

# Tips & Tricks on iDempiere development **not usual features that you must know!**

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Murilo Habermann Torquato



# About Me

Murilo Habermann Torquato

[muriloht@devcoffee.com.br](mailto:muriloht@devcoffee.com.br)

- co-founder devCoffee
- \*\*\*piere world since 2008





# Agenda

1. Virtual UI Columns
2. AskForInput: Process & Callout
3. Special Forms
4. Window Validators
5. Quick Info: zoom, images...
6. Field Types: Read Only Grid and Multi Selection
7. CSS Styles (windows, info windows, and forms)
8. Info Window: editable cell, related info and process
9. Process Customization

1

# Virtual UI Column

Display contents for users without affect performance



# Virtual UI Column Quick Concept

## Feature: Virtual UI Column [\[edit\]](#)

**Goal:** Technical

**Developers:** Carlos Ruiz

**Sponsors:** [TrekGlobal](#)

## Description [\[edit\]](#)

Legacy virtual DB columns can represent a big issue in terms of performance, for example writing complex SQL statements that bring SUM of records accessing without a proper index can add heavy usage to the database.

In high usage tables is not recommended at all to use these virtual DB columns, because every time a record is read from the database using the iDempiere model classes, all the virtual columns are read with the record, even if they are not required or going to be used.

In order to solve this issue we implemented the concept of Virtual **UI** Column (in contrast to the Virtual **DB** Column).

The virtual DB column functionality has not been changed, it keeps working as usual, note the virtual DB columns can be used for finding records, and also can be exported, printed, etc.

## How to define a Virtual UI Column [\[edit\]](#)

To define a Virtual UI Column is simple, you just need to prefix **@SQL=** to the definition of the column (AD\_Column.ColumnSQL) - and usually you'll use context variables relating other fields on the same window, this way the Virtual UI Columns are refreshed every time the related fields change.

## Example [\[edit\]](#)

In the Product window there used to be a column (we inactivated it because of the impact on performance):

Virtual **DB** Column definition for CostStandard:

```
(SELECT ROUND(SUM(c.CurrentCostPrice),2) FROM M_Cost c INNER JOIN M_CostElement e ON (e.M_CostElement_ID=c.M_CostElement_ID)
WHERE e.CostingMethod='S' AND c.M_Product_ID=M_Product.M_Product_ID)
```

The same column can be obtained as a Virtual **UI** Column with much less impact on performance this way:

```
@SQL=SELECT ROUND(SUM(c.CurrentCostPrice),2) FROM M_Cost c INNER JOIN M_CostElement e ON (e.M_CostElement_ID=c.M_CostElement_ID)
WHERE e.CostingMethod='S' AND c.M_Product_ID=@M_Product_ID@
```

## Restrictions [\[edit\]](#)

Because they are calculated on the fly, Virtual UI Columns cannot be used to find records, cannot be exported or printed in reports.

**Technical Info:** [IDEMPIERE-3760](#)

Reference: [https://wiki.idempiere.org/en/NF6.2\\_Virtual\\_UI\\_Column](https://wiki.idempiere.org/en/NF6.2_Virtual_UI_Column)



## Virtual UI Column Demo & Discussion

- Simple usage: Product -> Standard Cost
  - Show in Grid automatically disabled when "SQL="
- SQL + HTML = Request (all) - SQL UI -> History
- Ideas, suggestions or experiences?

# 2

## **AskForInput: Process & Callout**

Better flow control with user interaction



# AskForInput: Process & Callout

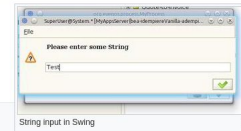
## Quick Concept

### Feature: Ask Input Within Process [edit]

Goal: Development  
Developer: Jan Thielemann  
Technical Info: IDEMPIERE-1773@  
Description:

