent and a form that is opened, a child. Parent and child forms can be based on the same database table or on different ones. The "Links" tab is also used to set parameters for opening a child form.

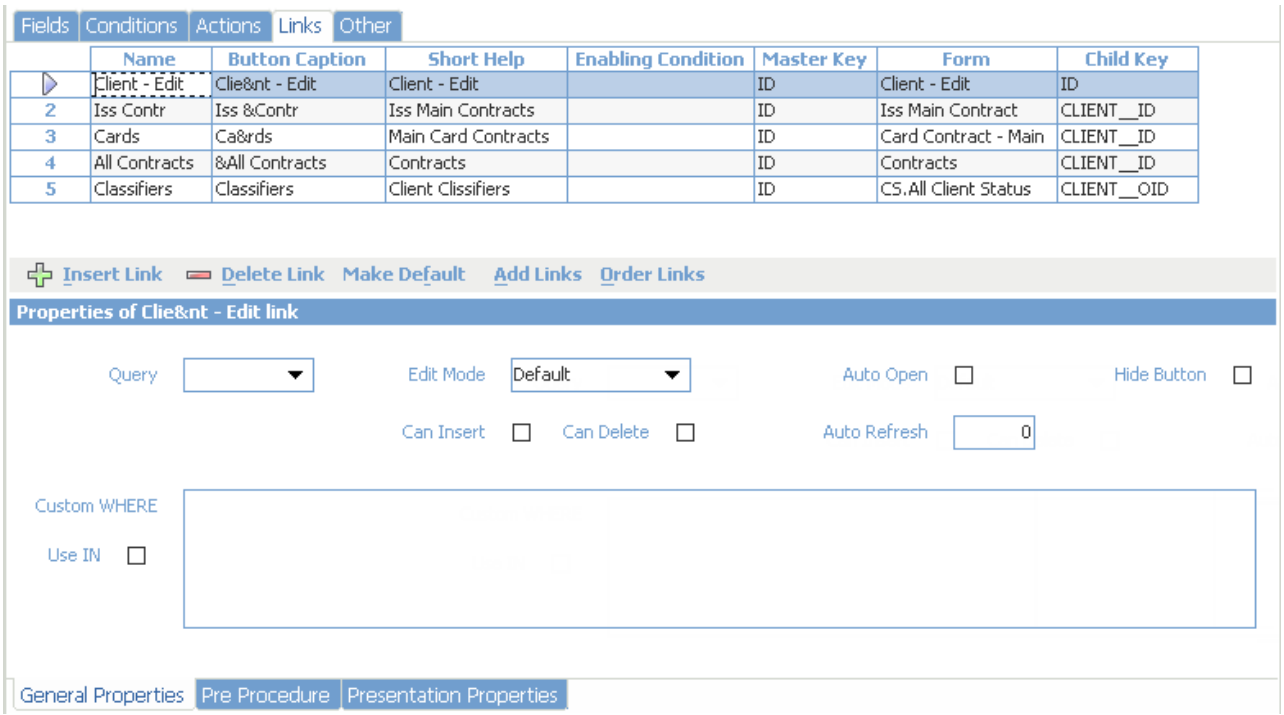


Fig. "Links" tab

This tab contains the following fields:

- *Name* – name of the link between forms.
- *Button Caption* – label of the button that opens the child form. Labels can contain the "&" character. In this case, the letter after "&" will be underlined, and the key combination <Alt>+<underlined letter> will be the same as clicking this button.
- *Short Help* – message that will be displayed in the status bar when hovering over the button for opening the child form.

- *Enabling Condition* – drop-down list of conditions specified on the "Conditions" tab (see "Form Editor window. "Conditions" tab); when a condition is selected, the child form can only be opened for records that meet this condition.
  For an example of using a condition to call a child form, see the section "Appendix 2 Script examples".
- *Master Key* – drop-down list to select a field of the parent form.
- *Form* – drop-down list to select the name of the child form.
- *Child Key* – drop-down list for selecting a field of the child form.

> Note that a child form will only contain records for which the *Master Key* and *Child Key* field values match.

The Insert Link and Delete Link buttons are used to add or delete links to child forms.

Click Make Default to set the specified child form as the form that will be opened by default when the parent form is double-clicked on. The name of the link between the forms will be displayed in bold. To cancel calling a child form by double-clicking on the parent form, click Reset Default State button.

The Add Links button is used to select child forms that can be opened from the parent form. Clicking this button will open a window for selecting child forms.

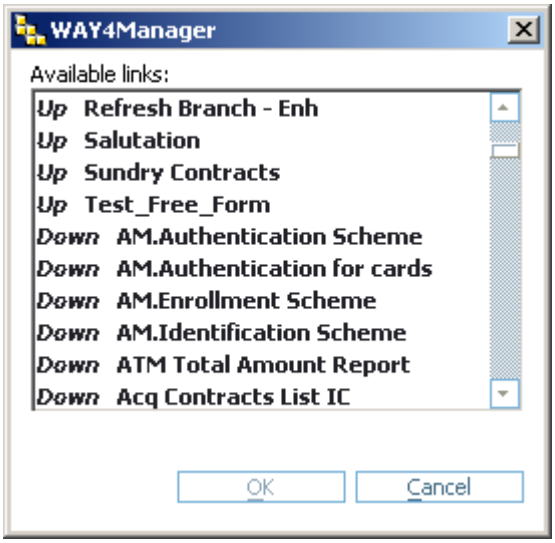


Fig. Window for selecting child forms

The *Available links* field contains a list of forms that can be opened from the form being edited; the possible type of link with the parent form is specified in front of each form's name:

- "Up" – the child form contains a record to which the current record of the parent form refers (e.g. the "Acquiring Contracts" form and the "Clients" child form).
- "Down" – the child form contains records referring to the current record of the parent form (e.g. the "Acquiring Contracts" form and the "Devices" child form).
- "Self" – both forms are based on the same database table; the child form contains information on the parent form's current record. This link type is used, for instance, to show a list of database

records in the parent form and all fields of the current records in the child form (e.g. the "Issuing Contracts" and "Balance" forms).

To select child forms, select the necessary items while pressing the <Ctrl> key and click [OK]; to cancel addition of child forms, click [Cancel].

The Order Links button on the "Links" specifies the order in which buttons for opening child forms will be displayed in the parent form. Clicking the button will open the "Link Order" window.

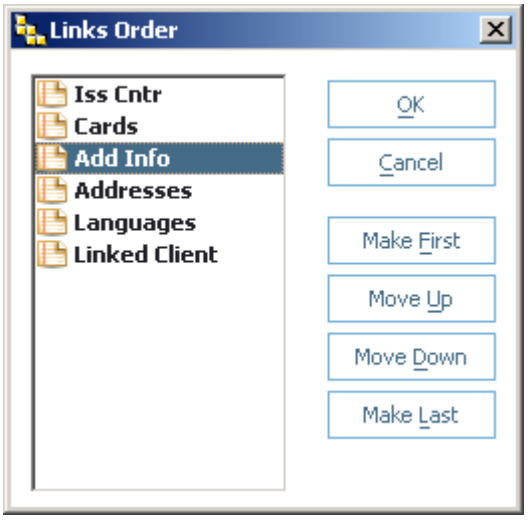


Fig. Order of buttons for opening child forms

To change the specified order, click the name of a link and use the buttons to move it to the necessary position. The [Make First] button moves the selected record to the first position in the list, the [Make Last] button, to the last position. [Move Up] and [Move Down] move a record one position up and down, respectively.

