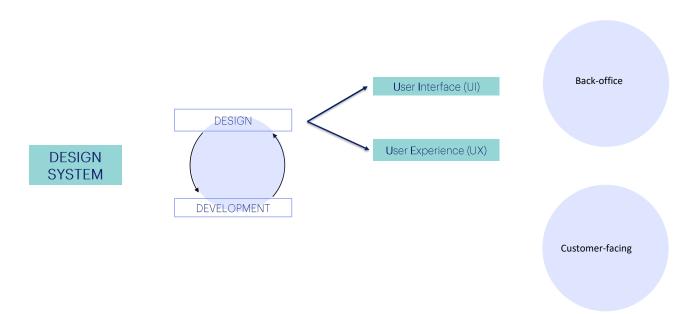
Design System in GeneXus

Customized

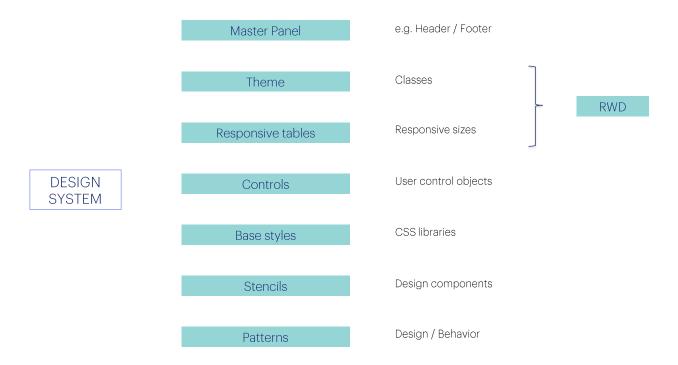
GeneXus*



In previous videos, we explained that both Back-office and Customerfacing applications have increasingly demanding requirements in terms of User Interface and User Experience, which led to the emergence of a new concept, the Design System.

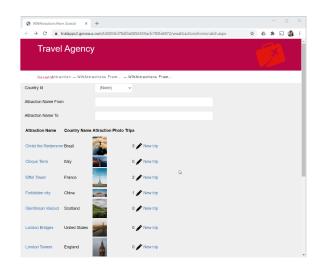
We saw that application development requires working together with graphic designers, who are the ones most involved in the definition of that design system and its use on our screens.

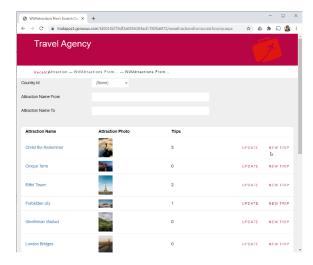
Then we focused on the Back-office application, to show how we already had a default Design System.



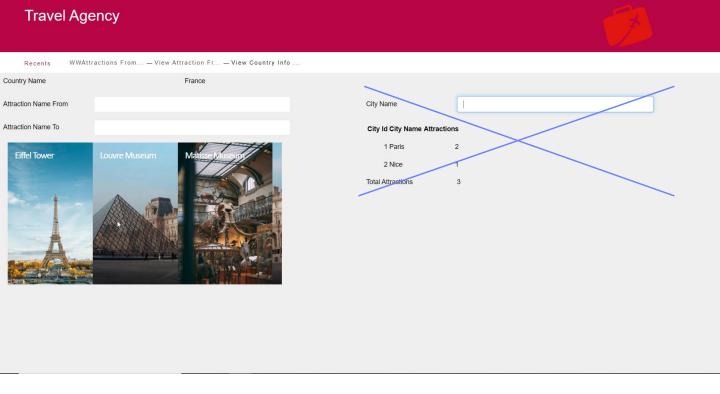
Later on, we saw the different players involved in its implementation, starting with the default master panel, followed by the default theme and everything that the Work With pattern already used from all that, through the classes it defined in that theme.

From there we saw how everything could start to be customized, creating new classes and applying them to the form controls, or changing the existing classes to keep consistency with the design of the pattern screens, ensure responsiveness, etc.





But when we had to design our own screens, those we created from scratch, we had nothing to fall back on but try to copy what the Work With element made. In real life, for these cases we will have graphic designers.



View Country Info Comp

Let's suppose that we have asked our graphic designer to design a screen for the Back-office to show the information of a country with its tourist attractions (like the one we implemented manually, but without the cities).

Actually, in real life we would never have implemented it from scratch if we had a graphic designer. Let's look at the steps we would have taken if we had known how.

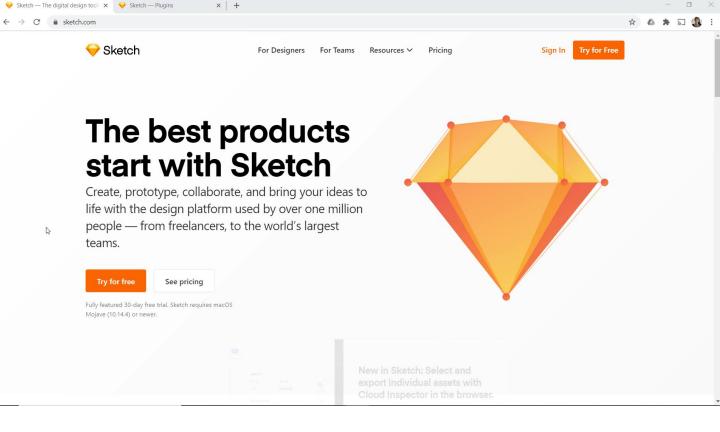


• Panel for: View Country Detail

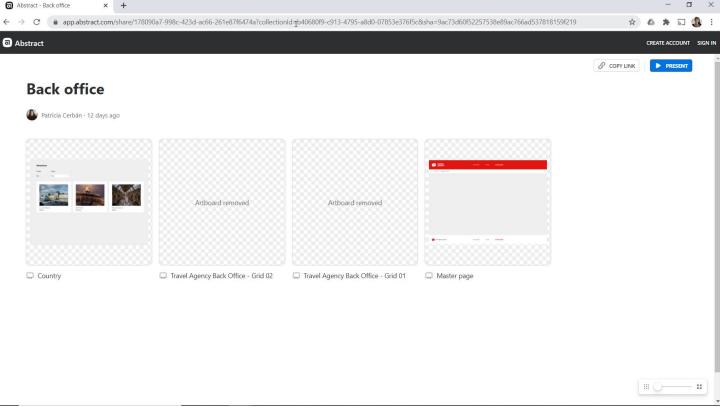


- Work With: Colors, Fonts, etc.
- Home

To make it simple, we ask him or her to design initially only the master panel for the Back-office and that particular screen. But actually it will also adapt our Work With screens, possibly changing colors, fonts and so on. And, of course, he will design the Home page of the Back-office.