When running a process from the GUI, you now have two methods to interact with the user. In the SvrProcess subclass you can call the processUI to ask for boolean or String inputs. Here is an example of how to use the askForInput() method:

```
final StringBuffer string = new StringBuffer();
final StringBuffer stringcaptured = new StringBuffer();
processUI.askForInput("Please enter a String:", new callback<String>() {
    @Override
    public void onCallback(String result) {
        addLog("You entered: " + result);
        string.append(result);
        stringcaptured.append("true");
    }
});
int timeoutInSeconds = 5;
int sleeps = 200;
int maxcycles = timeoutInSeconds * 1000 / sleeps;
int cycles = 0;
while (stringcaptured.length() == 0) {
    try {
        Thread.sleep(sleeps);
    } catch (InterruptedException e) {}
    cycles++;
    if (cycles > maxcycles)
        throw new AdempiereUserError("Timeout waiting for user answer");
}
String userInput = string.toString();
```

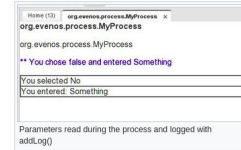


String input in Swing

Notice that we have to use final objects so they can be used in the callback. Using a StringBuffer is a good idea here. Also notice that we implemented a timeout because a process produces a lot of locks.



String Input in WebUI



Reference: [https://wiki.idempiere.org/en/NF2.1\\_Ask\\_Input\\_Within\\_Process](https://wiki.idempiere.org/en/NF2.1_Ask_Input_Within_Process)





## AskForInput: Process & Callout Demo & Discussion

- IDEMPIERE-3969
  - Ask for input: process example
    - showReport
    - showInfoWindow
  - Ask for input: callout example
- Ideas, suggestions or experiences?

📌 IDEMPIERE-3969

### Callout & Process: new features and improvements

📎 Attach   📄 Create subtask   🔗 Link issue

#### Description

Hi,

Attached you can find a patch that:

1. extends the [IDEMPIERE-1773: Asking for input from within a process](#) **CLOSED** (ask for input on process) feature to allow the use of String, Number, TableDir and Search editors
2. implements ask for input feature for use from inside callouts (see the below gif to understand how it works and CalloutTeste.java with an simple usage example)



3. implements on AbstractProcessDialog a new method called "showReports". This is useful when we need to display a pdf (or a list of pdf files) after generating it from inside the process. Note that DunningPrint and InvoicePrint classes was using the same (duplicated) code for that, and now they are modified to use the new method.
4. implements on AbstractProcessDialog a new method called "showInfoWindow". Allowing an easy way to call a InfoWindow in the end of a process execution. Usage:

```
1 // define some context for infowindow filtering
2 Env.setContext(getCtx(), "#CTX_COB_GCDevedor_ID", contrato.getCOB_PNDDevedor_ID());
3
4 if (processUI != null)
5 {
6     processUI.showInfoWindow(0, MCOBContratoLinha.Table_Name, MCOBContratoLinha.Table_Name+"_ID
7 }
```

# 3

## Special Forms

More than only a parameter panel



## Special Forms Quick Concept

- Displays a custom form before running a process in place of parameter panel
- Open custom forms in an easy way from any place that you can call a Process (toolbar, window, info window... )

ABC value	ABC name	ABC classname
TabEditor	Tab Editor	org.compiere.apps.form.VTabEditor
C_BankStatement CreateFromBatch	Bank Statement Create From Batch	org.compiere.apps.form.VStatementCreateFromBatch
CompareFieldSuggestion	Compare Field Suggestion	org.adempiere.webui.apps.form.CompareFieldSuggestion
CompareCtxHelpSuggestion	Compare Context Help Suggestion	org.adempiere.webui.apps.form.CompareCtxHelpSuggestion

Reference: above classes and some threads on google groups

## Special Forms Demo & Discussion



- Use case I
  - BrERP: Informações da Localização -> Ajustar Região e Sequência de Entrega
- Use case II
  - BrERP:
- Use case III
  - Tratamento de Pedidos
- Ideas, suggestions or experiences?

