DECEMBER - 2020

WorkWithPlus for Web Training Exercises

Summary

The challenge

A consulting company hires you in order to develop a web system to help the company managing its clients, companies, properties, sales, products and the persons that work in it. The employers of the company will access this system from a browser in different devices, so it is mandatory to generate a web responsive application.

The application should include security in order to manage users, roles and permissions. Moreover, a auditing module is required to audit the changes executed within the application.

We will use WorkWithPlus for Web in order to implement the desired system.

WorkWithPlus for Web Training

Part 1 – Introduction

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1. Create a Knowledge base with name "WWPTraining" to start the development of the application. Select 'C#' as the prototype environment and 'Web' as the type of application.

2. Import the "WWPTraining_Transactions.xpz" so you will get the required transactions to develop the application. Then, run the Web Panel 'WebPanelLoadData' to load the data of all transactions automatically.

3. The customer wants to have the possibility to have a screen in order to see all the companies of the system, and from there, edit, delete and create new companies. What can we do to generate this in an automatic way?

   We apply WorkWithPlus for Web to the Company transaction by opening the Tab Patterns→WorkWithPlus for Web.

The first time that you apply WorkWithPlus for Web to a KB, you have to initialize the settings and theme of the application. So, click in the link 'Initialize WorkWithPlus for Web' to open the Design System Wizard where you will be able to define the main settings of the application.

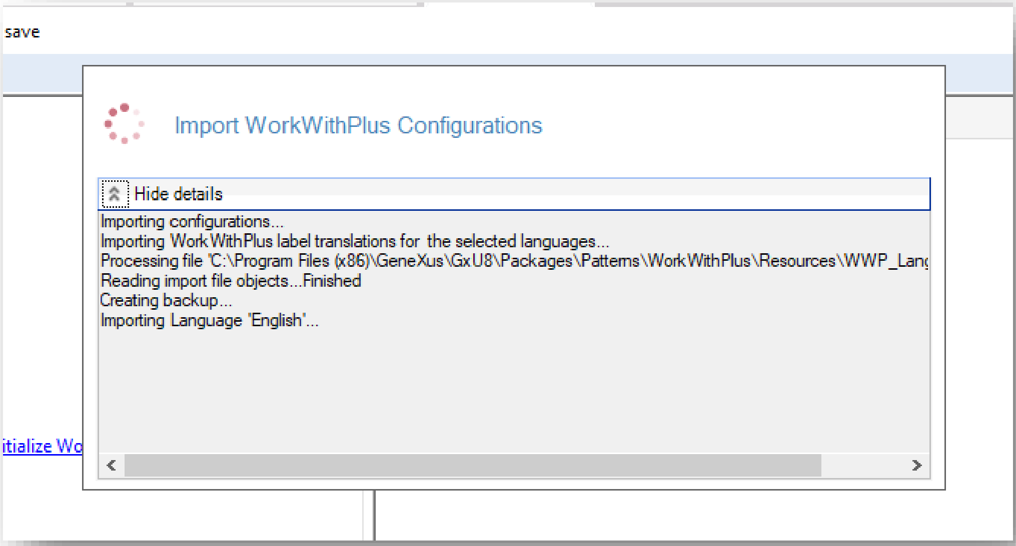
Select the following options through the Design System Wizard (if the property is not specified below, use the default value):

Initial Step	Predefined Theme	Seine
Basic Settings	Base Color	Red
Click in 'Advanced Settings' Step 3	Logo for Login	LogoLoginCocaCola.png
Step 5	Logo	LogoCocaCola.png
	Footer Text	Coca Cola Company – 2021
	Title	Coca Cola
Step 6	Home Pages	Banner and Modules

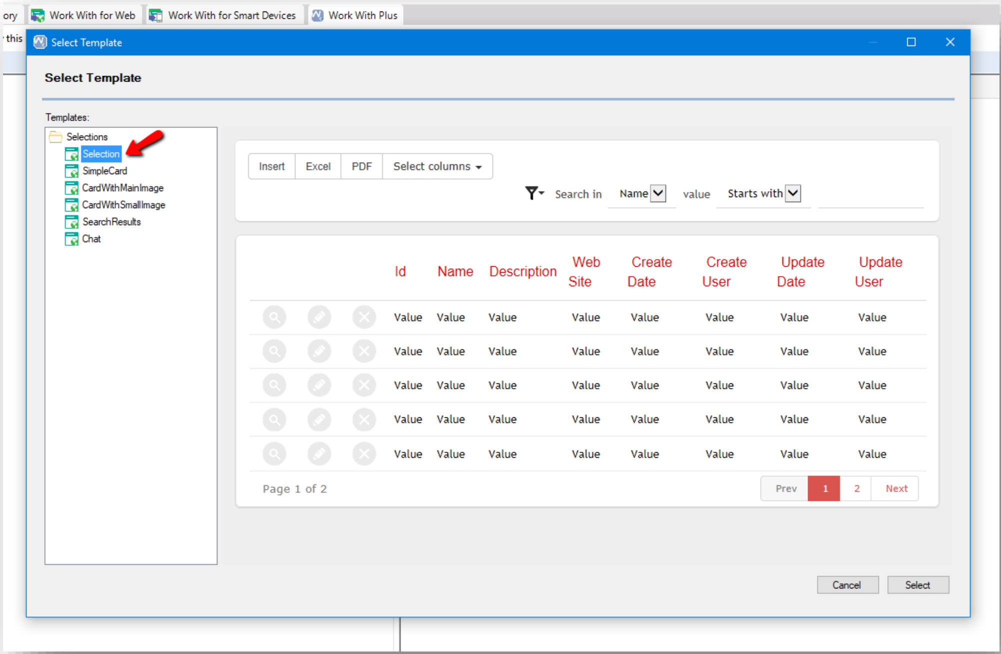
Observation:

- You should get the logos and images from the Logos folder
- While you work in the Design System Wizard you can use the real time preview to visualize how your application will look like according to the options you have selected.
- In Step 3 we have defined the security type of the application. We will use GAM+WorkWithPlus for Web and that is why you will automatically have a Login screen (between other screens) ready to use. In part 6 of training we will focus on the management of the security of the application.

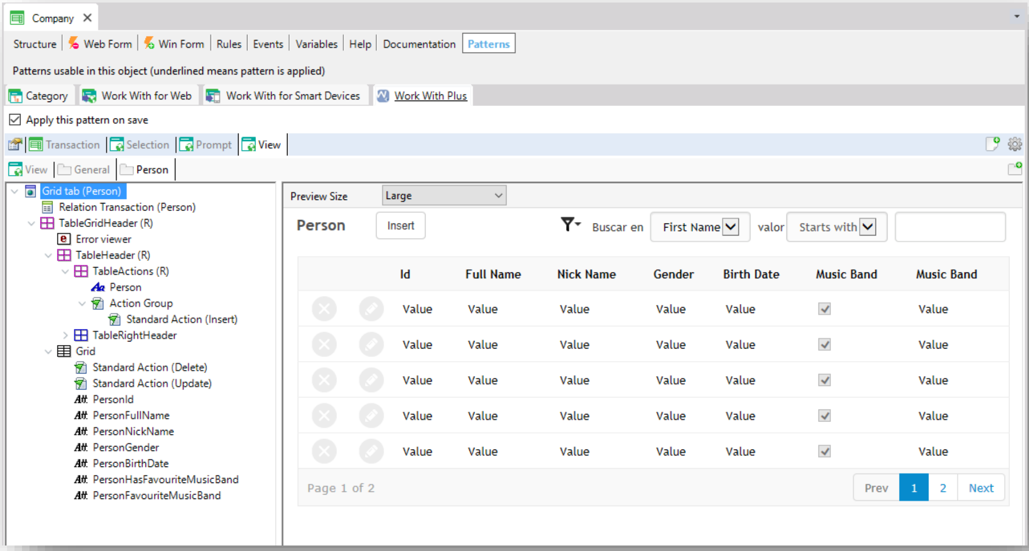
As you can visualize, once you have finished the Design System Wizard, WorkWithPlus for Web will import some objects related to application's look & feel will be imported (Theme object, Master Pages, images, Web Panels, etc.) and the WorkWithPlus for Web Settings customized according to the definitions made in the Design System Wizard.



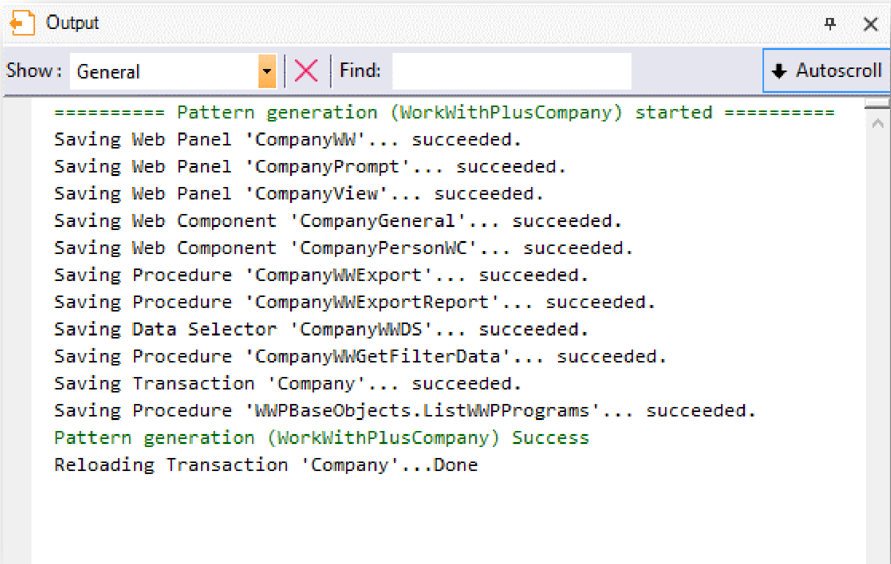
Once the importing process is finished, you will a screen where you can define the template that you will use for this transaction. There are different options that will use later in the training. Now, select the "Selection" option:



Before saving the object make the changes needed in the GridTab 'Person' of Company transaction, so that it only contains the following attributes:



When you apply the pattern to one object of the KB, it will show which objects were actualized (Succeeded) and which have not changed (Skipped). The first time all objects are created, as they did not exist.

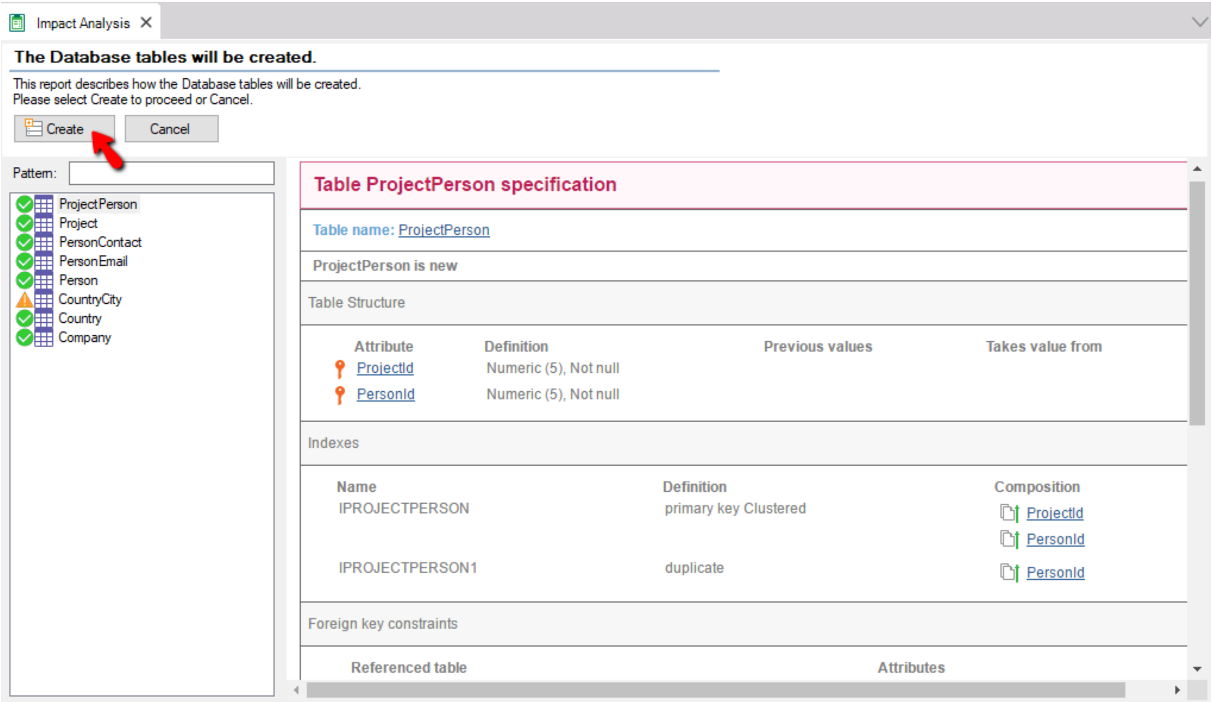


Observation: It is important to visualize always the Output 'General' when you apply the pattern, because when you write something wrong in one of its properties, for example, a condition using an attribute that not exists, it will show an error message in the object and will not update the objects.

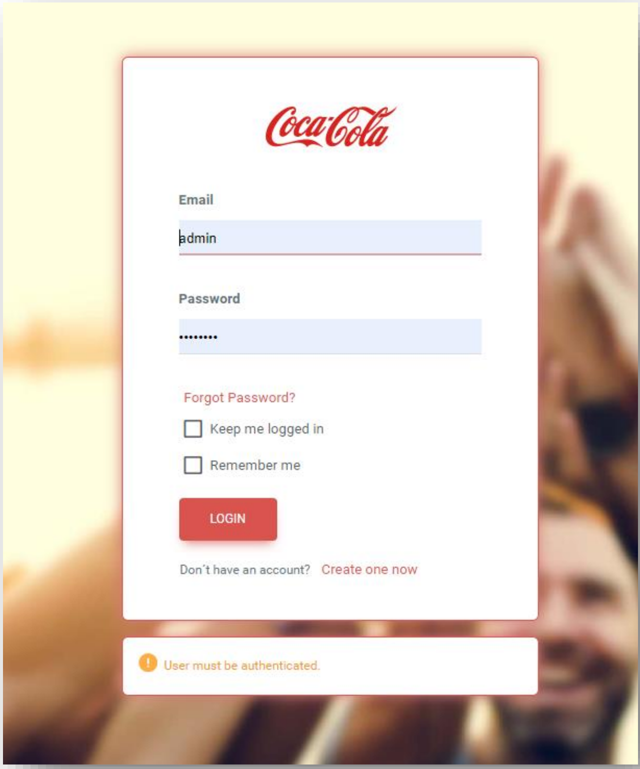
4. We also want to generate the screens to manage Persons, Projects and PersonContacts. How can we do it? Apply WorkWithPlus for Webto Person, PersonContact and Project using the "Selection" template.

After, do F5 in order to execute the application and to see the results at runtime.

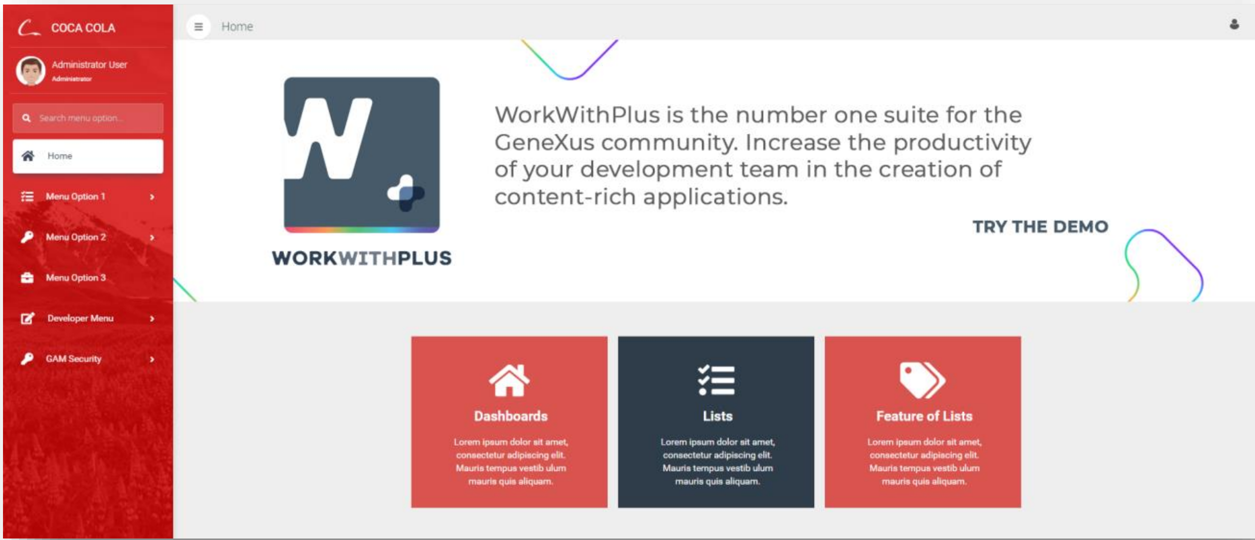
If the application is not in the cloud, you must configure the Data Base the first time that you run the application, for example, using the server SQL Server of your computer. Create the tables in the Database:



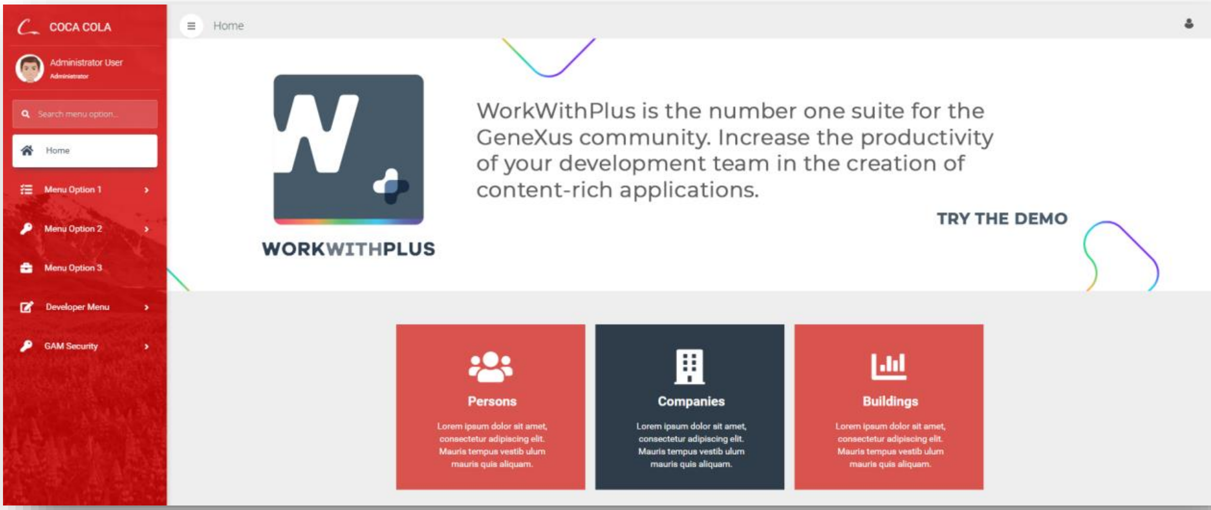
When you run the application, you will firstly see the Login screen:



Once you login into the application (user: admin, password: admin123), you will see the following screen:



By default, it shows different cards and a banner with images, but you can customize it or create a new Web Panel of this type using WorkWithPlus for Web templates.



5. We are going to customize this Home page, to access the different screens of the application as follows:

For that, we will create a DataProvider named DPLoadHome, which will contain the following code:

DPLoadHome * ×

Source * | Rules | Variables | Help | Documentation

```
HomeModulesSDT
{
    HomeModulesSDTItem
    {
        OptionTitle = "Persons"
        OptionDescription = "From this option you can work with all the people registered in our system"
        OptionIconThemeClass = "fas fa-users"
        OptionWCLink = PersonWW.Link()
    }
    HomeModulesSDTItem
    {
        OptionTitle = "Companies"
        OptionDescription = "From this option you can work with all the companies registered in our system"
        OptionIconThemeClass = "fas fa-building"
        OptionWCLink = CompanyWW.Link()
    }
    HomeModulesSDTItem
    {
        OptionTitle = "Projects"
        OptionDescription = "From this option you can work with all the projects registered in our system"
        OptionIconThemeClass = "fas fa-chart-bar"
        OptionWCLink = ProjectWW.Link()
    }
}
```

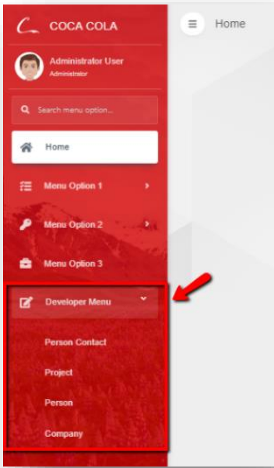
You can copy and paste the code from the following link: Code Snippets

Observation: you can use the icons you want to personalize the cards. Access to https://fontawesome.com/icons?d=gallery, select one and copy the content that is inside the <i class> tag.

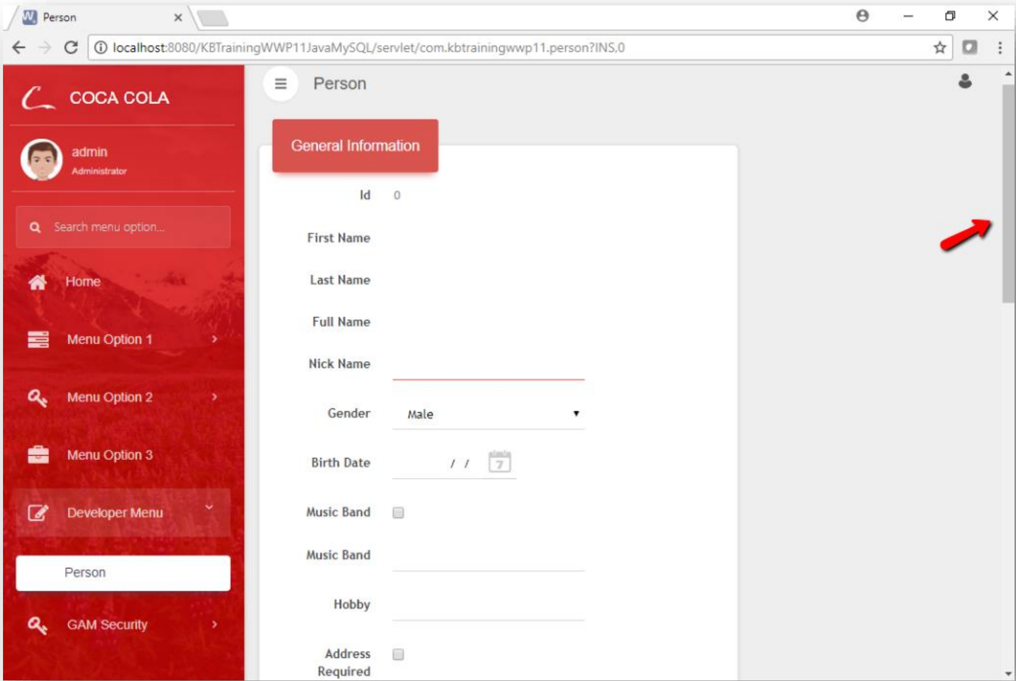
Then, open the Web Panel *Home* and modify the last line of the Start event, substituting the Data Provider called *GetMainHomeModulesSample()* (which is the one that loads the data by default) to use the one that we have just created (*DPLoadHome*):

```
&HomeModulesSDT = DPLoadHome()
```

Run the application to visualize the customized screen. You can also navigate in the application using the responsive menu, as for default the option ‘Developer menu’ is being added with the options to go to the “Selections” of all the transactions that have WorkWithPlus for Web applied.

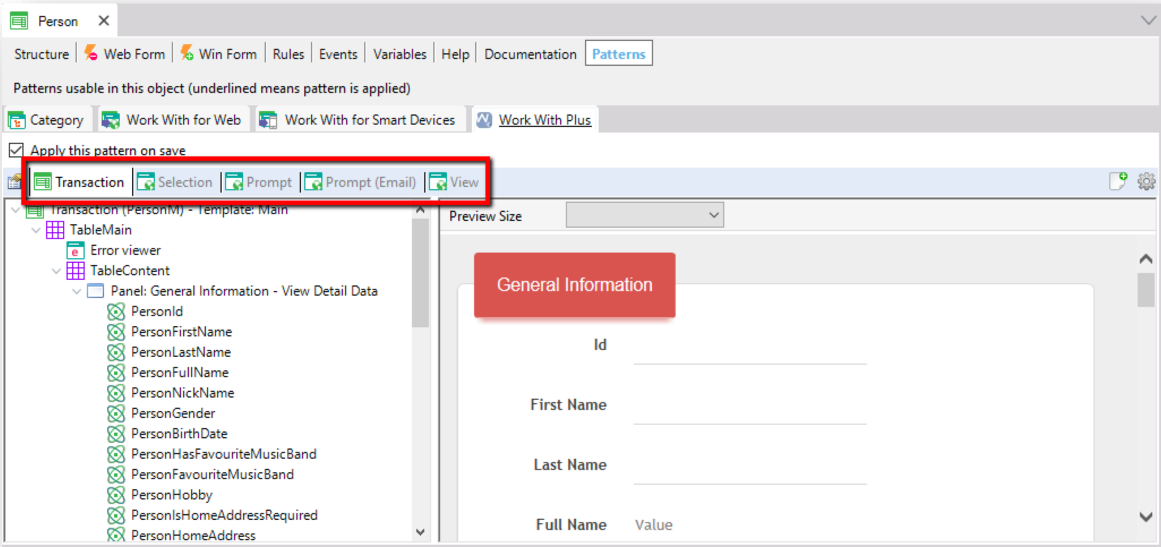


6. If you Access the option to create a Person record, you can observe the following screen:

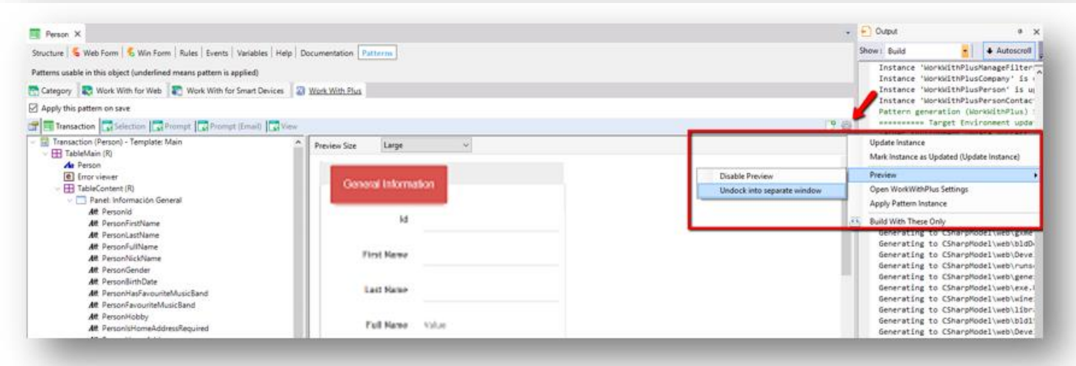


As you can visualize, Person transaction has many attributes, and this makes the page to have a large vertical scroll, which makes a bad user experience. We are going to customize the layout in order to take advantage of the width of the screen.

When you are working with some transaction's instance, you will visualize a special environment, in which you have tabs, a hierarchical tree and a real time preview:



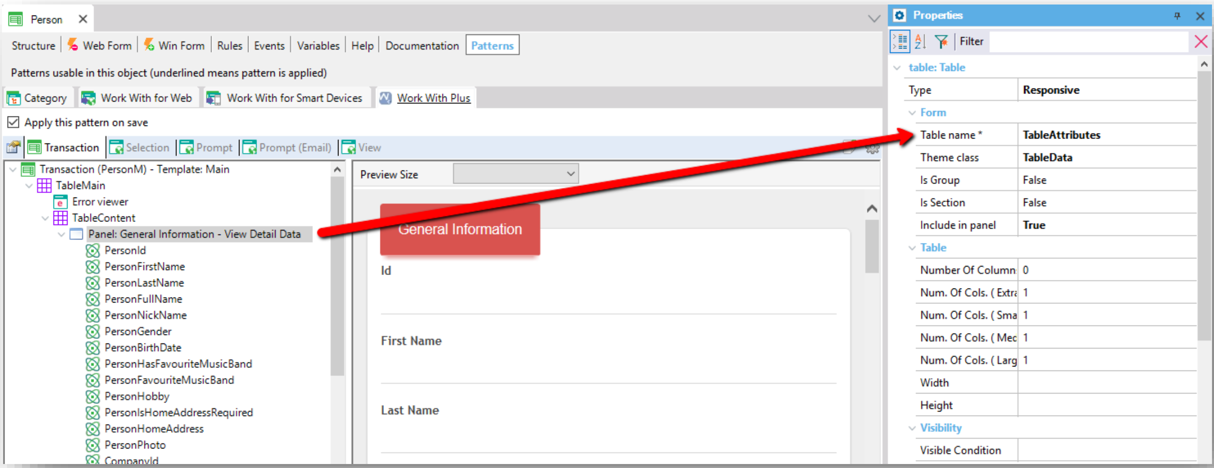
- The Tabs (Transaction, Selection, etc.) define the objects generated by this transaction (Person transaction in this case).
- The hierarchical tree corresponds to the object that you are working on (the one marked in the Tabs). In this example is the transaction form.
- The real time preview shows a markup of the object that you are working on (the one marked in the Tabs). In this example is the transaction form. You have the option to undock the Preview in order to have it in another monitor for example, or just disable it.



Modify the instance of the transaction in order to have the appearance shown below, taking into account the following observations.

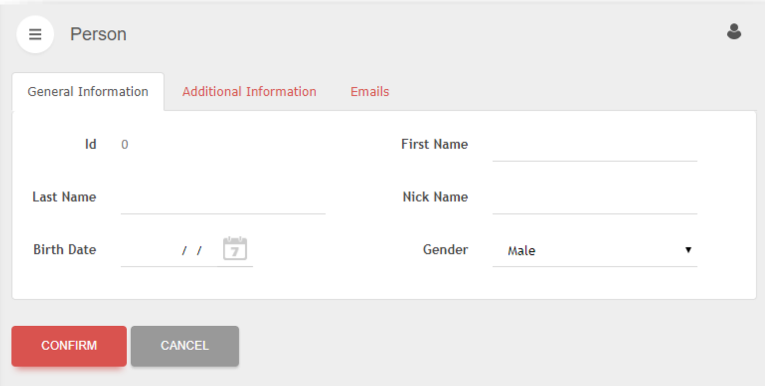
Comments:

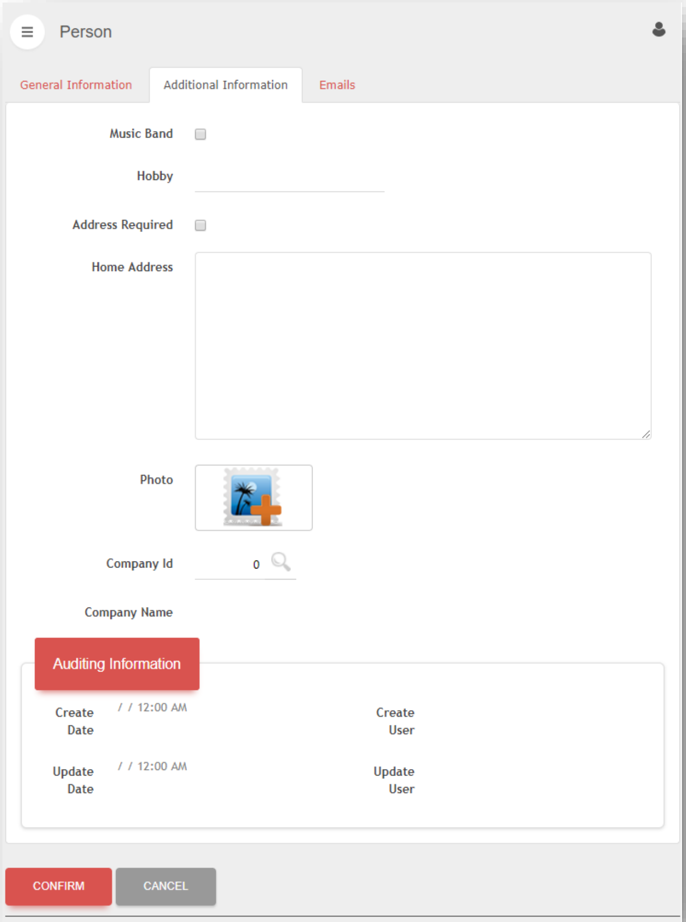
- Add the Tab node by doing right click over the Table Attribute → Add → Tabs. Then, add each tab by doing right click over the Tabs node → Add → Tab
- You can cut the attribute nodes selecting some of them and pasting them inside the other tables, executing 'Control + X' or right click, 'Cut'.
- Use the **Preview at real time** functionality to visualize how the form transaction is getting.
- You must have in any part of the instance of Person transaction, the table named ´TableAttributes´ that is defined by default as a Panel titled ´General Information´. It is not necessary to maintain it as a Panel, but it is obligatory to have it in the form of the transaction. You will understand the reason of this when study the ´Update Instances´ topic:

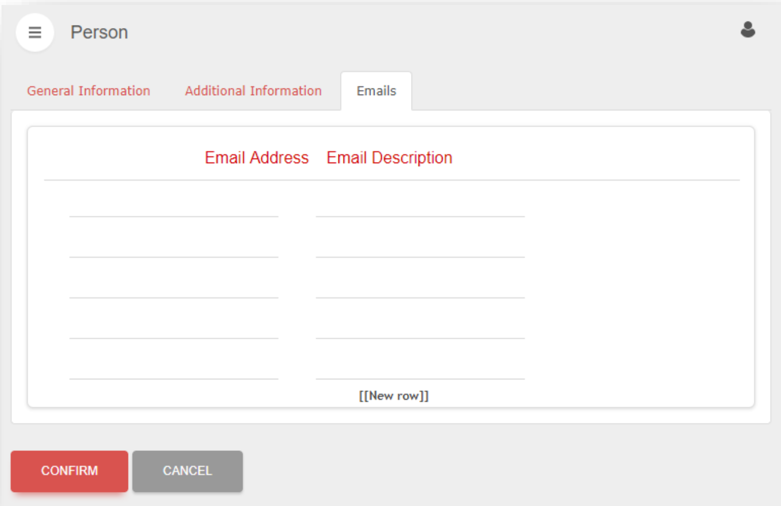


- Assign to the Tabs node the property Cell Width (Small) as 75%.

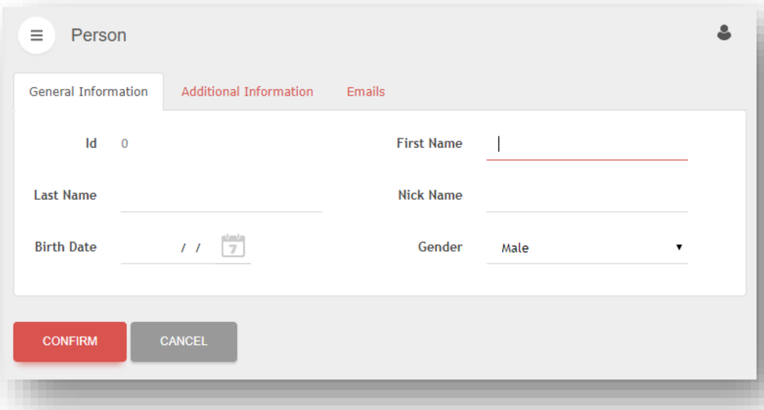
Create three tabs as follows:







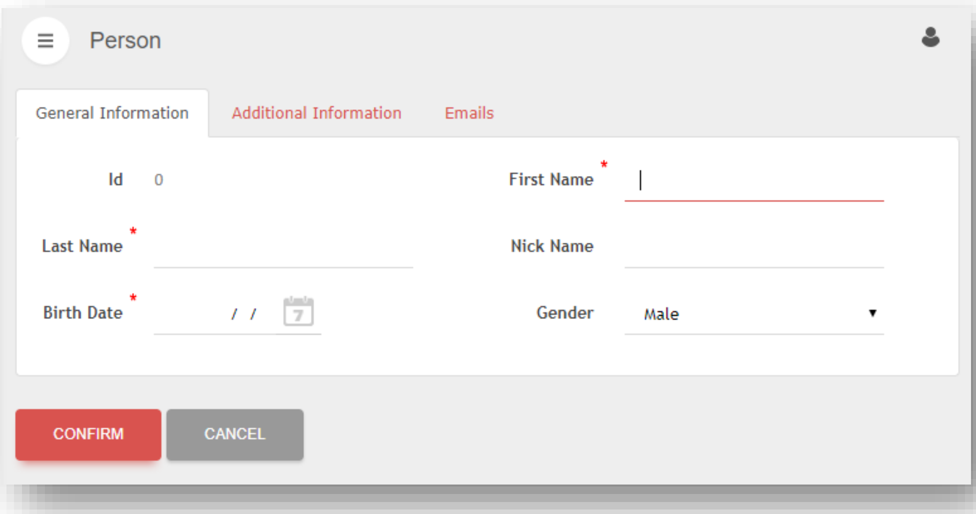
Generate and execute the application (F5) and navigate to PersonWW in order to create a new person and visualize the results at runtime.



Now the person information is grouped and the screen size has been reduced.

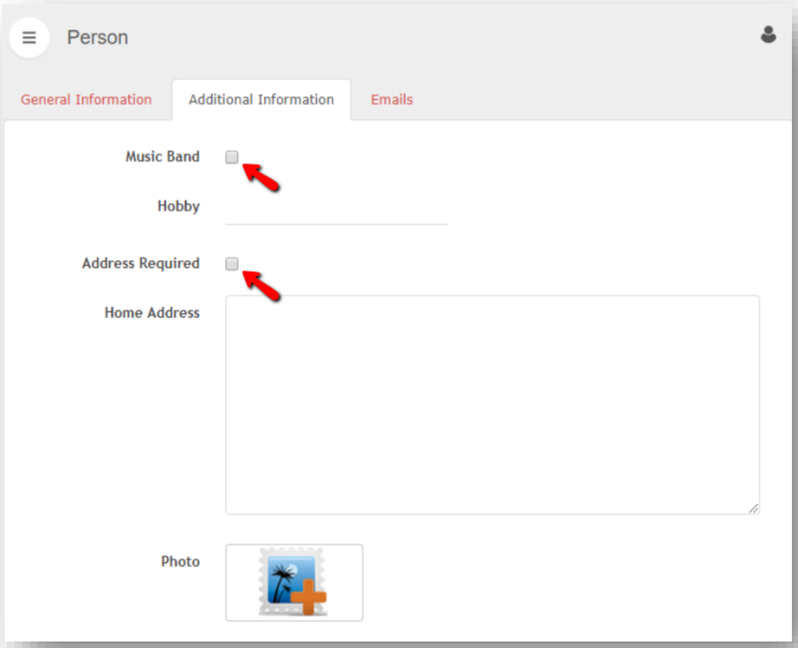
7. The system requires having the fields ‘First Name’, ‘Last Name’ and ‘Birth Date’ as mandatory. Which functionality provides WorkWithPlus for Web to resolve this requirement?