To save changes to the order of buttons for opening child forms, click [OK]; to cancel changes, click [Cancel].

2.5.1 "General Properties" tab

The "General Properties" tab in the child form "Properties of <Button Caption> link" is used to specify parameters for opening child forms.

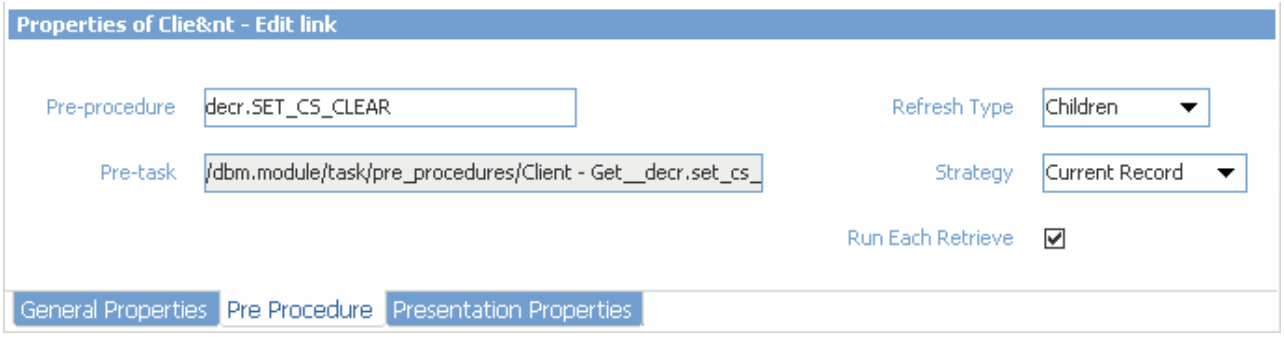
The tab contains the following fields:

- *Query* – child form query method (see the section "Queries" of the document "WAY4 Manager Manual"):
  - "None" – the query window will not be opened.
  - "Free" – a query can be made according to custom criteria or according to a predefined scenario.
  - "Prepared" – a query is only made according to a predefined scenario.
- *Edit Mode* – method of editing child form fields:
  - "Default" – form fields can be edited depending on the form's properties.
  - "Read Only" – form fields cannot be edited.

- *Can Insert* – checkbox with three states for specifying whether new records can be added to a child form. If the checkbox state is "unspecified" (light grey), the ability to add a record is determined by the form's properties; when the checkbox is checked, a new record can be added to the form, and if the checkbox is not checked, records cannot be added.
- *Can Delete* – checkbox with three states for specifying whether records can be deleted from a child form. If the checkbox state is "unspecified" (light grey), the ability to delete a record is determined by the form's properties; when the checkbox is checked, records can be deleted, and if the checkbox is not checked, records cannot be deleted.
- *Auto Refresh* – number of seconds after which a child form's contents will be refreshed; when the value of this field is "0", the form's content will not be refreshed.
- *Auto Open* – when this box is checked, the child form is opened automatically when the parent form is opened.
- *Hide Button* – when this flag is set, the button for opening the child form will be absent in the main form. The *Hide Button* checkbox is only available when the *Auto Open* checkbox is checked.
- *Filter* – additional filtering of data from a child form if the child form contains records that refer to the parent form's current record (for example the "Acquiring Contracts" form and the "Devices" child form). This expression will be included in the SQL query's "AND" condition.
- *Custom WHERE* – WHERE clause added to a SELECT statement to select records displayed in the child form.
- *Use IN* – when this checkbox is checked, the content of the *Custom WHERE* field is interpreted as an IN clause, added to the value of the *Child Key* field on the "Links" tab.

2.5.2 "Pre Procedure" tab

The "Pre Procedure" tab is used to specify the parameters of a stored procedure that will be called before opening a child form.



"Pre Procedure" tab

The tab contains the following fields:

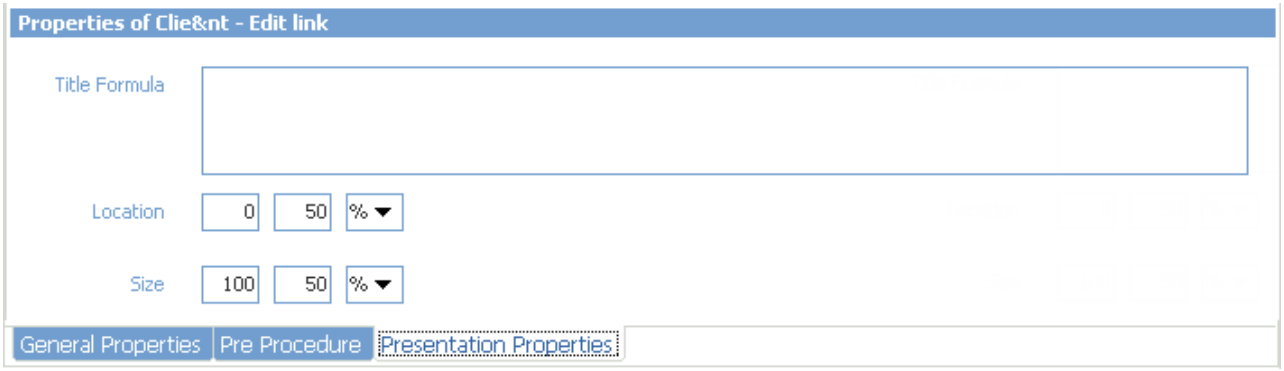
- *Pre-procedure* – the name of the stored procedure that will be called before opening the child form.
- *Pre-task* – the path to the file containing the description of the stored procedure specified in the *Pre-procedure* field.
- *Refresh Type* – drop-down list of conditions for refreshing the child form after the associated procedure has been executed:

- "None" – the contents of the form are not refreshed.
- "Row" – only the current record is refreshed.
- "Children" –the current record and its child records are refreshed.
- "Current Set" – all this form's records are refreshed.
- "Parent" – the parent, current, and child records of the form are refreshed.
- "All" – the entire contents of the form are refreshed, as well as all child and parent records.

- *Strategy* – specifies the records for which this procedure will be executed:
  - "Current Record" – for the current record.
  - "Each Record" – for all the form's records; the procedure is called as many times as there are records.
  - "Pack Records IDs" – for all the form's records; the procedure is called once and a string containing the identifiers of all records, separated by commas (",") is passed as a parameter.
- *Run Each Retrieve* – when this checkbox is checked, a stored procedure will be executed each time the child form is called, and also when moving from one record to another in the parent form.