# 4

## Window Validators

Display a message, ask for confirmation or whatever you need

## Window Validators Quick Concept



```
WindowValidatorEventType.java ✕
1 package org.adempiere.webui.adwindow.validator;
2
3 public enum WindowValidatorEventType {
4     BEFORE_IGNORE("beforeIgnore"),
5     AFTER_IGNORE("afterIgnore"),
6     BEFORE_NEW("beforeNew"),
7     AFTER_NEW("afterNew"),
8     BEFORE_PRINT("beforePrint"),
9     AFTER_PRINT("afterPrint"),
10    BEFORE_DELETE("beforeDelete"),
11    AFTER_DELETE("afterDelete"),
12    BEFORE_SAVE("beforeSave"),
13    AFTER_SAVE("afterSave"),
14    BEFORE_COPY("beforeCopy"),
15    AFTER_COPY("afterCopy");
16
```

Reference: <https://idempiere.atlassian.net/browse/IDEMPIERE-1749>



## Window Validators Demo & Discussion

- Example PaymentWindowValidator on org.adempiere.ui.zk.example
- Use Case: confirm beforeSave Sales Order without a Campaign
- Know problems
  - issue with detail tab <https://idempiere.atlassian.net/browse/IDEMPIERE-2572>
- Ideas, suggestions or experiences?

# 5

## **Quick Info: zoom, images...**

Speed up your users tasks





## Quick Info beyond text: using zoom, images and other Quick Concept

### NF2.1 Quick Info Widget

#### Feature: Quick Info Widget [\[edit\]](#)

Goal: Usability

Contributor: Quality Systems & Solutions (GlobalQSS)@

Developer: Carlos Ruiz

Video: <http://www.youtube.com/watch?v=ILtpjklZY@> by Jan.thielemann - evenos Consulting GmbH@

#### Description:

Now you can configure a Quickinfo widget to appear by any Window/Tab.

- Firstly you define a translatable message with the text you want to display in the status line. Please note the usage of the MessageFormat parameters.
- Here you can define positional parameters numbered from zero, describe the type (number, date, time, format, choice or undefined for a default string), and the format style.
- On the message you can even use basic html tags to format its title and values (i.e. bold, italic):

The screenshot shows the iDempiere web interface. The top navigation bar includes 'Home', 'Status Line: QuickInfo\_Last...', 'Message: QuickInfo\_LastOrder', and 'Menu'. The user is logged in as 'SuperUser@System: System Administrator'. The main content area is titled 'Message' and contains the following configuration fields:

- Client:** System
- Organization:** [Dropdown menu]
- Search Key:** QuickInfo\_LastOrder
- Active:**
- Entity Type:** User maintained
- Message Type:** Information
- Message Text:** <b>Last Sales Order</b> (0 / {1,date}) / <b>{2,number,#,##0.00}</b>
- Message Tip:** [Text area]

Reference: [https://wiki.idempiere.org/en/NF2.1\\_Quick\\_Info\\_Widget](https://wiki.idempiere.org/en/NF2.1_Quick_Info_Widget)



## Quick Info beyond text: using zoom, images and other Demo & Discussion

- Example on sales order line (image)
- Example on Request Window (HTML + javascript for zoom)
  - This is also useful on process result dialog
- Ideas, suggestions or experiences?

Área de Trabalho Retorna Todos os Produtos d... x Produto: 1000119 151-vari... x

**Retorna Todos os Produtos do MarketPlace**  
Atualiza TODOS os produtos no B/ERP que estão com o campo "E enviado ao Plugg.to?" selecionado, utilizando as informações registradas no MarketPlace

\*\*

MarketPlace: Plugg.to

24/08/2019 - 10:34:02	@_Orkut_SKU	Produto atualizado com sucesso.
24/08/2019 - 10:34:02	@_Padrão	Produto não possui Descrição para o MarketPlace Plugg.to
24/08/2019 - 10:34:02	@_XYZ	Produto atualizado com sucesso.
24/08/2019 - 10:34:03	@_138-ED021	Produto atualizado com sucesso.
24/08/2019 - 10:34:04	@_151-variacao123	Produto atualizado com sucesso.