Generate and run the application to visualize the changes:

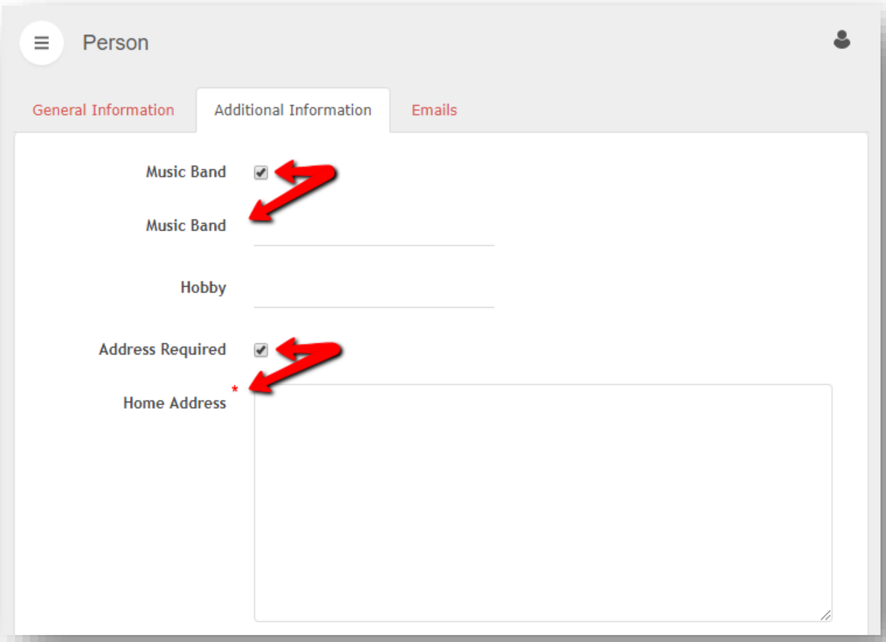


8. Also, the field ‘Home Address’ has to be mandatory just when the field ‘Is Home Address Required’ is true; and the field ‘Favorite Band’ has to be visible just when the field ‘Has Favorite Band’ is true. Implement this with WorkWithPlus for Web and test it at runtime.

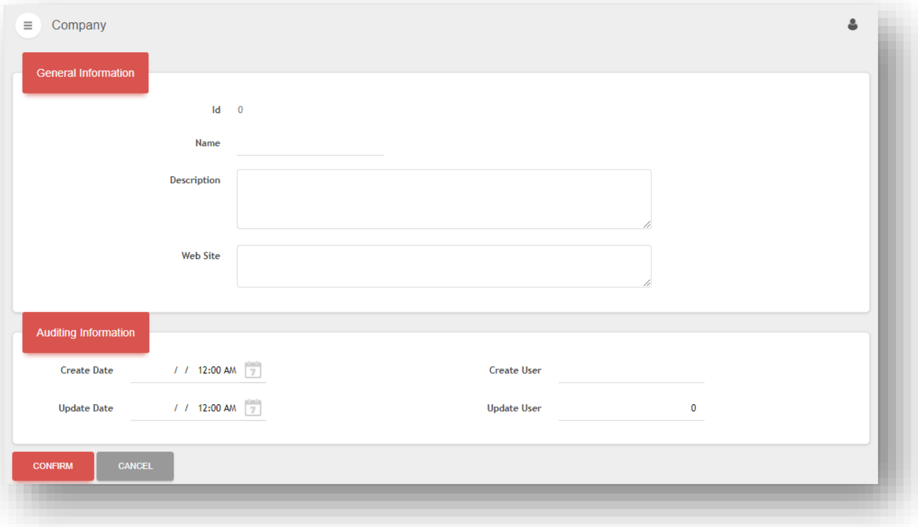
As you can visualize, when the person does not have a favorite band, the field where user inserts the name of the band is not visible. In addition, as the check box that defines whether the Home Address is required or not is not checked, the field Home Address is not market as mandatory:



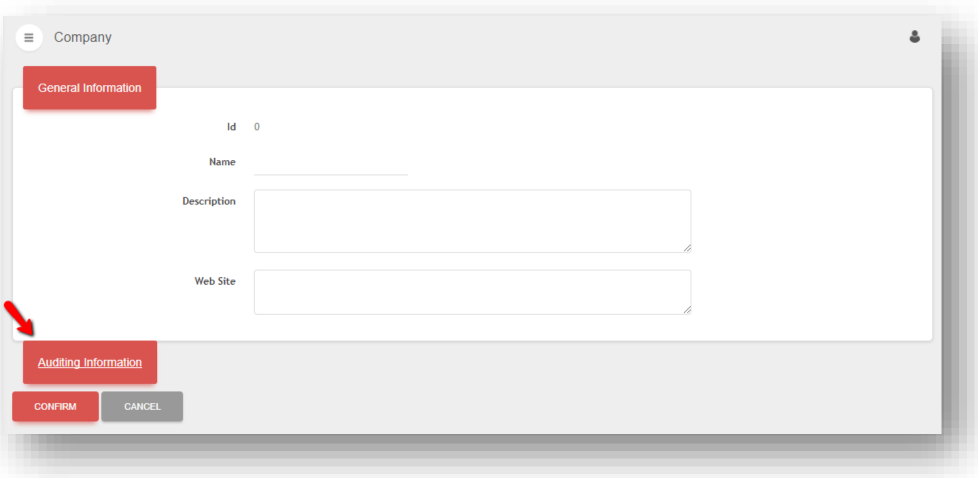
Then, if you mark both check boxes, you can verify that the field in order to record the favorite band is visible and the field Home Address is required:



9. Now it is necessary to improve the web form of the Company transaction, grouping the auditing attributes in a collapsible panel. The panel should appear expanded when the screen is loaded:



At runtime the panel can be collapsed (by clicking in the title).

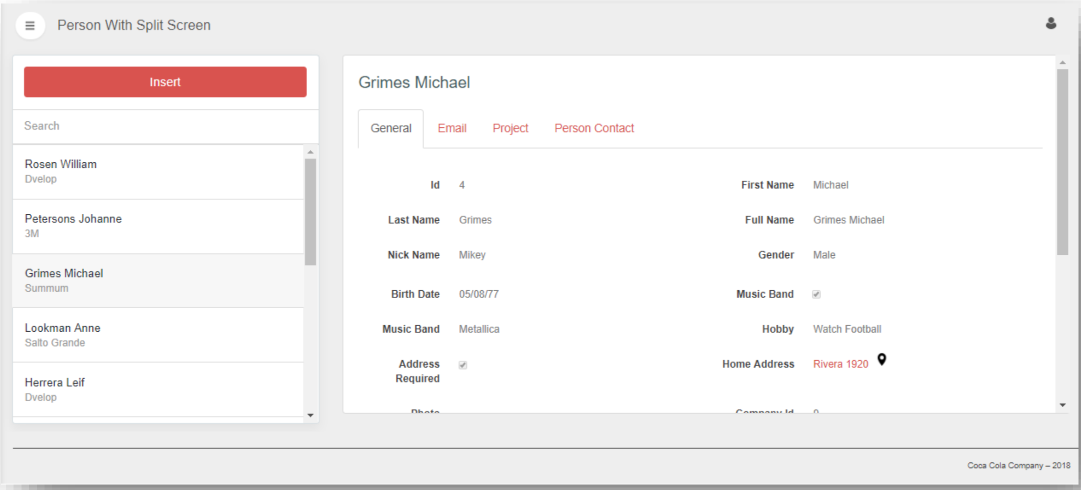


Comment: Assign to the new Panel's "Cell Theme Class" property the value 'CellMarginTop' so that the panels keep separate one from the other. Run the application to see the results.

10. As the auditing attributes will be assigned form an automatic rule, it is not desire that the attributes could be edited from the transaction form. Which mechanism provides WorkWithPlus for Web to leave fields read-only from the pattern instance?

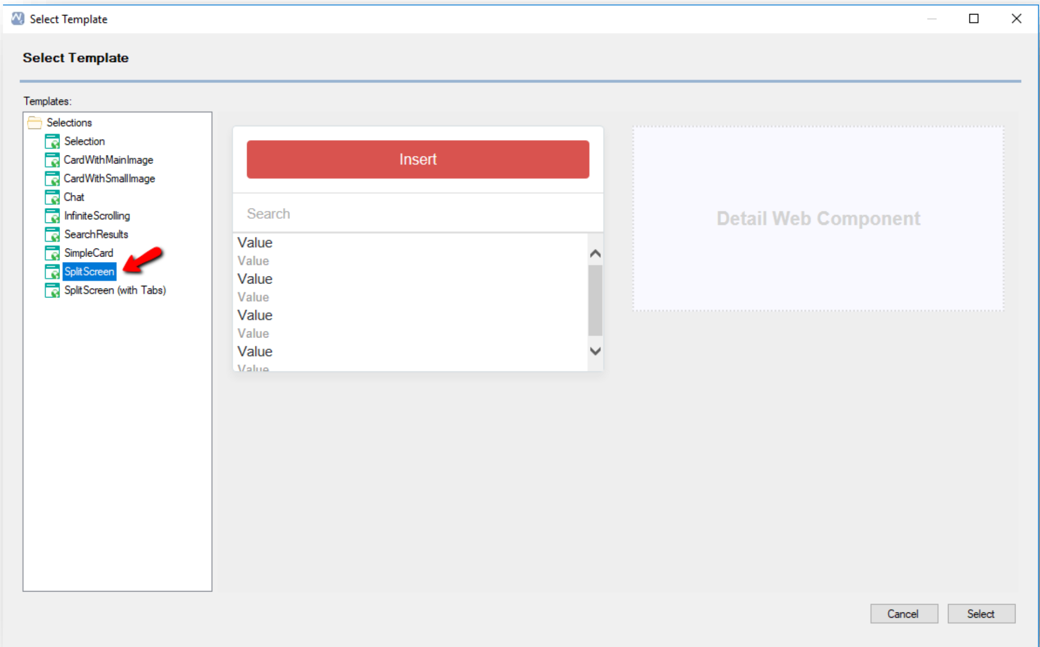
Run the application to see the results.

11. It's required to create a screen to visualize a list containing the registered people and its detail next to it.

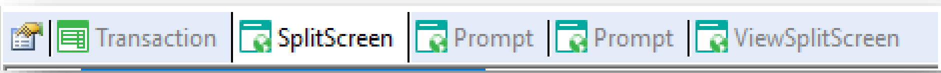


Solution: To do this, let's do a 'Save as' of the Person transaction. Name the new object '*PersonWithSplitScreen*'.

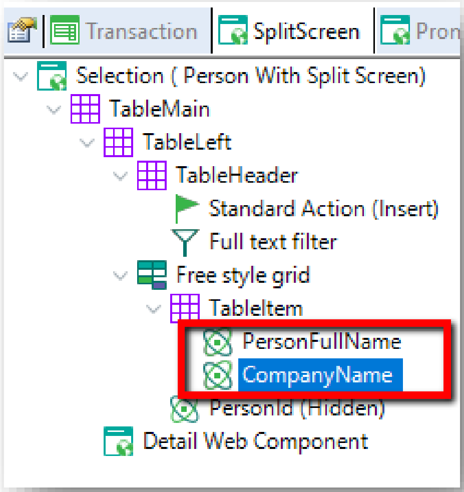
Apply WorkWithPlus for Web in that new transaction and select the 'Split Screen' template.



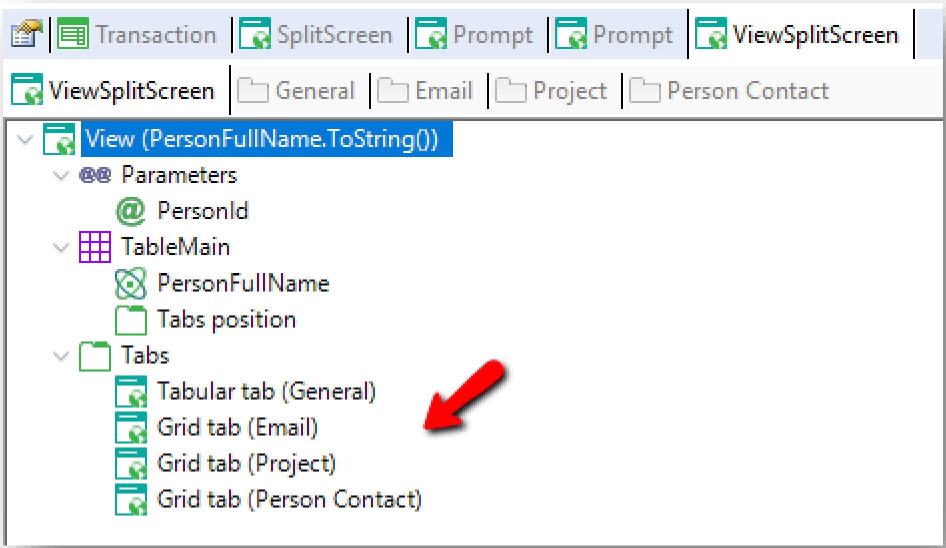
Pay attention to the generated objects:



In 'SplitScreen' we will configure what refers to the list of people that will appear on the left of the screen. Change the attributes within TableItem to show the full name of the person and the name of the company.

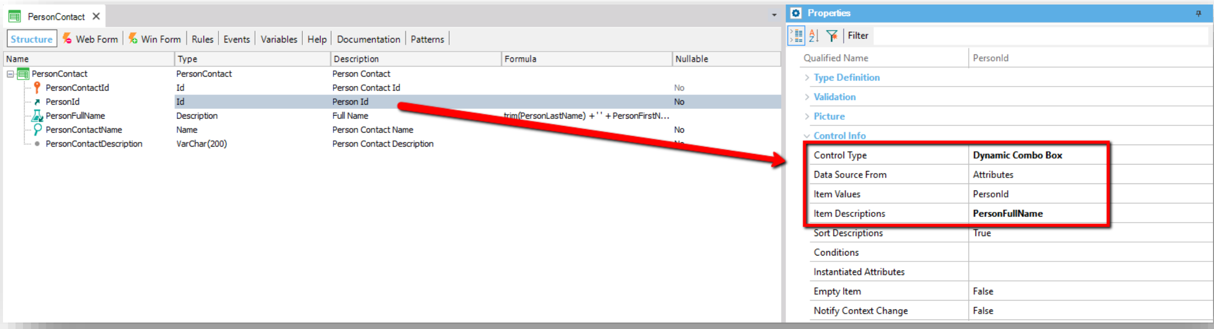


In 'ViewSplitScreen' you can modify the Tabs that will be displayed within the View of the selected person.

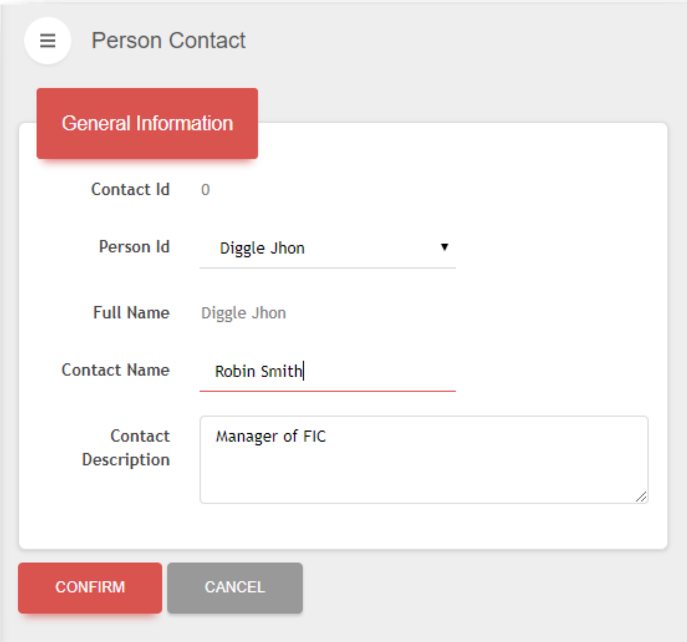


Run the application and test the newly created screen.

12. Then, in the PersonContact transaction, the customer wants to select the person associated to this contact using a dynamic combo box. To do this, you might change the definition of the PersonId attribute.



Run the application and see the results after adding a contact to a person:



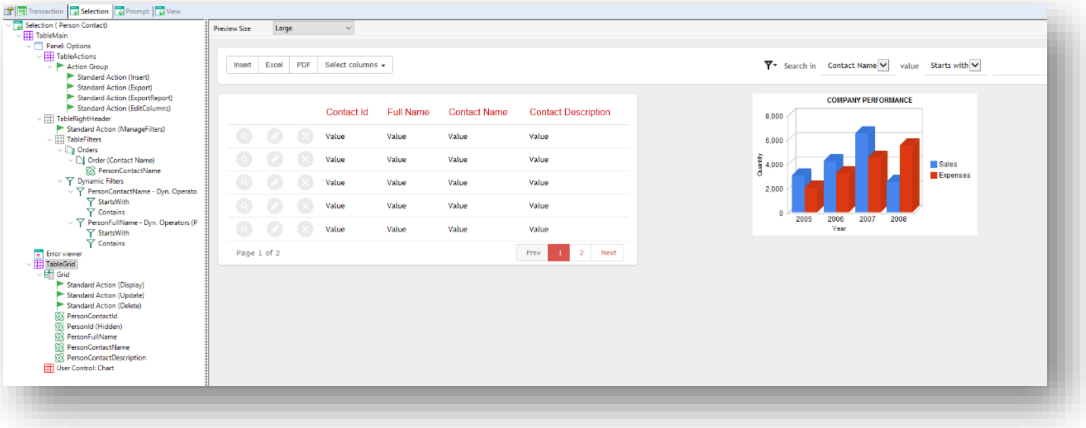
As ‘Person Id’ shows a dynamic combo box with the values of ‘PersonFullName’, the field is being shown twice.

Delete the attribute ‘PersonFullName’ of the transaction instance to update the Form of that object. Execute the application to visualize the results.

13. Moreover, the client needs to have an idea of how many contacts a person has. To do this, we are going to add a chart inside PersonContactWW that shows the information needed. Which mechanism provides WorkWithPlus for Web in order to add user controls within the instance?

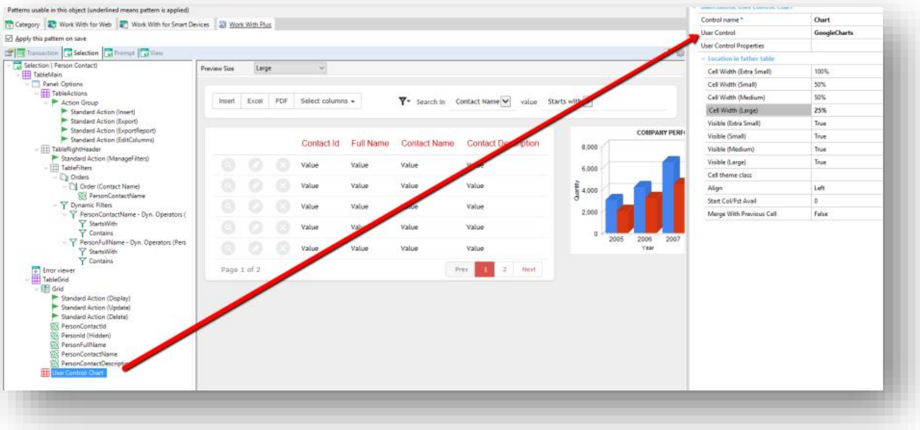
Solution: Add the User Control by following the steps below.

Add the “User Control” node and then, in order to display the chart next to the grid, you have to create a new “Responsive Table” and set the grid and the user control node inside this table (you can cut and paste the grid into the new table)



Assign 2 columns to the table that you have just created, and assign to the grid’s Cell Width (Small) property the value 75% so that the chart occupies 25% of the width of the browser.

In the User Control node, select the user control that you want to include as follows:



Then, set the following properties for the Google Chart:

- Width: 270px
- Is 3D: false
- Type: Pie Chart

Open the events to add behavior to the chart. Create a new Sub called “GxChartData” and copy its code from the following link: [Code Snippets]()

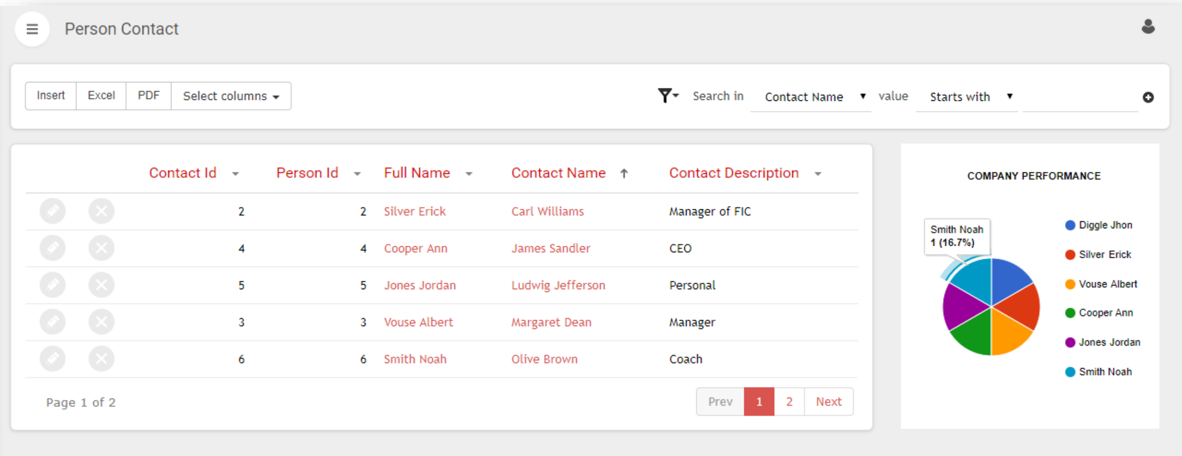
And in the Start Event call the created subroutine as follows:

```
Event Start

    do 'GxChartData'

    /* Generated by DVelop Work With Plus Pattern [Start] - Do not change */

    Grid.Rows = Page.Rows
    Form.Caption = 'Work With Person Contacts'

    Do 'PrepareTransaction'
    Do 'LoadGridState'

    /* Generated by DVelop Work With Plus Pattern [End] - Do not change */

EndEvent
```

You must define the variables *GoogleChartData* and *GoogleChartSeries* as detailed below:

Name	Type
GoogleChartData	GoogleChart
GoogleChartSeries	GoogleChart.Series

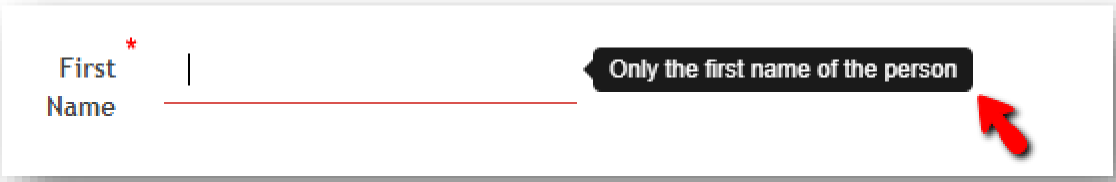
Run the application and visualize the results (to test the chart it is recommended to insert some people with some contacts):



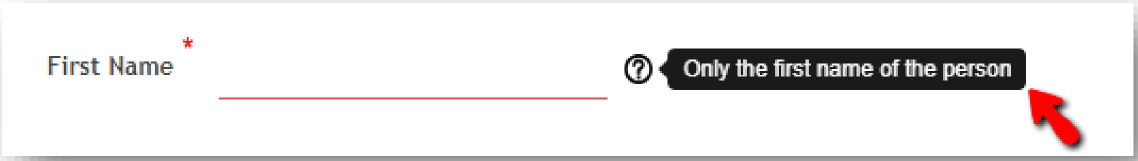
In resume, by using the User Control node and user's code a Google Chart (GXChart) was added and its behavior was codified. If it is needed to add any complex control that could not be insert directly from the instance of WorkWithPlus for Web, we can use the User Control node.

13. To finish the first section of the training, define the following tooltips to the attributes on the screen of the Person transaction. You should use the “Help Text” property in order to do it. Once you have defined the tooltips, verify the results at runtime:

PersonFirstName: Only the first name of the person
PersonLastName: Last name
PersonBirthDate: Format: dd/mm/yyyy



Comment: Where is the tooltip displayed? How is it configured to show an icon next to the field and the tooltip is there, as we see in the following image?

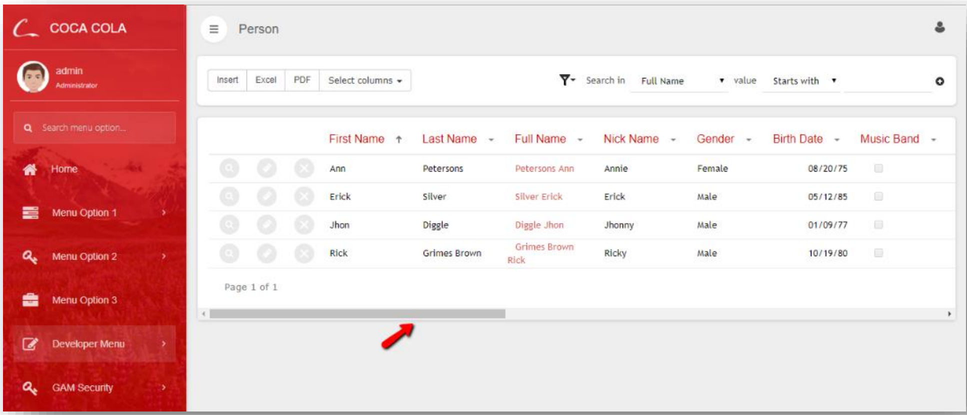


WorkWithPlus for Web Training

Part 2 – Grid Objects

Part 2 – Grid Objects

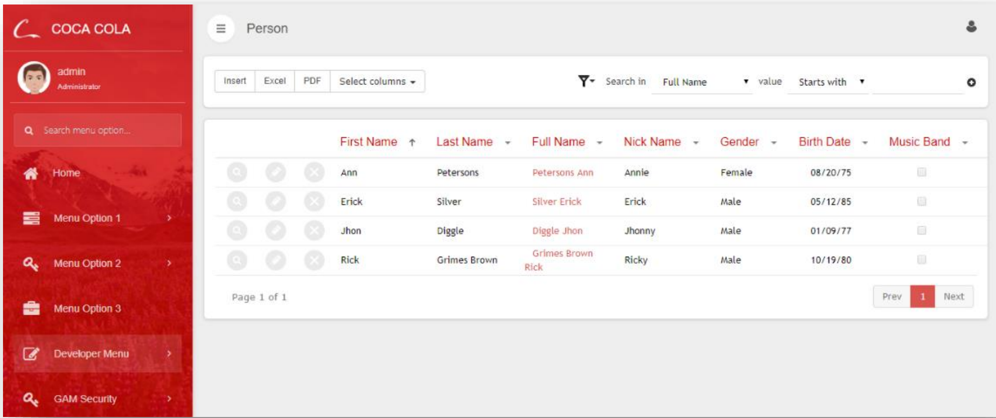
1. Run the application (F5), and navigate to PersonWW.



As you can see, there is a very large horizontal scroll because there are a lot of columns in the grid. We would like to avoid this scroll.

Solution: Open the Person transaction, and go to the “Selection” screen. Modify the instance, in order to hide the following columns ‘PersonCreateDate’, ‘PersonUpdateDate’, ‘PersonCreateUser’ and ‘PersonUpdateUser’. How can we do it? Which is the difference between hiding them by using the “Visible” property and deleting the attribute from the grid?

Run the application and visualize the results:



2. All the information that the grid contains is now important the different users of the system, although the grid continues with a large width. Which functionality provides

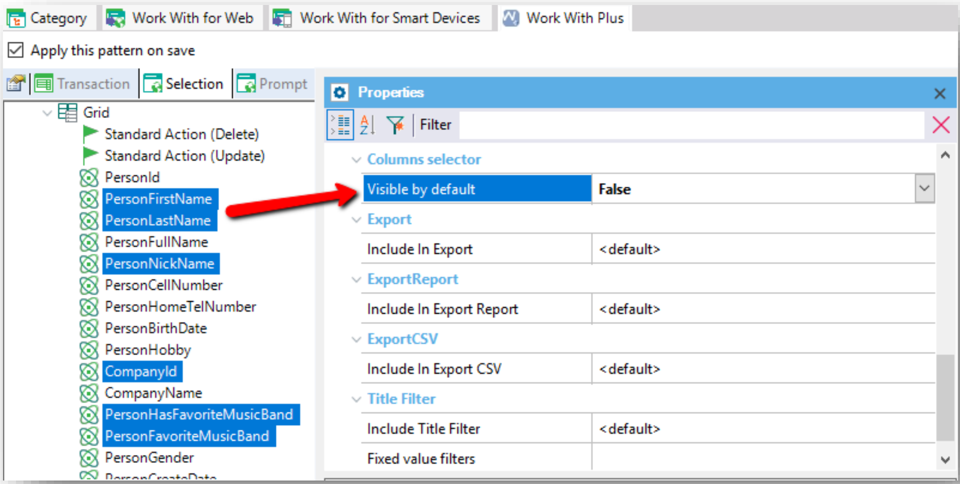
WorkWithPlus for Web for giving the possibility to the final users select which columns to show?

Solution: Columns Selector for grids. This feature is already enabled by default when you apply WorkWithPlus for Web to a transaction (we have defined that behavior during the Design System Wizard execution)

The following attributes must be hidden when the grid is loaded the first time, but the user must have the option to select them if he wants to visualize them. How do you do it?

- PersonFirstName
- PersonLastName
- PersonNickName
- CompanyId
- PersonHasFavoriteMusicBand
- PersonFavoriteMusicBand
- PersonIsHomeAddressRequired
- PersonHomeAddress

Comment: you can select many columns at a time (attributes in this case) and modify the property that you think is the right one.

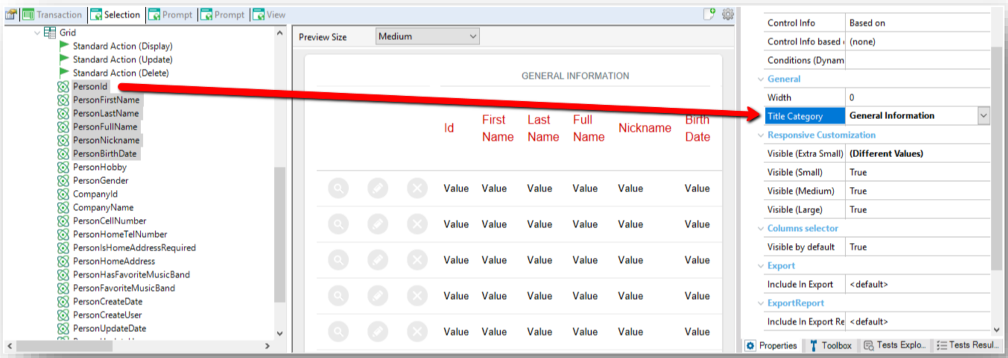


Run the application (F5), and go to the Person's Selection in order to visualize the results.

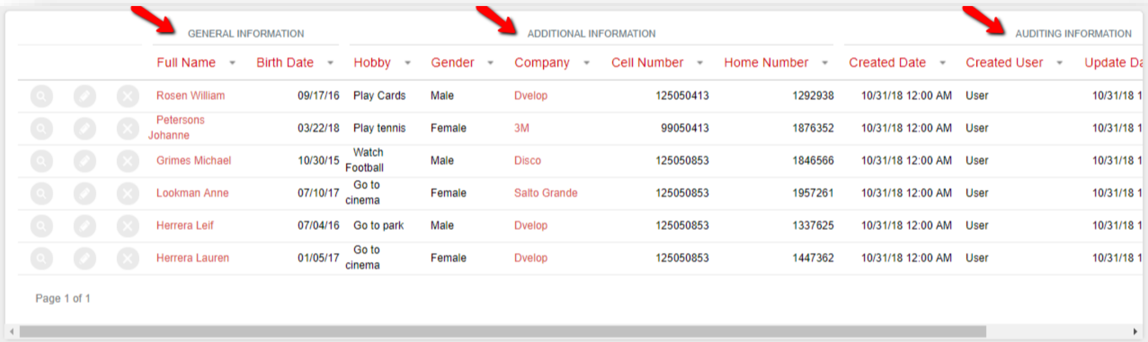
3. It is required to organize the attributes of the Person's Selection in three categories:

- ***General Information***: PersonId, PersonFirstName, PersonLastName, PersonFullName, PersonNickName, PersonBirthDate
- ***Additional Information***: PersonHobby, PersonGender, CompanyId, CompanyName, PersonCellNumber, PersonHomeTelNumber, PersonIsHomeAddressRequired, PersonHomeAddress, PersonHasFavouriteMusicBand, PersonFavouriteMusicBand
- ***Auditing Information***: PersonCreateDate, PersonCreateUser, PersonUpdateDate, PersonUpdateUser

Solution: modify the property 'Title Category' of the grid's attributes as follows:

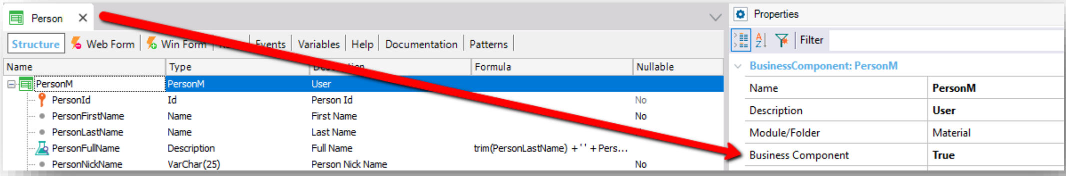


Run the application and visualize the results:

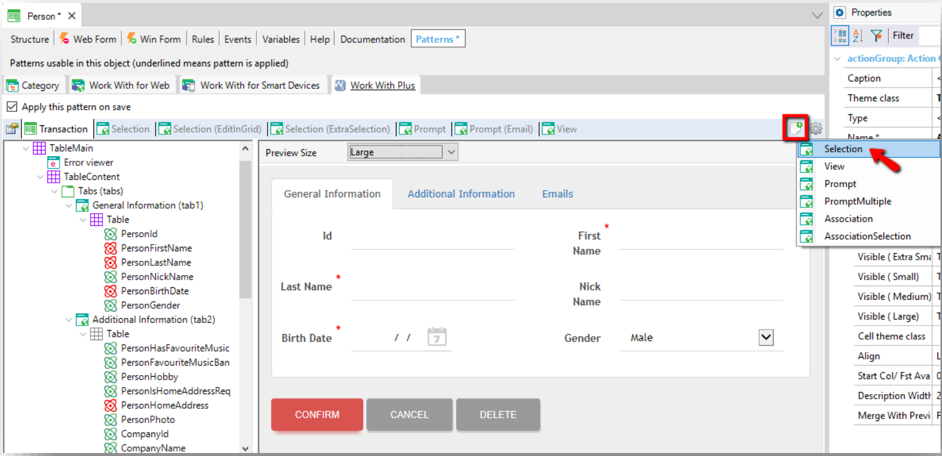


4. End user needs to edit a person's record straightforward from the grid. How can we do it with WorkWithPlus for Web?

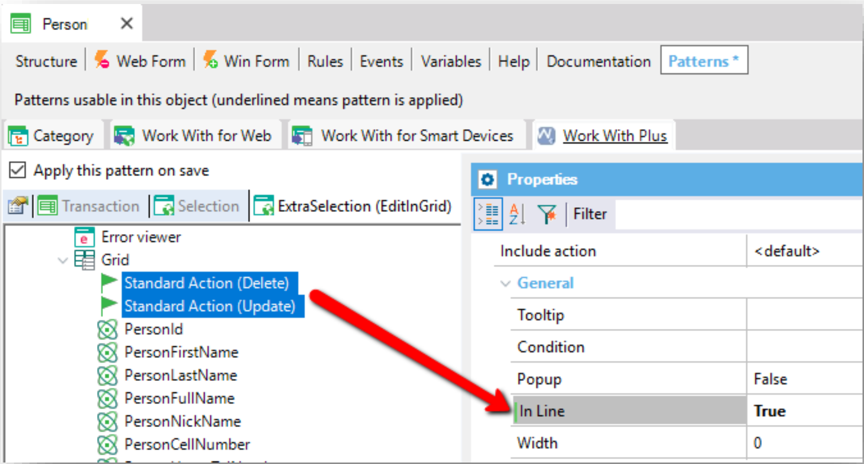
Solution: In order to do this, the transaction must be set as "Business Component", so firstly perform this configuration and save the transaction.