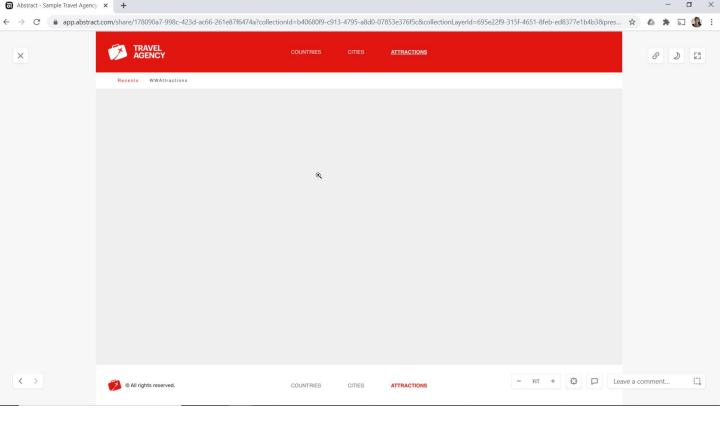


The designer uses the Sketch tool for his work, because it is a design tool to which you can add a GeneXus plugin that will do the amazing things we will see next, automatically integrating the design to our KB. It will even create objects.

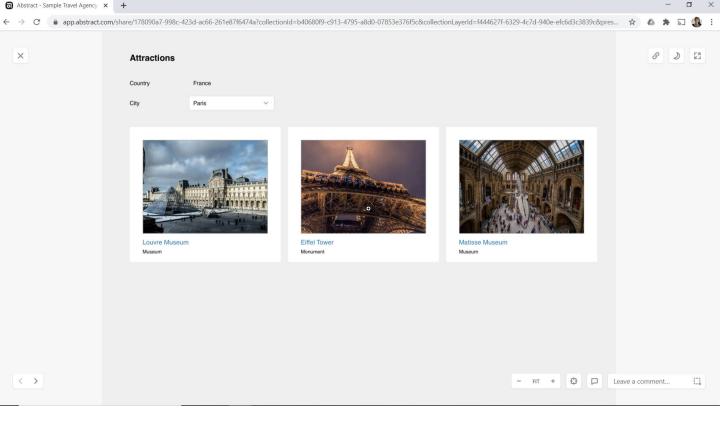


So, the designer creates the master page and panel design that we asked for in Sketch. To do so, some guidelines must be followed so that the subsequent integration with GeneXus is simple and efficient.

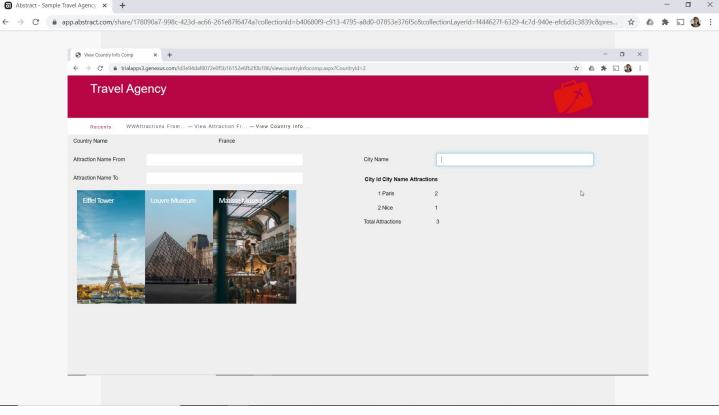
Once the design is completed, it is shown to us for confirmation. In this case, we will be sent this link so that we can see the screens, as we don't have a Sketch user account.



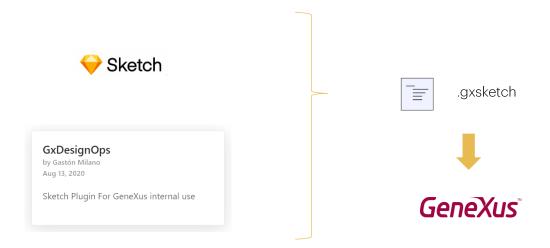
This is what the master page will look like.



And this is the appearance of the country's attractions panel... $\label{eq:country} % \begin{center} \begin{c$

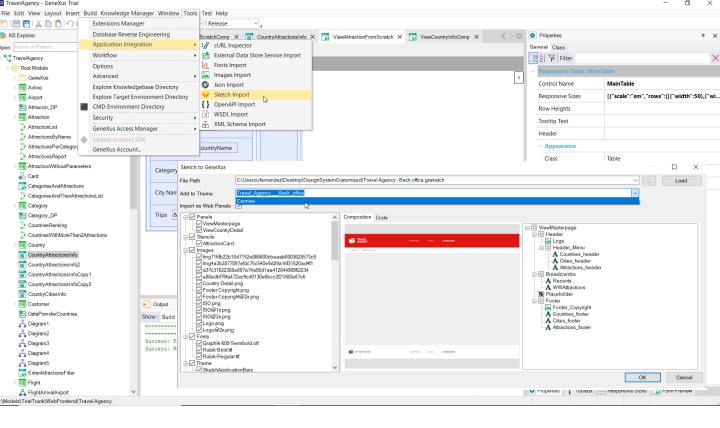


...that will replace this other one.



When we accept it, using that plugin we were talking about, it creates a gxsketch extension file, which is the one sent to us.

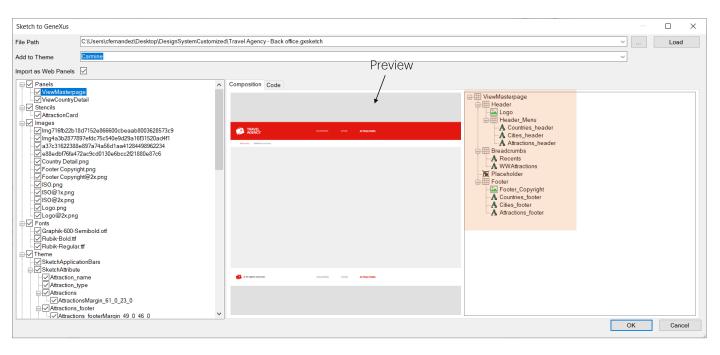
What we do next is import it into our KB. How?



By selecting Sketch Import in our KB.

There we must indicate the location of the gxsketch file sent to us by the designer, and check that we want to import Web Panels.

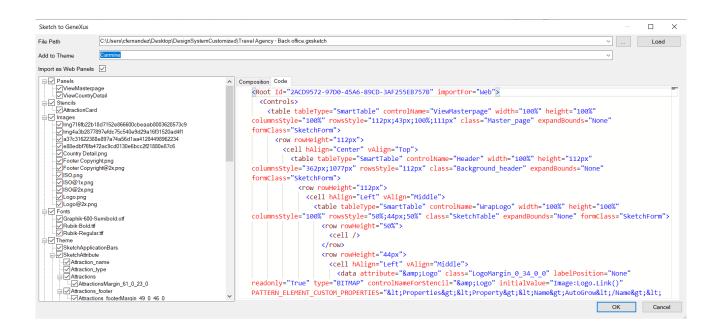
Also, we must indicate if all the classes that it will create to define the controls' design and behavior will be imported as a new theme object, or if we want them to be integrated into the Carmine Theme. We want to do the latter, so that everything is integrated into our back-office.