Parâmetros Salvos

# 6

## Field Types: Read Only Grid and Multi Select

Let's start with the basics



## Field Types: Read Only Grid and Multi Select

### Quick Concept

IDEMPIERE-3269

Field to show read-only grid (TrekGlobal contribution 1006181)

Attach Create subtask Link issue

#### Description

We want to implement a new field type in core that can show a grid for a detail tab.

- the field can admit and call callouts that would be triggered when a line of the grid is selected
- the value to save in the field is the ID (converted to String) of the record selected, or a list of IDs separated by commas in the case of multi-selection (so, the String field must defined with enough space to save the mutltiple IDs selected)

Our intention is to interact with this field via callouts, so a callout can potentially fill other fields on the master tab, and the master can have buttons that call a process to do things on the detail (this would be processing the list of IDs on the field).

#### Environment

None

#### Attachments

PatchTest1006181\_Call  
out.patch

2 KB

PackinTest1006181.zip

16 KB

temporary\_attachment

9 KB



#### STATUS

Closed Fixed

#### ASSIGNEE

Heng Sin Low

#### REPORTER

Carlos Ruiz

#### DEVELOPMENT

8 commits

7 months ago

#### PRIORITY

Major

#### Show 1 more field

Time tracking

Created December 15, 2016, 9:49 AM

Updated May 1, 2019, 9:02 AM

Configure

Reference: <https://idempiere.atlassian.net/browse/IDEMPIERE-3269>



## Field Types: Read Only Grid and Multi Select Demo & Discussion

- Test New Grid Field (Carlos 2Pack)
  - Removed parent link column and tabs visible for demonstration
- Ideas, suggestions, experiences?



## Field Types: Read Only Grid and Multi Select Quick Concept

IDEMPIERE-3413

### Multi Select List and table reference

Attach Create subtask Link issue

#### Description

Design:

Adding 2 new reference type

1. Multi Select Table
2. Multi Select List

When multi select table reference column is sync to DB, create column of Integer array. When multi select list reference column synced, create column of string array.

create editor for each reference type and allow check box to select multiple value.

Add support for handling array data type in PO class as well as GridTable.

#### Environment

None

#### Linked issues

is duplicated by

IDEMPIERE-3484 Allow multiple selection for lookup fields on reporting

CLOSED



#### STATUS

Closed Fixed

#### ASSIGNEE

Heng Sin Low

#### REPORTER

Deepak Pansheriya

#### DEVELOPMENT

1 commit

4 months ago

#### COMPONENTS

Zk Web Client

#### FIX VERSIONS

6.2z

#### PRIORITY

Major

Show 1 more field

Time tracking

Reference: <https://idempiere.atlassian.net/browse/IDEMPIERE-3413>



## Field Types: Read Only Grid and Multi Select Demo & Discussion

- Multi Select Usage example on iDempiere
  - Report & Process: Open Item
  - Info Window: Order Info
    - You need to have one column for display and one for criteria
    - Parameters panel hiding on selection (maybe a bug)
- BrERP Multi Selecion <https://idempiere.atlassian.net/browse/IDEMPIERE-3181>
  - Usage example on BrERP
  - Negate option on parameters is the only missing on iDempiere
- Ideas, suggestions or experiences?

# 7

## **CSS Styles (windows, info windows, and forms)**

Let's start with the basics





# CSS Styles (windows, info windows, and forms)

## Quick Concept

### NF4.1 Styles On Fields

**Feature:** Styles On Fields [\[edit\]](#)

**Goal:** Usability

**Contributor:** TrekGlobal@

**Developer:** Heng Sin Low

**Description:**

Now you can set special css styles for fields in Windows. The css styles can depend on the theme or any display logic.  
This is achieved simply configuring records in the new CSS Style window.

**Fields:**

- **Tenant:** You can define entries for System or in Tenants, all users will see the System defined entries, Tenant entries will be shown just in specific tenant
- **Organization:** If the organization is set, it is used as a filter for the query
- **Name:** Name of the CSS Style
- **Description:** Description of the CSS Style

Once you create a record in the CSS Style tab, create one in the Style Line tab for each style you want to add.