2.5.3 "Presentation Properties" tab

The "Presentation Properties" tab is used to specify parameters for the child form's location on the screen.



Presentation Properties" tab"

The tab contains the following fields:

- *Title formula* – child form label specified using a script written in JavaScript.
  For an example of using the script, see the section "Appendix 2 Script examples".
- *Location* – group of fields to set parameters for the form's location on the screen. The first field sets the horizontal offset of the form's top left corner relative to the top left corner of the screen's working area, the second field sets the vertical offset. The third field is used to set the unit of measurement for the offset:
  - "%" – the offset is specified as a percentage of the size (horizontal or vertical) of the screen's working area.
  - "px." – the offset is specified in pixels.

- *Size* – group of fields for setting the form's size. The first field contains the horizontal size of the form, the second field, the vertical size of the form. The third field is used to specify the unit of size:
  - "%" – the size is specified as a percentage of the size (horizontal or vertical) of the screen's working area.
  - "px." – the size is specified in pixels.

2.6 Form Editor window. "Other" tab

The "Other" tab is used to specify additional criteria for queries and to set conditions for sorting records in an editable form.

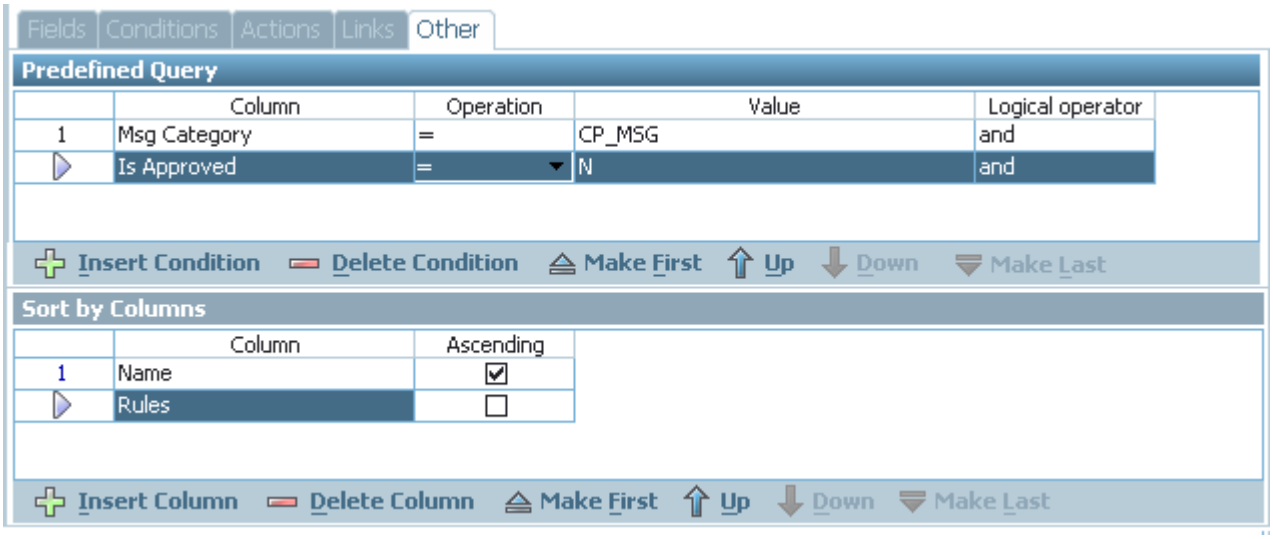


Fig. "Other" tab

The "Predefined Query" form is used to set criteria to query data that will be shown in an editable form. Query criteria are set as described in the section "Queries" of the document "WAY4 Manager Manual".

> Note that a query defined by criteria in the "Predefined Query" form is an editable form's property and the query will be run when the form is opened, regardless of user actions.

The "Sort by Columns" form is used to set parameters for sorting records in a form. This form contains an ordered list of form column (field) names for sorting and the sorting order for each field. To add a new column for sorting, click Insert Column and fill in the following fields:

- *Column* – drop-down list of form field names.
- *Ascending* – checkbox for specifying the order of sorting: ascending when the box is checked, otherwise, descending.

> Note that the data sorting order depends on the order of records in this form, i.e. records will be first sorted by the field specified in the first row, then, by the field specified in the second row, etc.

To delete a column from the list, select the column and click Delete Column button.

To change the order of records in the "Predefined Query" and "Sort by Columns" forms, click Make First (moves the record to the first position in the list), Make Last (moves the record to the last position in the list), Up (moves the record up one position) and Down (moves the record down one position).

2.7 Adding computed fields

Computed fields based on form data can be used. To add a computed field, on the "Fields" tab of the Form Editor window (see the section "Form Editor window. "Fields" tab) click [Insert Computed Field]. In the *Enter a new computed field name* field of the window that opens, enter the name of the computed field and click [OK]. The corresponding row will be added to the list of fields on the "Fields" tab.

> Note that only the *Label* and *Visible* fields of a computed field can be edited.

Computed field formulas are specified in the*Expression* field on the "Computed Field Options" tab of the Form Editor window.

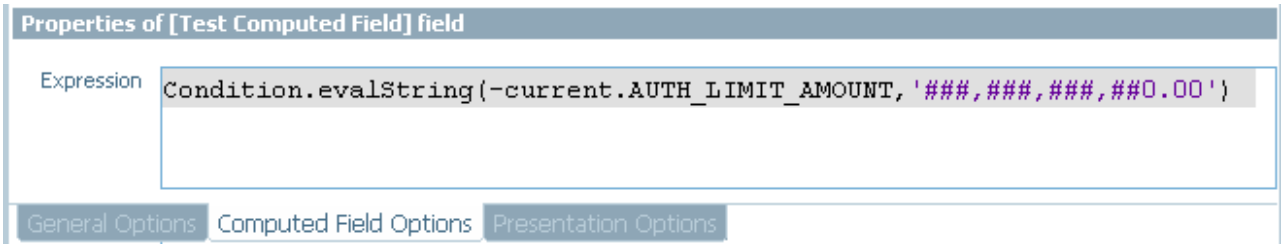


Fig. "Computed Field Options" tab

The formula for a computed field is a script written in JavaScript. This script can be used, for example, to concatenate values of several text fields when it is necessary to display a client's last, first and middle name in the same field.

Syntax for computed fields is described in the specification "way4manager_javadoc-<version>.zip", located in the "<OWS_HOME>client\way4manager\doc" directory.

3 Form design

3.1 Grid form design

Grid form elements:

- Table consisting of rows and columns; rows correspond to database records and columns correspond to record fields.
- Column labels.
- Control buttons, etc.

To enable grid form design mode, click the [Show Layout Editor] button in the "General Properties" form (see the section "Form Editor window. "General Properties" form).

> Before clicking [Show Layout Editor], make sure that "Grid" is specified in the *Style* field of the "General Properties" form.

Clicking [Show Layout Editor] opens a window for designing a grid form.