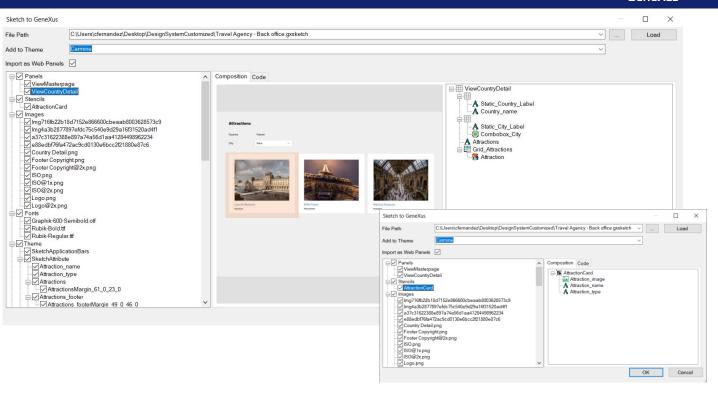
On the left it shows everything that will be imported. For example, we see two web panels.

The first one will correspond to the master panel. Here we can see the preview, and here it indicates the controls that it will contain.

It will have a Header table, which will contain an image control, and another table to specify the menu with the three options, presented as text blocks. Then another table for the recent links. One for the contentplaceholder. And a last one for the footer.

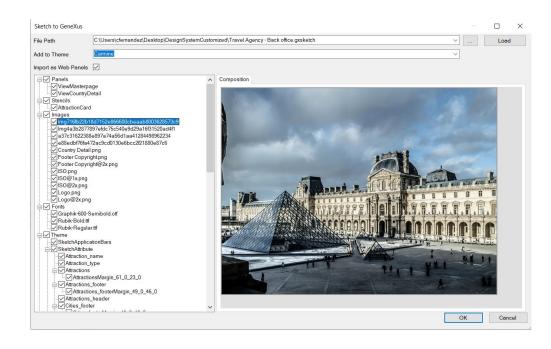


We can also see the corresponding HTML code.

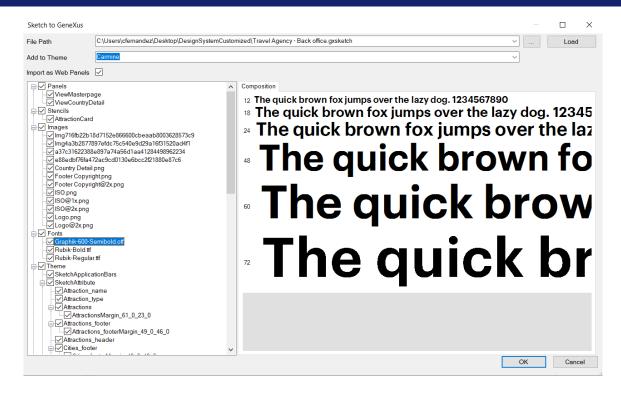


Then, the same thing in the next panel.

It will create a grid which, as we will see, will be horizontal, and a stencil control, precisely so as not to repeat this piece of design. We can see it here.



It will also import the necessary images. For example, these are to be able to run the panel with fixed data and show loaded attractions, which then the developers will have to replace with those in our application's database.

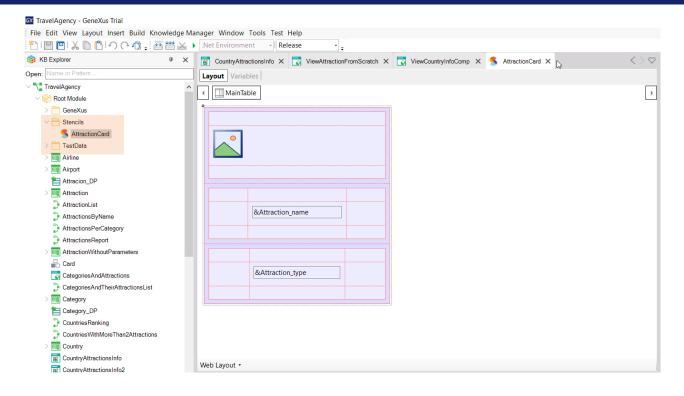


Here we see the fonts that will be used in this design.

And finally all the classes that will be added to our theme.

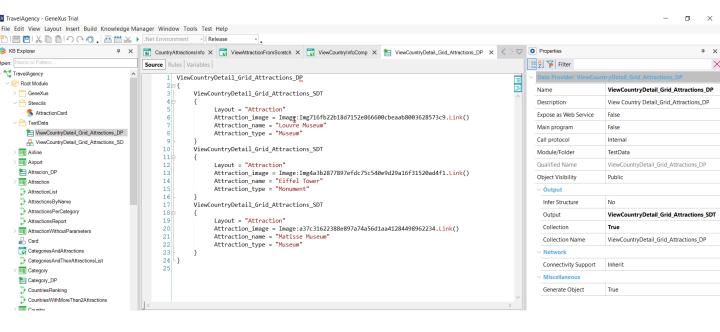
If new colors had been defined, they would be shown here too.

Since we want to import all this, we press OK.

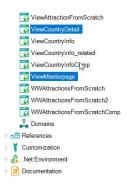


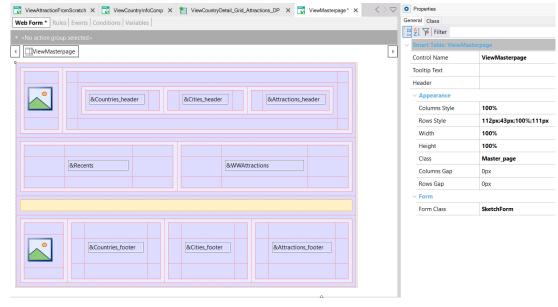
Note that these two folders were created.

Here is the stencil we had identified for the card showing a photo, name, and category of the tourist attraction.



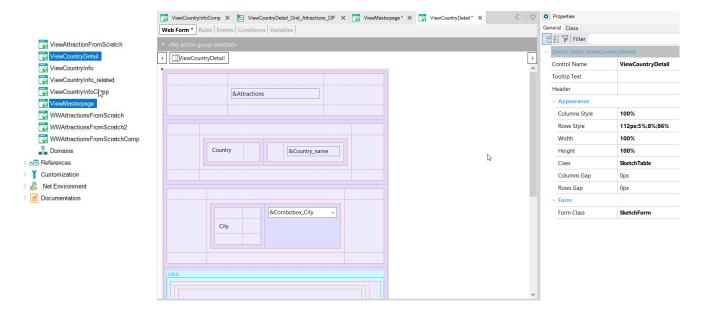
And here is a Data Provider that will load with fixed data the three attractions that we saw in the preview.