The screenshot shows a web application window titled "CSS Style: DocumentNo". The "Style Line" tab is selected. The configuration includes:  
- Client: System  
- Organization: (dropdown menu)  
- Style: DocumentNo  
- Line No: 10  
- Inline Style: background-color: yellow!important;  
- Display Logic: @DocStatus@=DR  
- Theme: bxtreme  
- Active:

**Fields:**

- **Tenant:** You can define entries for System or in Tenants, all users will see the System defined entries, Tenant entries will be shown just in specific tenant
- **Organization:** If the organization is set, it is used as a filter for the query

Reference: [https://wiki.idempiere.org/en/NF4.1\\_Styles\\_On\\_Fields](https://wiki.idempiere.org/en/NF4.1_Styles_On_Fields)



## CSS Styles (windows, info windows, and forms) Demo & Discussion

- Simple Use Case on Field
  - Business Partner (Name)
  - Product (Description)
    - IDEMPIERE-3952 - EntityType and Data Access Level review for tables
- IDEMPIERE-3831 - Implement AD\_FieldStyle for Info Windows
  - Info Product and Info BPartner
- BrERP: product and BP commercial status
- IDEMPIERE-4062 - legend for fields with CSS Styles
- Ideas, suggestions or experiences?

# 8

## **Info Window: editable cell, related info and process**

Let's start with the basics



# Info Window: editable cell, related info and process

## Quick Concept

IDEMPIERE-2709

### Adding support for editable field on info window

Attach Create subtask Link issue

**Description**  
Currently info window can run process, But there is no way to make any of field as editable by user.  
Adding this can allow to create suggestion and then user corrected input for process

**Environment**  
None

**Attachments**  
2709-180925.patch (6 KB)

**Linked issues**

is duplicated by

- IDEMPIERE-2839 Allow to configure editable columns on Info Windows **CLOSED**
- IDEMPIERE-3730 Editable fields on InfoWindow **CLOSED**

relates to

- IDEMPIERE-3515 Ability to export data from InfoWindow **CLOSED**
- IDEMPIERE-3973 Bug in Business Partner Info window export function **CLOSED**

testing discovered

- IDEMPIERE-1611 allow user input price and quality when select multi product **OPEN**

**STATUS**  
Closed ✓ Fixed

**ASSIGNEE**  
Deepak Pansheriya

**REPORTER**  
Deepak Pansheriya

**DEVELOPMENT**  
1 commit last year

**LABELS**  
+patch Bischofstein2015 infowindow

**COMPONENTS**  
Core

**PRIORITY**  
Major

Show 1 more field  
Time tracking

Created July 3, 2015, 11:37 AM  
Updated May 18, 2019, 9:54 AM Configure

Reference: <https://idempiere.atlassian.net/browse/IDEMPIERE-2709>



## Info Window: editable cell, related info and process Demo & Discussion

- Simple Editable Info Window Example
  - Editable Field + Process
- Related Info Window example (Roles)
- Ideas, suggestions, experiences?

# Process Customization

Power is never enough



# Process Customization Quick Concept

IDEMPIERE-3971

## Process Customization

Attach Create subtask Link issue

### Description

Similar to Window Customization, this ticket implements a Process Customization feature:



I reviewed our code and created a patch that you can find attached.

### Environment

None



### STATUS

Resolved ✓ Fixed

### ASSIGNEE

muriloht

### REPORTER

muriloht

### DEVELOPMENT

5 commits

18 days ago

### LABELS

+Patch

### TESTED BY

None

### PRIORITY

Major

Reference: <https://idempiere.atlassian.net/browse/IDEMPIERE-3971>

## Process Customization Demo & Discussion



- Simple usage
- Ideas, suggestions or experiences?



# Any Questions?



Thank you!

[muriloht@devcoffee.com.br](mailto:muriloht@devcoffee.com.br)



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