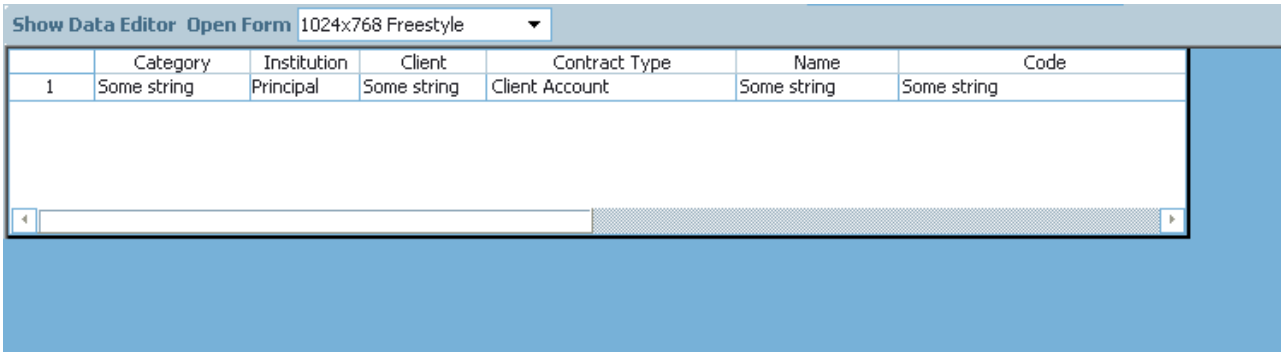


Fig. Designing a grid form

The window contains an example of a grid form in which columns correspond to the fields of the database table on which the form is based.

Click [Show Data Editor] to enable form data editing mode and open the Form Editor window, see the section "Form Editor window").

The [Open Form] button opens the editable form.

To the right of the [Open Form] button there is a drop-down list for selecting the size of the form. Field values depend on the value in the*Change current profile* field of the "WAY4Manager" form (see the section "Form Editor window. "General Properties" form):

- For the value "Design 1024x768":

- "1024x768 Halfscreen Wide" – for a screen resolution of 1024x768 pixels, the form will occupy half of the screen vertically and the entire screen horizontally if user menu, history and "Favorites" windows are minimized.
- "1024x768 Fullscreen Wide" – for a screen resolution of 1024x768 pixels, the form will occupy the entire screen if user menu, history and "Favorites" windows are minimized.
- "1024x768 60% Wide" – for a screen resolution of 1024x768 pixels, the form will occupy 60% of the screen vertically and the entire screen horizontally if user menu, history and "Favorites" windows are minimized.
- "1024x768 40% Wide" – for a screen resolution of 1024x768 pixels, the form will occupy 40% of the screen vertically and the entire screen horizontally if user menu, history and "Favorites" windows are minimized.
- "1024x768 Halfscreen" – for a screen resolution of 1024x768 pixels, the form will occupy half of the screen vertically and the entire screen horizontally if at least one of the user menu, history or "Favorites" windows is not minimized.
- "1024x768 Fullscreen" – for a screen resolution of 1024x768 pixels, the form will occupy the entire screen if at least one of the user menu, history or "Favorites" windows is not minimized.
- "1024x768 Freestyle" – the size of the form is specified by the user.

- For the value "Design 1280x1024":
  - "1280x1024 Halfscreen" – for a screen resolution of 1280x1024 pixels, the form will occupy half of the screen vertically and the entire screen horizontally if at least one of the user menu, history or "Favorites" windows is not minimized.
  - "1280x1024 Fullscreen" – for a screen resolution of 1280x1024 pixels, the form will occupy the entire screen if at least one of the user menu, history or "Favorites" windows is not minimized.
  - "1280x1024 Freestyle" – the size of the form is specified by the user.

3.1.1 Column order

The order of columns in a grid form is changed in grid form design mode. To do this, place the mouse cursor on the column's name, hold down the left mouse button and drag the column to the required position to the left or right.

3.1.2 Changing column width

The width of a grid form column is changed in grid form design mode. To do this, place the cursor on the border of the required column (the cursor will look like a double arrow), left-click and drag the mouse to the left or right to set the column width.

3.1.3 Changing column labels

There are two ways to change a grid form column label:

- For the field that must be renamed, enter a new name in the *Label* field on the "Fields" tab of the form Editor window (see the section "Form Editor window. "Fields" tab).
- In grid form design mode, right-click on the necessary column. Select "Change Label" from the context menu that opens, enter the column's new label in the *Enter a column label* field and click [OK].

> Note that after the changes have been made, the new label of the grid form column will also be displayed in the *Label* field on the "Fields" tab of the Form Editor window (see the section "Form Editor window. "Fields" tab).

3.1.4 Deleting columns

Grid form columns are deleted in grid form design mode. To delete a column, right-click on it. Select "Delete Column" from the context menu that opens.

> Note when a column is deleted, the *Visible* checkbox on the "Fields" tab of the Form Editor Window will be unchecked (see the section "Form Editor window. "Fields" tab).

3.1.5 Calculating totals

Grid form design mode allows users to calculate form column totals. To do so, right-click on a column and select "Add Computed Row" from the context menu that opens. Enter the name of the totals row in the *Enter a new computed row name* field and click [OK]. As a result, a totals row will be added at the bottom of the table.

There are two ways to specify the formula for calculating totals:

- Double-click the totals row cell for the selected column.
- Right-click the totals row cell for the selected column, and select "Add Expression" from the context menu that opens.

In the *Enter a script* field of the window that opens, enter a script written in JavaScript. After clicking [OK], this script will appear in the corresponding cell of the totals row.

For an example of using the script, see the section "Appendix 2 Script examples".

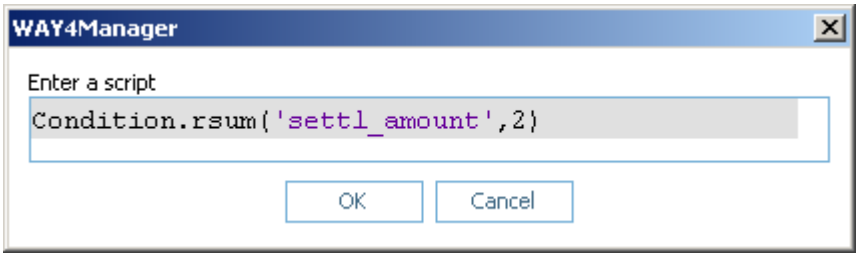


Fig. Window for entering a formula for calculating totals

If totals must be calculated for another column, repeat the procedure described above.

> If several formulas must be specified for the same column, add the necessary number of totals rows and enter a JavaScript formula in the appropriate cell of each row.

To delete a formula entered before, right-click the cell containing the formula and select "Delete Expression" from the context menu. The confirmation prompt "Do you really want to remove the expression?" will be displayed"; click [Yes] to confirm or [No] to cancel.

To delete a totals row, right-click any cell in the row and select "Delete Computed Row" from the context menu.

To rename a totals row, right-click any cell in the row and select "Rename Computed Row" from the context menu. Then, enter the new name of the totals row in the *Enter a computed row name* field and click [OK].