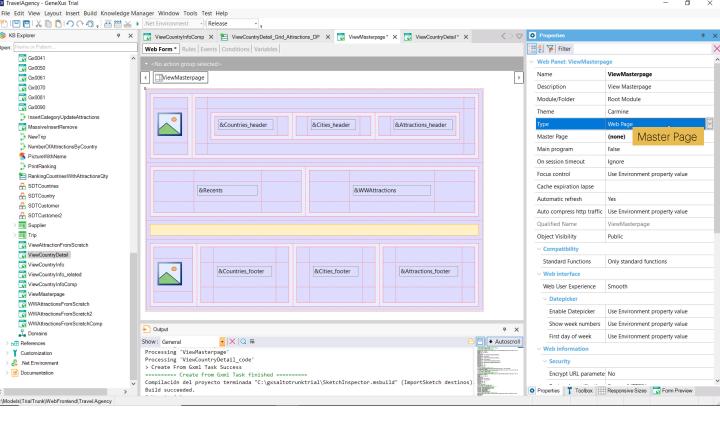


And below is the web panel that implemented the master page. And here is the one that implemented the detail of the country.

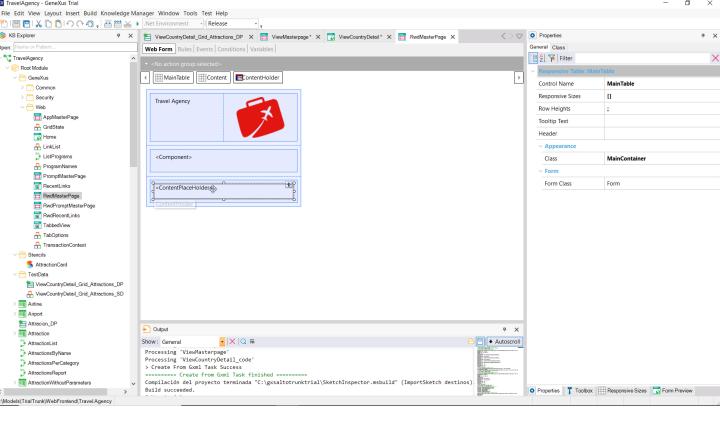
If we open the first one, we see that all its visual content is already created.



And the same if we open the second one.

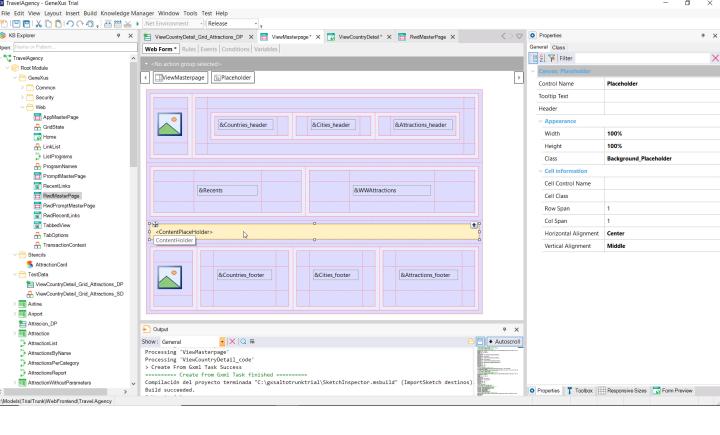


However, what the Sketch import program doesn't do yet (because it is still under development) but will do in the future, is to import this panel as a master page. Note that it imported it as a common web page. Then we will have to change its type.

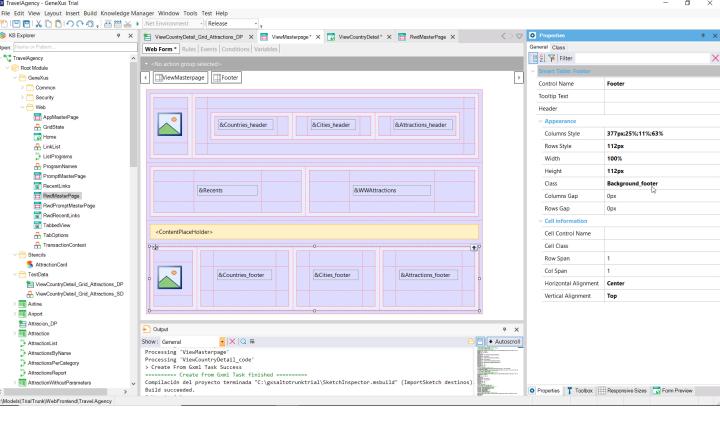


Remember that in our KB the web objects were using the default master page, which we had customized a bit.

Let's take advantage of the fact that we have it open to copy the contentplaceholder for the new one, which we have just set as master page, so it will require to have this control in its form (otherwise, we will not be allowed to save the object).

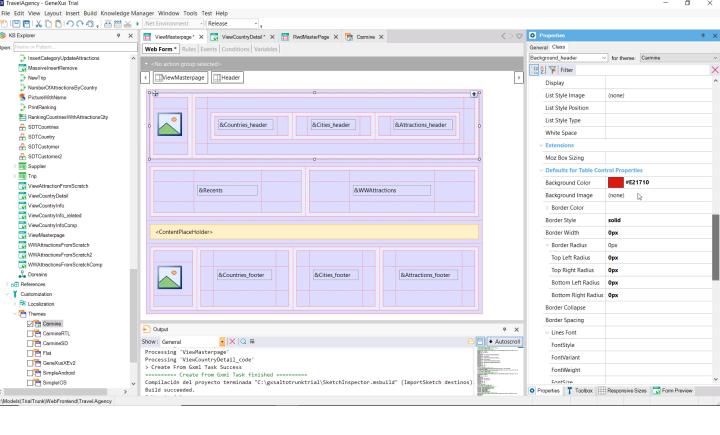


We copy it in the place left by the designer for this purpose.

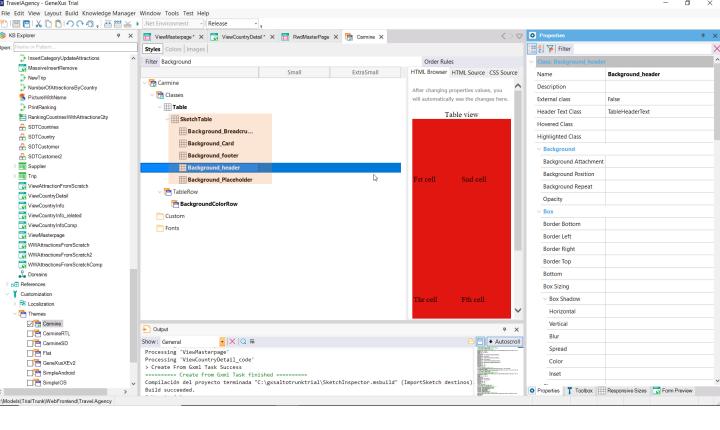


Here we see the Header table, which we had seen before importing. Here is the recent links one.

And here that of the footer. We see that it was assigned this class, which was imported into our Carmine theme....