As end user also needs to maintain the current Selection, you have to create an ExtraSelection to develop the new requirement:



Assign the property ‘Name’ of the ExtraSelection node with the value ‘EditInGrid’ and the description that you would like. Change the property ‘In Line’ of the actions Insert, Update and Delete to “True”:

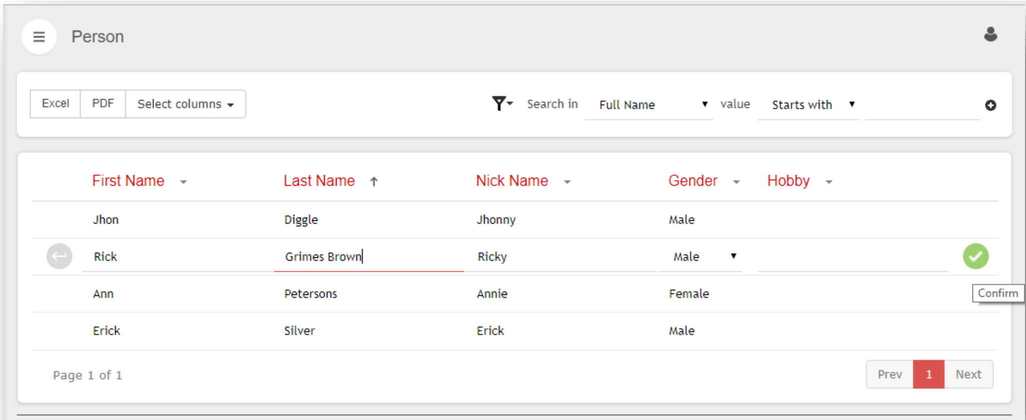


Hide the column PersonId and configure the grid, so that it displays the following columns (and delete the other of the columns):

- PersonFirstName
- PersonLastName

- PersonNickName
- PersonGender
- PersonHobby

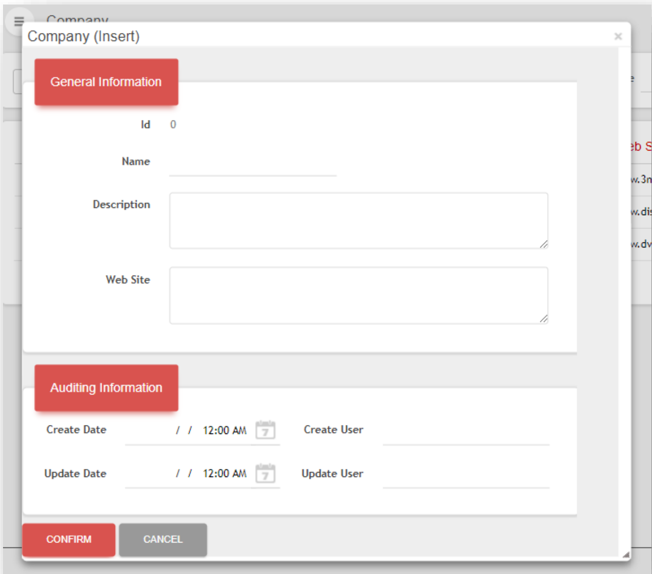
Run the application (F5) and navigate to the created object in order to visualize the results. You can test the new feature by modifying and deleting a record within the grid.



5. It is desired that the insert and modify action of the Company's Selection appear in Popup. In this way, when the user clicks the actions the screen will open in pop up, inside the same window. How do we do this? Configure it.

Comment: to have a proper visualization, assign to the transaction Company the MasterPage called 'PromptMasterPage'.

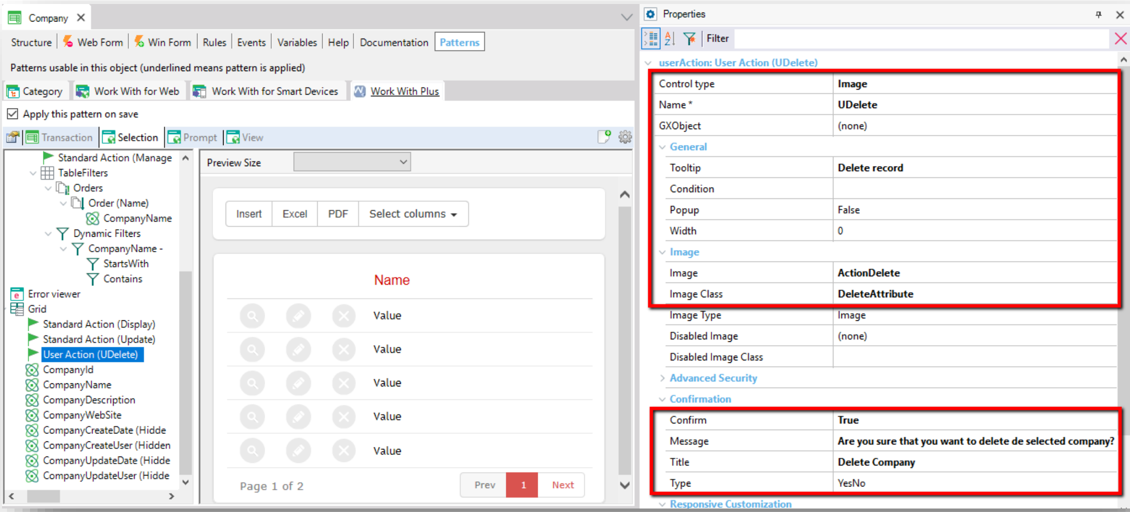
Execute the application and try the results at runtime by creating and editing a company:



6. It is desired that when the button to delete a Company's record is pressed, the system displays a confirmation message and in case the user confirms the action, directly deletes the record (without calling the transaction in delete mode).

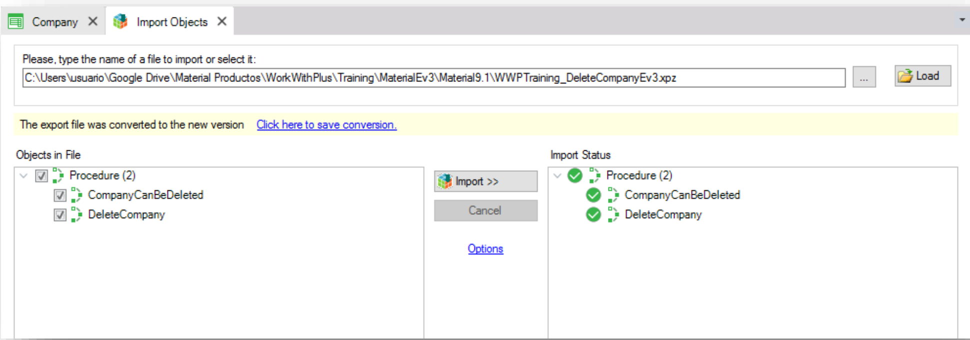
Solution: To achieve this requirement, we cannot use the StandardAction 'Delete'. Which other types of actions do you know?

Remove the StandardAction Delete and create a User Action named 'UDelete', with the following properties:

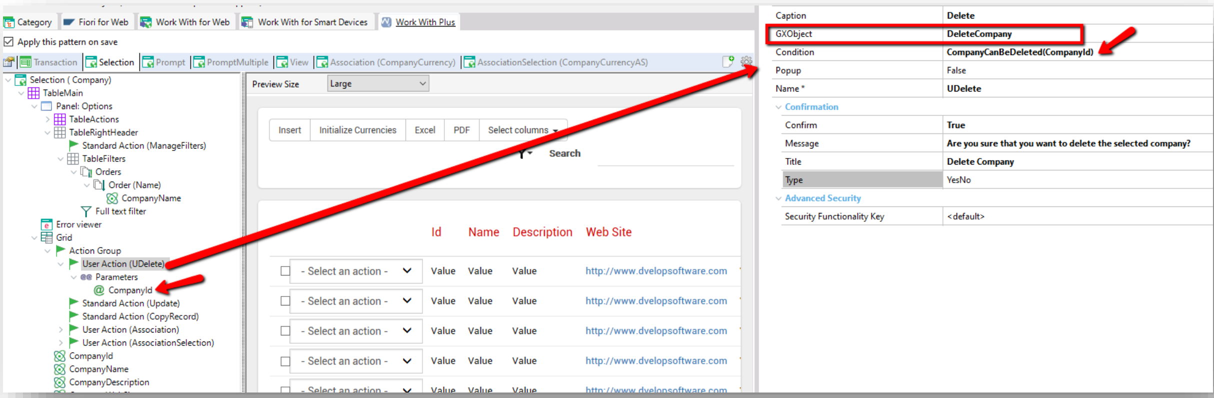


It is possible to delete companies only when the company does not have an associated person. In case someone tries to delete company with associated people, the system should show an error message, or directly restrict the deletion of those companies.

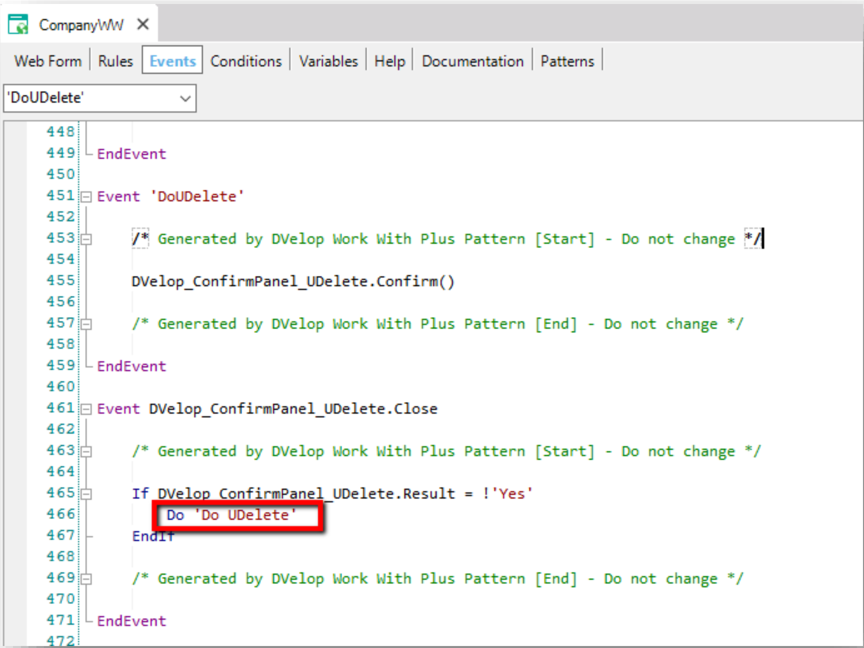
Import the file "WWPTraining_DeleteCompany.xpz" which has two procedures: DeleteCompany and CompanyCanBeDeleted.



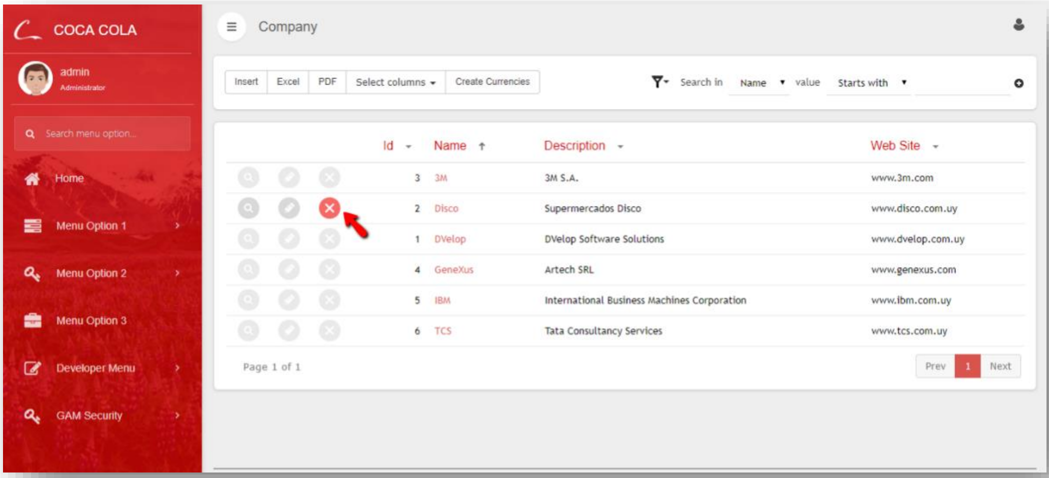
The behavior that analyses is a company can be deleted is developed in the procedure CompanyCanBeDeleted. We are going to use this procedure in the “Condition” property of the User Action UDelete in order to have the desired behavior. Then, assign the property “GXObject” with the procedure DeleteCompany and add the proper parameter:



The event associated to the action is ‘DoUDelete’. This opens the confirmation, and in case the user selects “Yes”, it calls the sub ‘Do UDelete’. In the sub ‘DoUDelete’ it calls the procedure that deletes (assigned in the GXObject).



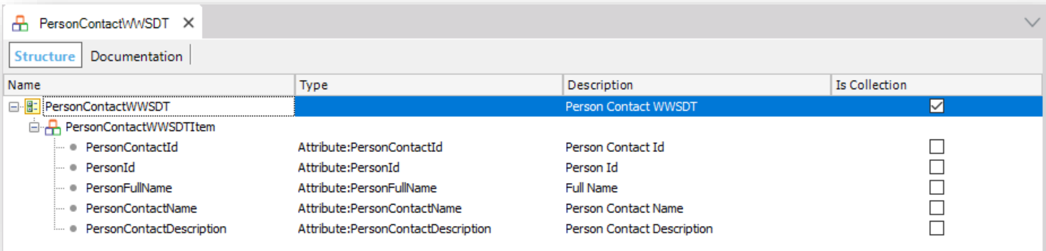
Execute the application and visualize the results. The action won’t be visualized for those records where the deletion can’t be done. For those companies where the action can be performed, click it and select ‘No’ when the “Confirm Panel” asks for confirmation. Then, select the action again, select ‘Yes’ and verify that the record was properly deleted.



7. The customer requires to have the possibility to select and delete multiple records of contacts at the same time.

Solution: in the “WorkWithPlus for WebPersonContact” instance, create a user action outside the grid (inside the Action Group), named ‘DeleteSelected’ and assign the property ‘Multi row action’ to “True”. Which is the goal of the property 'Multi row select all'? Assign “True” to this property too. Save the instance.

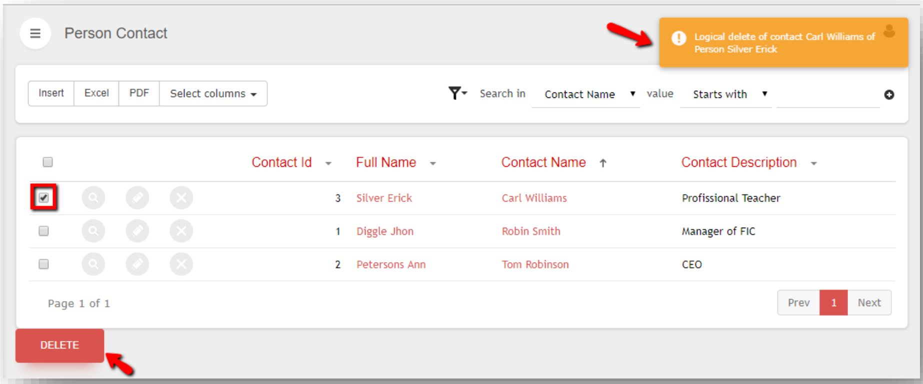
You can check that WorkWithPlus for Web has created an SDT with the attributes from the grid. In this collection the selected items will be stored so you can use them to perform the desired action:



We are going to code the desired behavior of the action. From the instance you can do right click ‘Go to event’. In the event 'DoDeleteSelected' insert (below the code generated automatically by WorkWithPlus for Web), the code from the following link: [Code Snippets]

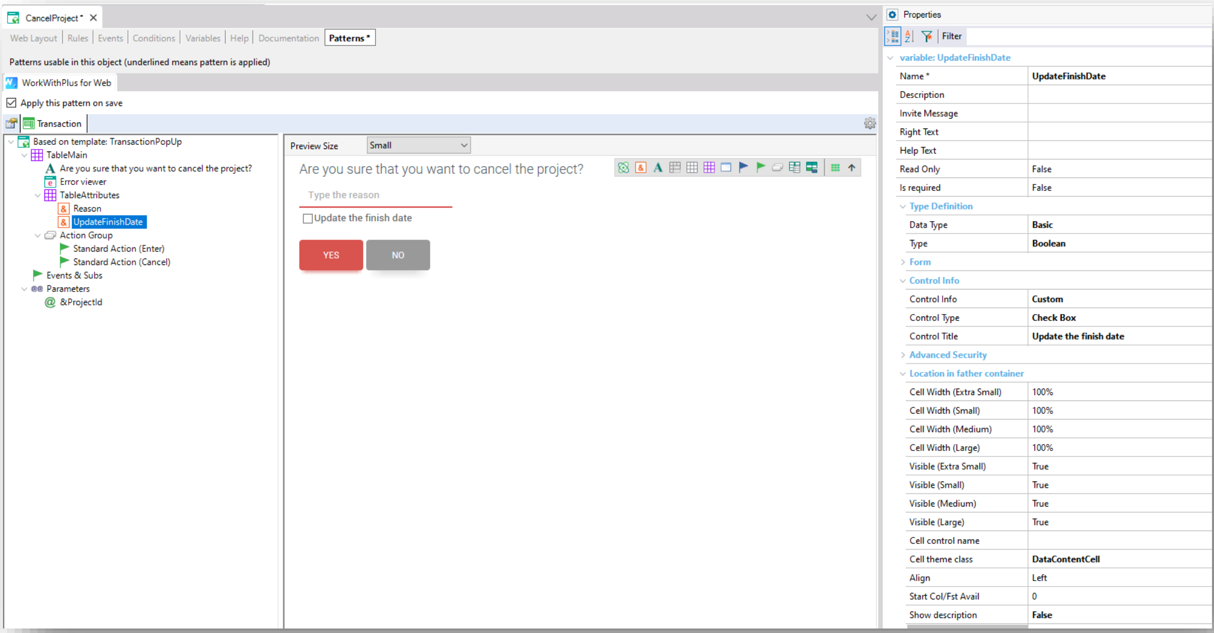
```
Event 'DoDeleteSelected'

    /* Generated by DVelop Work With Plus Pattern [Start] - Do not change */

    Do 'LoadSelectedRows'
    If &SelectedRows.Count = 0
        msg('WWP_NoRecordSelected')
    EndIf

    /* Generated by DVelop Work With Plus Pattern [End] - Do not change */

    If &SelectedRows.Count > 0
        For &SelectedRow in &SelectedRows
            msg('Logical delete of contact ' + &SelectedRow.PersonContactName.ToString() + '
        EndFor
    EndIf

EndEvent
```

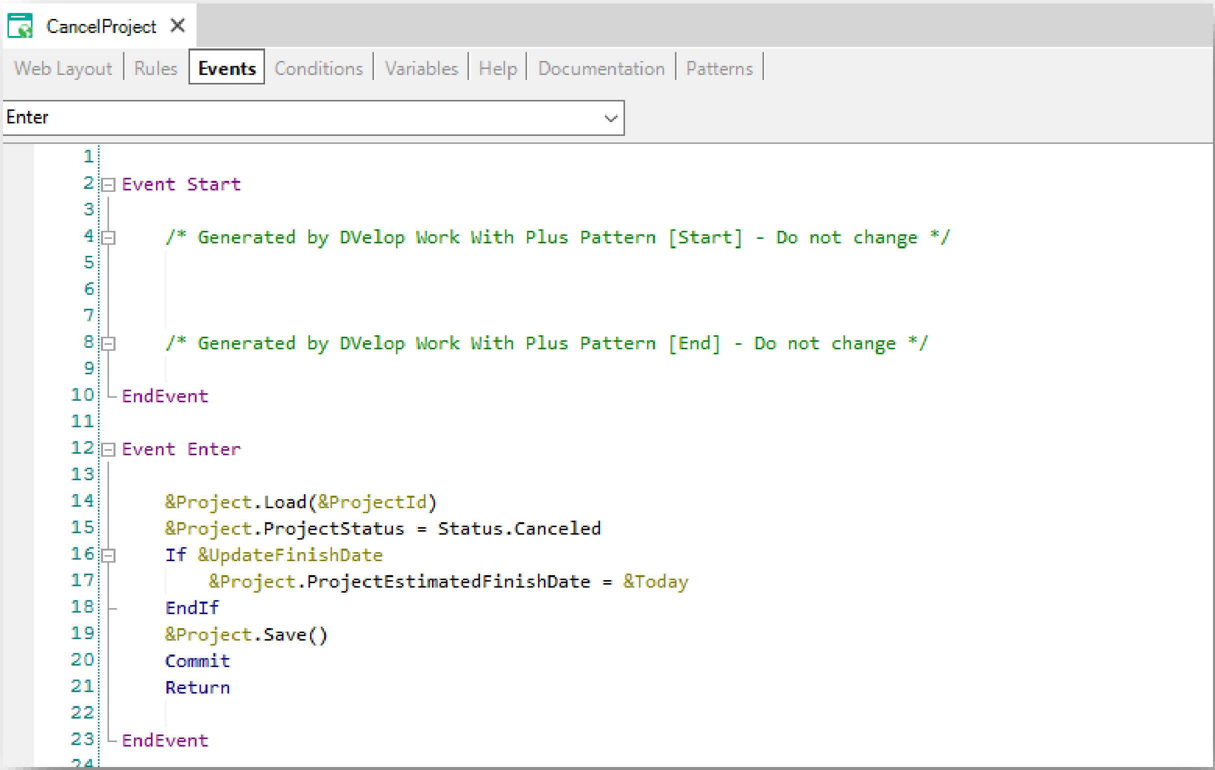
Run the application and test the developed action. As you can see, when no record is selected the action is not displayed, this behavior is called “Contextual Actions Visibility”.



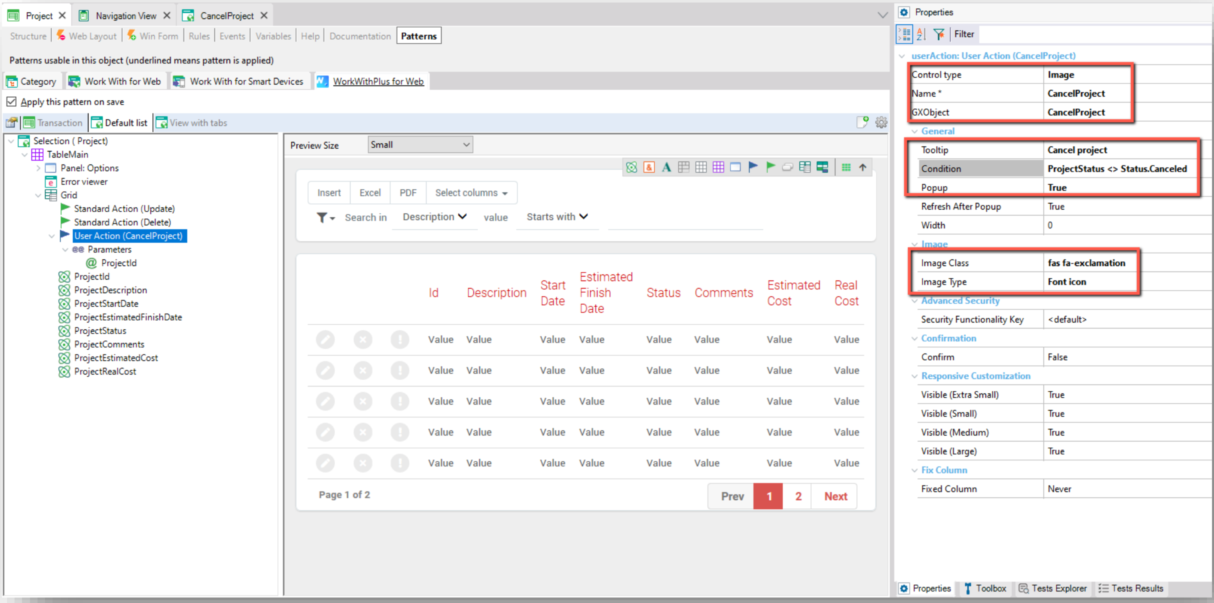
8. In the List of Projects, the customer wants an action to change the status of a Project to Canceled. When clicking in this action, a Popup must be displayed in order to write the reason of cancellation, and mark whether to update the ‘Estimated finish date’ to the current day or not. It is not possible to use the confirm option because we need to display a check box in the panel.

   So, we will create a Web Panel ‘CancelProject’, based on the template ‘Data displayed popup’ and adding the following structure:

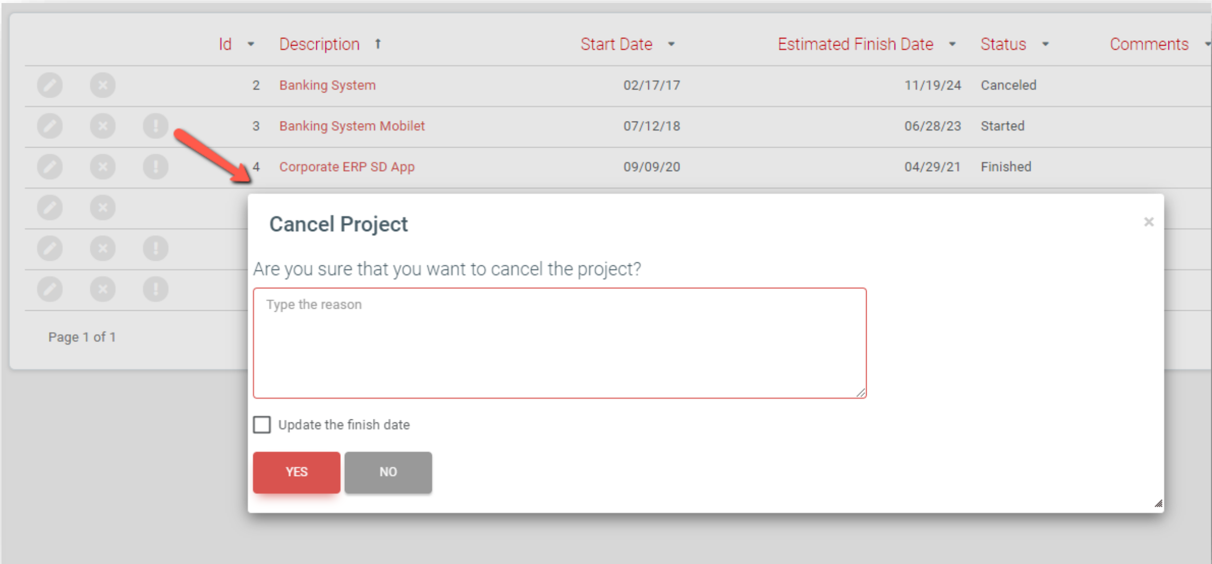




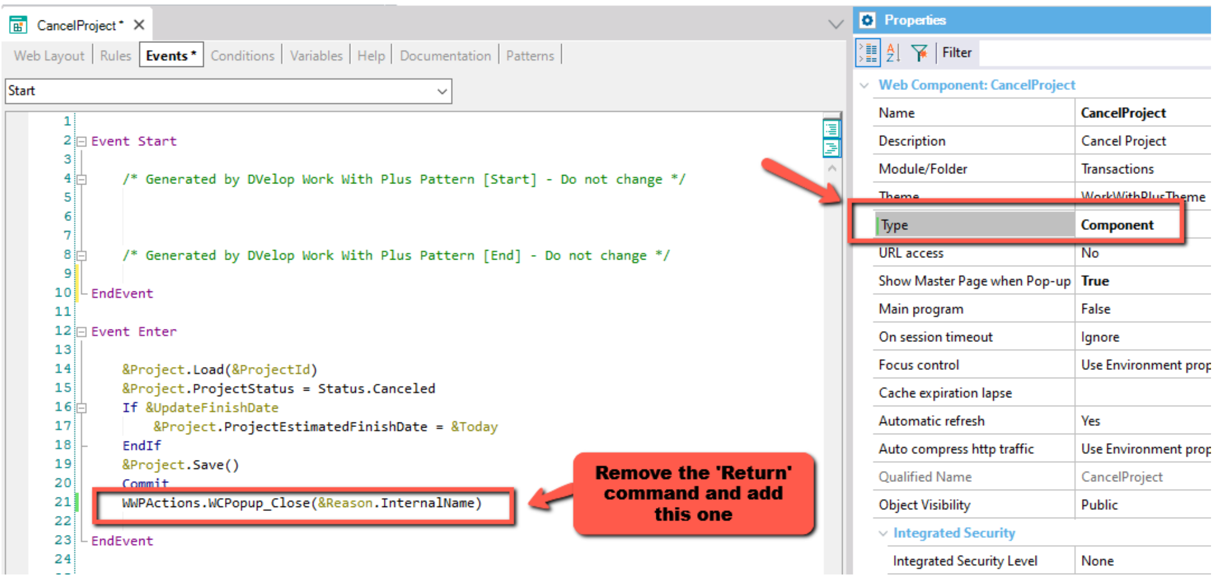
Then, in the List of Projects, add a User Action and in the ‘GX Object’ property call this object in Popup:



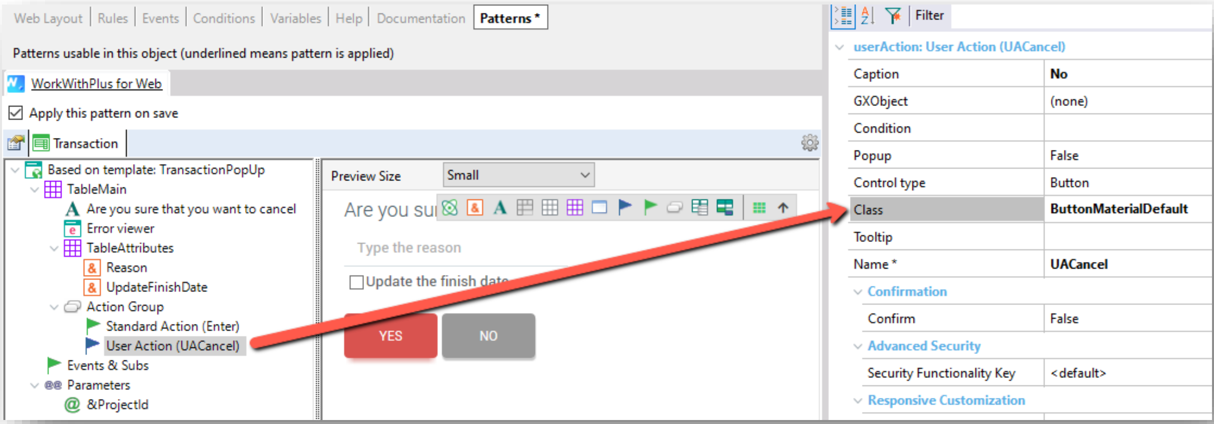
After we run the application and try the feature, it is displayed like follows:

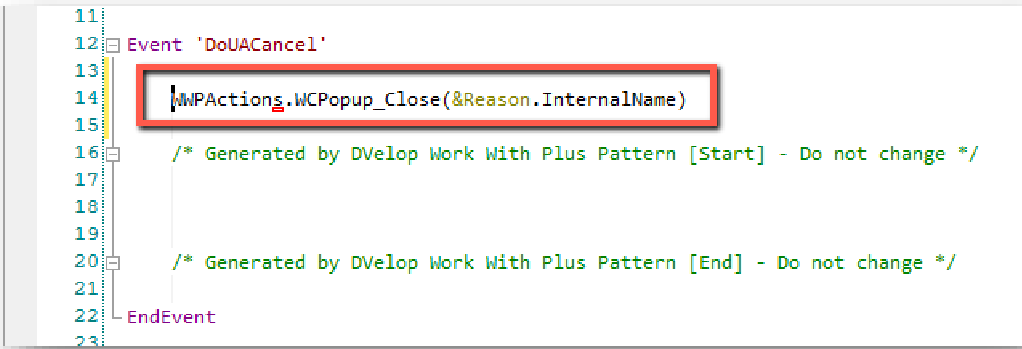


GeneXus opens the Popups in a very large way, so instead of using a Web Panel, we will change the Web Panel ‘CancelProject’ to a Web Component and the following line of the Enter event:

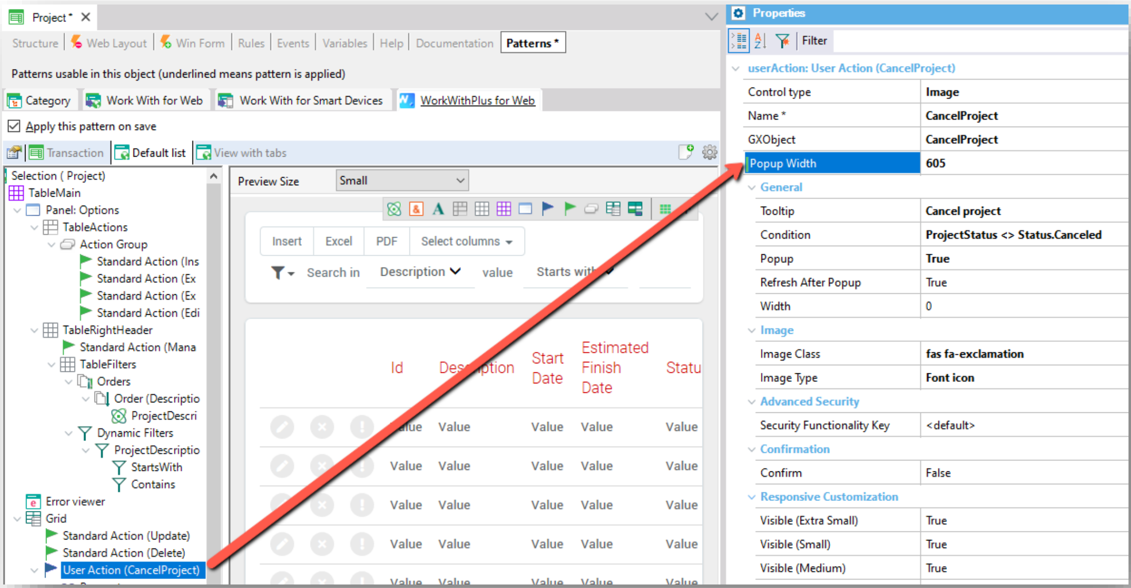


And change the Standard Action 'Cancel' for a User Action 'UACancel' with the following code:

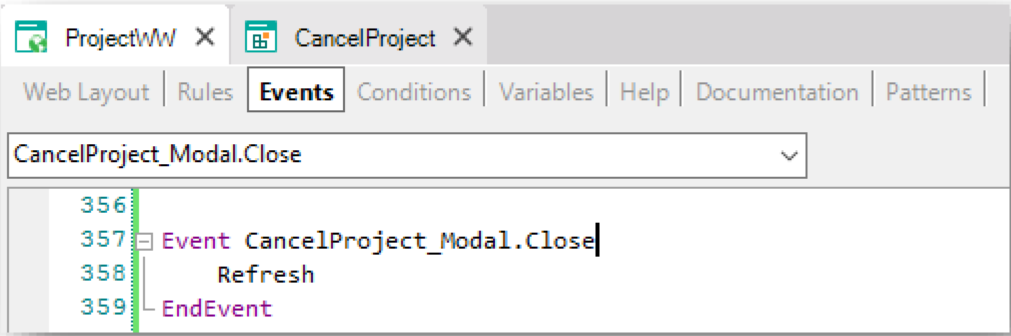


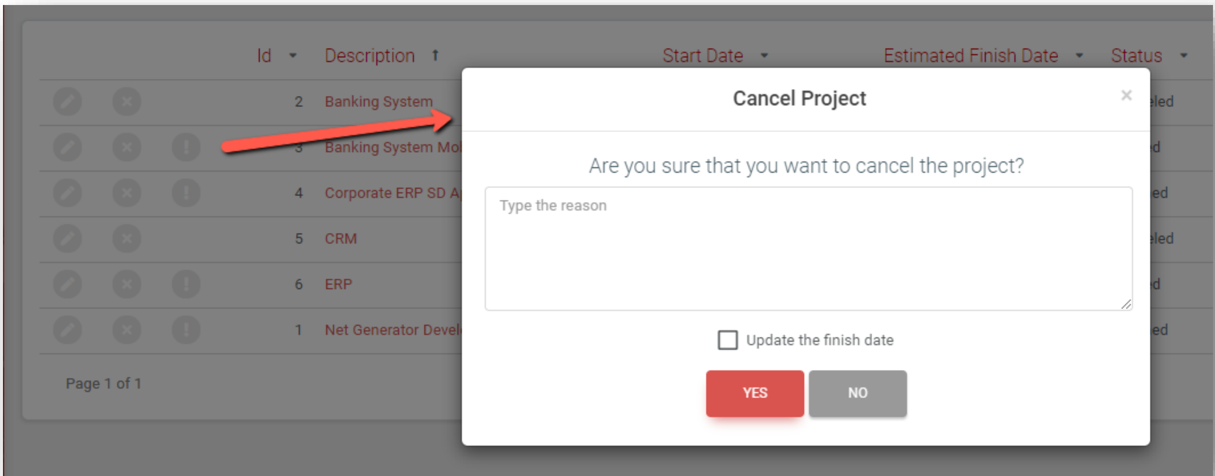


Go to Project List, and change the property 'Popup Width' to 605, and run the application to visualize the results:

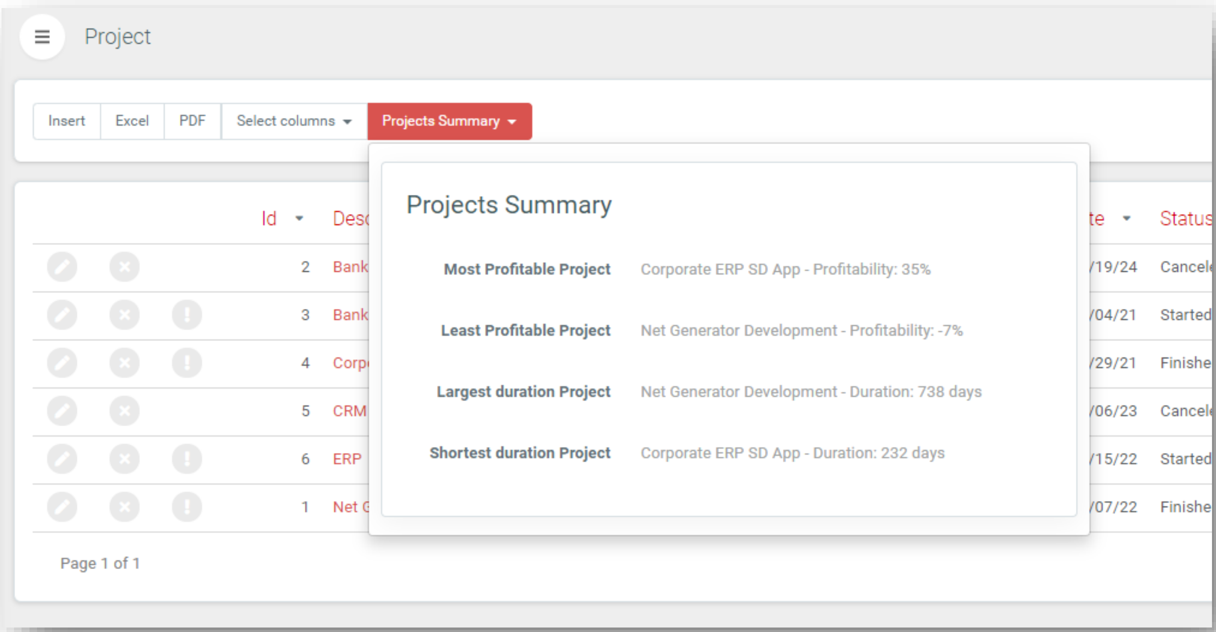


Go to the Events of Project List (ProjectWW) and add the following event:

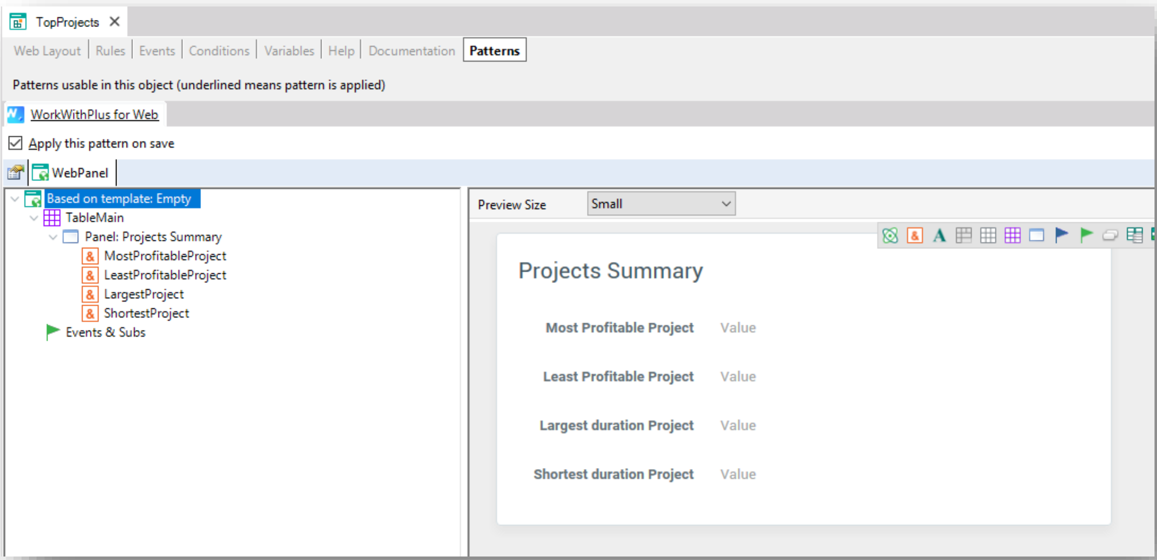




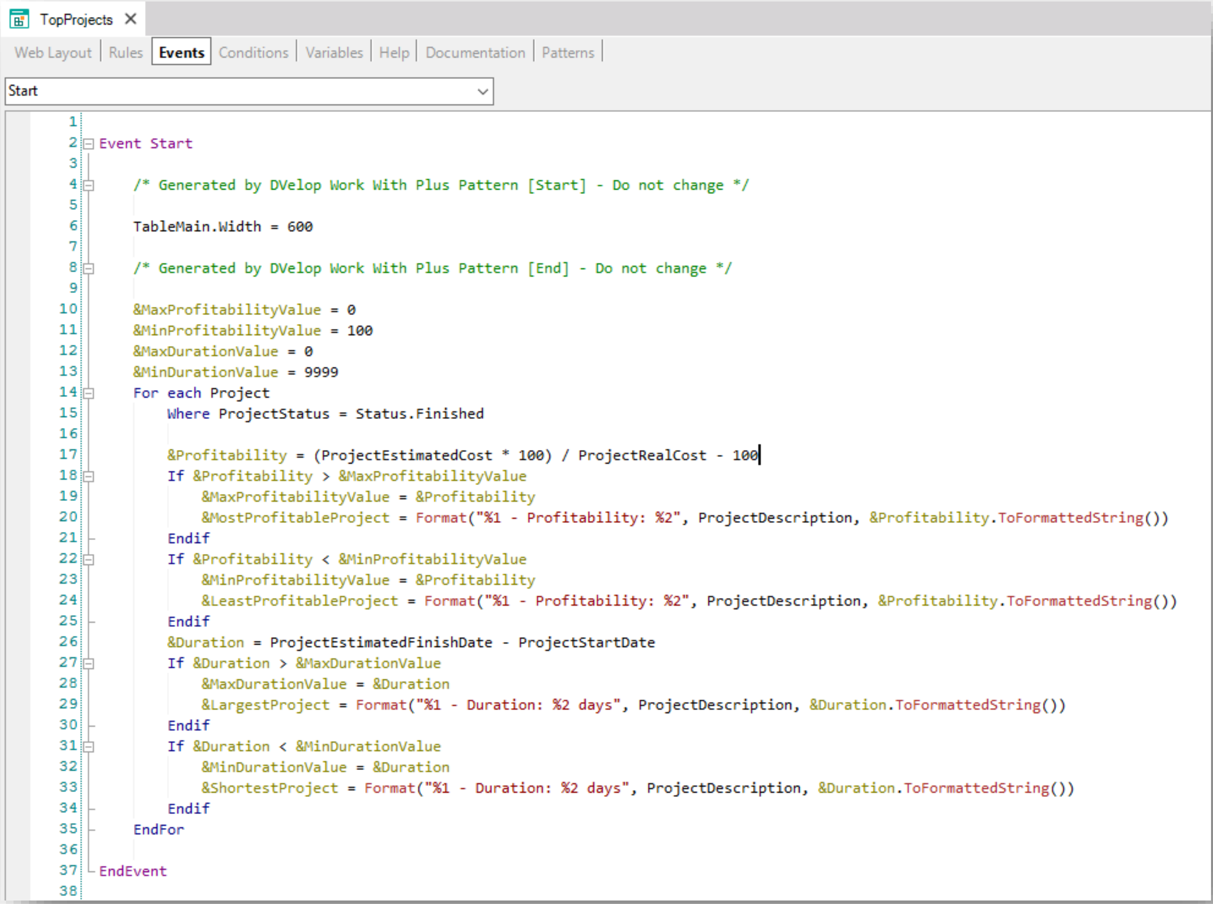
9. In the same List of Projects, the customer wants to have an action in which visualizes information about:
    - The most profitable project
    - The least profitable project
    - The project with largest duration
    - The project with shortest duration



Solution: one possible solution is to add a User Action of type Drop Down Component. First, create a Web Component and add the following structure:

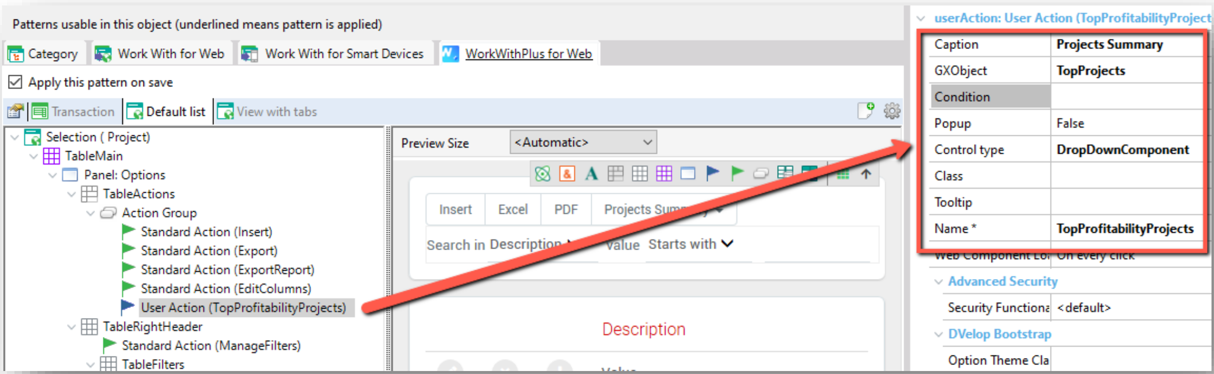


Then, add the code in order to calculate the values (remember you can copy from Code Snippets):



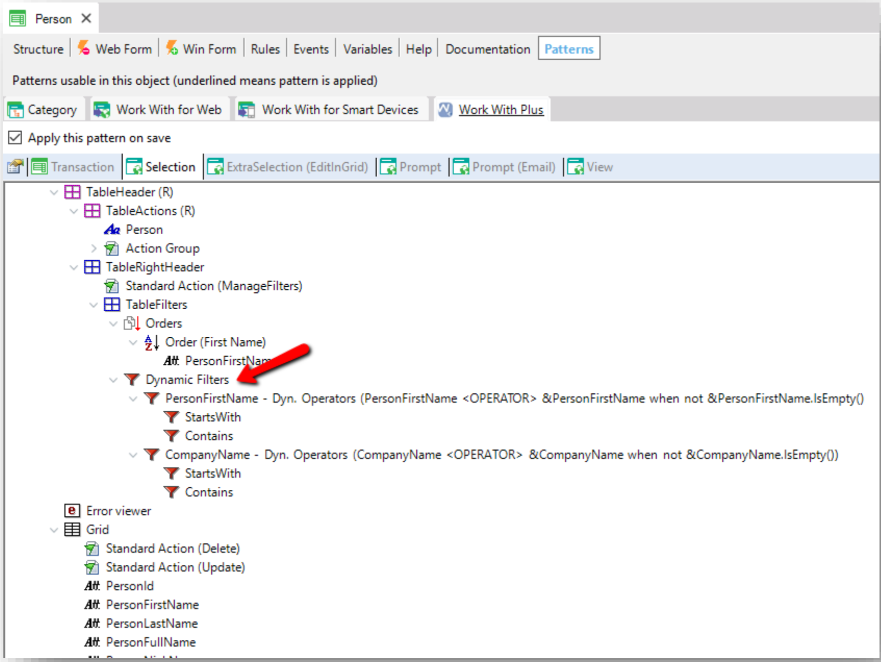
The variables &Profitability, &MaxProfitabilityValue, &MinProfitabilityValue are Numeric(5.2) signed. The variables &Duration, &MaxDurationValue and &MinDurationValue are Numeric (4.0).

Then, create a User Action of type Drop Down Component and select the WC created:

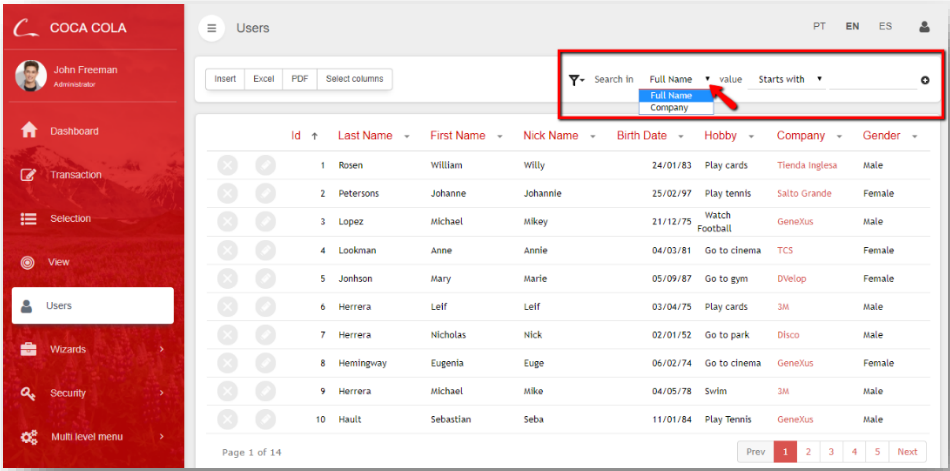


10. In the Person's Selection, which search filters does the end user have? Which type of filters are they?

Solution: the available filters are the ones that are included inside Dynamic Filters node (PersonFullName and CompanyName).



What is the purpose of the dynamic filters? They to select at runtime which filters to use and add new filters dynamically.



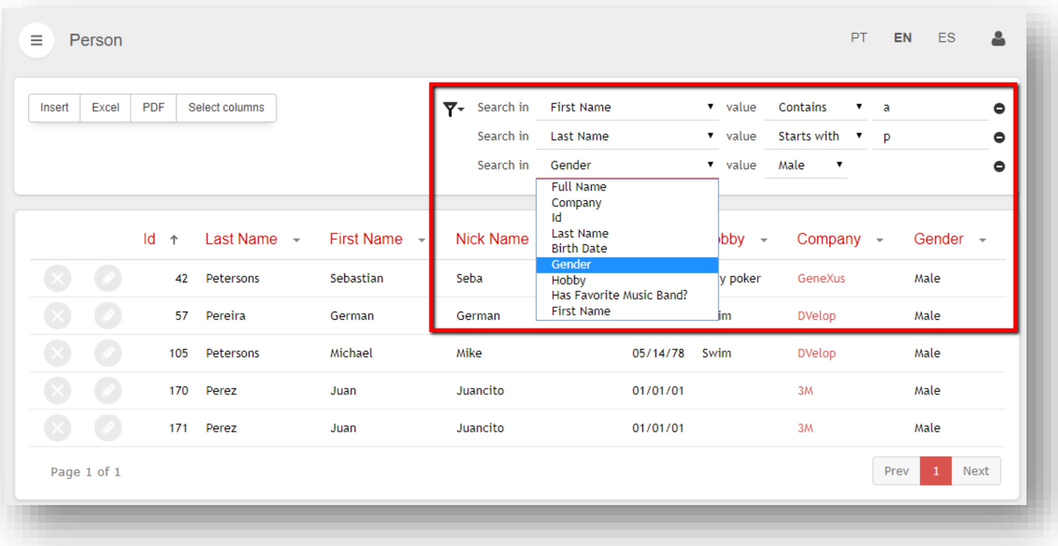
In addition to the filters that are already available, include the possibility to filter by the following fields as dynamic filters:

- PersonId
- PersonFirstName

- PersonLastName
- PersonBirthDate
- PersonGender
- PersonHobby
- PersonHasFavoriteMusicBand

Comment: when you insert new filters (making right click → Add FilterAttribute) you can select many attributes at the same time.

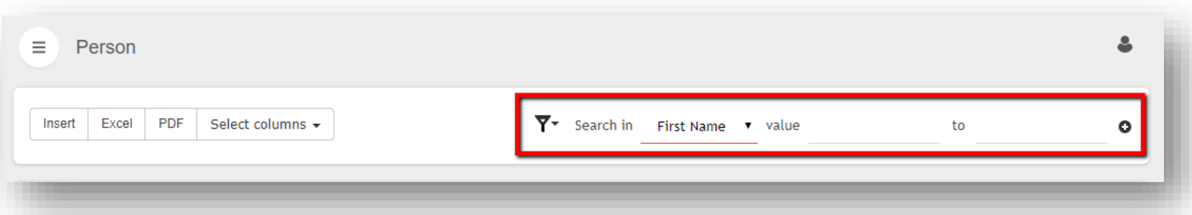
Run the application and test the dynamic filters adding more than one search filter:



As you can visualize, the search filter by FirstName is a filter with dynamic operators, because you can choose if you want to search by beginning of the word or by content. In addition, if you would like to give the possibility to users to search by a range of names, which kind of filters provides WorkWithPlus for Web?

Modify the type of the search filter of PersonFirstName in order to be a Range filter, by making right click 'Convert into Range Filter' and you will be able to visualize that its type has changed.

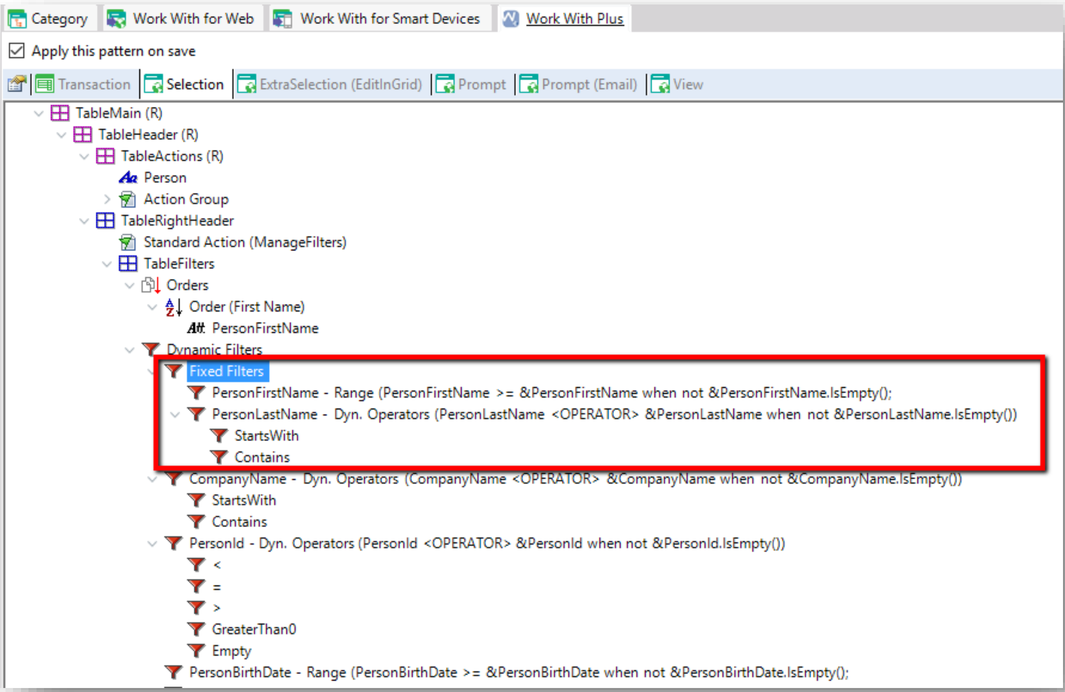
Run the application and check the results:



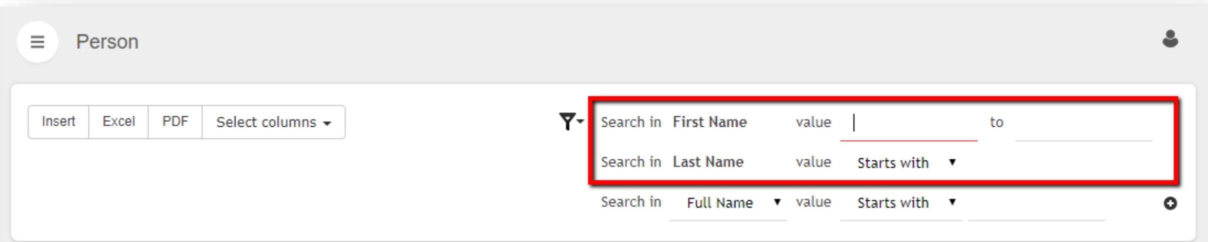
11. The client requires to have the filters by PersonFirstName and PersonLastName always visible instead of having the possibility to add/remove them from the screen, as these

filters are often used in most of the searches. How do you achieve this using WorkWithPlus for Web?

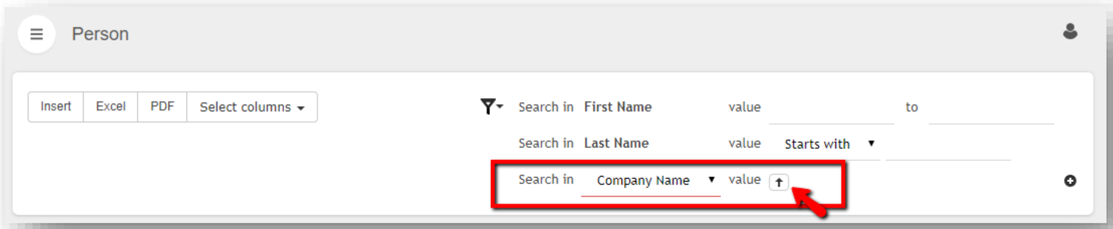
Solution: you can use Fixed Filters so they have the same look & feel as the dynamic filters but they are always visible at the top of the dynamic filters.

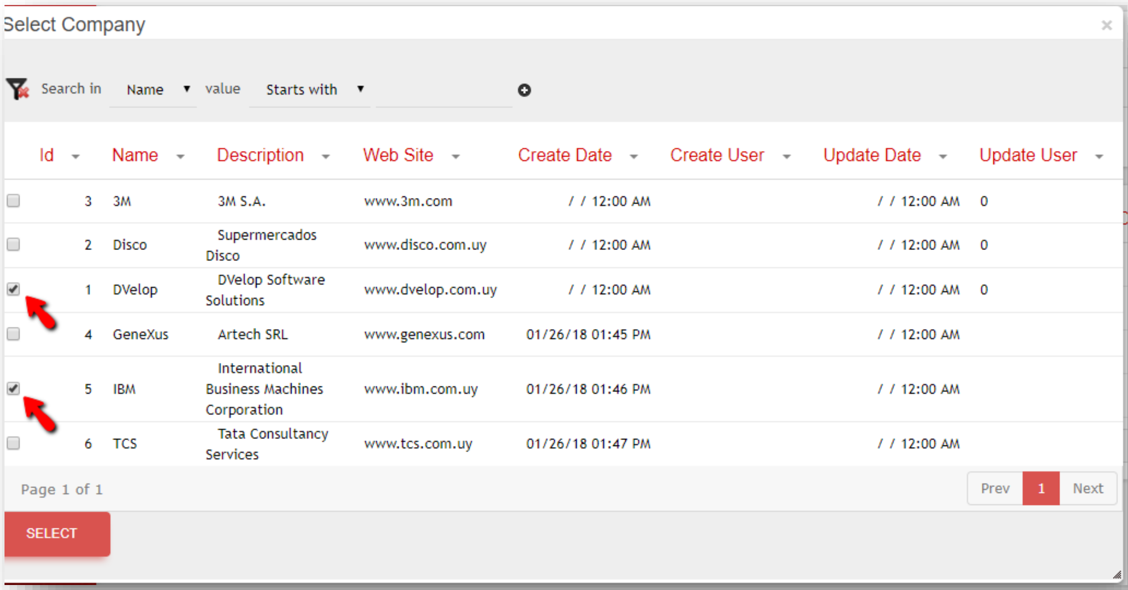


Run the application and visualize the results:



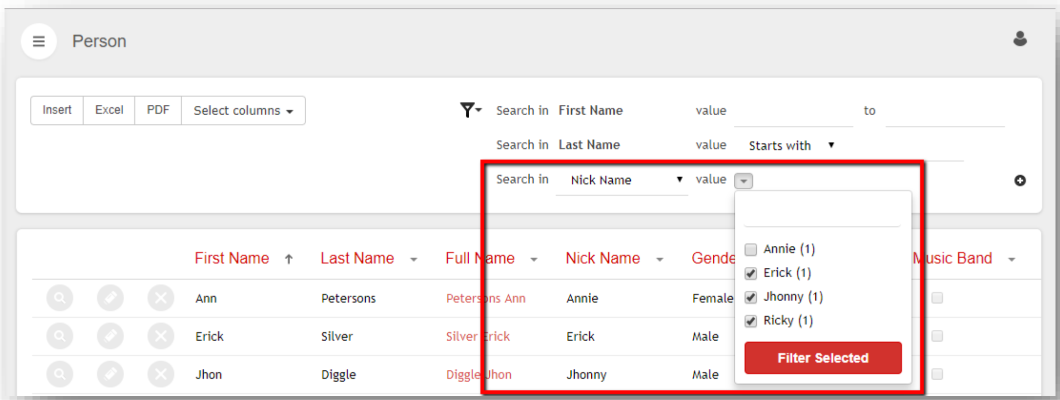
12. Now the customer wants to filter by more than one Company, selecting it from a prompt (as an option of the dynamic filters). Which kind of filter provides that possibility? Implement it and run it to test it:

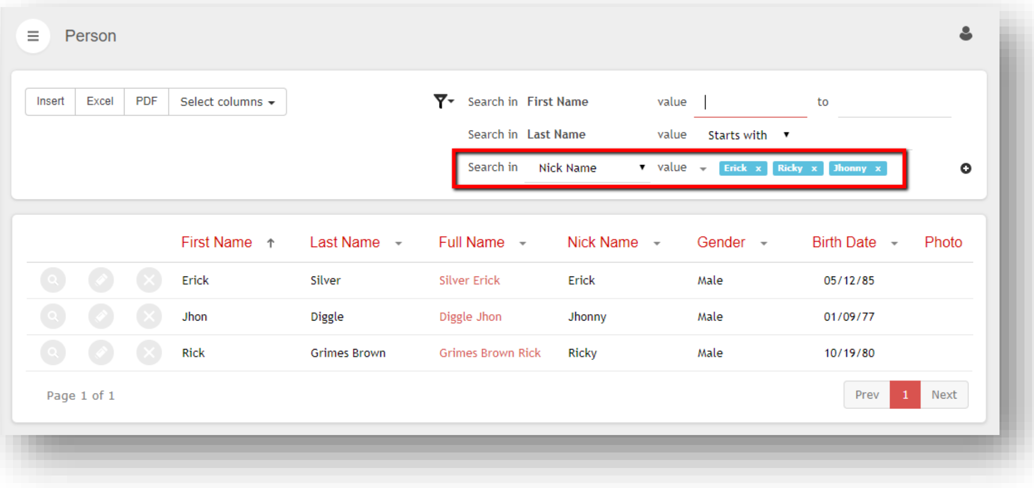




Comment: Before creating the filter in Person Selection you must create an object of type PromptMultiple in Company so that you can associate it with the filter later.

13. The customer requires to have the option of filtering by multiple nicknames (as an option of the dynamic filters). Which kind of filter provides that possibility? Implement it and run it to test it:

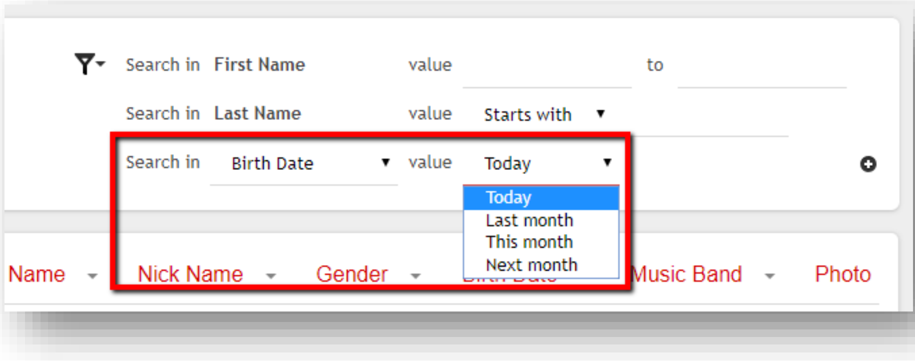




14. Moreover, the client needs to filter people's birth date by using fixed operators. The required operators are:

- Today
- Last Month
- This Month
- Next Month

Which kind of filter provides that possibility? Implement it and run it to test it:



15. In the 'Work With Persons' (PersonWW), the client requires to visualize a new column containing the CompanyId value together with the CompanyName. What could you do in order to achieve what the client needs?

Solution: add a variable inside the grid, and in its property "Load Code" assign the value of CompanyId concatenated to CompanyName.

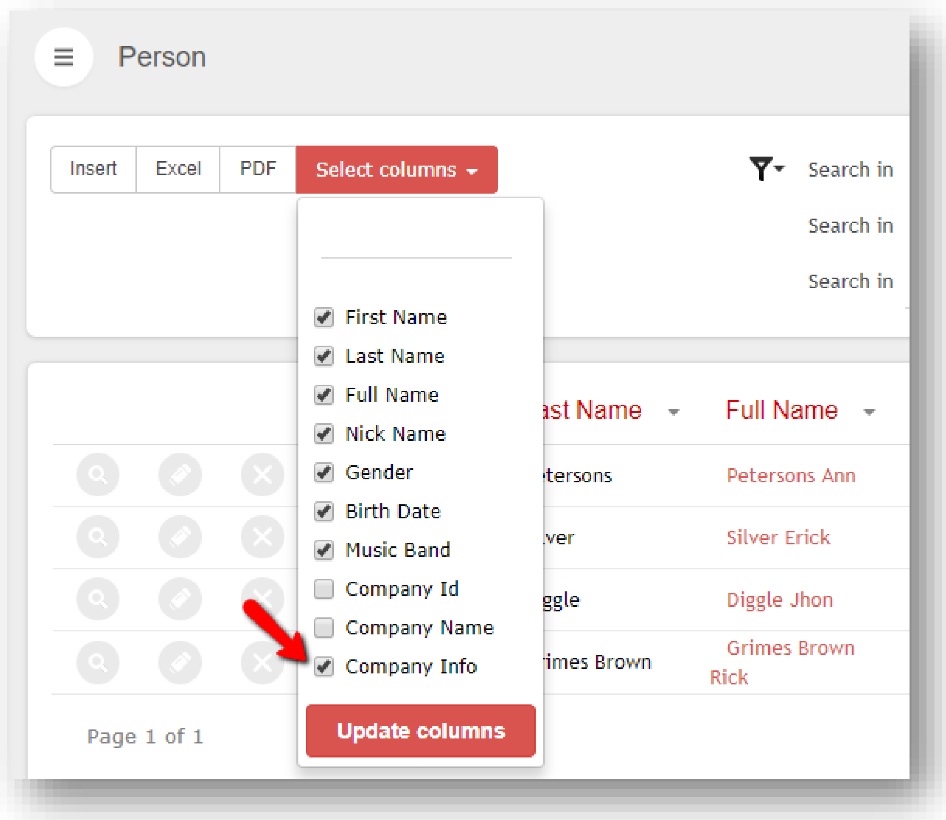
Comments:

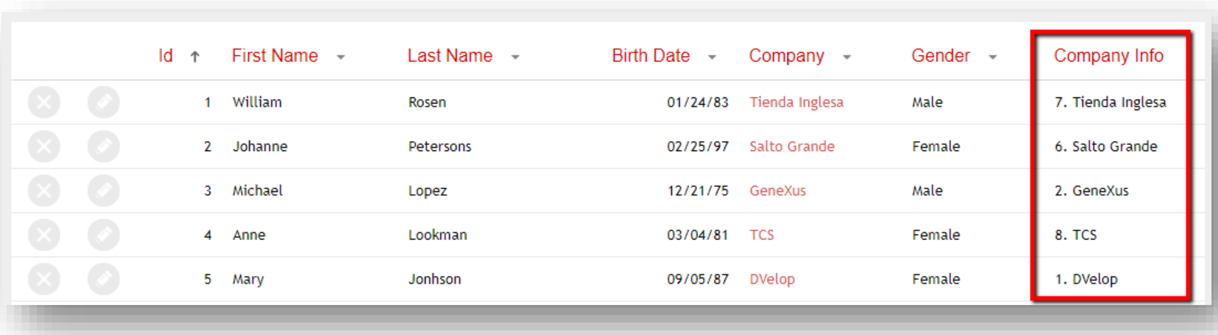
- When you insert a new variable in the form, the first thing that you have to do is define the domain/attribute/SDT/BC in which this new variable will be based on. In this case, as we want to display a description of the company you could define the variable based on the "Description" domain. You could also define it as basic as "Varchar(200)"

- The "LoadCode" property defines how the variable will be loaded. It can be the result of another variable, of calling some procedure, of concatenating some attributes, etc. You can visualize some examples below:

    - &MiVariable = &AnotherVariable
    - &MiVariable = Proc.udp(&parm1, att2, …)
    - &MiVariable = Att1 + " " + &Var2 …

Run the application in order to visualize the results.

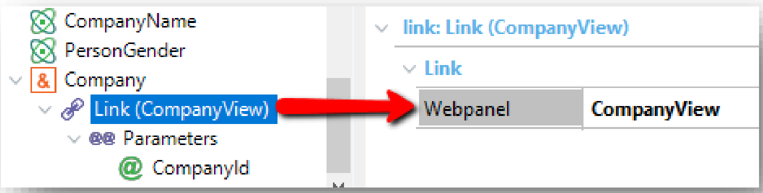




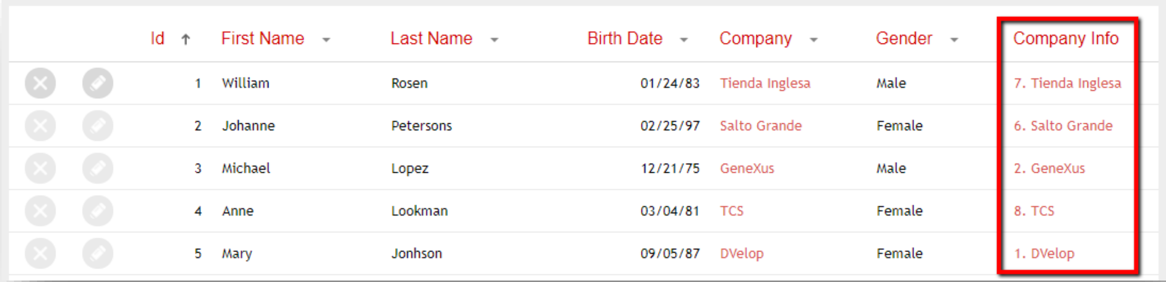
Id	First Name	Last Name	Birth Date	Company	Gender	Company Info
1	William	Rosen	01/24/83	Tienda Inglesa	Male	7. Tienda Inglesa
2	Johanne	Petersons	02/25/97	Salto Grande	Female	6. Salto Grande
3	Michael	Lopez	12/21/75	GeneXus	Male	2. GeneXus
4	Anne	Lookman	03/04/81	TCS	Female	8. TCS
5	Mary	Jonhson	09/05/87	DVelop	Female	1. DVelop

If you visualize the CompanyName attribute, you will notice that it has a link to call the View object of the transaction Company. This is an automatic behavior of WorkWithPlus for Web, named “Autolink”.

The new column that we’ve created does not have this behavior (as it is a variable), so it is necessary to add the behavior manually. In order to do that, use the ‘Link’ action as it is displayed in the following image:

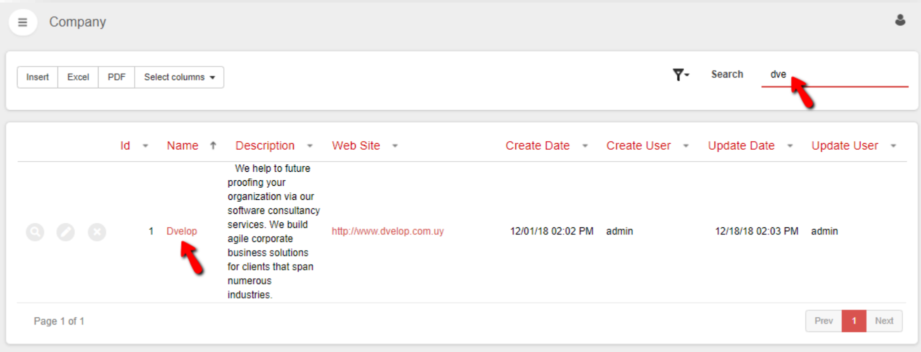


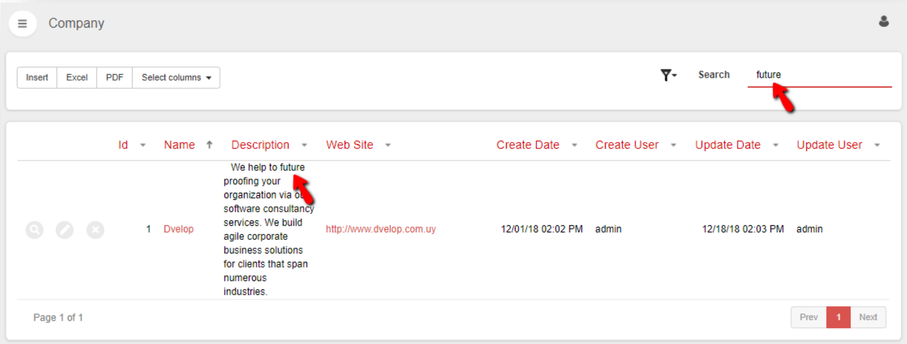
Run the application and test what you have developed:



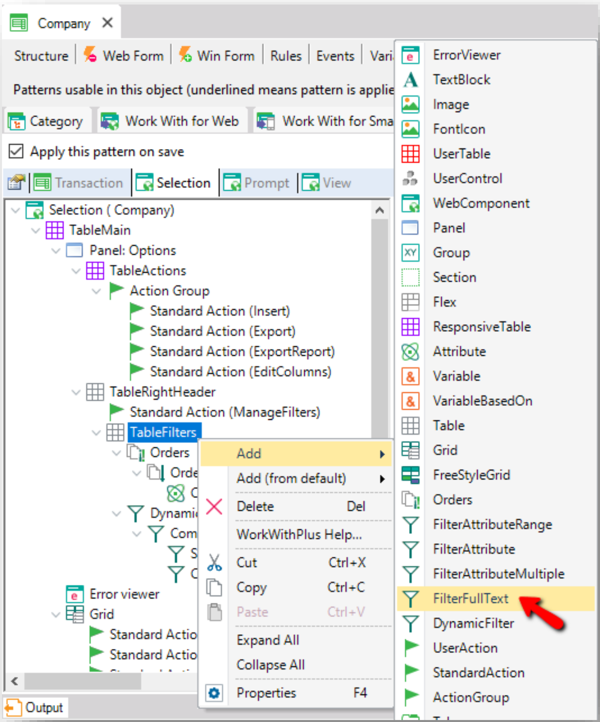
Id	First Name	Last Name	Birth Date	Company	Gender	Company Info
1	William	Rosen	01/24/83	Tienda Inglesa	Male	7. Tienda Inglesa
2	Johanne	Petersons	02/25/97	Salto Grande	Female	6. Salto Grande
3	Michael	Lopez	12/21/75	GeneXus	Male	2. GeneXus
4	Anne	Lookman	03/04/81	TCS	Female	8. TCS
5	Mary	Jonhson	09/05/87	DVelop	Female	1. DVelop

16. The client needs, in the Company’s Selection, to be able to filter by company name or by its description, in the same search box.