3.2 Free form design

Free form elements:

- Fields
- Labels (field names)
- Group boxes
- Computed fields

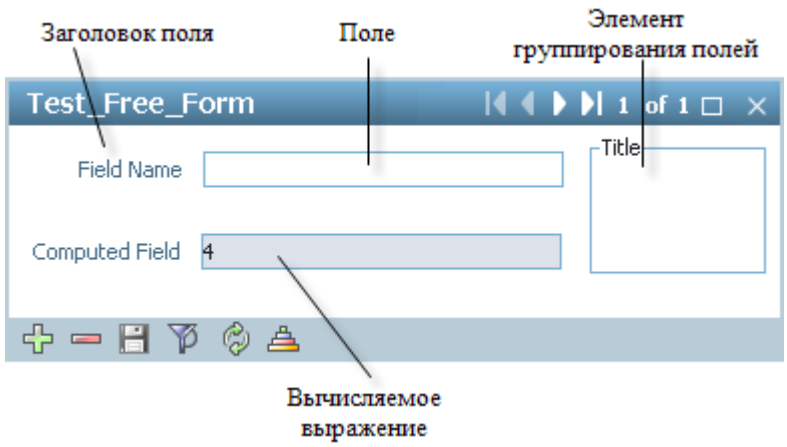


Fig. Free form design

To enable free form design mode, click the [Show Layout Editor] button in the "General Properties" form (see the section "Form Editor window. "General Properties" form).

> Before clicking [Show Layout Editor], make sure that "Free Form" is specified in the *Style* field of the "General Properties" form.

Clicking [Show Layout Editor] opens a window for designing a free form.

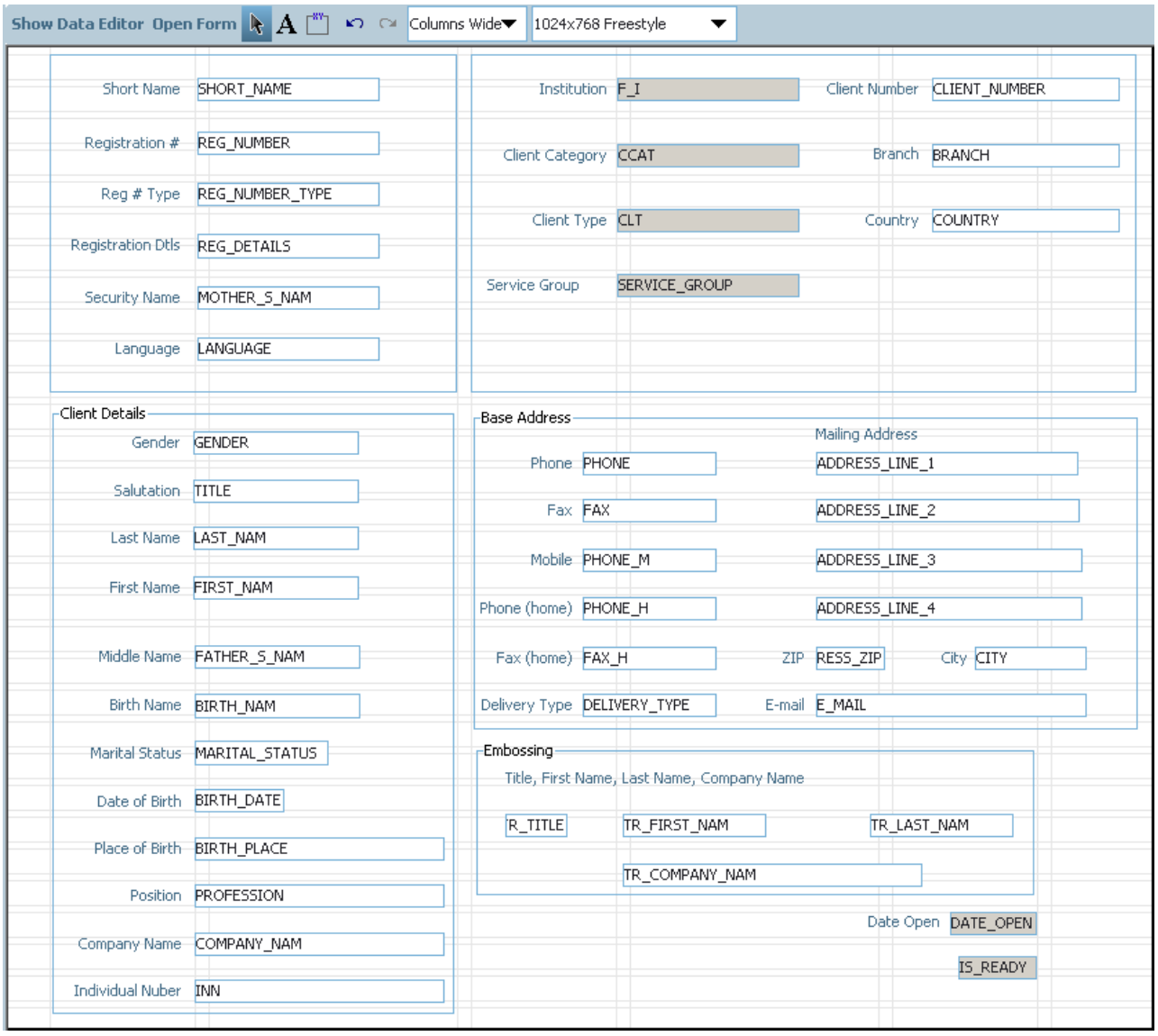


Fig. Free form design

Click [Show Data Editor] to enable form data editing mode and open the Form Editor window, see the section "Form Editor window").

The [Open Form] button opens the editable form.

The  button is used to enable form element selection mode. In this mode, users can move form elements, change their size, delete them, change their main properties, etc. When users hover over an element in this mode, the cursor looks like a four-way arrow.

The  button is used to add text to an editable form (see "Adding text").

The  button.

To undo a user action, click  , to redo an undone action, click the  button.

To the right of the  button, there is a field for specifying a design window layout option. Note that the selected layout is used to align form elements and is not displayed when the form is opened. The field can have one of the following values:

- "Columns Wide" – layout is a rectangular grid consisting of two rectangles: the bigger one for the field, the smaller one for the field label
- "Columns" – like as "Columns Wide", but the rectangles are the same size.
- "10x10" – layout is a grid consisting of squares with a side of 10 pixels.
- "20x20" – layout is a grid consisting of squares with a side of 20 pixels.
- "No" – no layout is used.

To the right of the field for specifying the layout option, there is a drop-down list for selecting form size (see the description of the field in the section "Grid form design").

3.2.1 Moving form elements

To move free form elements, select them in one of the following ways (the elements will be indicated by a special rectangle 

):

- To select a form element, click on it.
- To select several form elements, click them while the <Ctrl> key is pressed.
- To select elements of the same type (fields, field labels, or group boxes), click them while the <Shift> key is pressed.