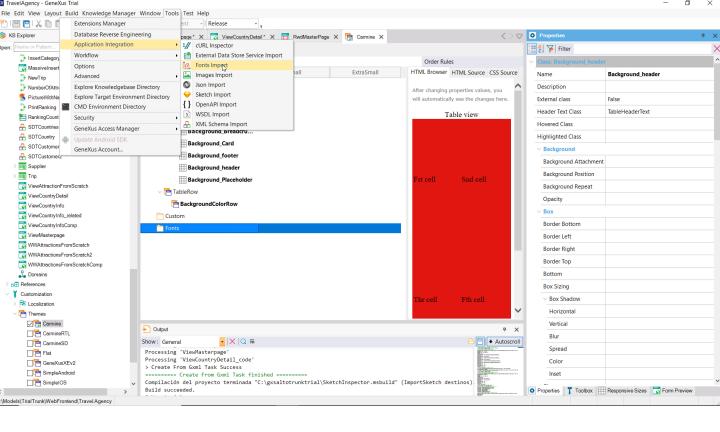


If we open it... and look for the class for the Header table that has this background color specified...

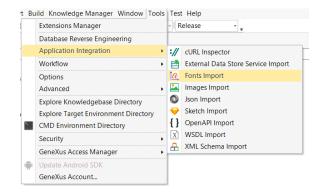


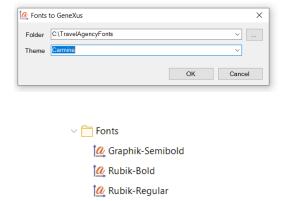
...We can see it here.

With the import all these classes of tables were created that were not there before.

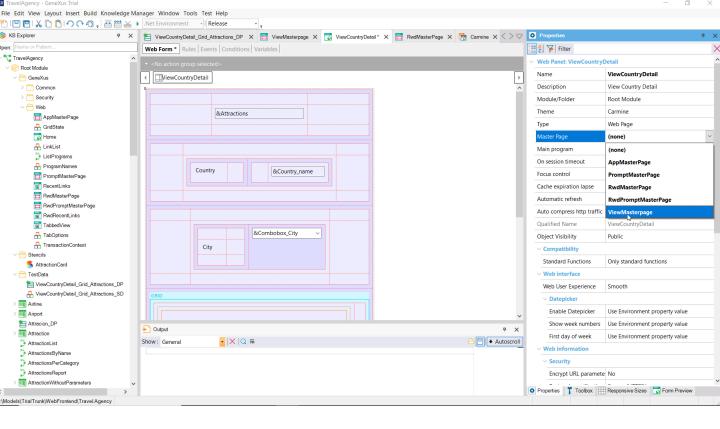


The fonts specified in Sketch should also have been created below here. This will be done in future versions. For now, we have to import them explicitly.



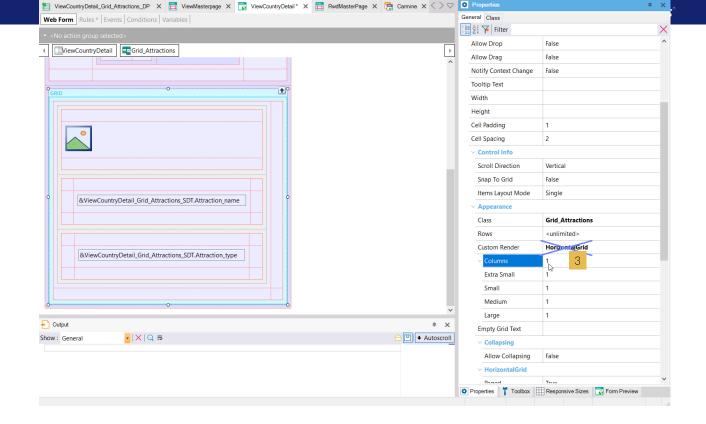


We indicate which folder they are in... and that we want them to be incorporated into the Carmine theme. There they are.



We save the new master panel.

And now we must have a country detail panel loaded into it.

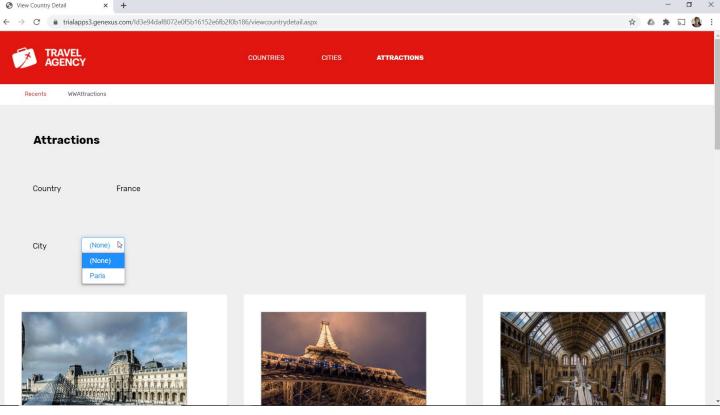


Before running it, note that a horizontal grid has been inserted, even though the 3 columns per horizontal page have not been specified correctly (yet). This is because the import function from Sketch for web panels is still not fully implemented.

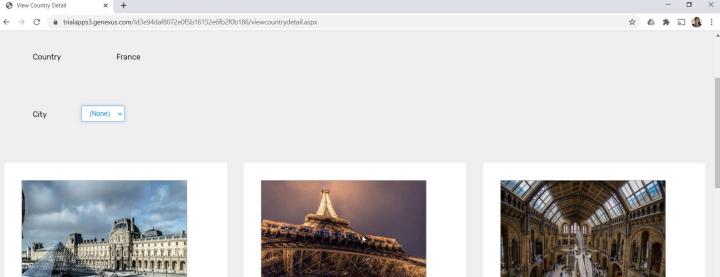
So we change it.

We could also customize it to first test how it would look if the grid was not horizontal but standard, although with 3 columns.

Let's try it.



We see that this panel is loading with fixed data, which are the ones imported with Sketch, in order to immediately see how it would look. That's why we see the country name France and a combo that allows choosing between None and Paris.



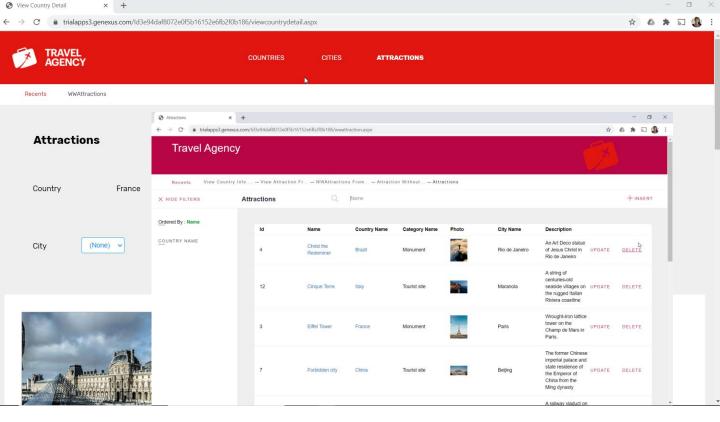
Eiffel Tower

Louvre Museum

Also, we see three tourist attractions that are hardcoded; that is, specified manually. Of course, we will have to modify all this to take the data from the database.