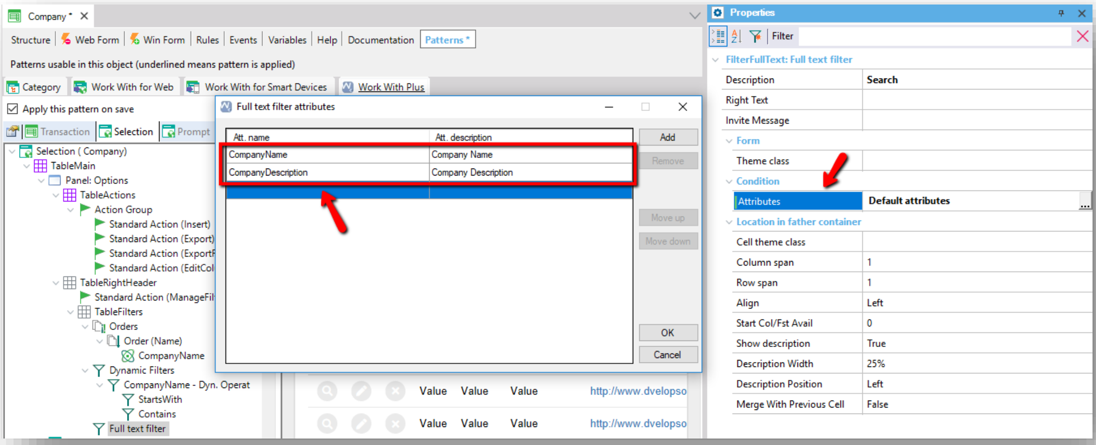




Solution: add a ‘Filter Full Text’ node within the Company’s Selection:

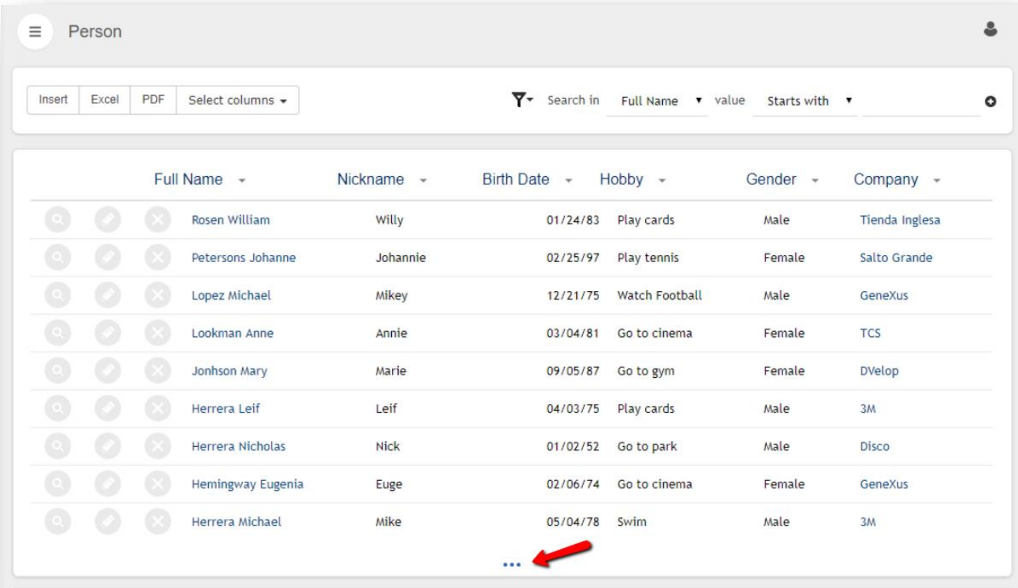


Customize the attributes that the filter will consider, by using the property 'Attributes' (by default it includes every attribute according to the definition specified on the WorkWithPlus for Web Settings):



Then, remove the Dynamic Filter node as it will not be necessary for this screen, and configure the “Description” property of the “Full text filter” with the ‘Search’ value.

17. The Customer needs a new screen to visualize the people added and work with them (ExtraSelection). The screen must contain an infinite scrolling to show people without paging:

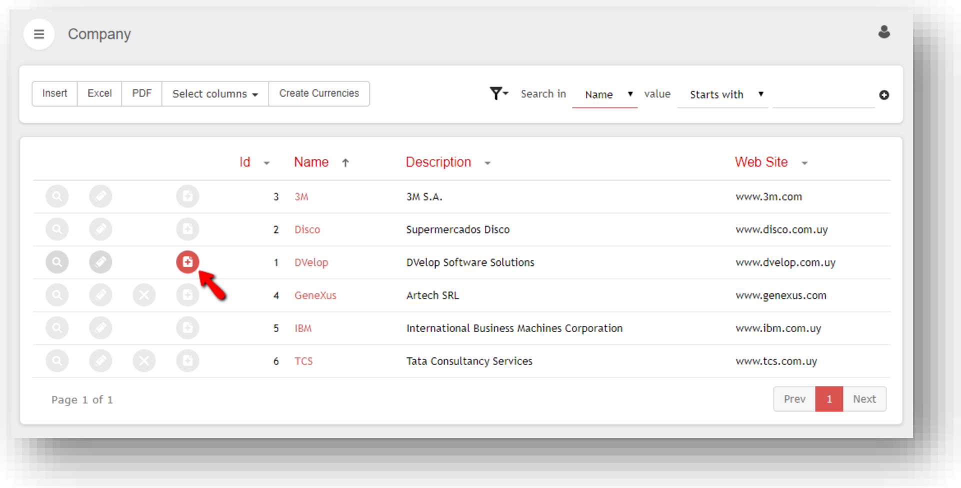


Solution: create a new Extra Selection based on the “Infinite Scrolling” template. Run the application and visualize the results at runtime.

18. Go to the Person’s Selection at runtime and analyze the Column Filters of First Name, Id, Hobby and Gender. As you can visualize, Id has a Range search box but First Name has a single search box and a dynamic list, and Gender has a fixed list. So, where do you configure the default values for each column filter options?

Solution: In the WorkWithPlus for Web Settings you can define the filter’s settings for each data type. In particular, perform the needed configurations so that all the “Varchar” columns have a maximum of 5 items listed on the dynamic list. Run the application and visualize the results (check this in all “Varchar” attributes: First Name, Last Name, Full Name, Nick Name, etc.).

19. In the Company’s Selection, the customer needs an option in order to create a new company record copied from an existent one, make the needed modifications and save the record. Which StandardAction does WorkWithPlus for Web provides for it? Add it in the needed object and test the new feature at runtime.

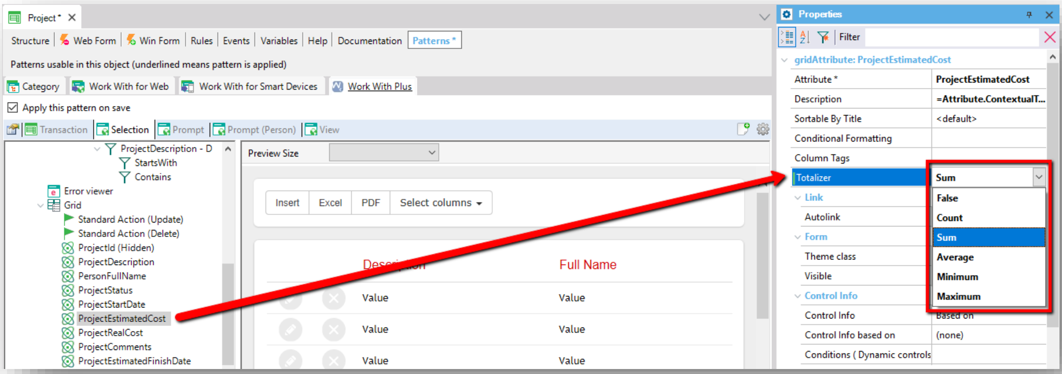


20. The customer needs to visualize the following totalizers in the Project’s Selection (ProjectWW):

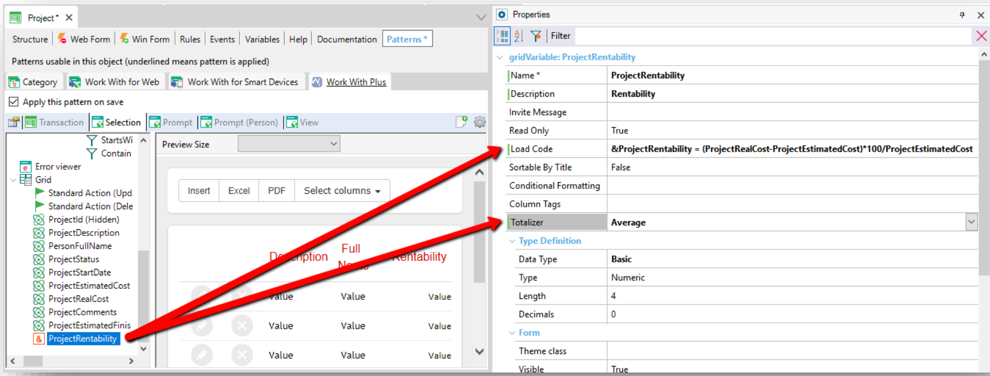
- Sum of the ProjectEstimatedCost
- Sum of the ProjectRealCost
- Average of the Project´s rentability

What mechanism does WorkWithPlus for Web provide for this feature?

Solution: use the “Totalizers” property within the ProjectEstimatedCost and ProjectRealCost attributes, to develop the required feature:



You can also apply totalizers when using variables, so you can add a new variable in the grid, load it and define the proper totalizer:



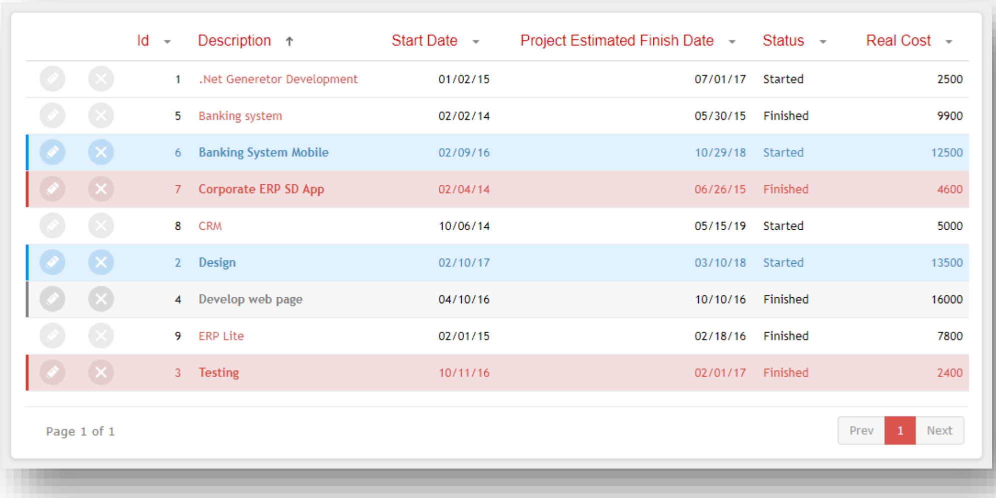
Run the application and test what you have developed.

21. The customer needs a new screen (Extra Selection) to easily visualize the projects profitability with different colors in the grid. What feature does WorkWithPlus for Web provides for it?

Solution: create a new “Extra Selection” and use Conditional Formatting to set the conditions and how the grid´s lines will look like. Add the following conditions and formats:

- ProjectEstimatedCost < ProjectRealCost and ProjectStatus = Status.Finished→ Danger
- ProjectEstimatedCost>ProjectRealCost*1.1 and ProjectStatus=Status.Finished→ Info
- ProjectEstimatedCost > ProjectRealCost and ProjectStatus = Status.Finished→ Lite

Run the application and test what you have developed:

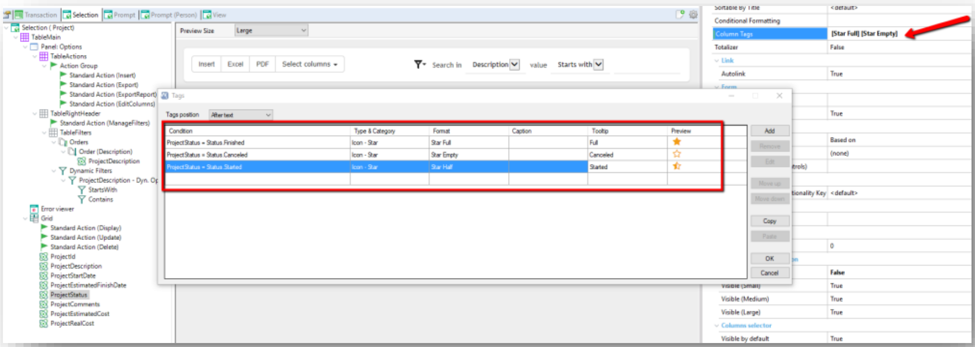


		Id	Description	Start Date	Project Estimated Finish Date	Status	Real Cost
		1	.Net Generetor Development	01/02/15	07/01/17	Started	2500
		5	Banking system	02/02/14	05/30/15	Finished	9900
		6	Banking System Mobile	02/09/16	10/29/18	Started	12500
		7	Corporate ERP SD App	02/04/14	06/26/15	Finished	4600
		8	CRM	10/06/14	05/15/19	Started	5000
		2	Design	02/10/17	03/10/18	Started	13500
		4	Develop web page	04/10/16	10/10/16	Finished	16000
		9	ERP Lite	02/01/15	02/18/16	Finished	7800
		3	Testing	10/11/16	02/01/17	Finished	2400

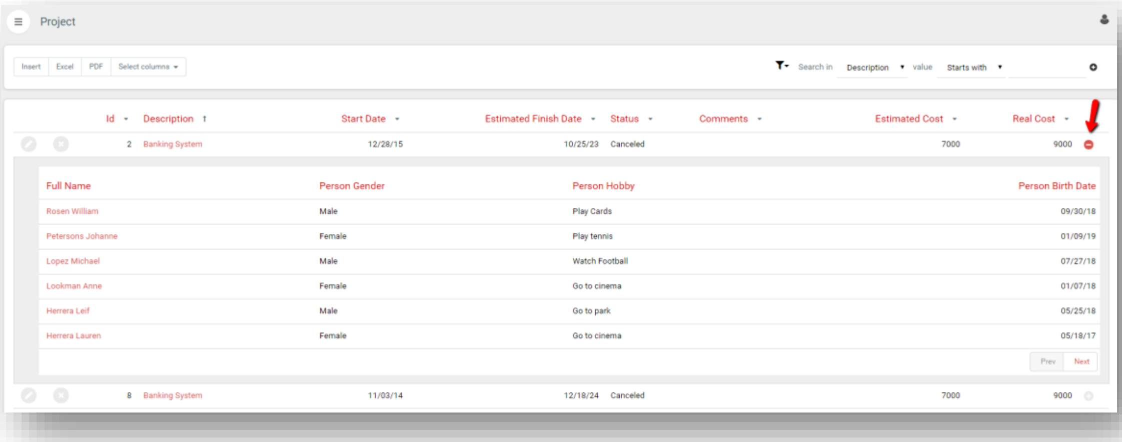
What other ways to format the rows are available in WorkWithPlus for Web?

22. The customer needs to visualize the projects with a star icon according to its status. What feature does WorkWithPlus for Web provides for it?

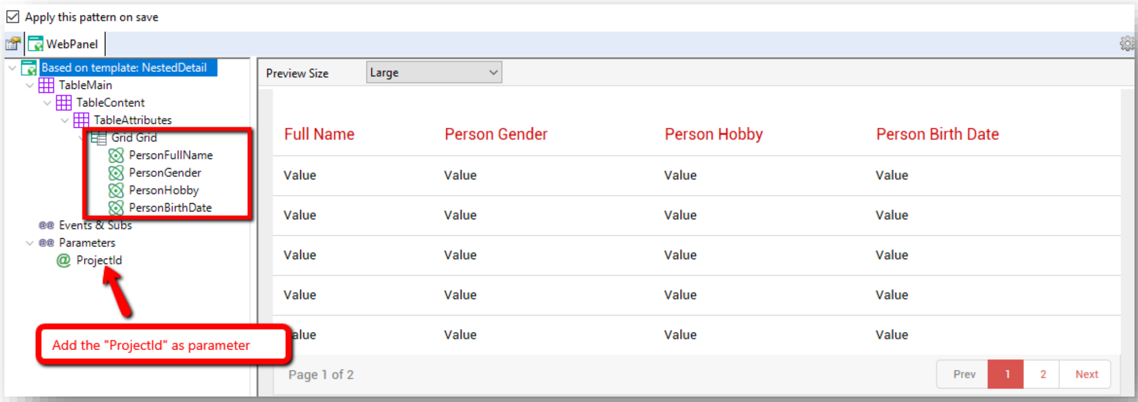
Solution: create a new “Extra Selection” and use Column Tag to define the conditions and select the desired icons to be used for each condition, as follows:



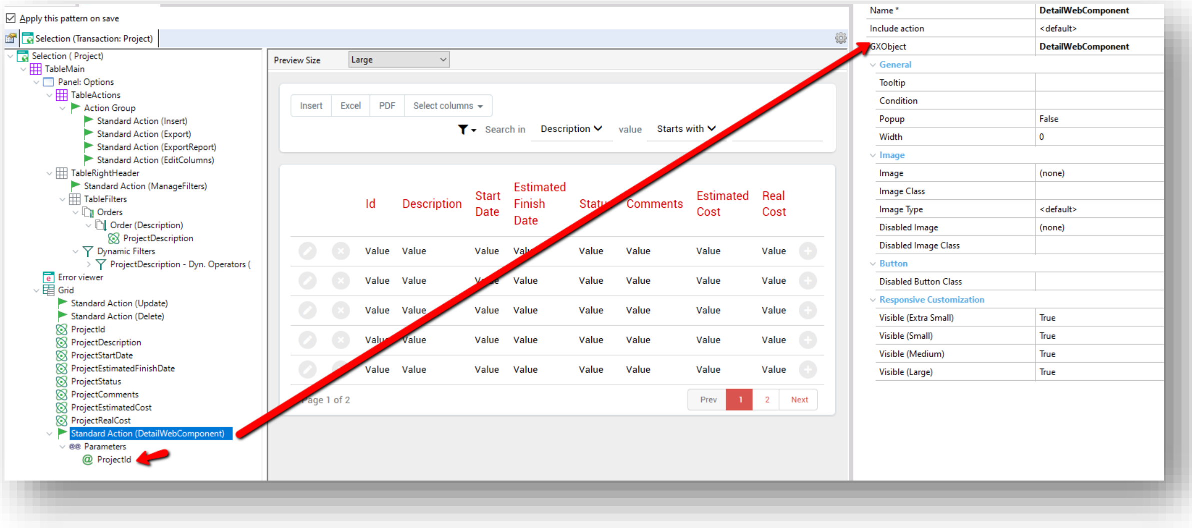
23. The customer needs to visualize the projects and expand one of them and visualize the people working on it:



Solution: create a new Web Component called “DetailWebComponent”, based on the “NestedGrid” template. Add a “Grid” node with the following attributes and parameter, as follows:

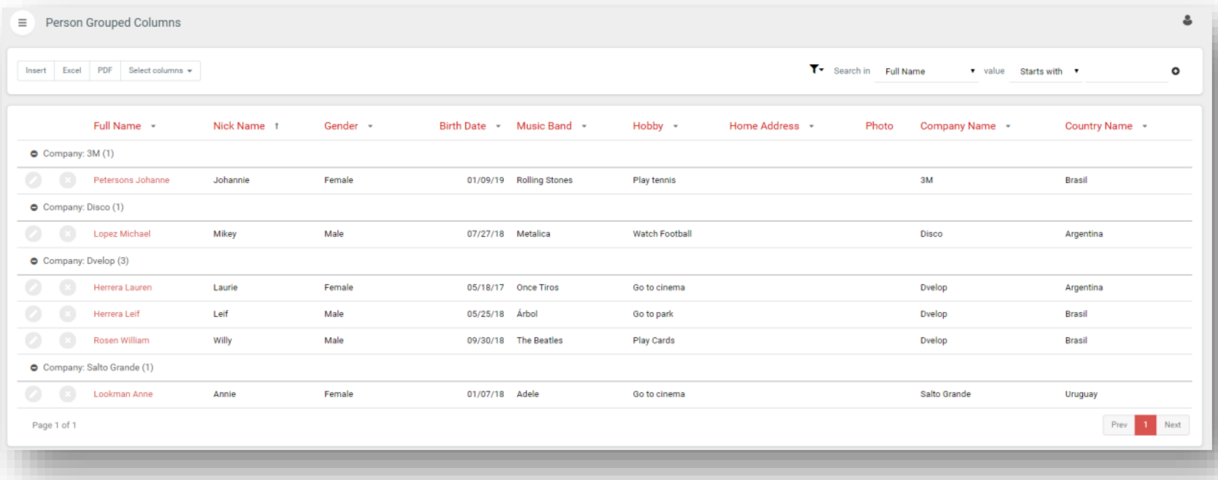


Then, create a new Web Panel called “ProjectsWithDetail”, based on the “Selection” template. Select the “Project” transaction so the Selection, with its features, is automatically created. Once the panel is created, define the description of add a new Standard Action in the grid as follows:

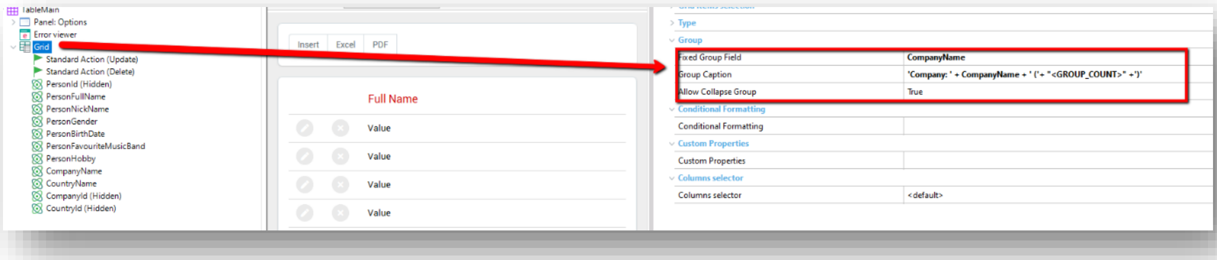


Run the application and visualize the results at runtime. If necessary, update a project to assign people to it. Then, open the new Selection and visualize the updated project by expanding it.

24. The customer needs to visualize the projects and expand one of them and visualize the people working on it:



Solution: create a new Extra Selection within the "WorkWithPlus for WebPerson" instance, set its description as "Person Grouped Columns". Remove the unnecessary attributes and define the group as follows:



Run the application and visualize the results at runtime.

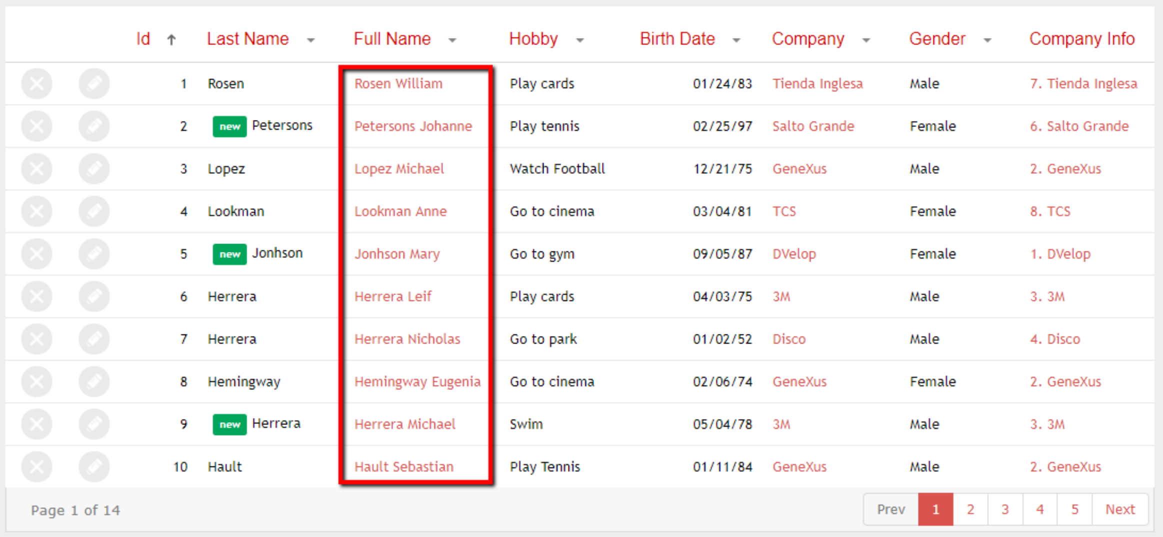
25. Popup WC
26. Dropdown WC
27. Import Excel

WorkWithPlus for Web Training

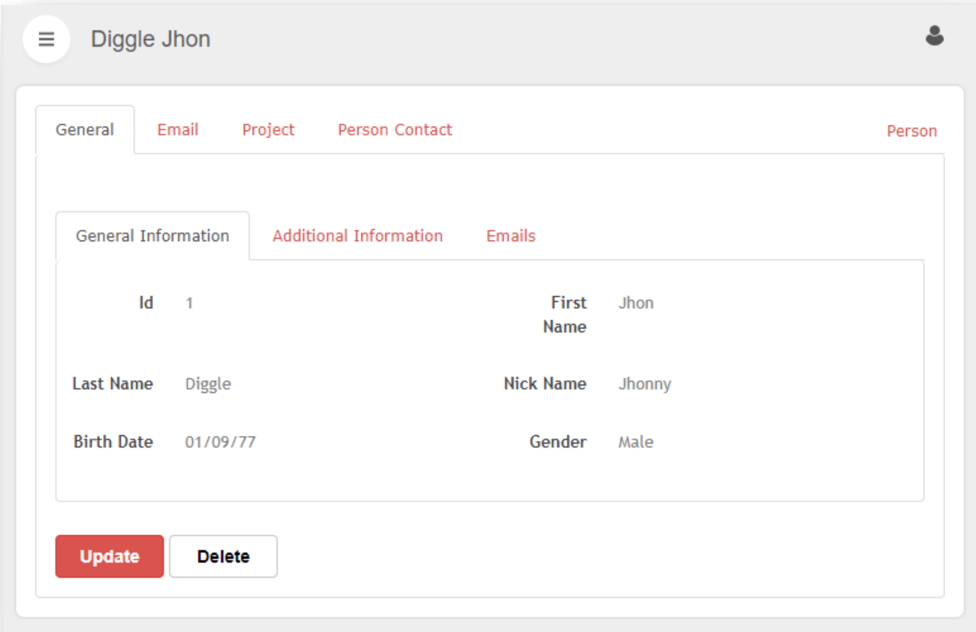
Part 3 – Other Objects

Part 3 – Other Objects

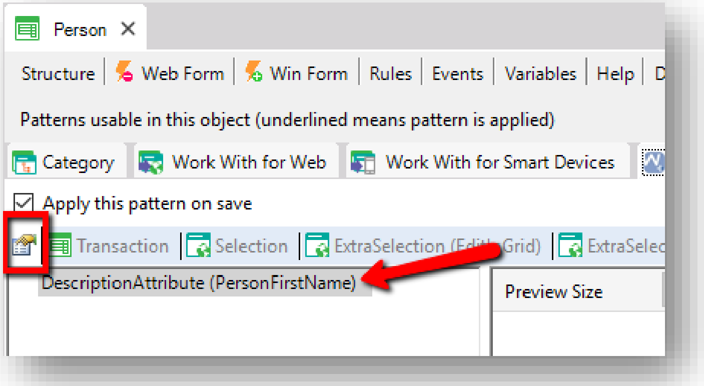
1. Run the application and go to PersonWW.



Click in 'Full Name' of any record, in order to go to the View object of that record and navigate through the different tabs of it.

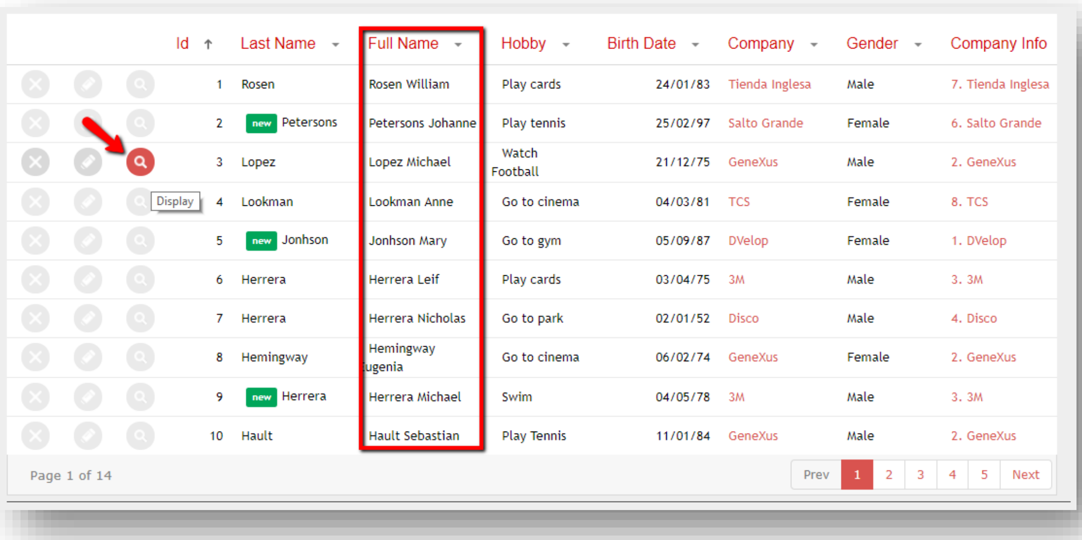


Why the link to visualize the record of a Person was inserted automatically in PersonFullName attribute? Because the attribute PersonFullName is the "Description attribute" of the transaction named Person (as you can visualize in the following image), and because the property "Autolink" within PersonFullName attribute is True.



Instead of having a link in the attribute PersonFullName, the client requires having an action (image) inside the grid that navigates into the View object of that record. Which mechanism provides WorkWithPlus for Web in order to achieve what is needed?

Make the changes necessaries in order to achieve the requirement and make F5 in order to visualize the results:

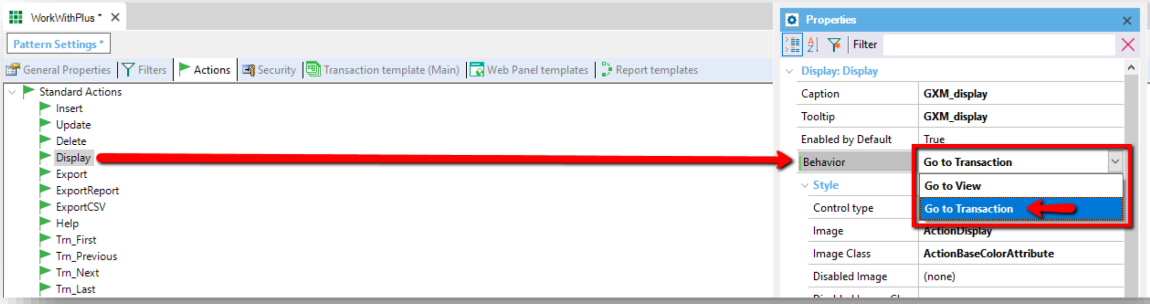


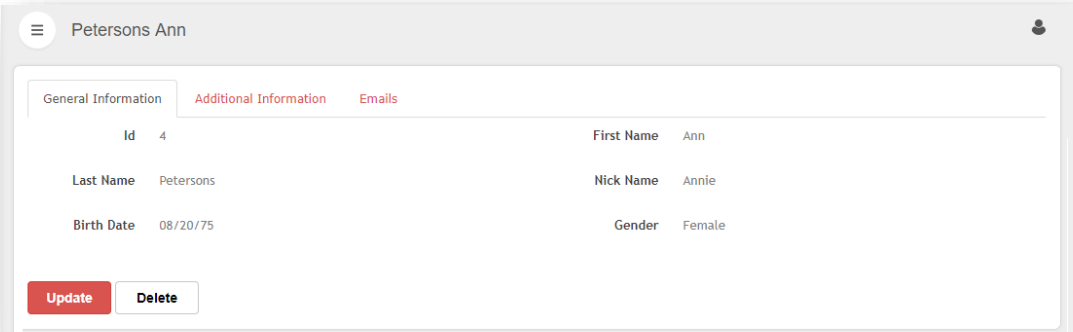
Comments:

- WorkWithPlus for Web contains a Standard Action called “Display” to achieve the desired behavior. Verify that the property “Behavior” of this node is “Go to View”.
- You should also disable the automatic link associated to PersonFullName.

2. The client requires that the action calls to the transaction in “Display” mode instead of calling the View object. How would you implement it with WorkWithPlus for Web?

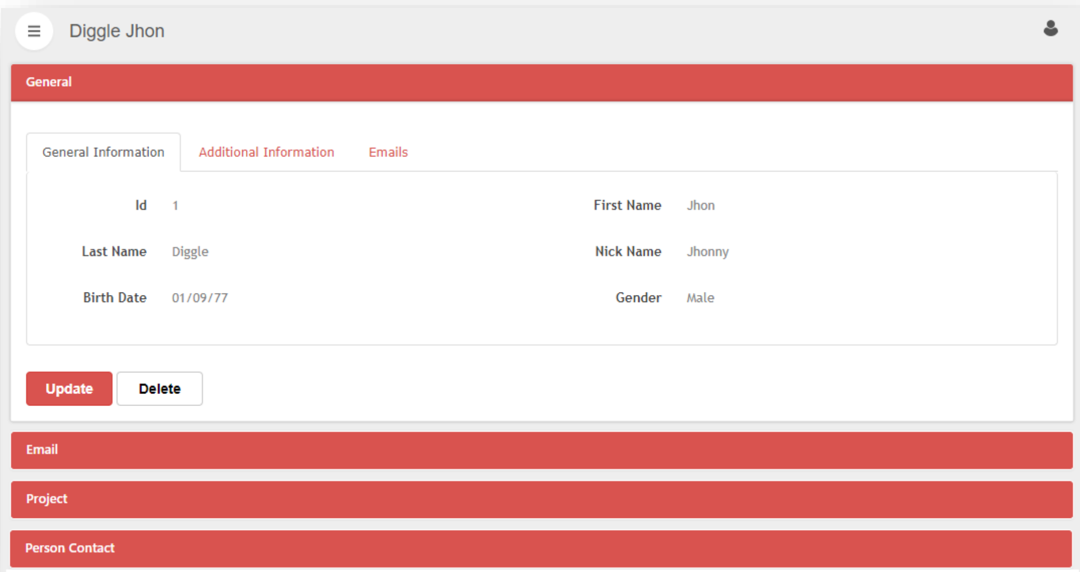
Solution: modify the property “Behavior” of the Standard Action Display to the value “Go to transaction”. Then, run the application and visualize the results.





Then, modify this property again so that it calls the View object.

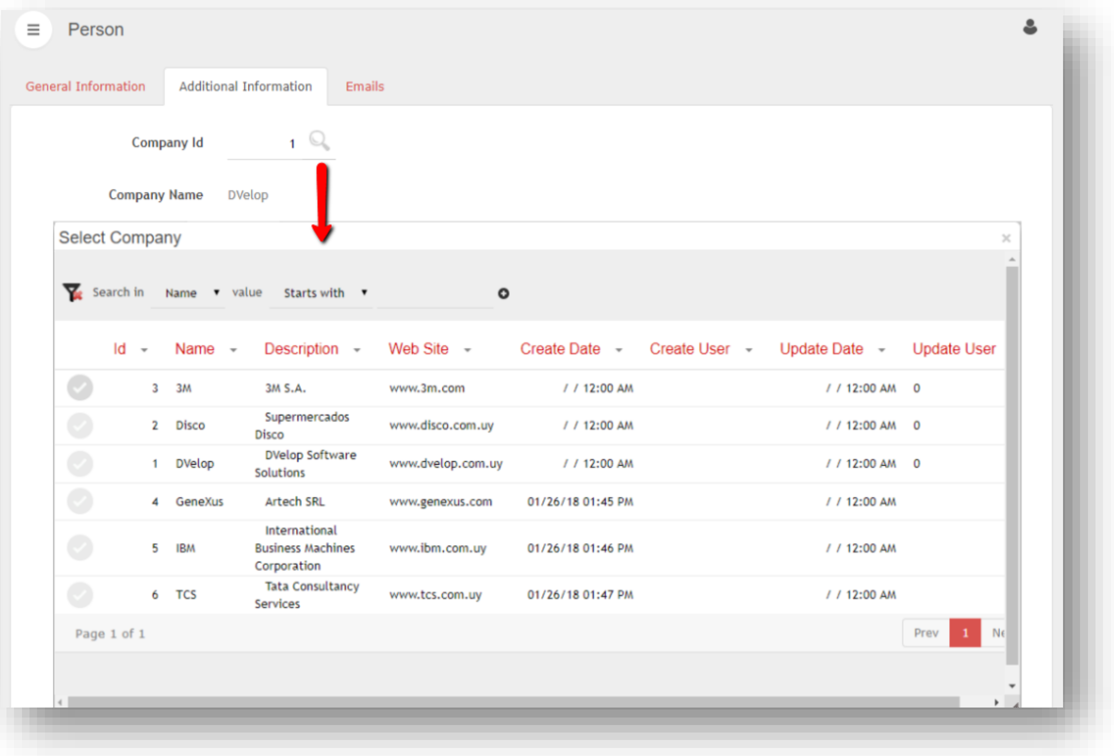
3. The client requires visualizing the information of the Person with an expanded view, as it is shown in the following image:



Which property do you need to modify in order to have the desired behaviour?

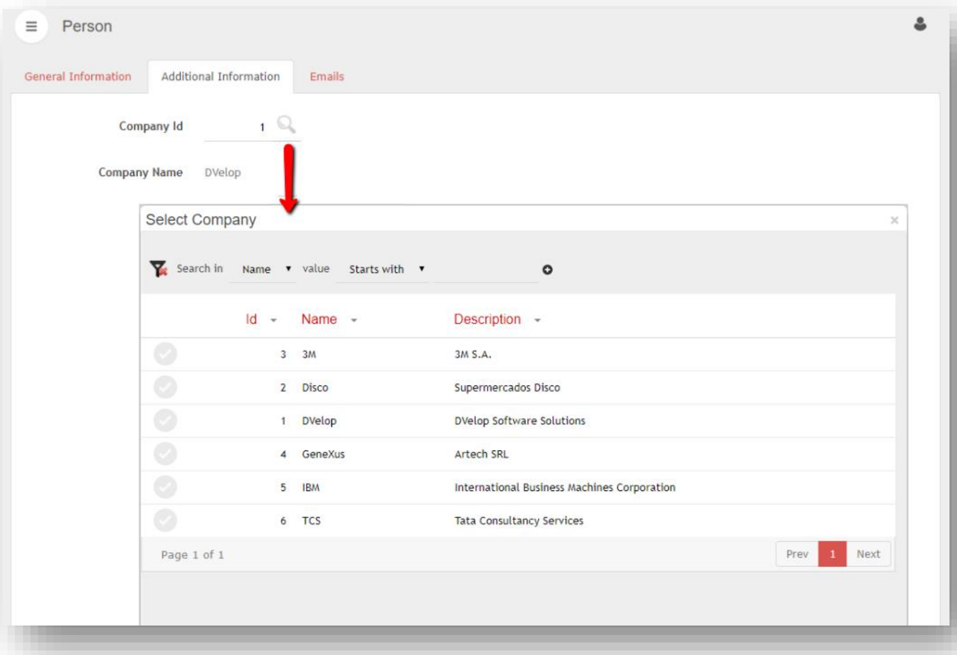
Make the modifications and test it at runtime.

4. Go to the screen in order to update some person. When you modify the information of the associated company appears an action in order to select the company to associate. Which is the object that the action is calling?