After selecting form elements, place the cursor on one of the selected elements (the cursor will look like a four-way arrow), hold down the left mouse button, and drag the elements to the necessary position. Form elements can also be moved using the keys <↑>, <↓>, <→>, <←>.

> Note that to align form elements while moving them, it is necessary to use the appropriate layout (see "Free form design").

3.2.2 Changing element size

To change the size of a free form element, click on it. The selected element will look like this: 

button. Next, move the mouse cursor to one of the circles on the element's border (the cursor will change to a double-headed arrow), click and moving the mouse, set the required element size.

> To set the size of an element to the default value specified in the data domain, right-click on the element and select "Set Default Size" from the context menu.

3.2.3 Automatic placement of elements in a form, depending on layout

In design mode, it is possible to set the same size for all form elements of the same type and place them according to the design window's layout (see "Free form design").

To do this, right-click in the design window and select "Do autolayout" from the context menu. A dialog window with the message "Do you really want to clear your current layout and lay out components automatically?" will be displayed. Click [Yes] to automatically place form elements according to the selected layout. All form elements of the same type (fields, field labels, and group boxes) will be of the same size, which is calculated automatically and depends on the selected layout option. The order of fields and labels in the form will correspond to the order of the fields on the "Fields" tab (see "Form Editor window. "Fields" tab).

3.2.4 Deleting elements

There are two ways to delete a free form element:

- Click on the element to select it, and then right-click. Select "Delete"; from the context menu that opens.
- Select the element and click <Delete>.

> Note when a field or a computed field in a free form is deleted, the *Visible* checkbox on the "Fields" tab of the Form Editor Window will be unchecked (see the section "Form Editor window. "Fields" tab).

3.2.5 Aligning elements

To align free form elements, click on them while holding down the <Ctrl> key, place the mouse cursor over one of the selected elements (the cursor will look like a four-way arrow), and right-click. Select the alignment method from the context menu:

- "Align Vertically" – elements will be aligned vertically, and their width and height will be changed to conform to the size of the first selected element.
- "Align Horizontally" – the elements will be aligned horizontally, and their width and height will be changed to conform to the size of the first selected element.

3.2.6 Adding text

Text, for example, a field label in a free form is added in design mode. To do this, click the  button in the form design window, click on the place in the form where the text must be added, and then edit the text.

To edit text, double-click it, or right-click it and select "Properties" from the context menu. This opens the "Properties" window where the text's main parameters are set.

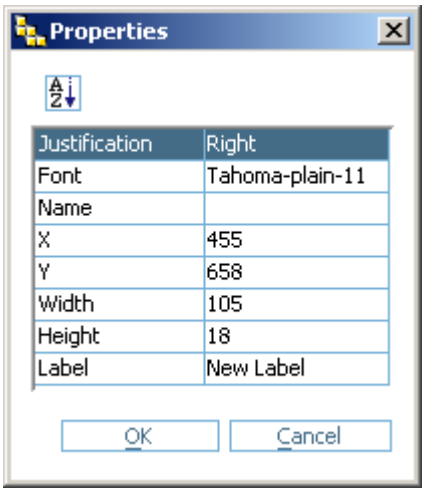


Fig. Text parameters

This window contains the following fields:

- *Justification* – text alignment type:
  - "Left"
  - "Right"
  - "Center"
- *Font* – font type
- *Name* – text name. This field is used when it is necessary to display/not display a field together with the corresponding text. In this case, the *Name* field must contain the code of the field to which the text is linked.
- *X* – horizontal offset of the text (in pixels) from the upper left corner of the form.
- *Y* – vertical offset of the text (in pixels) from the upper left corner of the form.
- *Width* – text width in pixels.
- *Height* – text height in pixels.
- *Label* – text label.

Click to sort the text parameters alphabetically.

3.2.7 Adding group boxes

Group boxes are added to free forms in design mode. To do this, click and click the place where a group box must be added to the form.

To edit a group box, double-click it, or right-click it and select "Properties" from the context menu. This opens the "Properties" window where the main parameters of the group box are set.

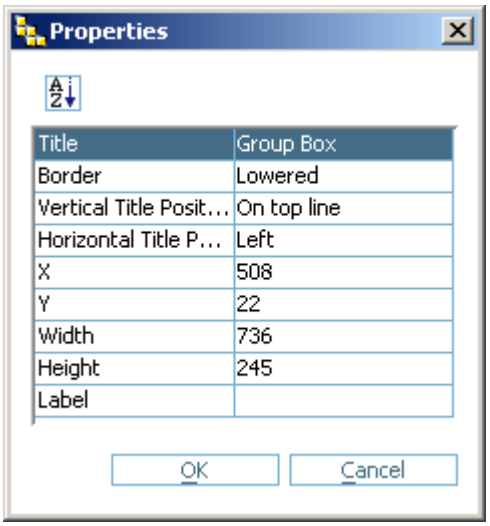


Fig. Group box parameters

Group box parameters are the same are text parameters. In addition, this window contains the following fields:

- *Title* – group box text (label)
- *Border* – border type:
  - "Raised"
  - "Lowered"
  - "Line border"
- *Vertical Title Position* – vertical position of the label:
  - "Above top"
  - "On top line"
  - "Below top line"
  - "Above bottom"
  - "Bottom"
  - "Below bottom"
- *Horizontal Title Position* – horizontal position of the label:
  - "Left"
  - "Right"
  - "Center"

3.2.8 Field parameters

In free form design mode, it is possible to specify main field parameters. To do this, double-click the necessary field, or right-click it and select "Properties" from the context menu. This opens the "Properties" window where the field's main parameters are set.

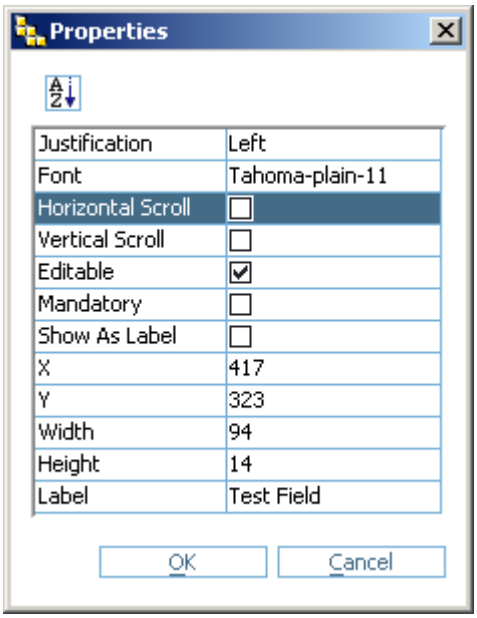


Fig. Field parameters

The purpose of the *Justification*, *Font*, *X*, *Y*, *Width*, *Height* and *Label* fields is the same as the purpose of the same fields in the text parameter window (see "Adding text"). In addition, this window contains the following fields:

- *Horizontal Scroll* – when this checkbox is checked, the horizontal scroll bar will be displayed for this field; the parameter is only available for fields with the "Edit" style type and the *Multiline* checkbox checked (see ""Text Field Options" tab).
- *Vertical Scroll* – when this checkbox is checked, the vertical scroll bar will be displayed for this field; the parameter is only available for fields with the "Edit" style type and the *Multiline* checkbox checked (see ""Text Field Options" tab).
- *Editable* – indicates whether the form field is editable; if this checkbox is checked, values in the field can be edited.
- *Mandatory* – determines whether this field is mandatory (only available when the *Editable* checkbox is checked). If the checkbox is checked and the field is left blank, an error message will be displayed.
- *Show As Label* – when this checkbox is checked, the field border (a rectangular frame) will not be displayed in the form.