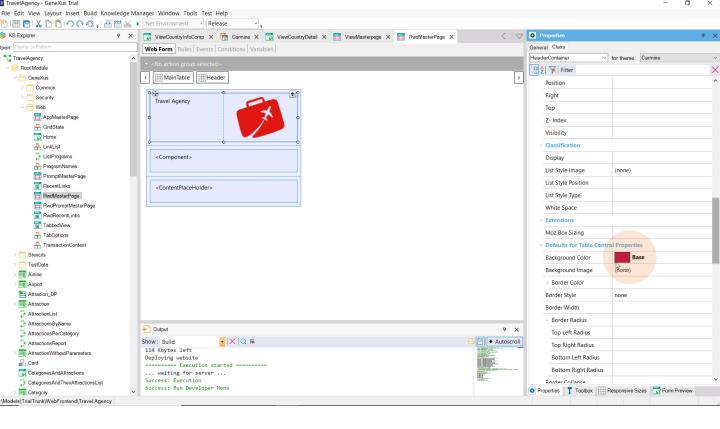
Matisse Museum

And maybe change some things like the spacing between controls, since this import is not pixel-perfect, as it will be soon when it matures. But, for starters, directly importing the design has saved us a lot of work. Let's think about the difference between this and implementing everything from scratch.

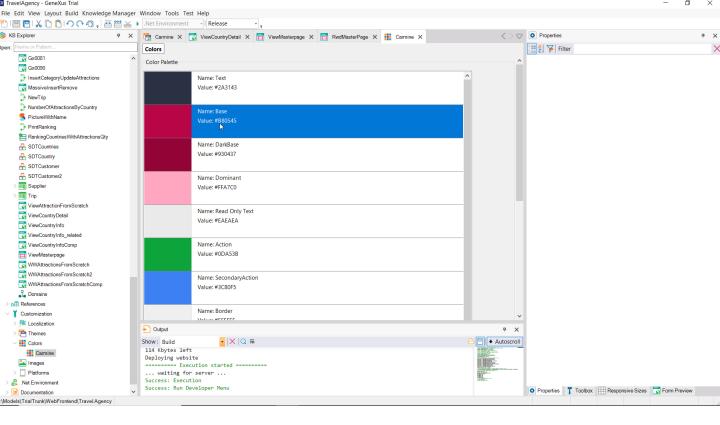


Obviously, if our intention is to turn the master page of this panel into the master page of the entire back-office, the base color of the rest of the application should be this one and not the previous one.

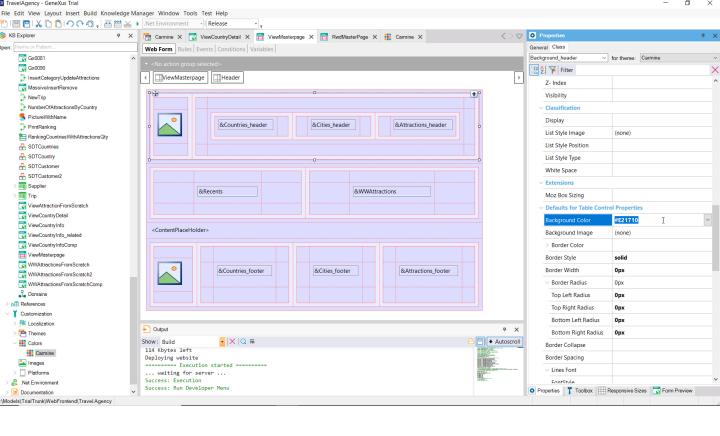
Not only the application bar, but all actions and buttons should take this other color.



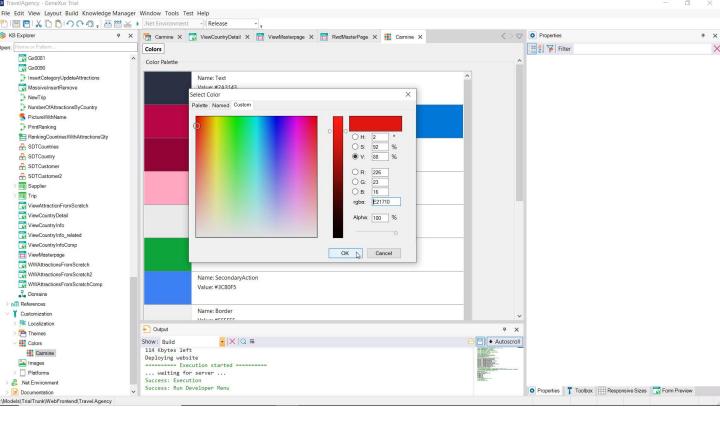
If we look at the class of the table that implements the application bar in the default master page, we see that the background color was this: Base. We need to change it. Where is it configured?



In the color palette associated with the Carmine theme, with the same name. So, there we change its color to the one the designers used in the application bar of the new master page.

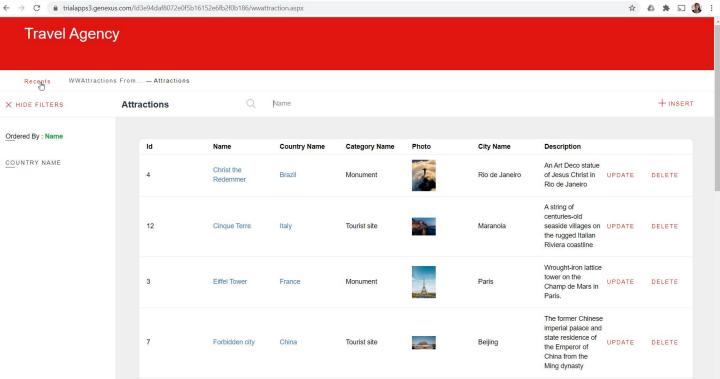


We copy the code...



...Double-click here, and paste it in this other place.

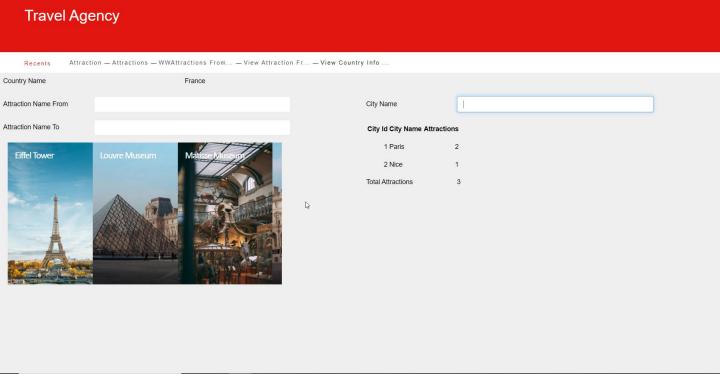
That's it. We save and run.