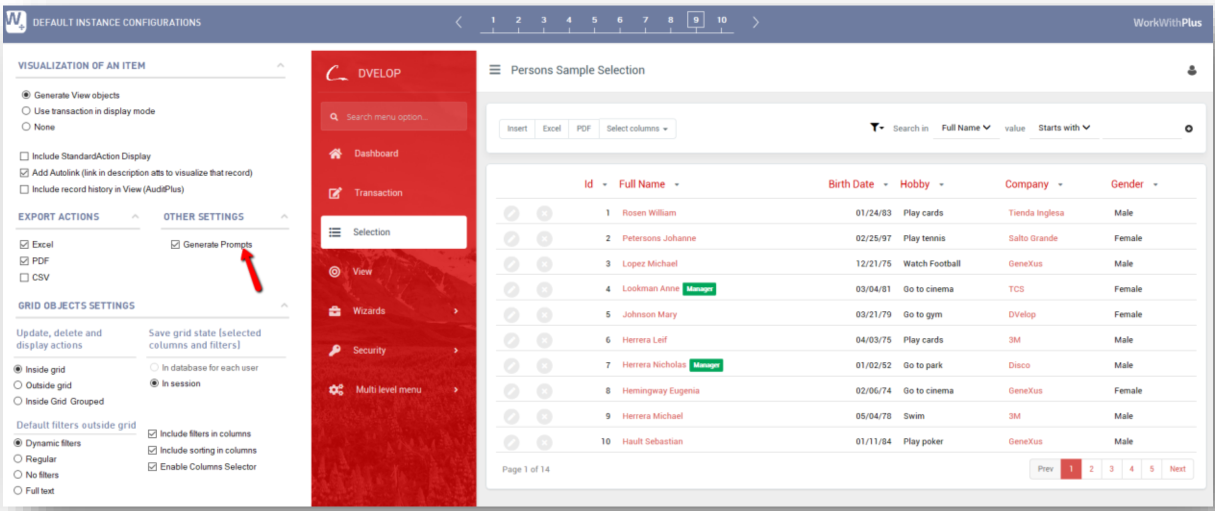


Solution: the object is "CompanyPrompt" that is created in the instance of WorkWithPlus for Web within Company transaction. WorkWithPlus for Web adds automatically the prompt rule to invoke that object in Person transaction (because the attribute CompanyId's AutoPrompt property within Person transaction has value True).

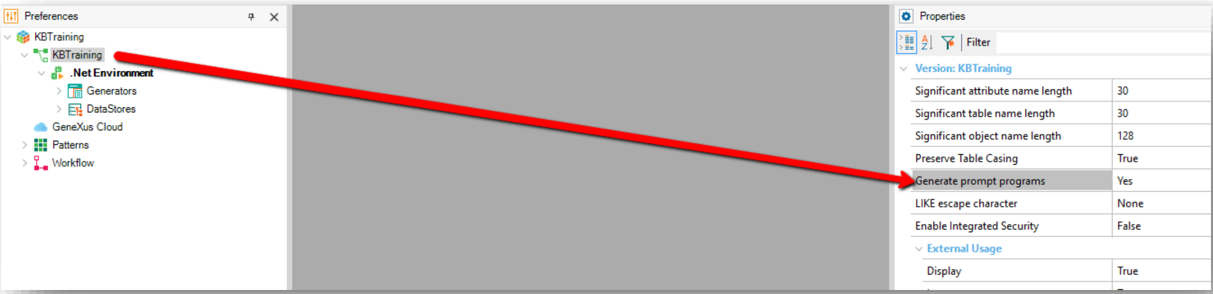
Then, modify the Company's prompt object so it displays just the following columns:



We suggest to use WorkWithPlus for Web prompts instead of GeneXus prompts as the offer a wide set of additional features. You can decide whether to generate them or not in step 9 of the “Design System Wizard”:



If this box is checked, the property “Generate prompt programs” will be set with the value 'No' in order to avoid the generation of GeneXus prompts:

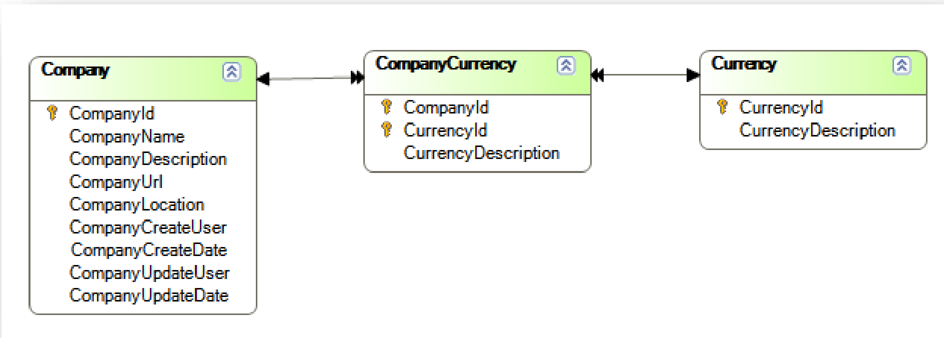


5. It is required to save with which currencies each company works with. In order to do it, you have to import an XPZ named 'WWPTraining_CompanyCurrency' which contains some objects and two transactions:

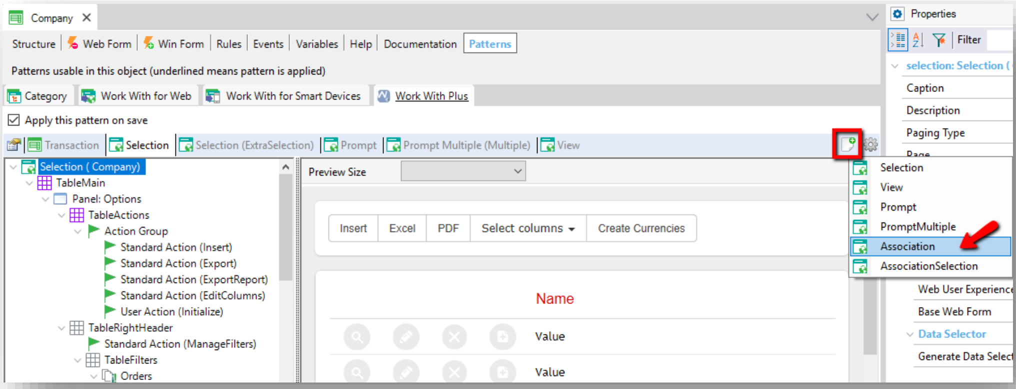
   - *Currency*: represents the currency information
   - *CompanyCurrency* associates a currency with a company.

   It is necessary to have a screen which provides the possibility to associate to some company the currencies which it works with. Which objects provide WorkWithPlus for Web for that?

Solution: Association and Association Selection objects. Every time that you have a table structure like the one displayed in the following image; you can use the objects mentioned above.



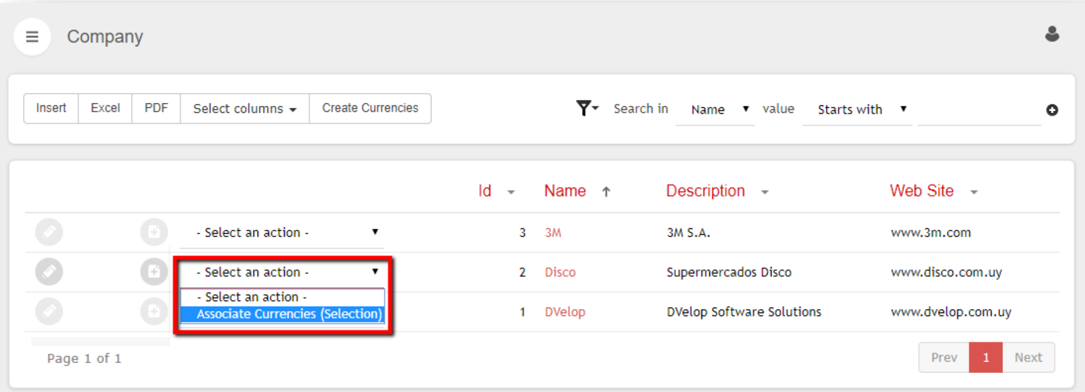
In first place, create an Association object in order to associate the currencies to some company. Open the Company transaction, go to its WorkWithPlus for Web instance and click in the "+ icon" → Add → Association. Then, select the related transaction (CompanyCurrency in this case) and continue. WorkWithPlus for Web will create a new object within Company's instance.



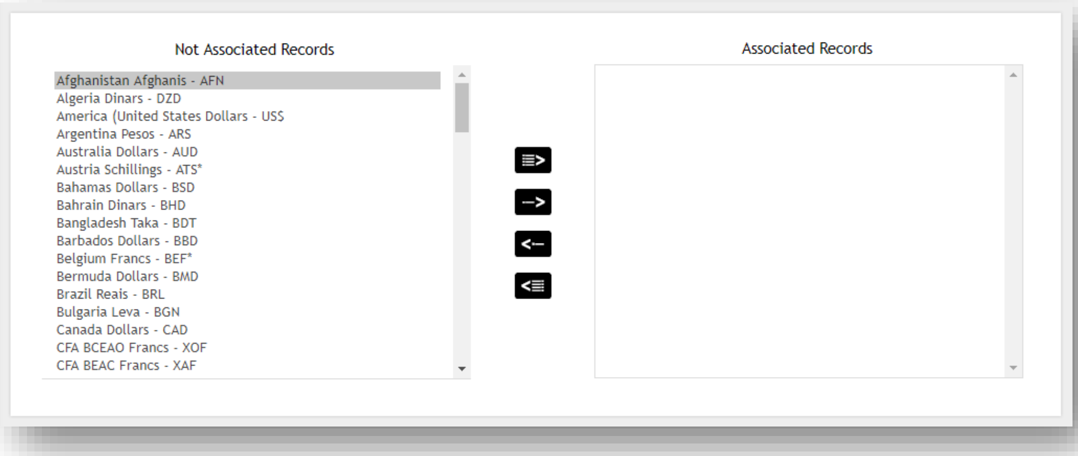
Save the changes so WorkWithPlus for Web creates the object. Then, it is necessary to add an action in the Company's Selection, that calls the new object and sends by parameter the identifier of the Company (CompanyId). Add this action in a new ActionGroup of type "Combo" inside the grid.

Before testing at runtime, create a "User action" in the Company's Selection object, next to "Export to PDF" action which initializes the currencies in the system. This action will call the procedure "CreateCurrencies" that was imported in the xpz.

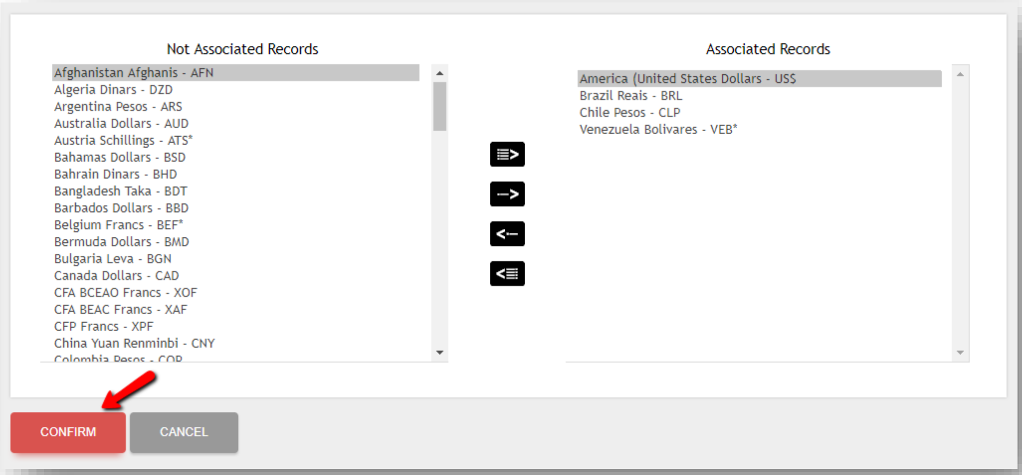
Finally, run the application and visualize the results:



Click the action to create the new currencies and then associate currencies to some Company:

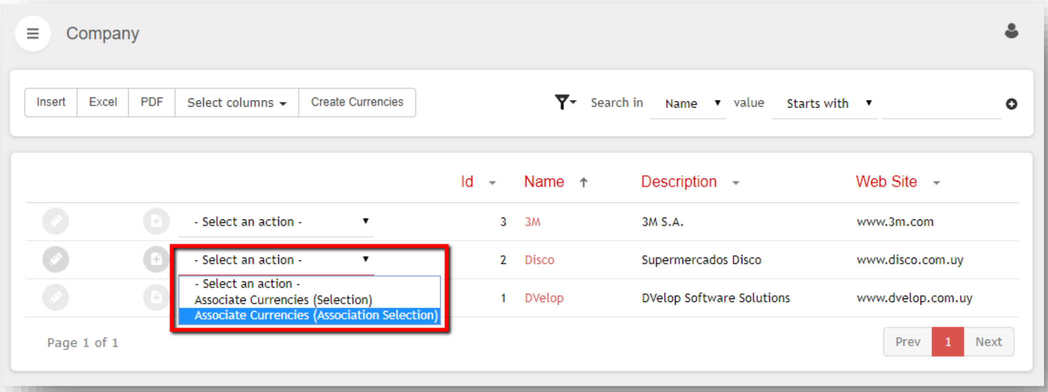


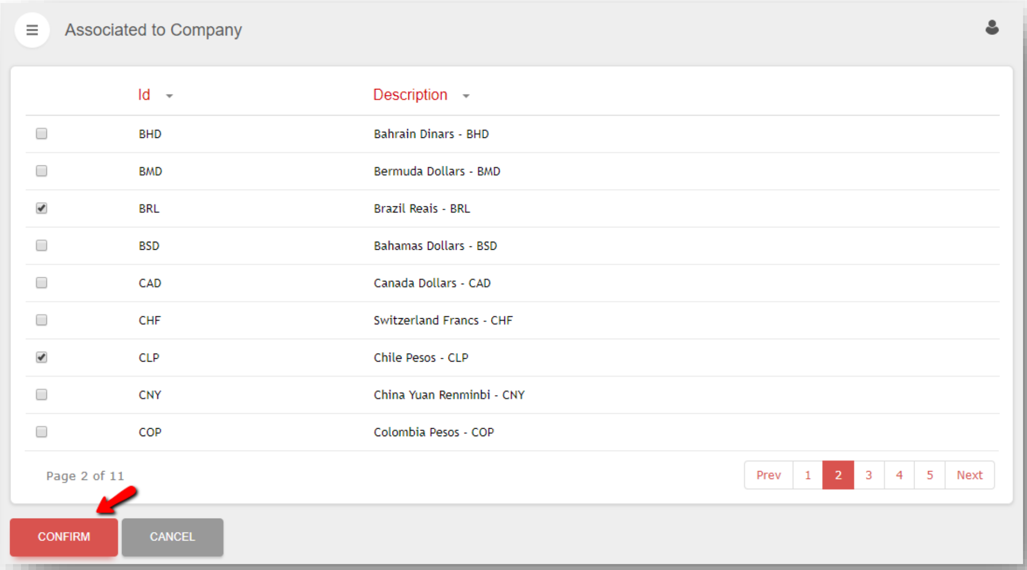
Select the currencies associated to the selected company and press ‘Confirm’:



Now, create an Association Selection object in order to achieve the same functionality of the Association but with a different visualization of the data. In the Company instance, click over the “icon +” and select the option Add → Association Selection. Then, you have to select the related tables and continue. Then, you have to add a User Action which calls the new object, in the same way that you did for the Association object (and insert that action inside the same ActionGroup).

Run and visualize the results.



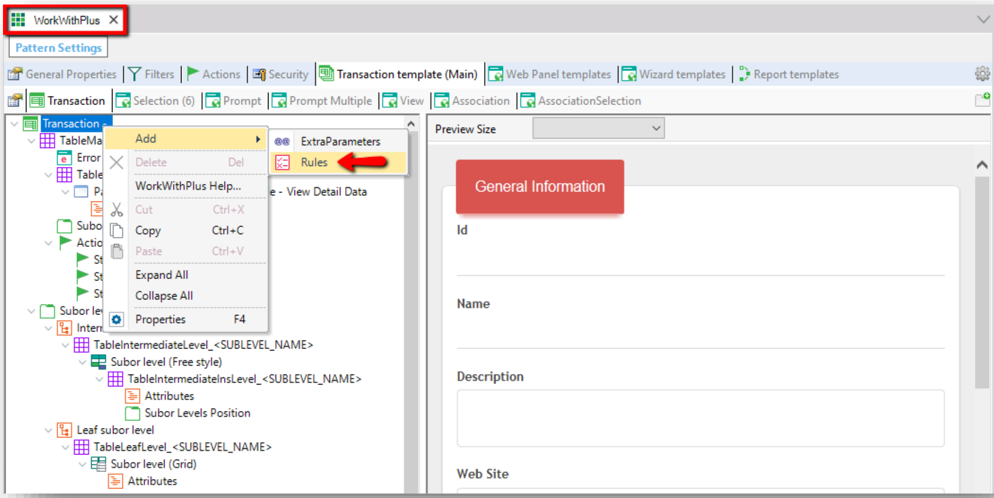


6. For each record created or inserted in the Person and Company transaction, the client requires saving the following data:

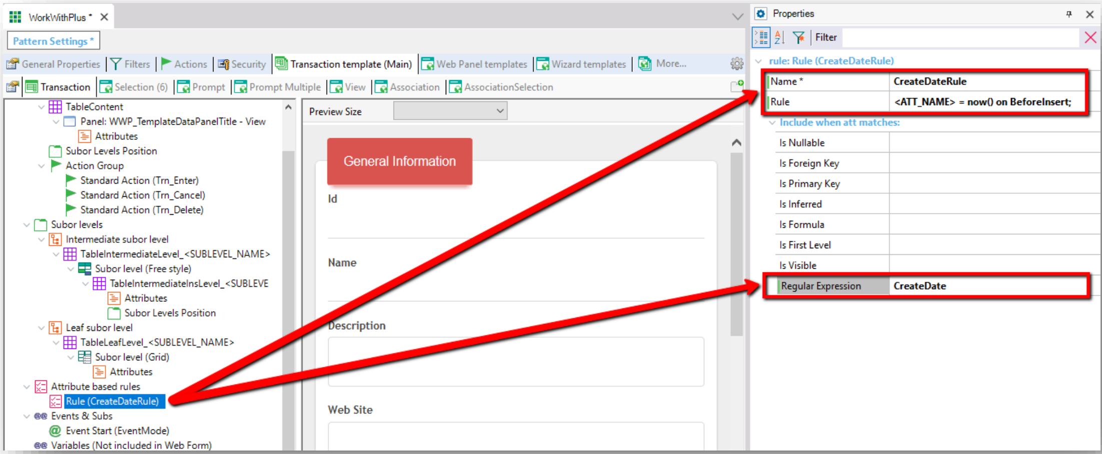
- Date of creation
- User who created the record
- Date of modification
- User who modified the record.

That is the reason why those transactions contain four attributes in order to save the information mentioned above. Is necessary to load information to these attributes with rules (one rule for each attribute). Probably, in the future, the application will contain other transactions that will contain auditing attributes. Which mechanism provides WorkWithPlus for Web in order to add rules which need to be added for multiple transactions (for certain attributes), and just add it once in the KB?

Solution: Automatic rules. Add a "Rules" node in the transaction template, and add the following automatic rules:



<u>**CreateDate Rule:**</u>



CreateUser Rule

rule: Rule (CreateUserRule)

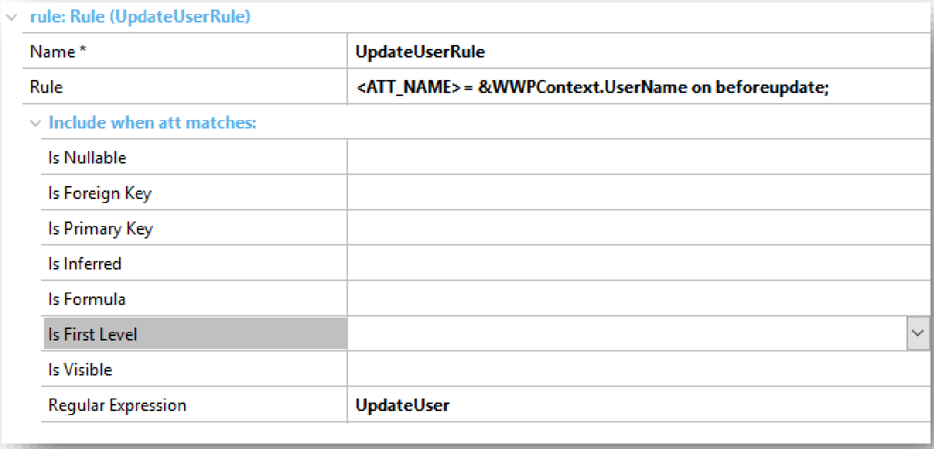
Name *	CreateUserRule
Rule	<ATT_NAME> = &WWPContext.UserName on beforeinsert;
Include when att matches:	
Is Nullable	
Is Foreign Key	
Is Primary Key	
Is Inferred	
Is Formula	
Is First Level	
Is Visible	
Regular Expression	CreateUser

UpdateDate Rule

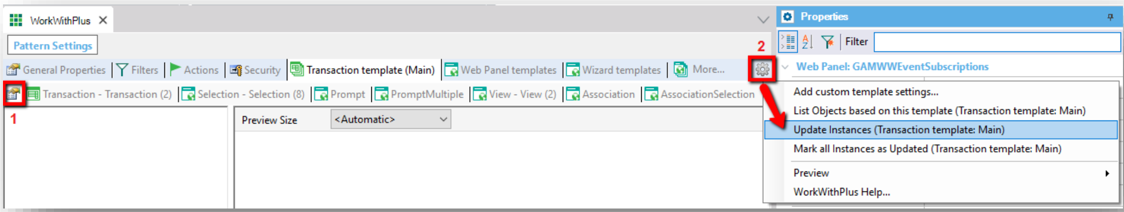
rule: Rule (UpdateDateRule)

Name *	UpdateDateRule
Rule	<ATT_NAME> = servernow() on beforeupdate;
Include when att matches:	
Is Nullable	
Is Foreign Key	
Is Primary Key	
Is Inferred	
Is Formula	
Is First Level	
Is Visible	
Regular Expression	UpdateDate

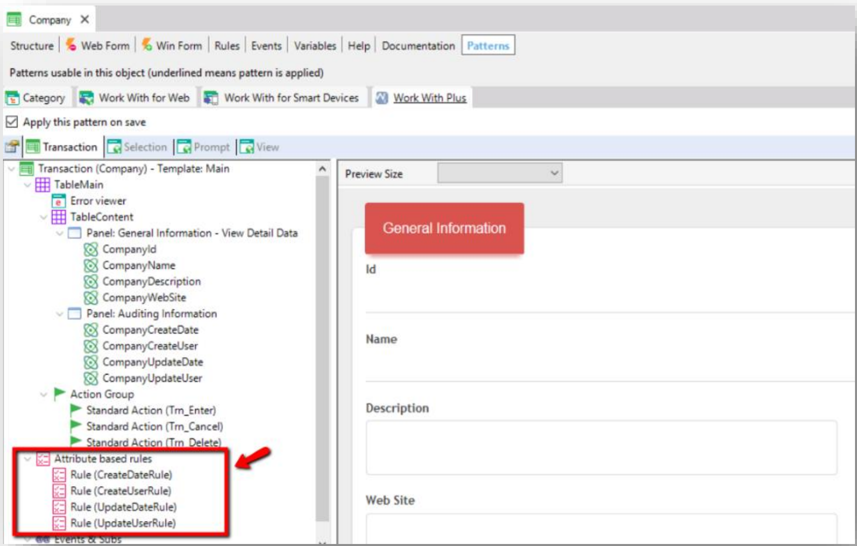
UpdateUser Rule



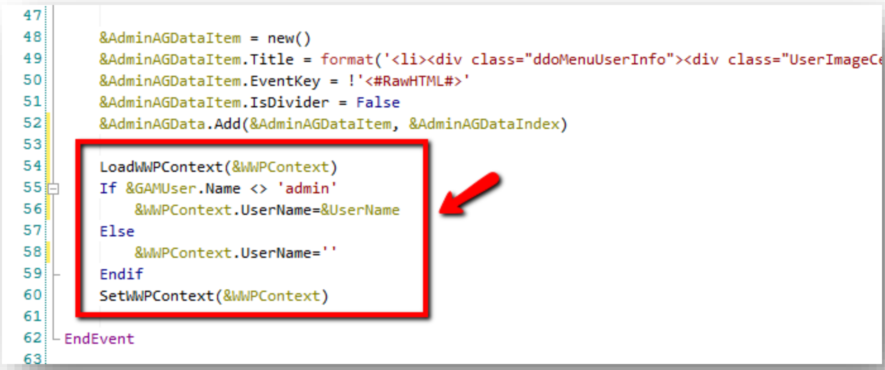
Execute the action “Update Instances” over the “Transaction Template” so that WorkWithPlus for Web propagates the changes made in the templates into the instances (this process will be explained further in the training).



Open Company transaction and go to Company’s WorkWithPlus for Web instance in order to verify that the rules were added automatically.

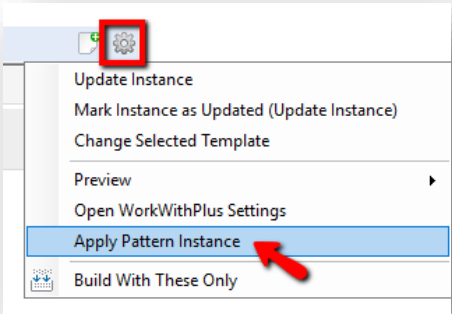


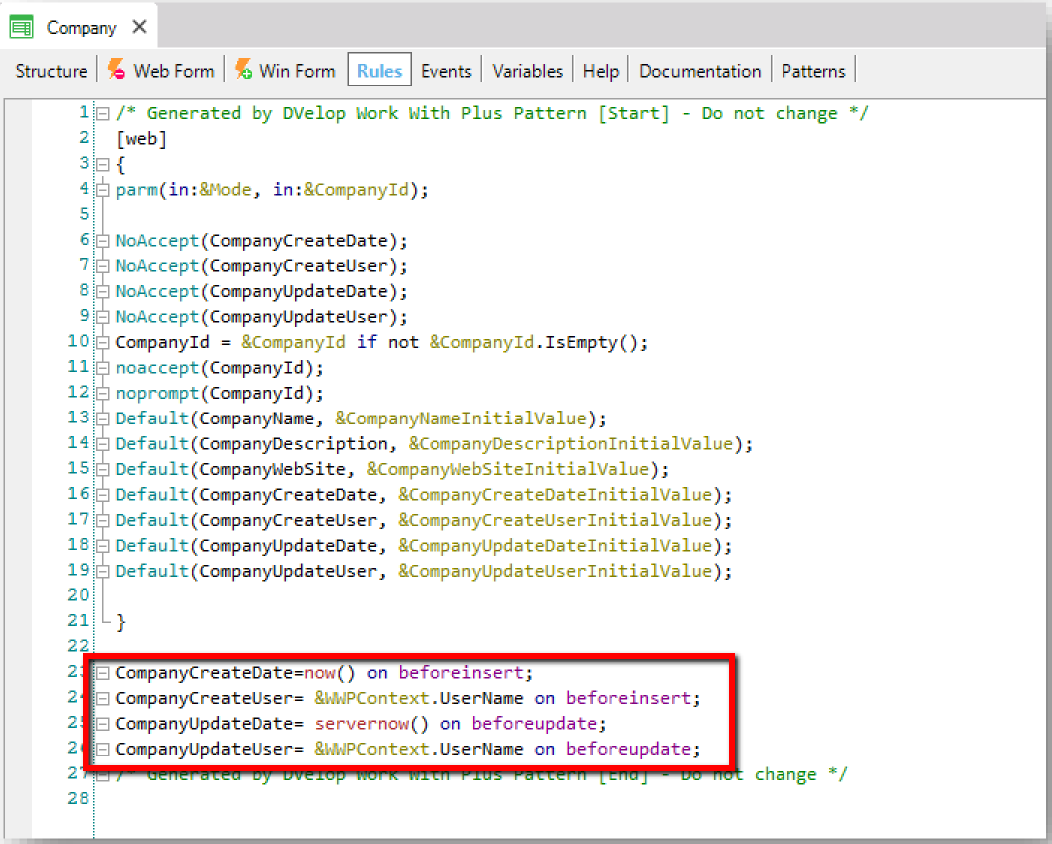
In these rules, you are using the property “UserName” of WWPContext SDT that has not been assigned yet. To save the logged user, you should add the following code in the “WorkWithPlus for WebMasterPage”:



Run the application and check the results at runtime.

7. Select the option ‘Apply pattern instance’ in order to update the transaction rules and verify that the new rules were inserted (this action is not mandatory as when making F5 or “Build all” it would update it automatically):





Run the application, create a record and verify that the creation date and creation user, were automatically updated. Then, perform the same process for modifying a record.

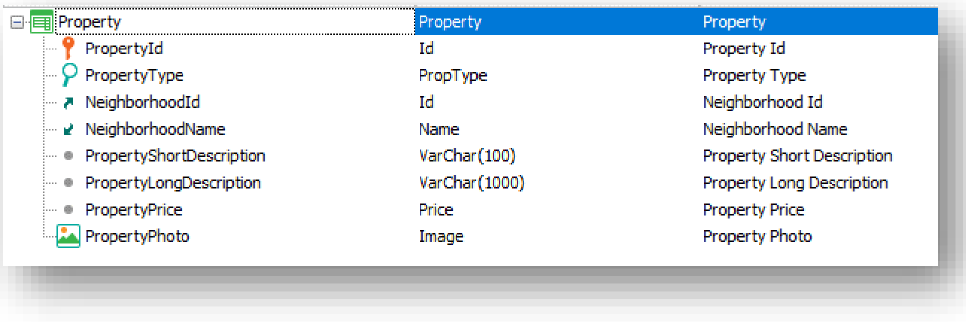
WorkWithPlus for Web Training

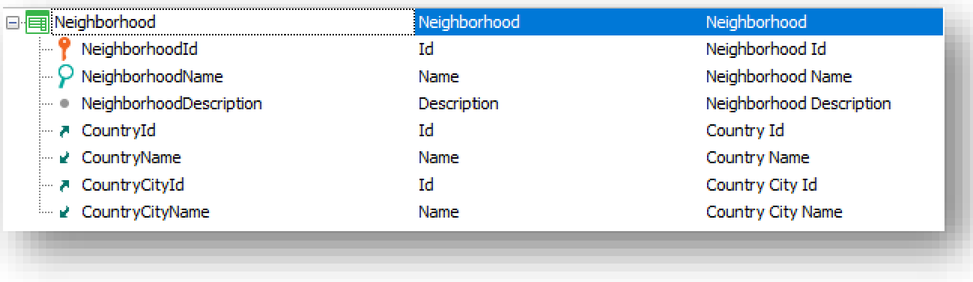
Part 4 – Update Instances & Web Panels

Part 4 – Update Instances & Web Panels

1. The client requests to add a new transaction to the application in order to include the properties available for the offices of the company, and another to include the neighborhoods in which these properties are located.

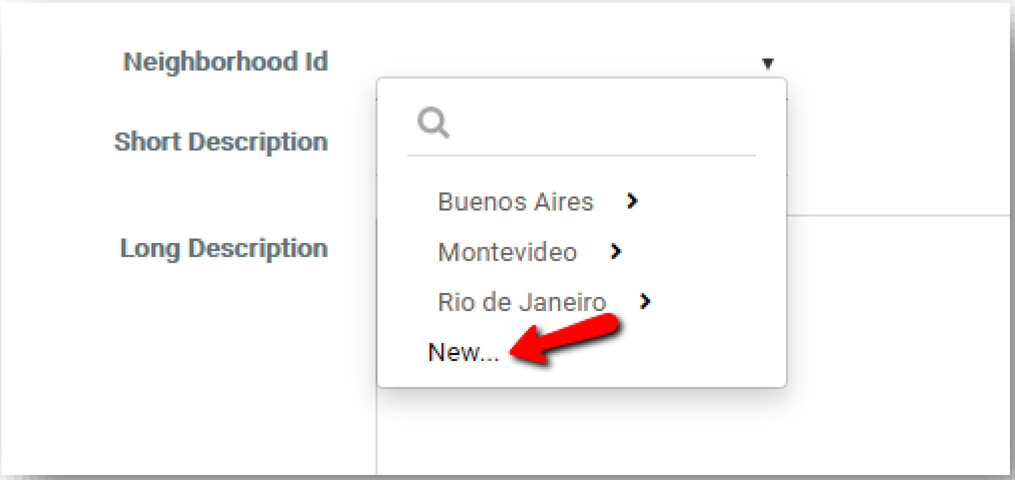
Import the WWPTraining_Properties.xpz object in order to add these transactions to the Knowledge Base:



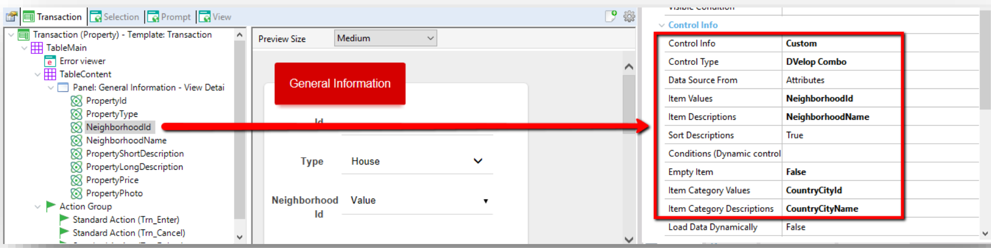


Run the Web Panel 'WebPanelLoadData' to load neighborhoods and properties automatically.

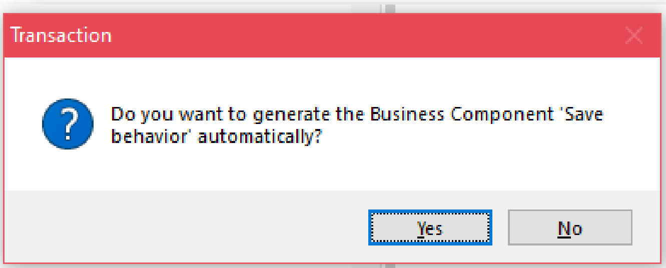
Apply WorkWithPlus for Web to the Property transaction and configure the NeighborhoodId attribute in order to use a control that allows to select the neighborhoods (grouped by city). In addition, it is required to have the possibility to insert a new neighborhood record from the combo:



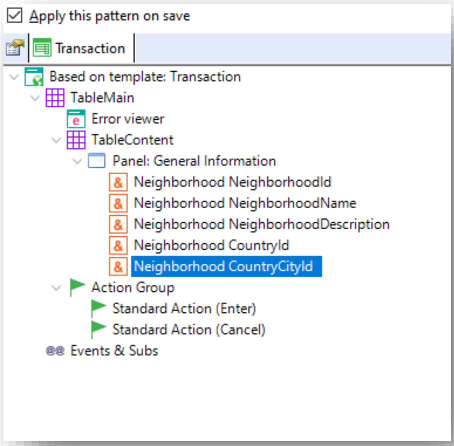
Solution:



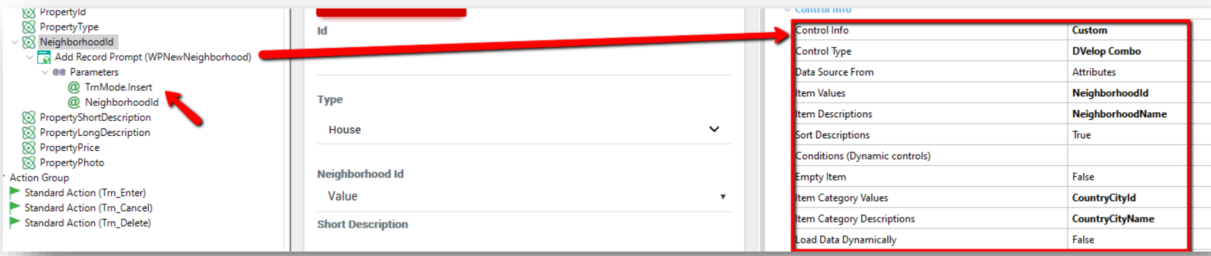
Set the Neighborhood transaction as “Business Component” and create a new web panel called “WPNewNeighborhood”. Use the template “Data displayed popup” to create it, based on the Neighborhood “Business Component”. Select “Yes” in the following message so WorkWithPlus for Web adds the behavior automatically:



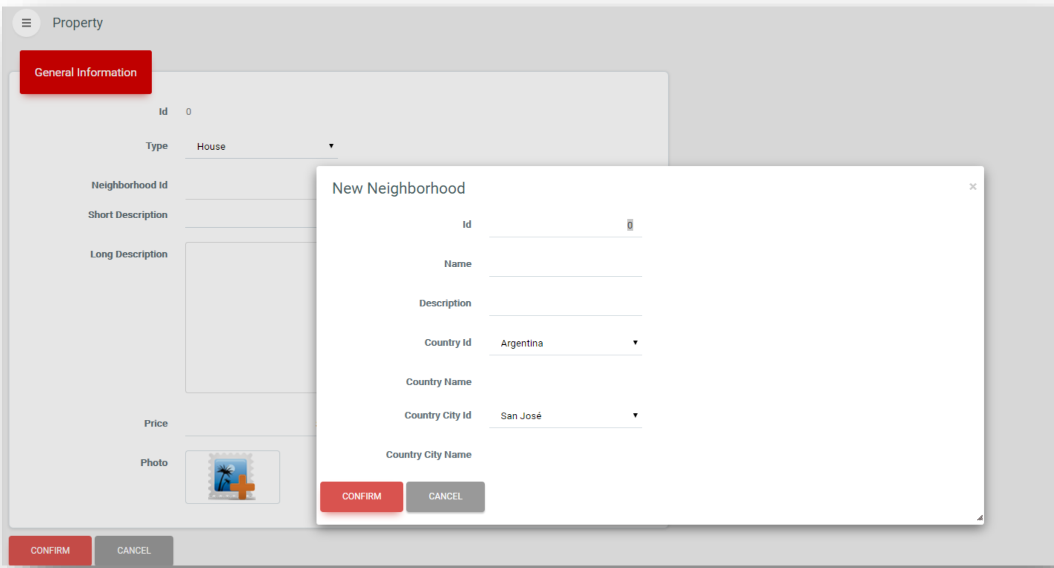
Remove the unnecessary attributes:



Then, in the "WorkWithPlus for WebProperty" instance, configure the NeighborhoodId attribute with the following properties:

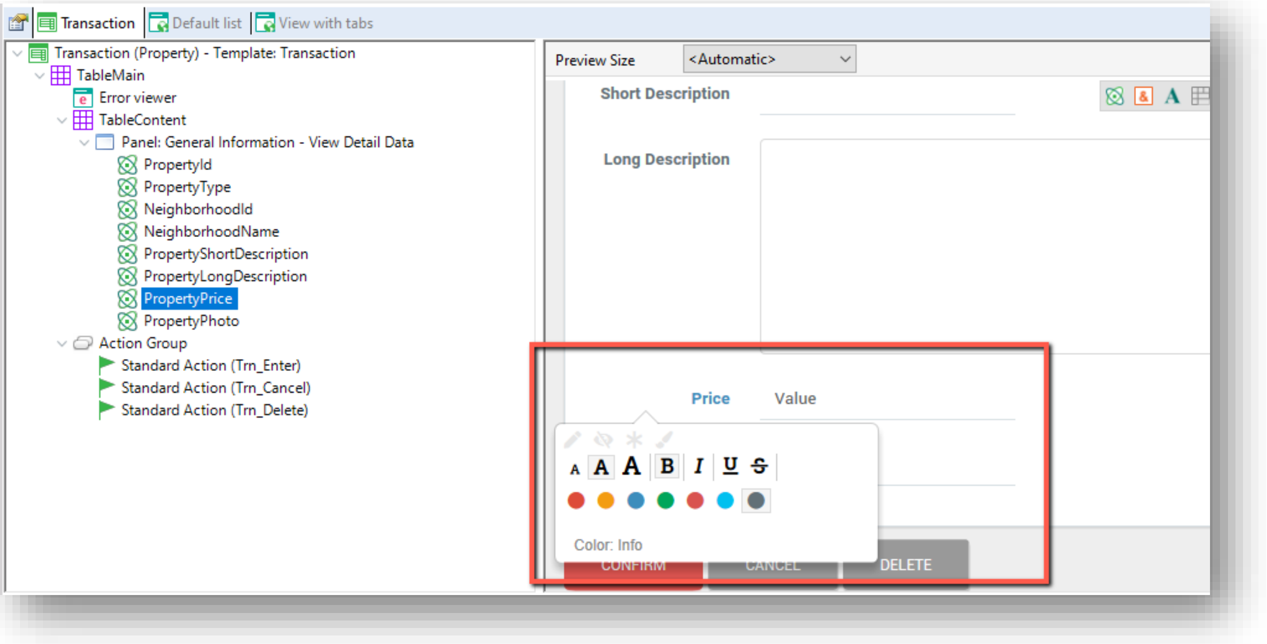


In the "Add Record Prompt" node, call the "WPNewNeighborhood" panel that was created previously. Run the application and add a new property record, and test the developed combo by adding a new neighborhood from it:



2. In the form of the edition of Properties (transaction form), the customer wants to visualize the description of the 'Price' and its value in large size and blue color. How can you achieve this with WorkWithPlus for Web?