3.2.9 Tab order

The <Tab> key is used to navigate between fields when working with WAY4 Manager free forms.

There are two ways to specify the tab order (the order of navigating between fields by pressing the <Tab> key):

- Right-click in the form and select "Set Tab Order" from the context menu. The cursor will change to a button. Next, set the necessary tab order by clicking each field. After the last field has been selected, the following message will be displayed: "Tab order has been successfully specified for all the fields".

- Right-click and select "Tab Order Dialog" from the context menu. This opens the "Tab Order Dialog" window containing an ordered list of free form fields.

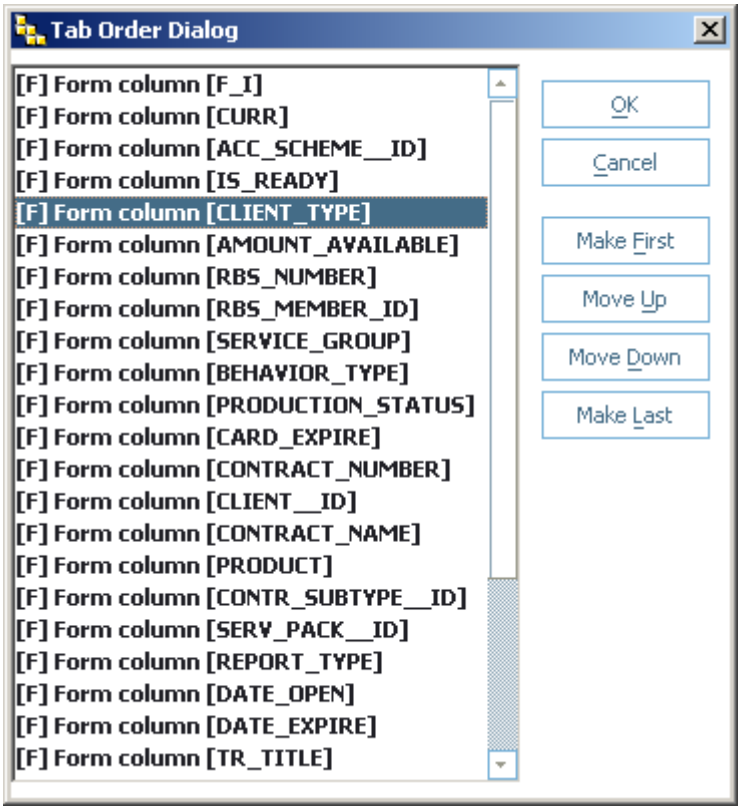


Fig. Setting tab order

To change the tab order, click the name of a field and use the buttons move it to the necessary position. The [Make First] button moves the selected field to the first position in the list, the [Make Last] button, to the last position. [Move Up] and [Move Down] move a field one position up and down, respectively.

To save the changed tab order, click [OK]; to cancel changes, click [Cancel].

3.2.10 Element overlay order

The overlay order of free form elements is adjusted when placing fields and labels in group boxes used to select groups of fields (see "Adding group boxes").

The overlay order of form elements is specified in design mode in one of the following ways:

- Right-click on the form element and select "Send to Back" or "Bring to Front" from the context menu.
- Right-click in a form an select "Draw Order" from the context menu. This opens the "Draw Order" window containing an ordered list of free form elements.

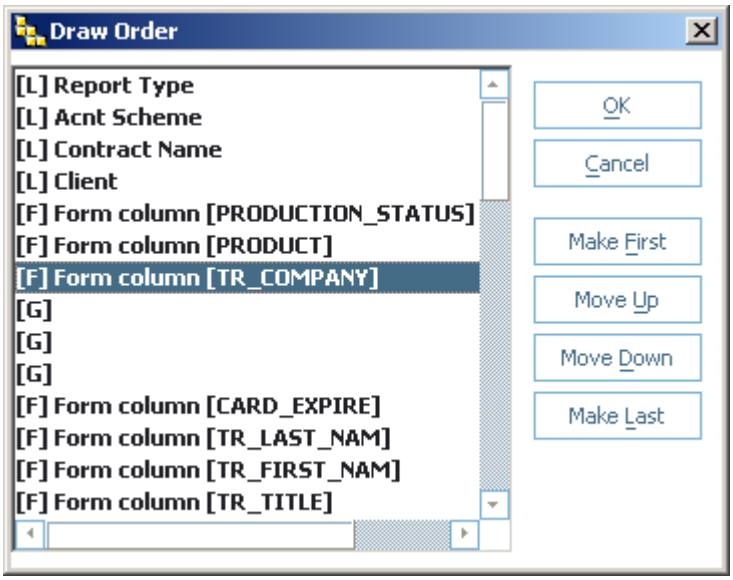


Fig. Setting element overlay order

In this window, [F] indicates a form field, [L], a label, [G], a group box.

Element overlay order is changed in the same way as tab order ("Tab order").

4 Appendix 1 Storing forms in standard WAY4 directories

4.1 WAY4 file server standard directories

Standard file server directories as well as access privileges for them are described in the section "Privileges of Access to WAY4 Directories" of the document "DB Manager User Management".

4.2 Storing forms in standard directories

To store forms in the system, physical files with the "*.xml" extension are used. File names are "<form name>.dataform". These files are stored in subdirectories "<OWS_directory_name>\client\way4manager\components\dbm.module\dataform" of the standard system directories <OWS_HOME> and <OWS_WORK>.

Forms supplied with the distribution and stored in the <OWS_HOME> directory are considered standard. It is forbidden to edit them in any way or delete them.

Only OpenWay specialists may modify standard forms in the <OWS_HOME> directory and these forms are only updated during system upgrade.

4.3 Custom forms

When standard forms are edited (modified), for example when localizing form field labels or when system users create custom forms, copies of these forms are created in the <OWS_WORK> directory. During further work with the system, these custom forms will be opened instead of the standard ones.

To find out which directory a form was opened from, right-click on the form label and select "Design → Show Information" from the context menu. The *Form* field of the form parameter window contains the form's file path.

4.4 Synchronizing custom forms

During system upgrade, it is necessary to run a procedure to synchronize custom forms. During this procedure, the system will check whether custom form fields correspond to upgraded database table fields. The procedure checks whether the corresponding fields are present in database tables and whether database fields and form fields have the same types. If discrepancies are found, a dialog box will be displayed prompting users to make changes to the corresponding columns or fields of the form.