Attractions

× S Attractions

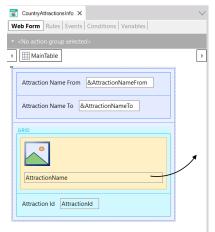
A railway viaduct on

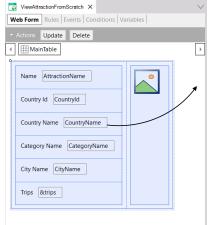


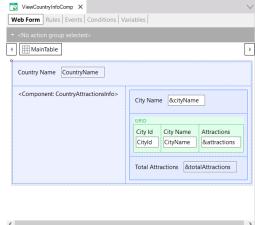
× S View Country Info Comp

 $\leftarrow \ \ \, \rightarrow \ \ \, \textbf{C} \quad \text{ \^{\textbf{a}} \ trial apps 3.genexus.com/ld} \\ \text{3e94daf8072e0f5b16152e6fb2f0b186/viewcountryinfocomp.aspx?CountryId=2} \\ \text{4e} \quad \, \, \text{CountryId=2} \\ \text{4e} \quad \, \, \text{CountryId=2} \\ \text{4e} \quad \, \text{CountryId=2} \\ \text{4e$

What if now we want to change the master page of these web panels?







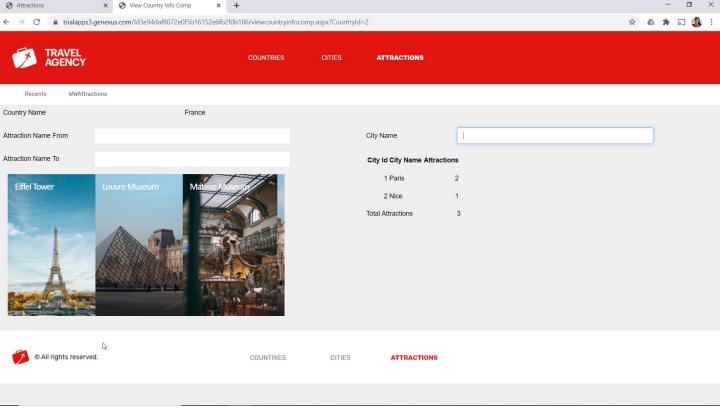
Master Page: ViewMasterpage

Master Page: ViewMasterpage

We go to GeneXus...

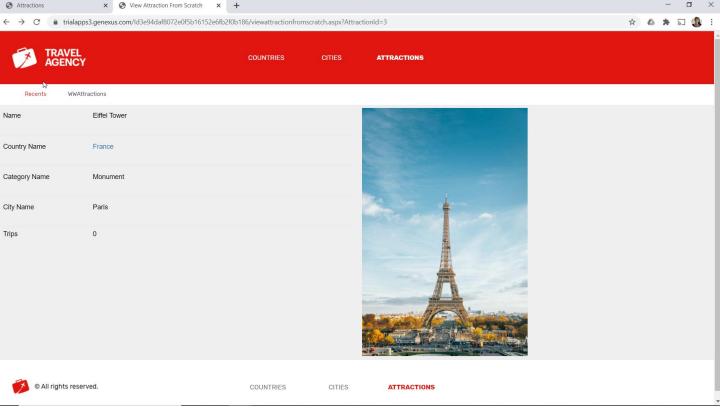
This is the component that shows the attractions in a horizontal grid, and when we click on the name of one of them, it opens this other one, which shows the information of the attraction. If we click on its country name, it opens the last one, which is the one we will replace later with the new one.

So, let's change the master page of this one, and of the previous one.

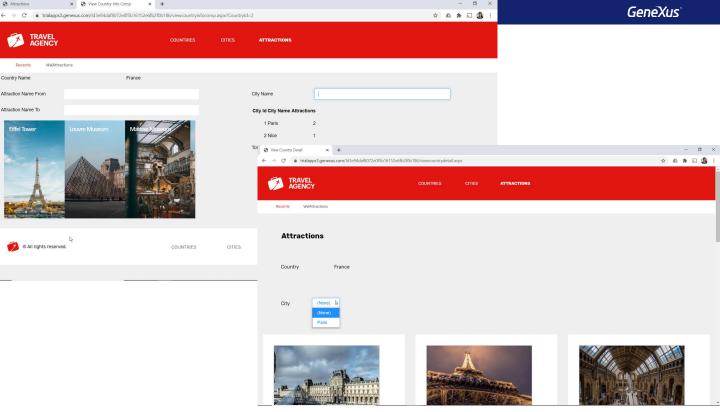


Let's try it.

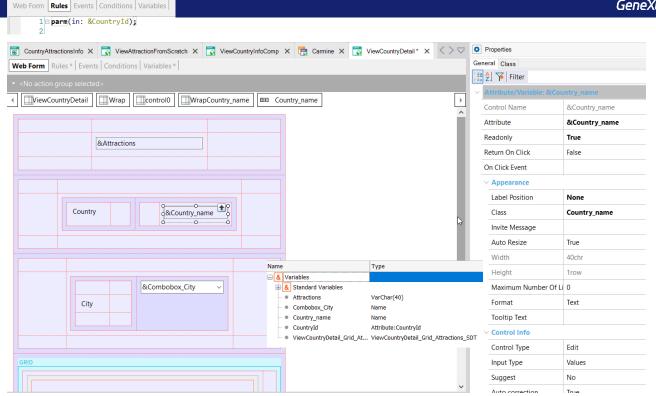
We refresh, and here we see the master page perfectly applied.



And also for the previous panel: the one that called this last one. Not so for the first one, because we didn't change it.

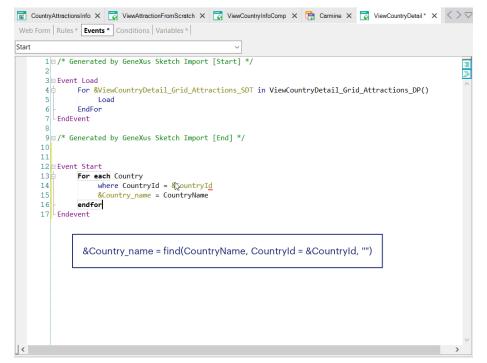


Now we will want to replace this panel with the new one, but loading all its data from the database.



The first thing we must do is receive the country identifier as a parameter. We add the variable to the object, which will be based on the attribute with the same name.

Then, we see that the variable Country_name should have the same data type as that of the CountryName attribute, which is Name, so we change it.