   Solution: using the Preview preset options of the label and the attribute:

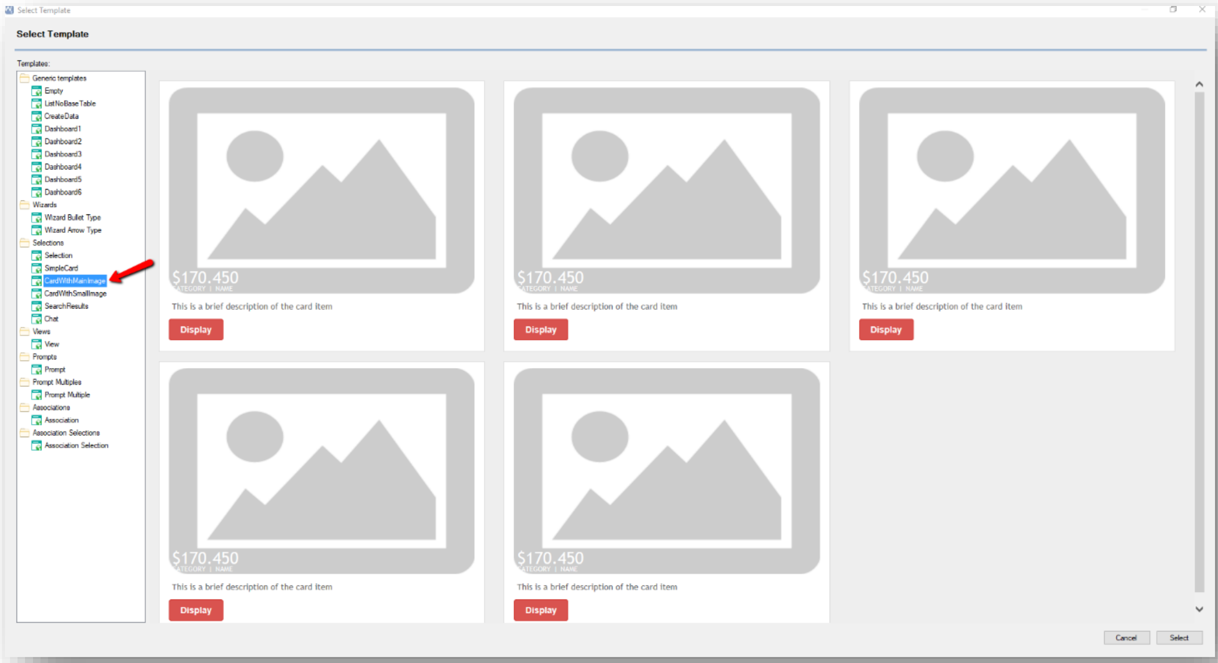


3. The customer wants to see the available properties by using a different visualization (different from the typical grid with filters that we were using in the previous sections). How can we achieve a different data visualization in WorkWithPlus for Web?

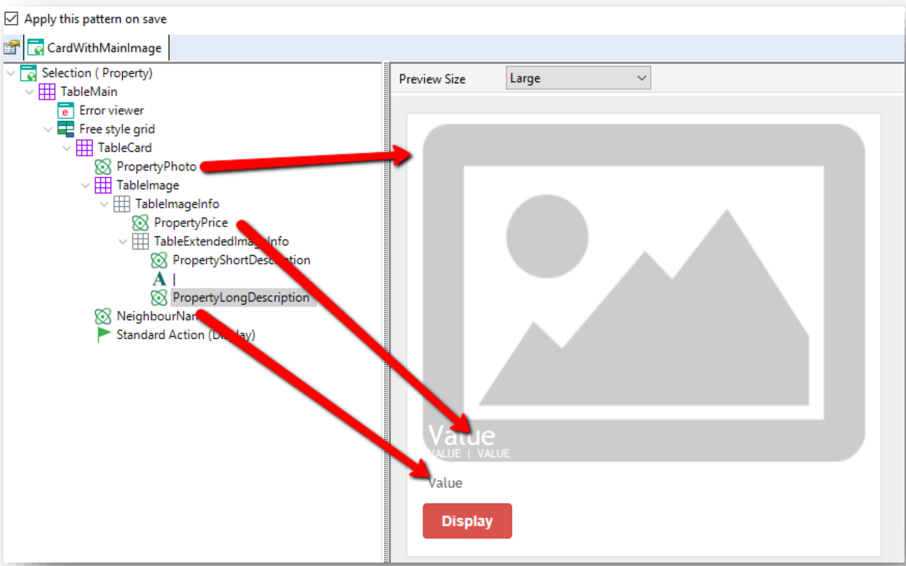
Solutions: There are two possibilities:

A. Apply WorkWithPlus for Web to the Property transaction and use other template instead of the "Selection" template used before.
B. Create a new web panel and apply WorkWithPlus for Web to it by selecting one of the available templates.

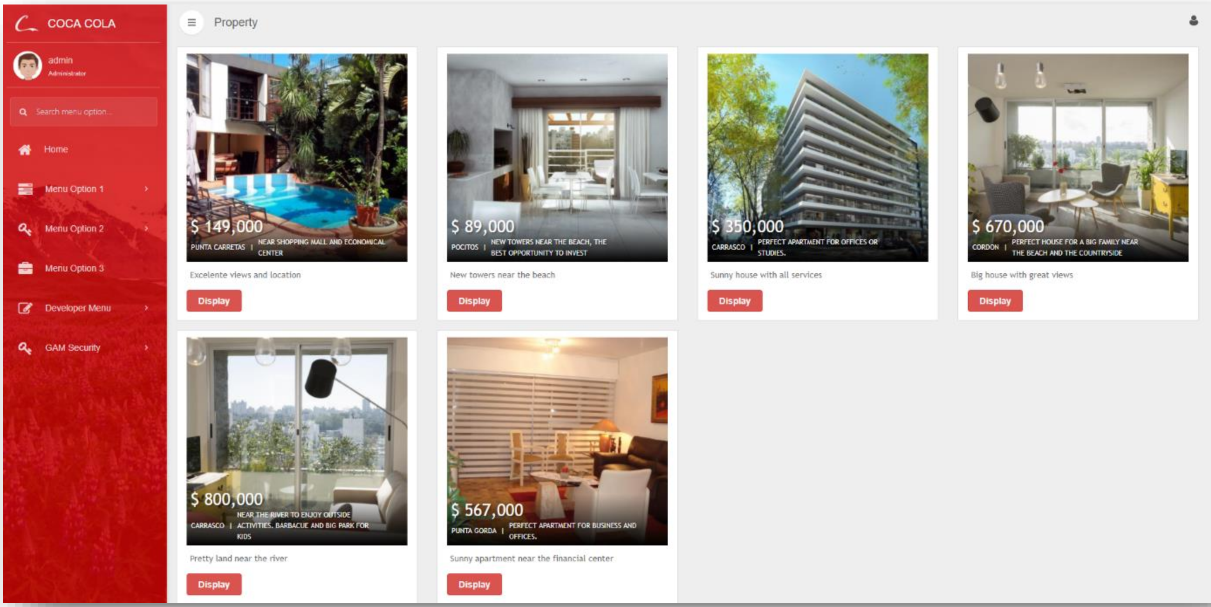
In this part of the training we will use the Solution B, in order to learn how to use WorkWithPlus for Web in Web Panels. So, create a new Web Panel called "WPProperties" and select the "Card with Main Image" template as follows:



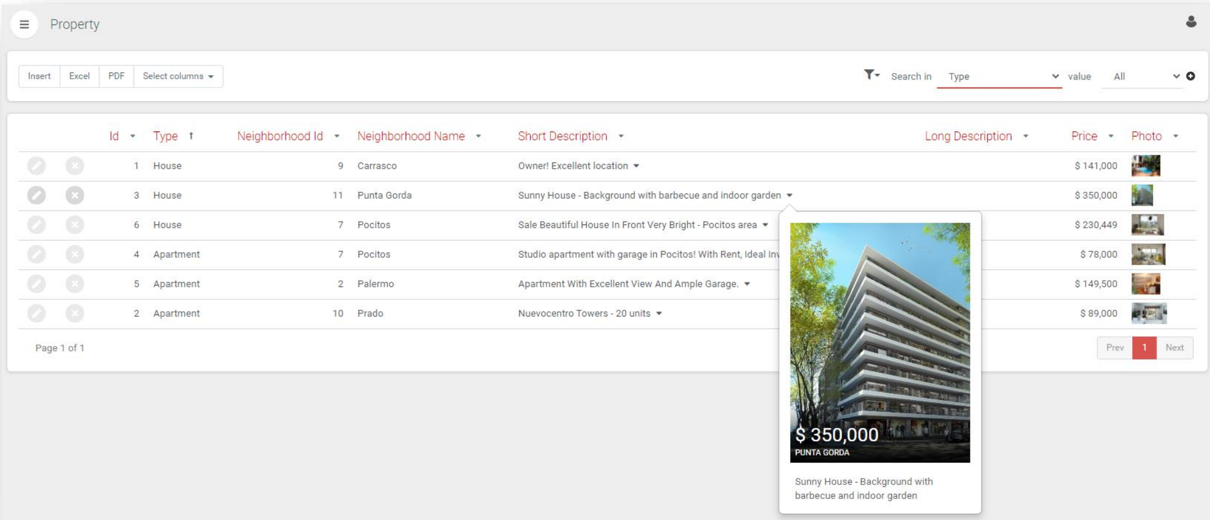
Once you have selected the desired template, choose the option "Transaction" (in order to create the web panel with base table) and define which items do you want to show in each part of the template (WorkWithPlus for Web will infer some of them according to its data type but you can change them if you want)



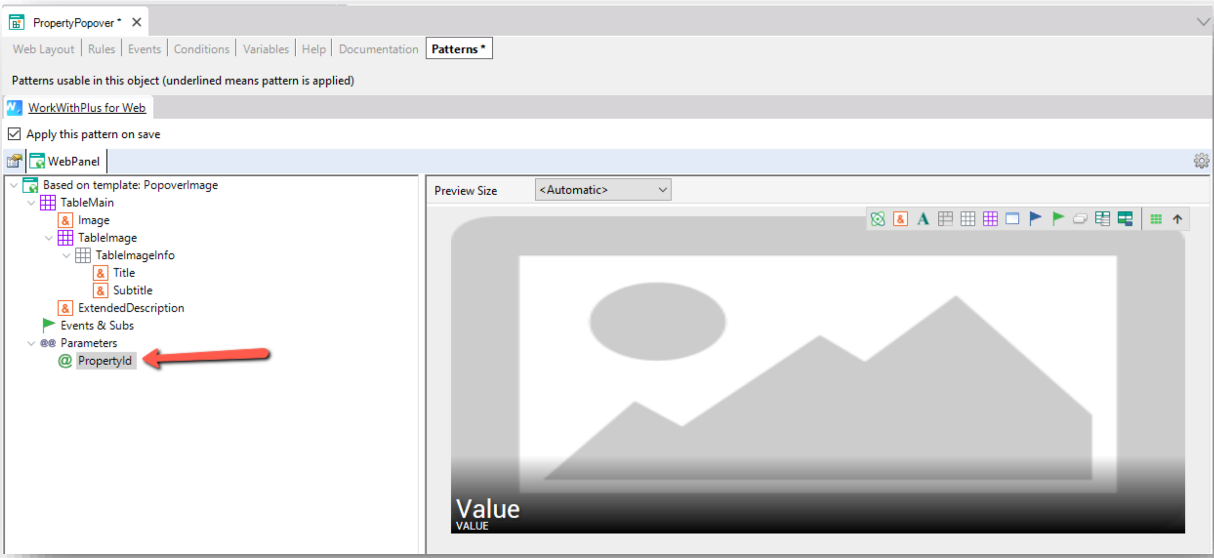
Run the application and visualize the results at runtime:



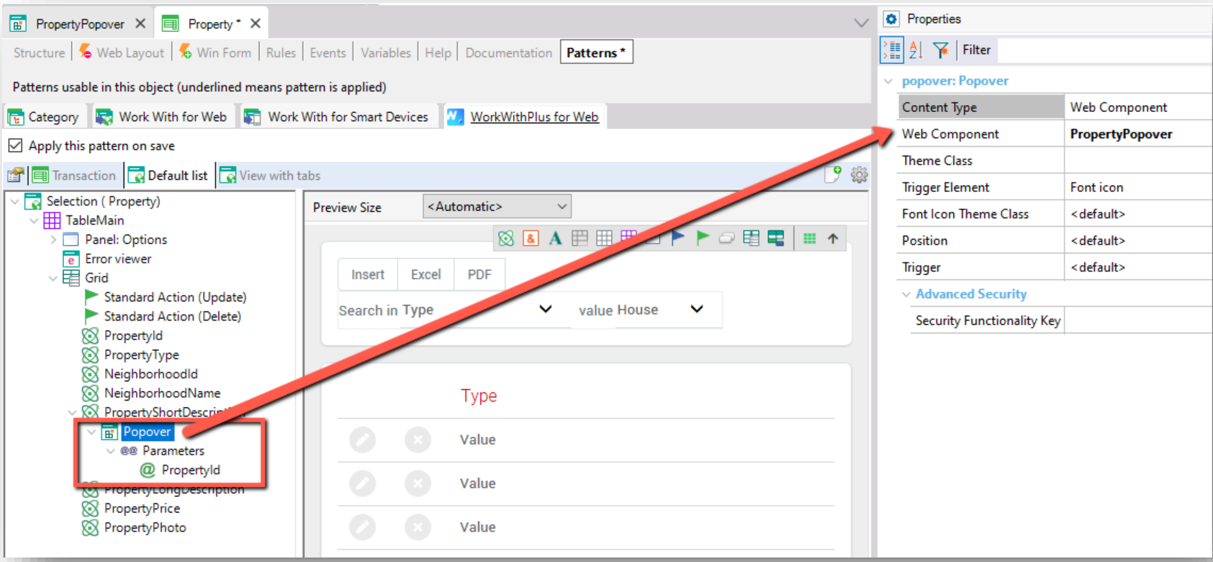
4. The customer now decided that he wants to have the properties visualized in two ways: the one that you made in the previous steps (with the big images of the properties), and also a simple list but with the option to visualize the image large with the information on it, when making popover on the Short Description. How can you do this with WorkWithPlus for Web?



Solution: using the Popover feature. First, create a Web Component 'PropertyPopover', select the right Popover template (Popover with a big image) and add the parm rule so that it receives the PropertyId and loads the variables used in the WC:



Then apply WorkWithPlus for Web for 'Property' transaction, and add a Popover node in the correspondent attribute, selecting the WC that you have created, and adding the attribute PropertyId as a parameter to the Popover:



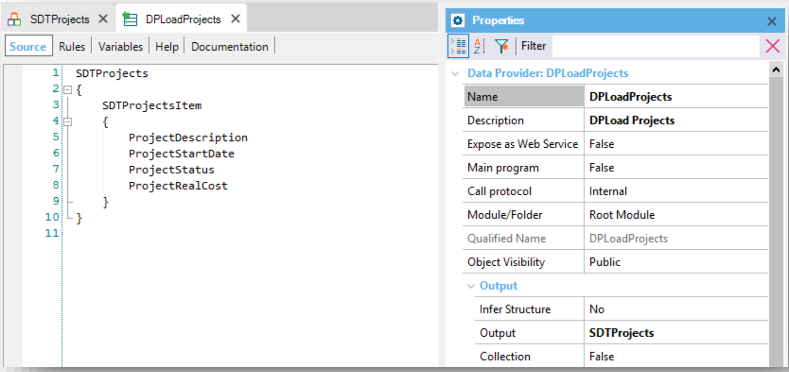
5. We are going to create a web panel to visualize the projects, but instead of doing it with a base table, we will create an SDT to load it. In this way, you will learn how to create a screen with most of the Selection's features (filters, paging, column's selector, etc.) even if you don't have a base table. We are going to try two different options:

<u>Load with SDT:</u>

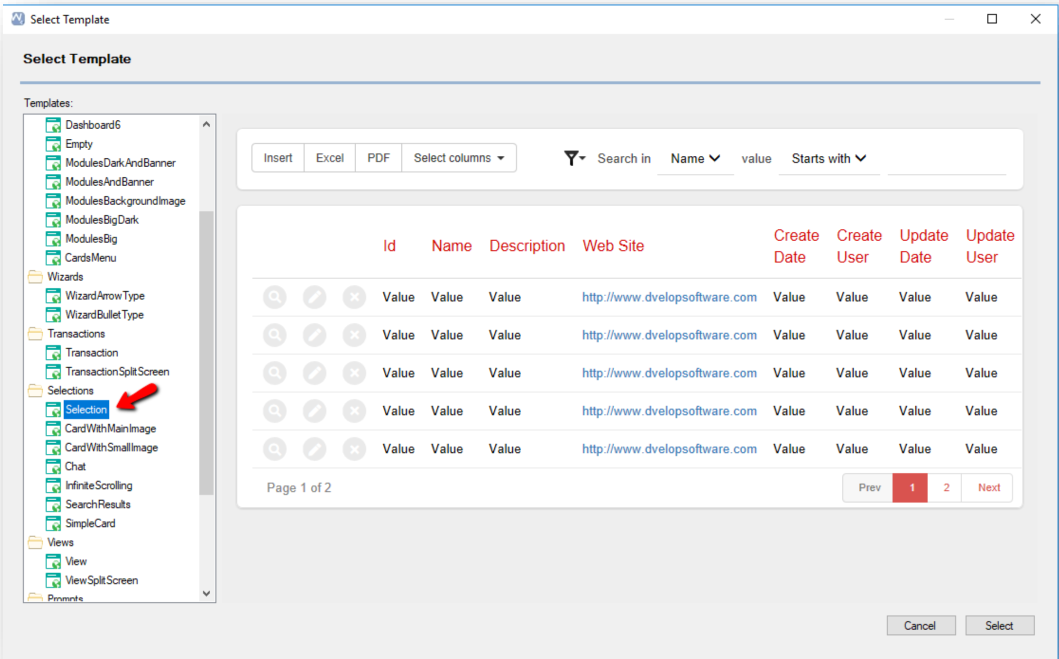
First, create an SDT called 'SDTProjects' with the following structure:

Name	Type	Description	Is Collection
SDTProjects		SDTProjects	☑
SDTProjectsItem			
ProjectDescription	Attribute:ProjectDescription	Project Description	☐
ProjectStartDate	Attribute:ProjectStartDate	Project Start Date	☐
ProjectStatus	Attribute:ProjectStatus	Project Status	☐
ProjectRealCost	Attribute:ProjectRealCost	Project Real Cost	☐

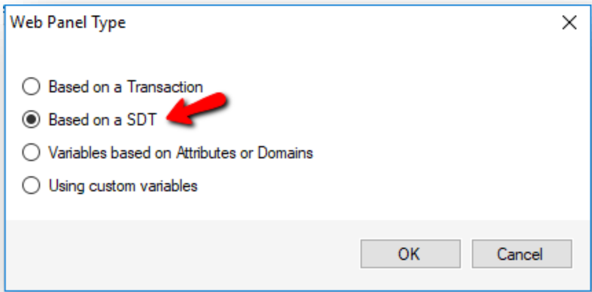
Now, create the Data Provider called 'DPLoadProjects' to later load it:



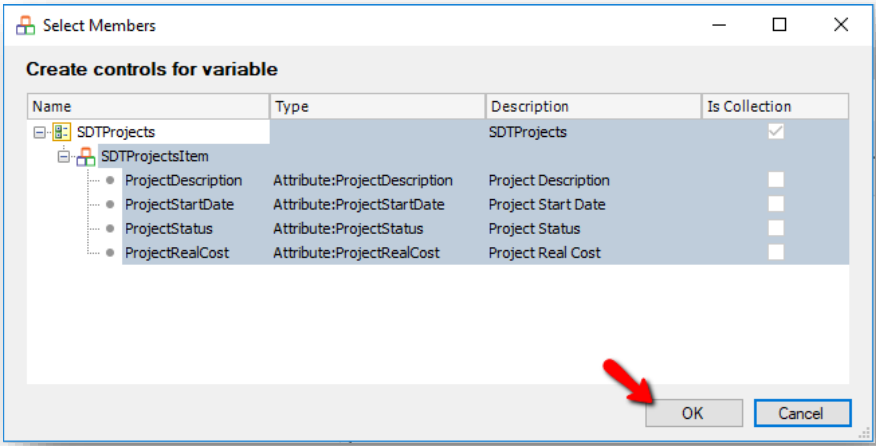
Finally, create a Web Panel called “WPProjectsWithSDT”, based on the ‘Selection’ template.



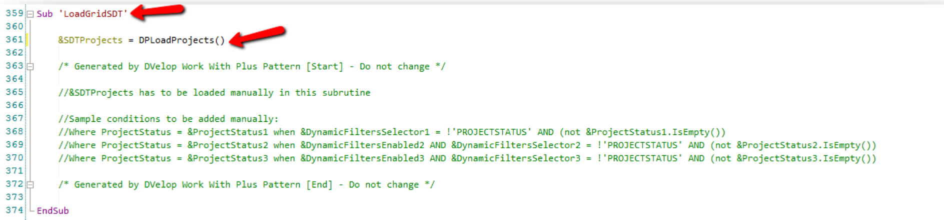
Select the option ‘Based on a SDT’:



Select the SDT you just created, 'SDTProjects' and the data you want to display:

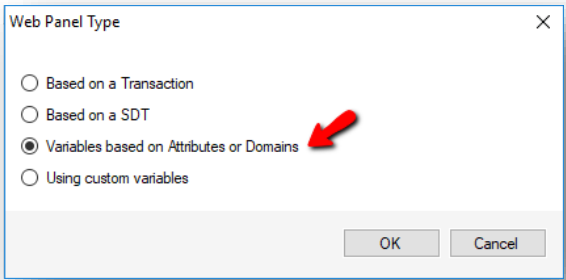


Save the changes and perform the loading of the Grid in the Sub ‘LoadGridSDT’, as follows:

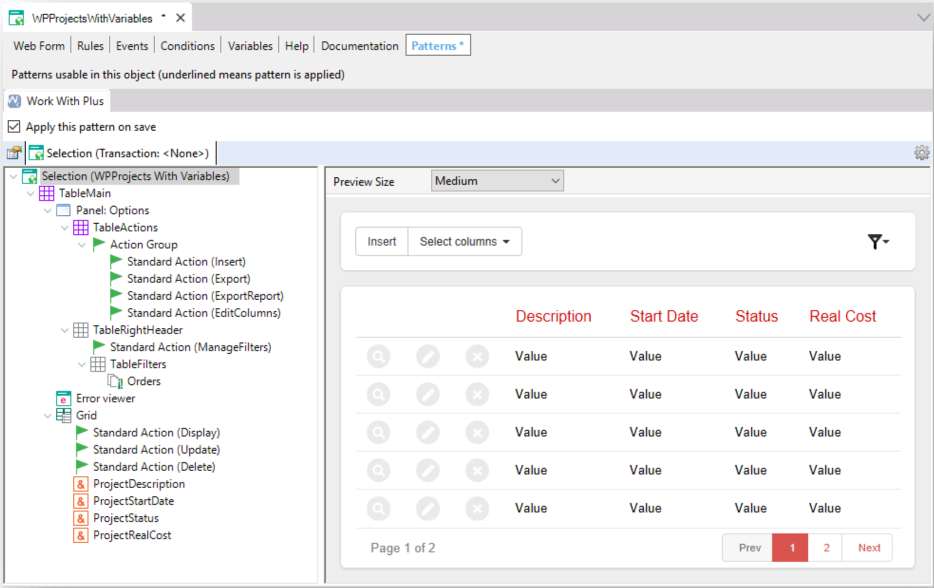


Load with variables:

Now we will create the same screen but using variables to load the Grid. To do this, create a new Web Panel called “WPProjectsWithVariables” also based on the template “Selection”, but now select the “Variables based on Attributes or Domains” option:



Select the attributes on which the variables will be based and press “Ok”.



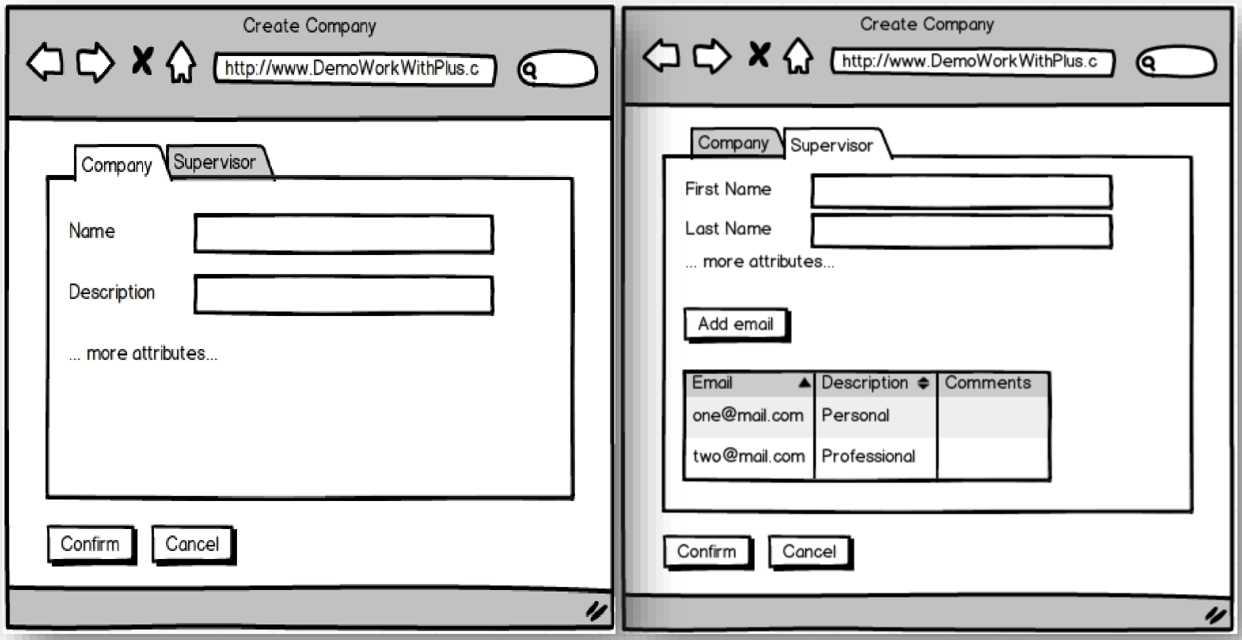
Now, let's program the corresponding for each to load the variables in the Load event.

```
Event Grid.Load

    For each Project
        &ProjectDescription = ProjectDescription
        &ProjectStartDate = ProjectStartDate
        &ProjectStatus = ProjectStatus
        &ProjectRealCost = ProjectRealCost

    /* Generated by DVelop Work With Plus Pattern [Start] - Do not change */

    //this code should be inside the For Each used to load the data

    &Display = !'<i class="fa fa-search"></i>'

    &Update = !'<i class="fa fa-pen"></i>'

    &Delete = !'<i class="fa fa-times"></i>'

    /* Generated by DVelop Work With Plus Pattern [End] - Do not change */

        Load
    Endfor

EndEvent
```

Run the developed panels in order to try the implemented features.

6. It is required to have a field which specifies whether that person is a director from the company where he works. Create this attribute (PersonIsDirector) as a boolean field and do “Update Instance” so that WorkWithPlus for Web adds the attribute in all the associated objects.

7. It is required to develop a screen to insert new companies and at the same time create the director of it (confirms both records at the same time). How can we achieve the required feature? The customer suggests the following mockup:



Which WorkWithPlus for Web template do you think that you might use in order to create a Web Panel like the mock up showed above?

Analyze the templates that are created by default (and their block codes) and create a Web Panel based on the most appropriate template. Then make all the modifications in the Web Panel's instance in order to create a Web Panel like the mockup displayed in the image above (having in mind the attributes that are mentioned in the mock up). For the case of the Person transaction, also include the attributes PersonGender, PersonBirthDate, CountryId y CountryCityId.

Comments:

- Use the transactions Person and Company as BussinessComponent and add them in the form as variables. Therefore, you will only have to "Save" the BC in order to create the records needed and automatically all the integrity controls and business rules defined in the transactions will be executed.

- The button 'Add email' should add a new item to &Person.Email, as follows: Code Snippets
Where the variable &PersonEmail have to be defined as Person.Email

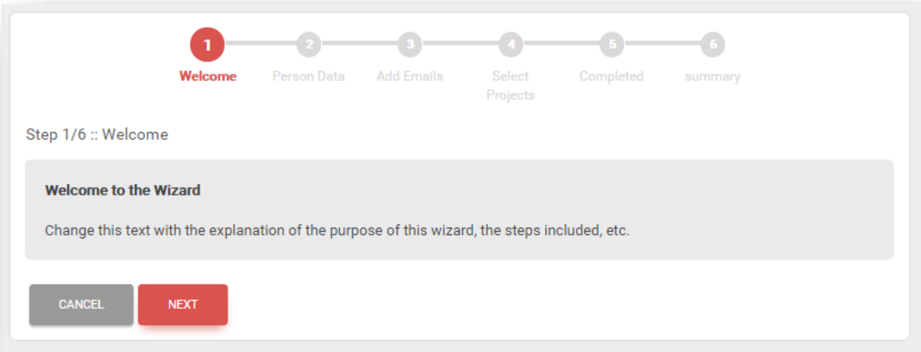
- In the action "Enter", copy and paste the code from the following link: Code Snippets

Run the application, add the application in the menu and access the panel to add a new company with its director. Then, go to CompanyWW in order to check that the new company has been created correctly and verify that the person (director) associated to the company has also been created.

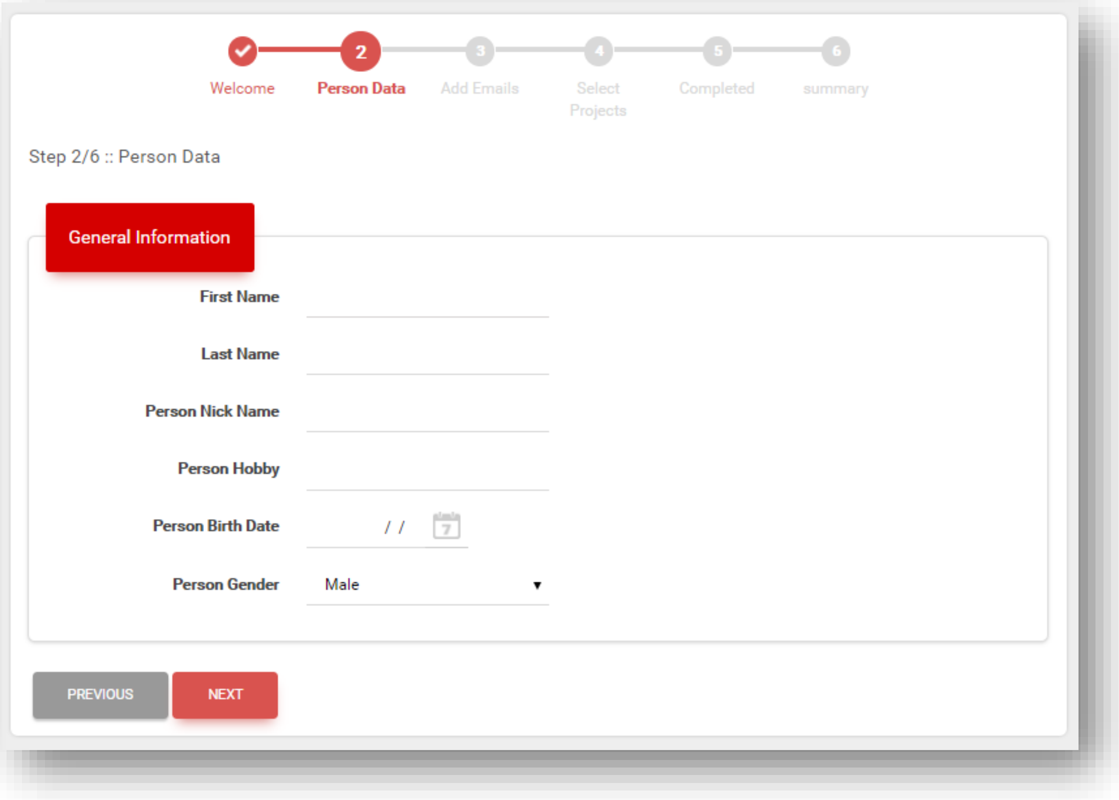
8. The client requires to have screen, with different steps in order to create a new person, add the e-mail address of the new person and select the assigned projects. This screen should be created with an attractive and organized layout. How can we create this screen by using WorkWithPlus for Web?

Solution: Develop a new web panel, called "PersonWizard" by selecting the "Bullet Wizard" template. Create the wizard as detailed below:

- Step 1: Welcome to the Wizard



- Step 2: Add information related to the new Person: in this step you should add a variable based on Person transaction and select the items: Person First Name, Person Last Name, PersonNickName, PersonGender, PersonHobby and PersonBirthDate.



- Step 3: Add emails to the Person. For this step it is recommended to use the step template 'Add Grid Items' and to create an SDT which contains a collection of emails. So, you can make right click over the Grid → Select SDT and select it.

- Step 4: Select Projects to the Person. Use the template "Select Grid Items" and include the ProjectId, ProjectDescription, ProjectStatus, and ProjectStartDate.

- Step 5: Summary. Remove the table associated to Step 1.

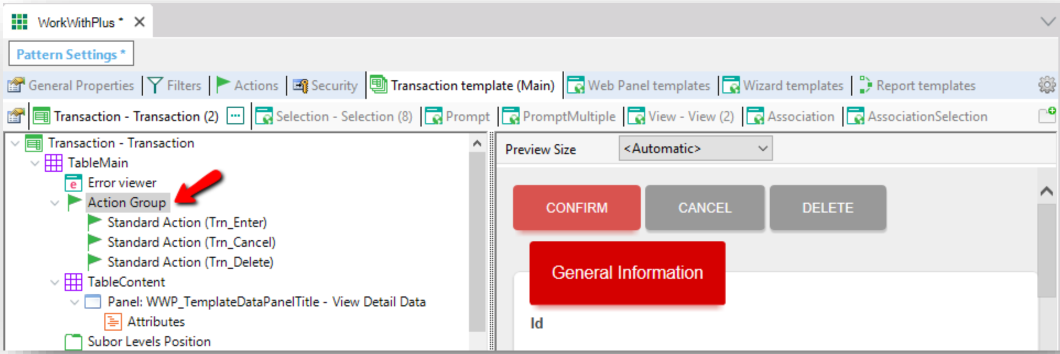
- Step 6: Completed

In this training, you will not add the code/behavior that saves all the data at the final step, because it is just an example (the idea is to understand how to create wizards and its steps). If you are developing a real wizard you would have to add this code in the event "Next" of the final step, using the variable based on the SDT that WorkWithPlus for Web creates and loades automatically.