To start form synchronization, run the system menu item "Tools => Synchronization => Synchronize Forms" or press <Shift>+<F11>.

It is sufficient to run this process once every time a version is upgraded.

4.5 Restoring standard forms

There are two ways to return to using a standard form instead of an edited (custom) one from the <OWS_WORK> directory: keeping the custom form or discarding it.

To use a standard form when working with the system, delete the file of the same form from the working directory. To do this, click [Remove] in the window for selecting a form, or delete its physical file using the operating system's fine manager.

To be able to restore a custom form, save its file "<form name>.dataform.xml" in another directory on the disk.

5 Appendix 2 Script examples

- Setting a condition that must be met for a user to be able to delete a document from the database. The condition is specified on the "Conditions" tab of the Form Editor window (see the section "Form Editor window. "Conditions" tab), and then selected in the *Delete Condition* field of the "General Properties" form (see the section "Form Editor window. "General Properties" form).

  Sample script:

```
Condition.isNull(posting_status)||posting_status=='W'||posting_status=='D'
```

  As a result of running the script, a document can only be deleted from a grid form if the field with the "posting_status" code is not filled in or contains either "W" or "D" (which means that the document has the "Waiting" or "Decline" status). When the condition is met, the form's  button becomes active.

- Setting a condition that must be met for a user to be able to edit a form field. The condition is specified on the "Conditions" tab of the Form Editor window (see the section "Form Editor window. "Conditions" tab), and then selected in the *Editable Condition* field of the "General Properties" form (see the section "Form Editor window. "Fields" tab).

  Sample script:

```
con_cat=='C'
```

  This script is specified, for example for the fields *External PIN Response*, *On US PIN Response* and *Def PIN Tries* of the "Service Pack Full Info" form containing additional information about Service Packages. As a result of running the script, these fields will be available for editing only for card contract Service Packages; i.e. for contracts with "con_cat" (contract category) "C" (Card).

- A script that is run each time the contents of a field in an editable form change. The script is specified in the *Modification Script* field on the "General Options" tab (see the section ""General Options" tab).

  Sample script:

```
if (current.CLT == 'PR') {userSetValue(currentRow,'COUNTRY','RUS')} else{userSetValu
e(currentRow,'COUNTRY','')}
```

  If the "PR" (Private Resident) client type is specified in the field for which this script is set, the value "Russia" will be automatically put into the field with the "COUNTRY" code (the code of this value is "RUS"). If the value of the editable field is other than "PR", the field with the "COUNTRY" code is not filled in. It is convenient to specify this script when the bank or processing center is located in the Russian Federation.

- Setting a condition for the text color to change depending on a field's value. The script is set in the *Paint Script* field on the "Presentation Options" tab (see the section ""Presentation Options" tab).

  Sample script:

```
if (Condition.asc(message_type) == Condition.asc("E") )
{paintProperties.color = UI.rgb(255,0,0)}
else if (Condition.asc(message_type) == Condition.asc("W"))
{paintProperties.color = UI.rgb(0,255,0) }
else paintProperties.color = UI.rgb(0,0,0)
```

  This script is specified, for example, for the *Type* field (the field code is "message_type") of the "Last Process Messages" form, opened by clicking the [Messages] button in the "Last Process" form. The "Last Process Messages" form contains information about messages generated by the system during a process.

  If an error occurred during the process; i.e. the field with the "message_type" code contains "E" (Error), the text color will be red. If a warning occurred; i.e. the field with the "message_type" code contains "W" (Warning), the text color will be green. In all other cases, the text will be black.

- Script used to determine additional conditions for filtering data displayed in drop-down lists (the script can only be specified for fields with "DDD Window", "Check Box List" and "Lookup" style types). The script is specified in the *Data Filtration Script* field of the "Data Filtration Script" tab (see the section ""Data Filtration Script" tab).

  Sample script:

```
dddw.F_I == current._F_I
&& dddw.PCAT == current._PCAT
&& dddw.CCAT == current._CCAT
```

  This script is specified, for example for the *Account Scheme* field of the "Iss Main Contract" form.

  When an issuing contract is created, the drop-down list in the *Account Scheme* field will only contain records whose values of fields with codes "F_I" (Financial Institution), "PCAT" (Product Category) and "CCAT" (Client Category) in the form are the same as the values of the same fields in the "acc_scheme" form, based on the ACC_SCHEME table.

- Setting a condition that must be met for users to be able to open a child form only for a record that meets this condition. The condition is specified on the "Conditions" tab of the Form Editor window (see the section "Form Editor window. "Conditions" tab), and then selected in the *Editable Condition* field of the "Links" tab (see the section "Form Editor window. "Links" tab).

  Sample script:

```
terminal_category=='A'
```

  This script is specified, for example, for the "Device Contract" form, used to enter device contracts.

If the *Terminal Category* field (the field code is "terminal_category") contains the value "A" (ATM), the [ATM] button will be present in the "Device Contract" form. Clicking this button opens the "ATM for <device name>" form, used to set up an ATM.

- Specifying a child form title. The script is specified in the *Title Formula* field of the "Link Presentation Properties" tab (see the section "Presentation Properties" tab").

  Sample script:

```
'Linked Clients for ' + SHORT_NAME
```

  When a child form is opened, its title will be generated as follows: the contents of the field with the "SHORT_NAME" code of the "Client – Edit" form will be added to "Linked Clients for" For example, if the field contains the "Test Client" value, the title of the child form will be "Linked Clients for Test Client".

- Specifying a formula for calculating grid form column totals. The script is set in the *Enter a script* field of the window for entering a formula for calculating totals (see the section "Calculating totals"). Sample script:

```
Condition.sum('shared_blocked',0)
```

  This script is specified, for example, for the "All Contracts for <client name>" form opened by clicking [All Contracts] in the "Clients (Corporate)" form.

  The *Credit Limit* field of the *sum* totals row in the "All Contracts for <client name>" form will contain the sum of credit limits (values of the *Credit Limit* field with the "shared_blocked" code) for all a client's contracts.

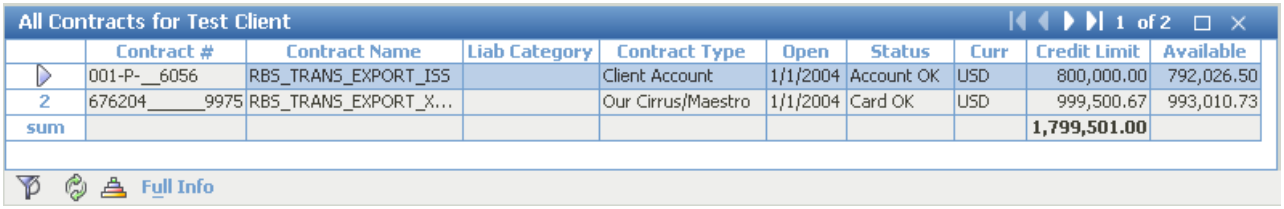


Fig. Sample use of a formula for calculating totals