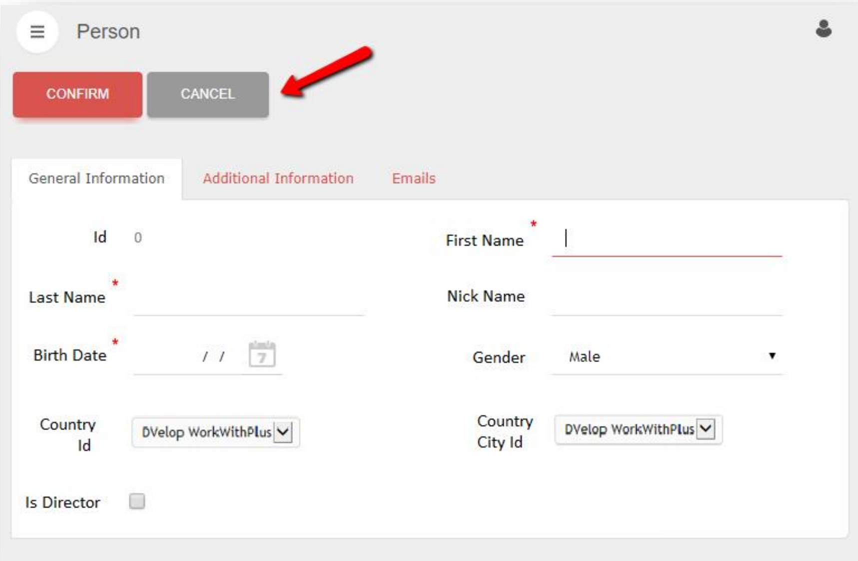
After creating the wizard, run the application in order to test it at runtime (remember that the final step won't save this new person, unless you add the code to do so).

9. The client also needs that all the insertion forms (such as transactions and the Web Panel that you have created) display the Standard Action (confirm and cancel) at the top of the screen (now they are at the bottom)
   How do you modify this? As it is a massive modification, which mechanism provides WorkWithPlus for Web for making this change just once and propagates the changes automatically?

Solution: Modify the transaction template and do “Update Instances” to propagate the change. Open any transaction and use the preview in order to verify that the instance has been updated (you should visualize the buttons confirm and cancel at the top of the attributes)

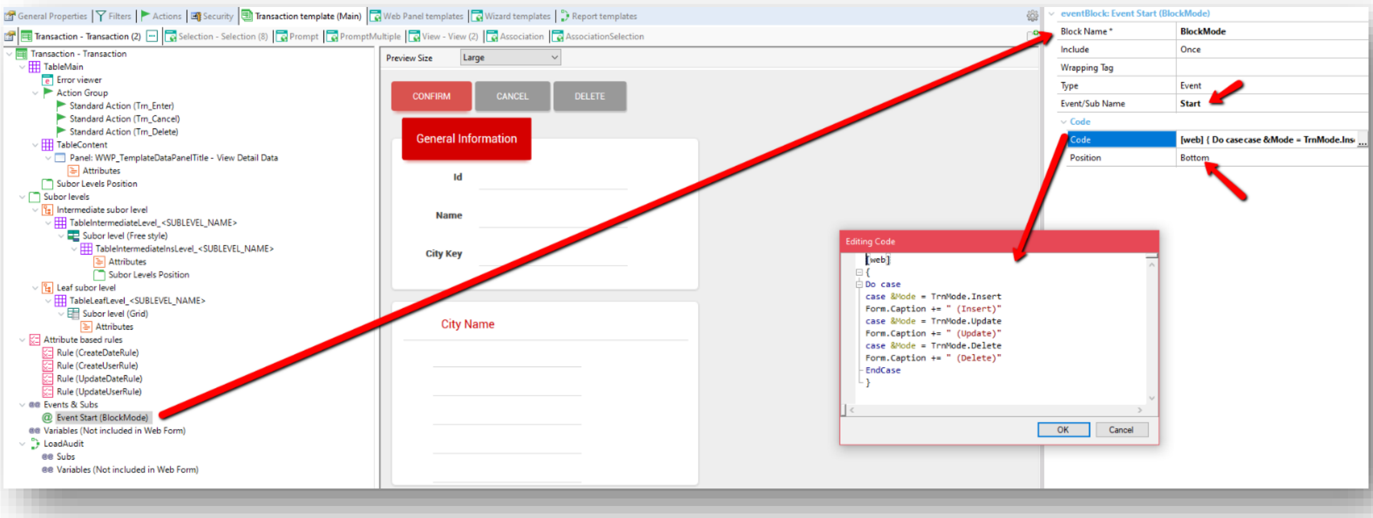


Run the application and visualize the results in the Person transaction and in the Web Panel created in part 4.5.



10. The client also needs to mention in the title of the form of all the transactions the action that the end user is doing (inserting, updating or deleting a record). As it is a code that you have to insert in all the transactions, which mechanism provides WorkWithPlus for Web for making this massively?

Solution: Create a “Code Block” in the Start Event, as follows:

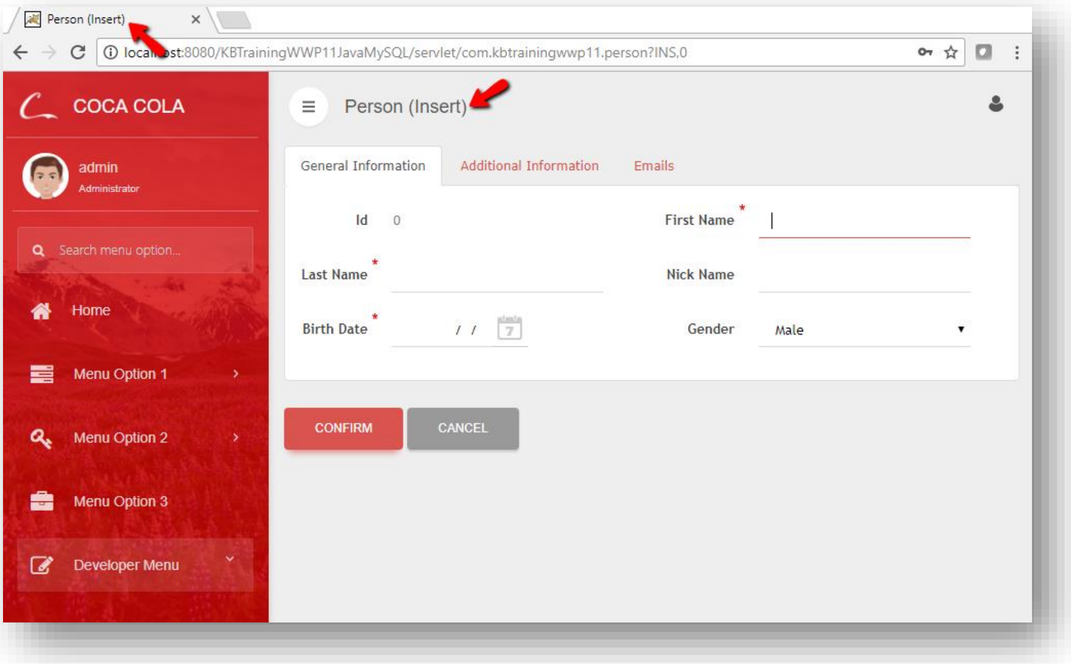


You can copy and paste the code from the following link: [Code Snippets]

Then make “Update Instances” in order to propagate the changes made in the template.

Comment: remove the new Even Block node from the Web Panel created on part 4.7 as you can’t use [WEB] tags on Web Panels.

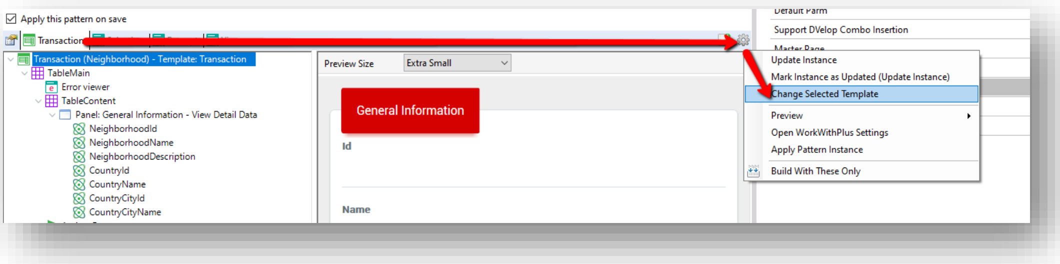
Run the application and check the new behavior that was added:



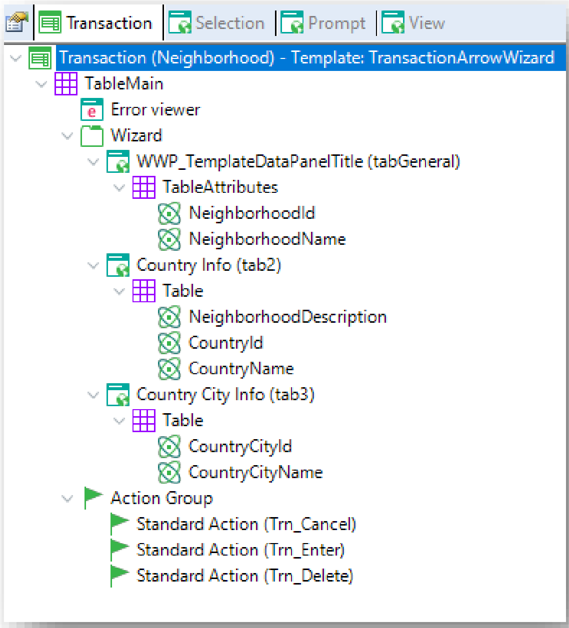
Finally, open the transaction and check that the block code was added in the Start event, inside the code generated automatically by WorkWithPlus for Web.

11. It is required to have a screen to insert and update the neighbors with a wizard style. It is mandatory to use the transaction form as the customer doesn't want to use a web panel to develop the screen. How can we achieve this feature with WorkWithPlus for Web?

Solution: Apply WorkWithPlus for Web in the Neighborhood transaction by selecting the "Selection" template. Then, change the selected template as follows:



Select the template called "Wizard Arrow Type" and set up the screen as follows:


Transaction
Selection
Prompt
View
Transaction (Neighborhood) - Template: TransactionArrowWizard
TableMain
Error viewer
Wizard
WWP_TemplateDataPanelTitle (tabGeneral)
TableAttributes
NeighborhoodId
NeighborhoodName
Country Info (tab2)
Table
NeighborhoodDescription
CountryId
CountryName
Country City Info (tab3)
Table
CountryCityId
CountryCityName
Action Group
Standard Action (Trn_Cancel)
Standard Action (Trn_Enter)
Standard Action (Trn_Delete)

WorkWithPlus for Web Training

Part 5 – Report Generation

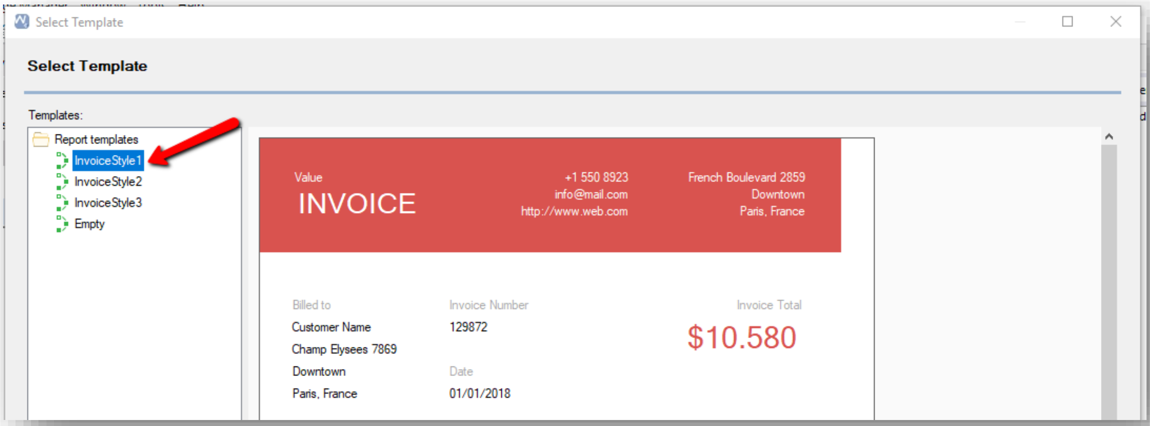
Part 5 – Report generation

1. The customer needs to print a PDF Invoice with the Sales of the company. This invoice is going to be used for final users so is important to create a layout with great look&feel.

   How can we create customized PDF reports in WorkWithPlus for Web?

Solution: As you already know, WorkWithPlus for Web automatically generates Excel, CSV and PDF reports within the Selection objects, including the filters and other settings selected in the screen. However, for this requirement, the customer need a customized report with a special layout and look&feel so we're going to create them using WorkWithPlus for Web templates for report generation.

So, import the Sale and Product transactions from the WWPTraining_Sales.xpz, apply WorkWithPlus for Web to them and register some products and sales for the company. Then, create a new procedure called "InvoiceReport", apply WorkWithPlus for Web to it and select the following template:

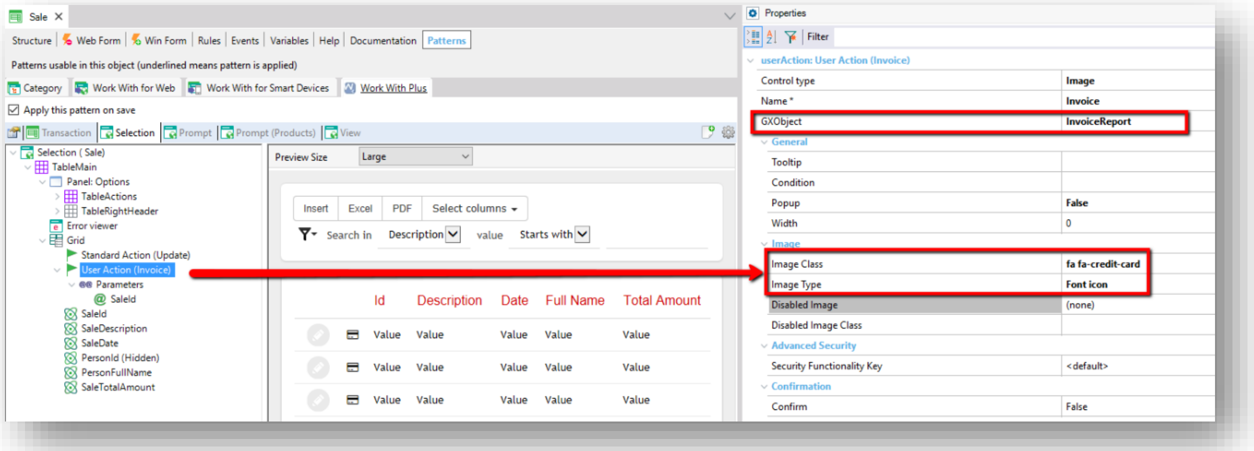


As you can visualize, you can work with a PDF report in the same way you work with transactions and web panels by using the real time preview and the hierarchical declaration. In this way, you can change and customize the layout if you need to modify it.

WorkWithPlus for Web creates the desired layout and you only need to add the necessary code in the "Source" section of the procedure to load the invoice properly. Copy the necessary code from the following link: Code Snippets

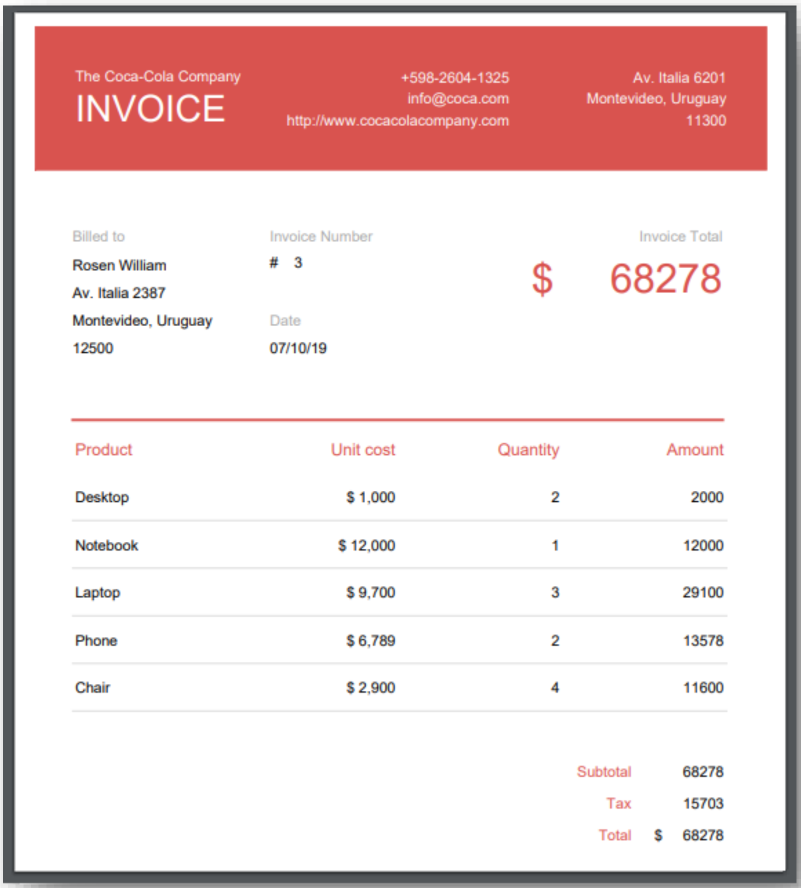
Important: You should also add the Output_file rule and set the "Call Protocol" of the procedure as HTTP.

Finally, you should add a “User Action” in the Sales’ Selection to call this new procedure. For this User Action, we will use the possibility to include a Font Icon as follows:



Comment: you can find more icons in the following site: http://fontawesome.io/examples/

Run the application to visualize the Invoice in runtime:



WorkWithPlus for Web Training

Part 6 – Security

Part 6- Security

In the Design System Wizard, we have decided to use GAM + WorkWithPlus for Web security, and that is why you were using a Login object to access the application. In this part of the training we are going to customize the security in order to take advantage of it.

Step 1 – Assign security functionalities (permisions) to the attributes

The verification whether some user can access an object (Web Panel, or Report) will be done automatically by GAM Security. So, the only functionalities that have sense to assign in this step are the ones related to actions, links, tabs or attributes.

WorkWithPlus for Web will add the code in order to verify if some user can click in some action or link and will hide/disable the action when user does not have permission for it. The same occurs for attributes non-editable or non-visible.

There are some fields of the persons that cannot be visible for all users, and there are some fields that cannot be updated by all users. Therefore, the customer requests to configure this at runtime associated to the roles. How do you achieve this with WorkWithPlus for Web?

Solution: using the security to attributes and variables that provide WorkWithPlus for Web, from the definition of the attributes modify their properties 'Enable Show/Hide Security' and 'Enable Edit/Readonly Security'.

In particular, the fields that must have the possibility to be hidden are the following:

- PersonId
- PersonFirstName
- PersonLastName
- PersonNickName
- PersonGender
- PersonBirthDate
- CountryId
- CountryCityId
- PersonCreateDate
- PersonCreateUser
- PersonUpdateDate
- PersonUpdateUser

And the fields that can be editable or read-only are the following:

- PersonFirstName

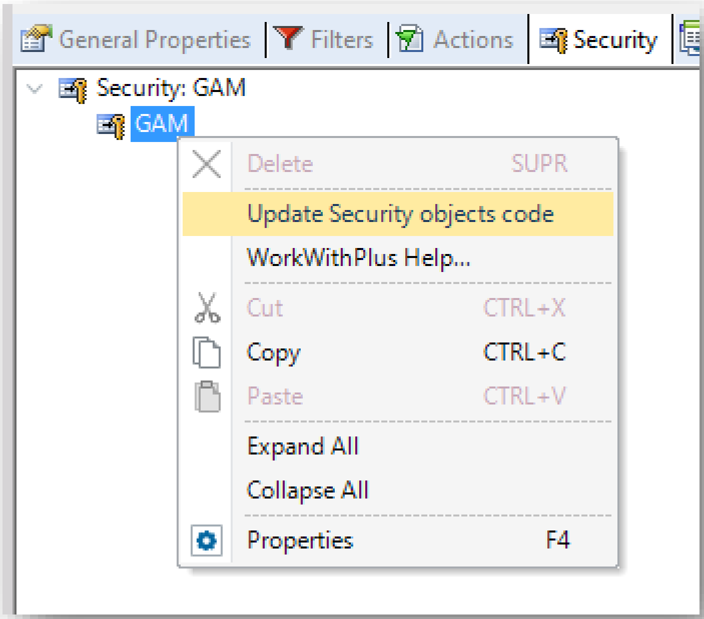
- PersonLastName
- PersonHobby

Comment: Modify the properties 'Enable Show/Hide Security' and 'Enable Edit/Readonly Security' to the attributes that you think it is necessary from the transaction's structure. You can select more than one attribute at a time and change that property massively.

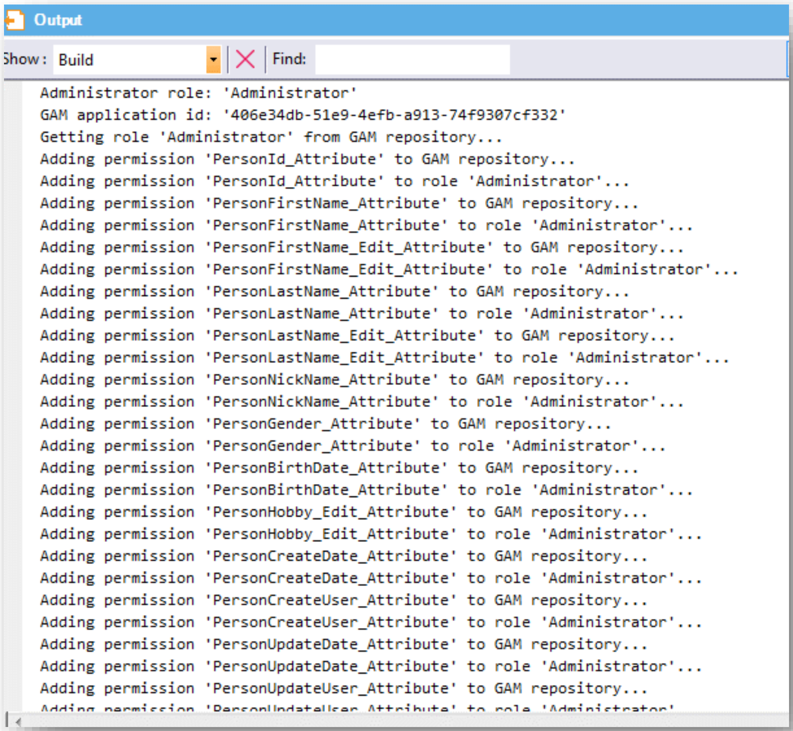
Step 2 - Update Security Objects Code

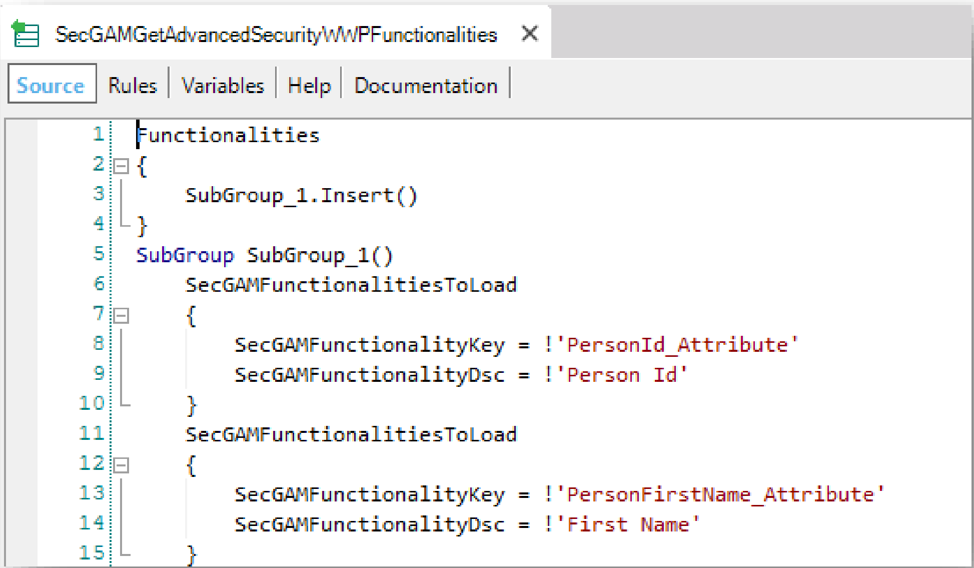
After you assign the functionality name to the attributes, tabs and actions (the configuration for tabs and actions was kept with its values by default), WorkWithPlus for Web needs to create the structure associated to these assignations in the DataProvider **SecGAMGetAdvancedSecurityWWPFunctionalities**.

In order to do this, you should go to WorkWithPlus for Web Settings, and select the option "Update Security Objects Code":



After making this, the object **SecGAMGetAdvancedSecurityWWPFunctionalities** was updated:





Then make **Build all**. Log in to the application with the user “admin” and password “admin123” (you can Access to GAMHome in order to configure users and roles).

From the GAM Backend add a role named ‘Visitor’. Assign to this role the following permissions of objects (screens):

- GAM Home
- CompanyWW

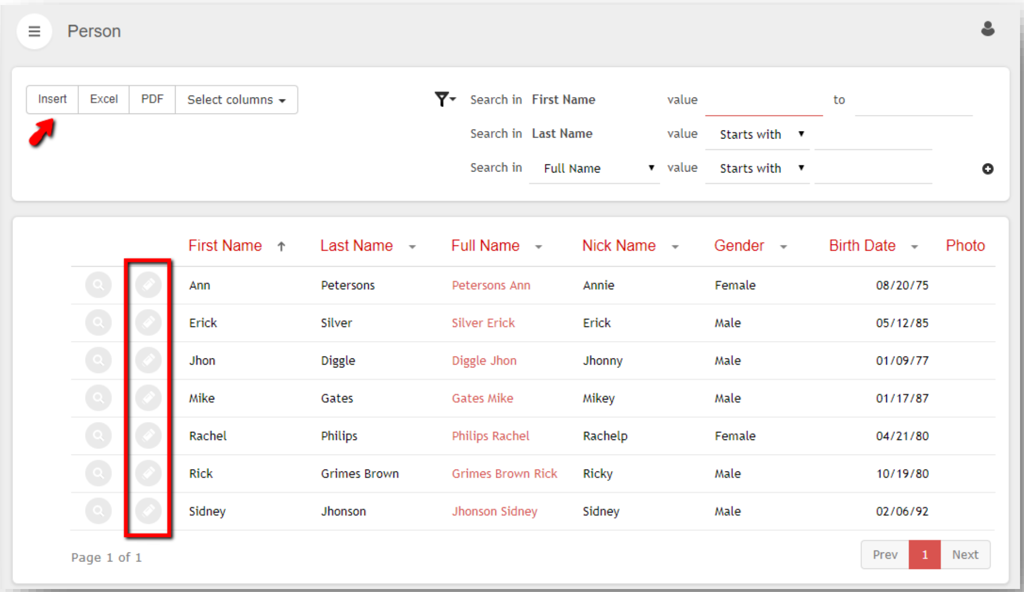
- Company
- Country
- CountryWW
- Person
- PersonWW
- PersonContact
- PersonContactWW

Save and then associate permissions in order to insert and modify persons (but not to delete). In order to do that you can make click in the action that is next to the record 'Person'.

Then create a new user named VisitorUser, password 1234 and associate him the role 'Visitor'.

Log out with this user and log in into the application with user 'VisitorUser' and password '1234'.

Go to PersonWW and check that the actions 'Insert', 'Update' are available but the action 'Delete' is not visible (because this user does not have permissions to execute that action). Also, the attributes that are available are just the ones that the logged user has permissions:



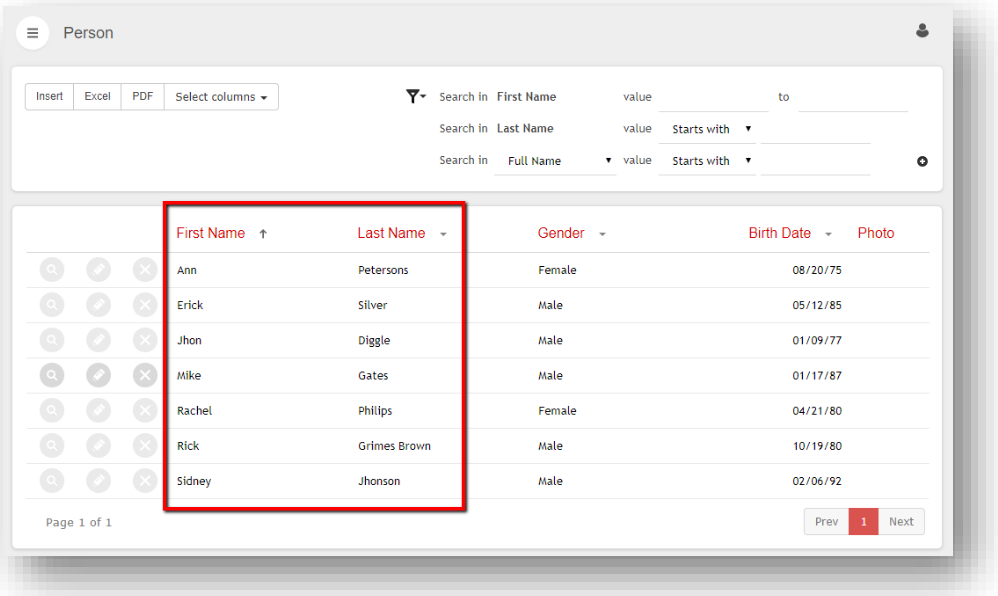
Modify a person and check the following items:

- The first Tab is not visible (because this user does not have permission in order to visualize any of the attributes of the first tab)
- The Auditing Panel that is in the second Tab is not visible
- The field PersonHobby is read-only

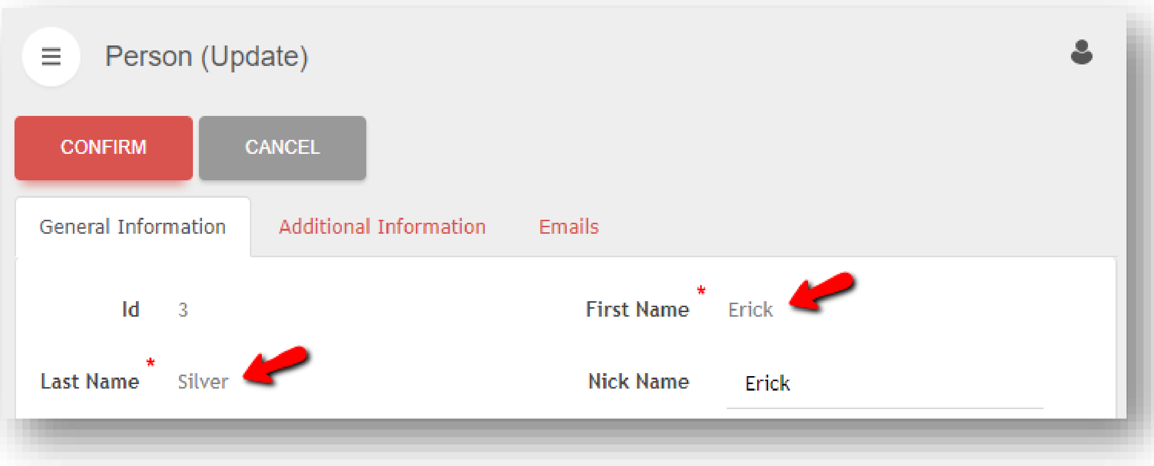
Try to go to CurrencyWW for example, without having permissions in order to access that Web Panel and check that the system will automatically call the Web Panel 'Not Authorized'.

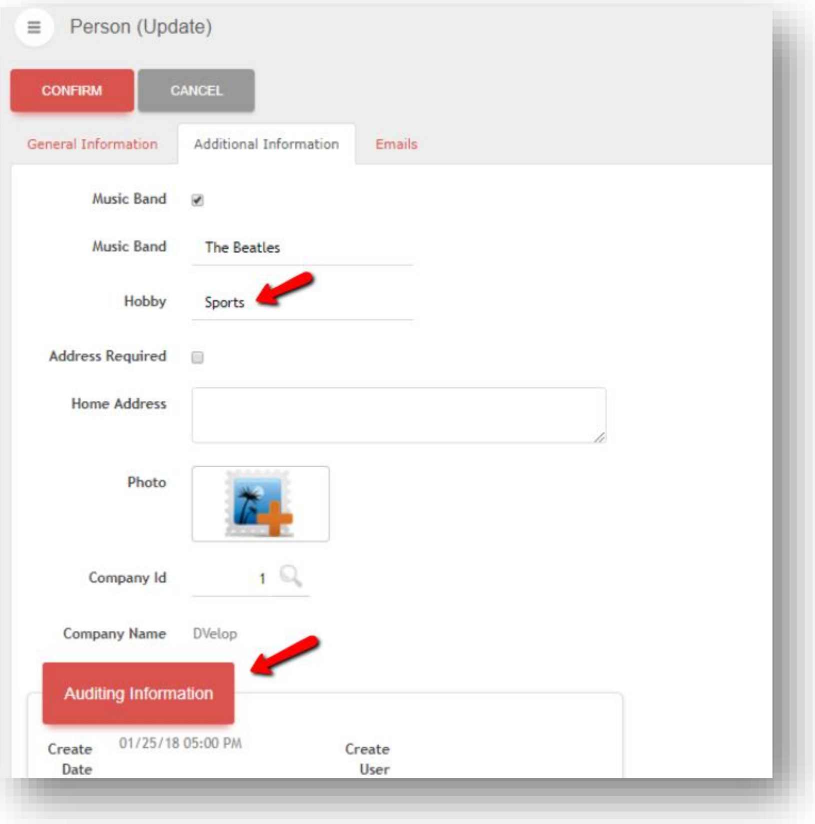
Then log out and access with Admin user in order to give permissions to visualize the attributes PersonFirstName, PersonLastName and PersonCreateDate and to edit PersonHobby to Visitor role (you can filter by type: Attribute in the association of permissions to Visitor role).

Log out with Admin user and log in with Visitor user in order to verify that you can see the grid columns of these attributes in grid:



Then modify some person in order to verify that you can visualize the first Tab of Person, the Auditing Panel and the field PersonHobby is editable.




Person (Update)
CONFIRM
CANCEL
General Information
Additional Information
Emails
Music Band
Music Band
The Beatles
Hobby
Sports
Address Required
Home Address
Photo
Company Id
1
Company Name
DVelop
Auditing Information
Create Date
01/25/18 05:00 PM
Create User

WorkWithPlus for Web Training

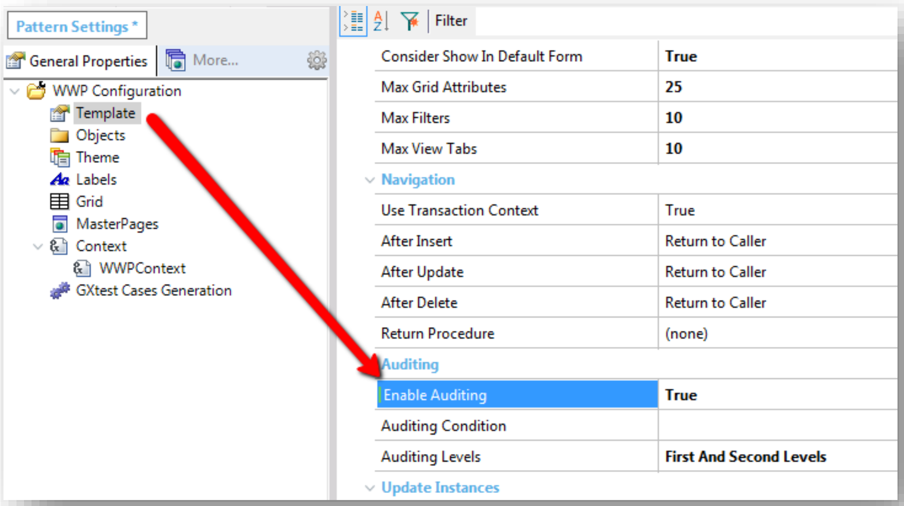
Part 7 – Auditing

Part 7 – Auditing

1. The client wants to have an historic log about the actions made to any of the entities of the system: persons, companies, contacts, etc. In other words, he wants to have information about when the records were created, updated and deleted, which values they had and who did that action. Which feature does WorkWithPlus for Web provides for this requirement?

Solution: Auditing for the actions of a transaction.

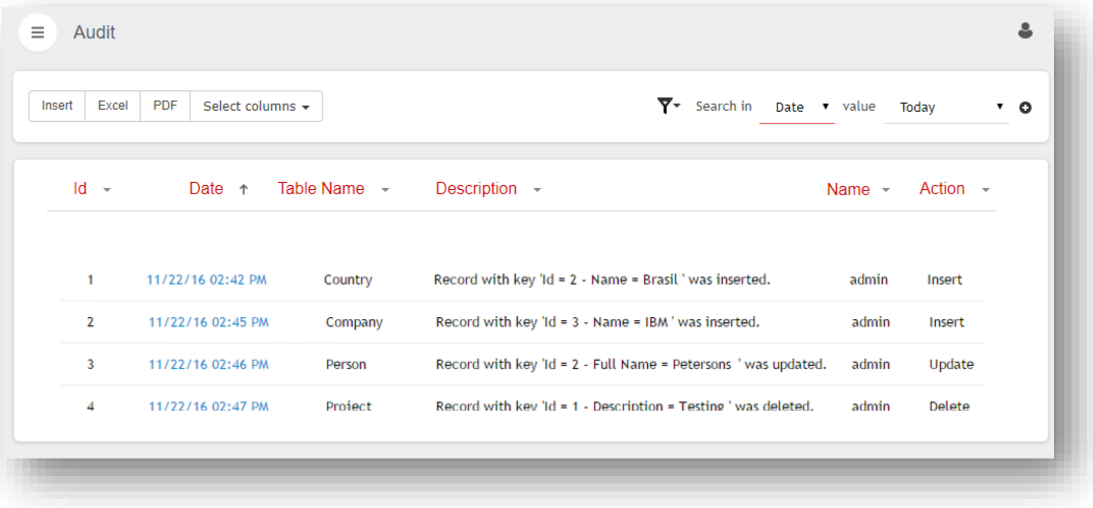
How do you enable auditing for all the transactions at the same time? In Template node within WorkWithPlus for Web Settings set the property 'Enable Auditing' to True.



After end user creates, modifies or deletes a record, the application will call a unique centralized procedure called 'AuditTransaction'. This procedure is where the developer should codify the behavior needed for auditing the application.

The procedure 'AuditTransaction' by default contains a suggestion in its source in order to save into Database the information of the action. Follow that suggestion having in mind all that is mentioned in the Source (including what is detailed at the bottom of the Source).

Run the application and visualize the results. In order to verify that the auditing behavior is the right one, modify some record within Company, delete a record from Person and create a record from PersonContact. Then go to AuditWW and check the records created.



2. Now you only want to save auditing information when end users are deleting records of all the entities. How do you configure this in WorkWithPlus for Web?

Solution: property 'Auditing Condition' in Template node within WorkWithPlus for Web Settings because it is a change made to all the transactions.