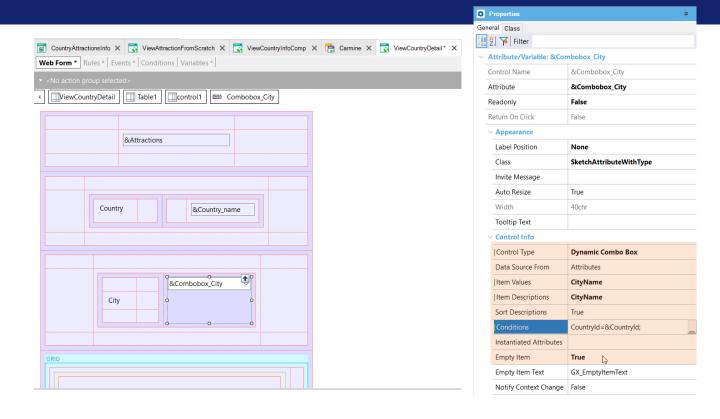




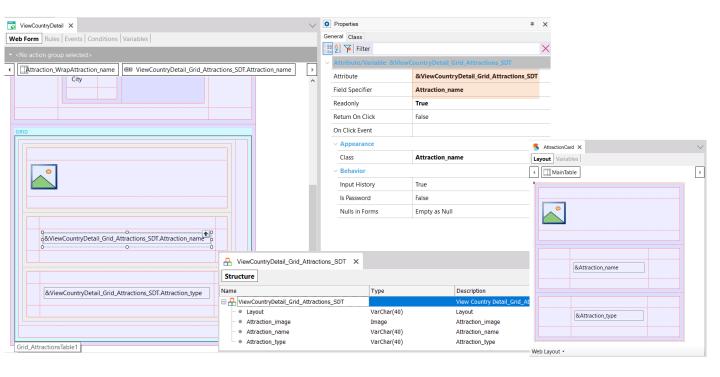
This web panel doesn't have a base table, as we will show. So, we have to find in the database the name of the country received in a parameter. For this, we can program a For Each command in the Start event. In the Country table we will look for the record whose Countryld is equal to the parameter variable, and for that record we assign the value of the CountryName attribute to the variable of the &Country name form.

Another way to achieve the same would have been to use the inline Find formula, instead of the For Each command.

Now let's remove that initial value it was using, because we don't need it anymore.



We must load this combo box variable with the cities of that country. Therefore, we must change the type of control so that it is a combo whose values are loaded dynamically from the database, and not statically as before. The values taken by the combo will be those of the CityName attribute and the descriptions will be the same, CityName (it will save internally and display the same). But also we don't want to show all the cities, but only those of the country received in a parameter. We leave the property set to true to add the empty item (that None value we saw at runtime).



Well, now we need to change what is shown on the grid, and also filter it.

As we see, the grid has no specified Base Transaction, no Order, and no Conditions. It doesn't even have attributes, but elements of an SDT that was created by importing from Sketch.

So, this grid will load a collection of that SDT. For each item, its elements will be shown according to the stencil design we saw.

Here the SDT is defined, with one element that will store an image of the attraction; another will store the name, and another one the category. These elements will replace these generic variables in the grid stencil.

```
ViewCountryDetail_Grid_Attractions_DP X
Source Rules Variables
            ViewCountryDetail_Grid_Attractions_DP from Attraction
            where CountryId = &CountryId when not &CountryId.IsEmpty()
where CityName = &CityName when not &CityName.IsEmpty()
                   ViewCountryDetail_Grid_Attractions_SDT
                          Layout = "Attraction"
                          Attraction_image = AttractionPhoto
Attraction name = AttractionName
                          Attraction_type = CategoryName
       12
       13
      14 //
15 //
                  ViewCountryDetail_Grid_Attractions_SDT
      16 //
17 //
18 //
                          Attraction_image = Image:Img716fb22b18d7152e866600cbeaab8003628573c9.Link()
Attraction_name = "Louvre Museum"
                          Attraction_type = "Museum"
      19 //
20 //
      21 //
22 //
23 //
                   ViewCountryDetail_Grid_Attractions_SDT
                          Layout = "Attraction"
      24 //
25 //
                          Attraction_image = Image:Img4a3b2877897efdc75c540e9d29a16f31520ad4f1.Link()
Attraction_name = "Eiffel Tower"
      26 //
                          Attraction_type = "Monument'
      27 //
28 //
29 //
30 //
                  ViewCountryDetail_Grid_Attractions_SDT
                          Layout = "Attraction"
                          Attraction_image = Image:a37c31622388e897a74a56d1aa41284498962234.Link()
Attraction_name = "Matisse Museum"
       31 //
      32 //
       33 //
                          Attraction_type = "Museum
      34 //
35 -}
                 }
```

```
Source Rules Variables

1 parm(in: &CountryId, in: &CityName);
2
```

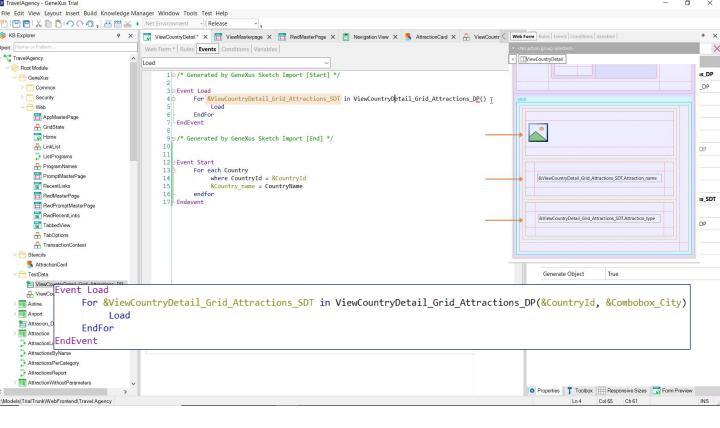
But the one that will actually return a data collection from this SDT with the attractions loaded will be this DataProvider imported with Sketch. The only thing we have to do is modify it so that the items are loaded from the attractions in the database, and not from these fixed data.

So we leave these three groups with comments and add one that will be variable, specifying that we will take the data from the Attraction base transaction, filtering by country identifier when it is not empty. And by city name, when it is not empty.

We must define both variables in the parm rule.

But first, for each record found, we want an item to be added to the resulting collection, with the value of the attraction photo, its name, and the name of its category.

Now, let's define the two parameters that this data provider must receive when it is invoked.

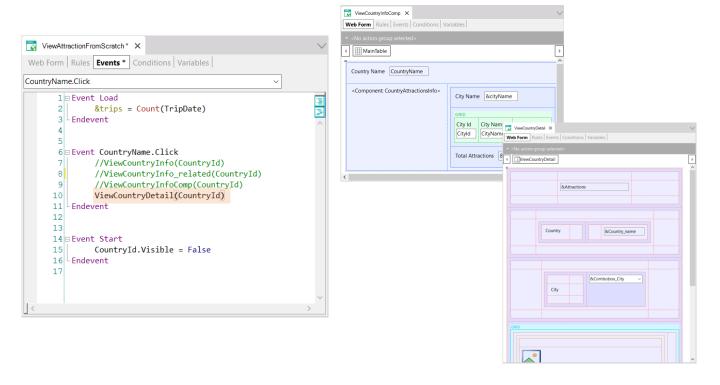


And now let's look at its invocation.

It is done in the Load event, of course!

We see that we have a For in command that runs through each item in the collection returned by the Data Provider, and loads it into the grid.

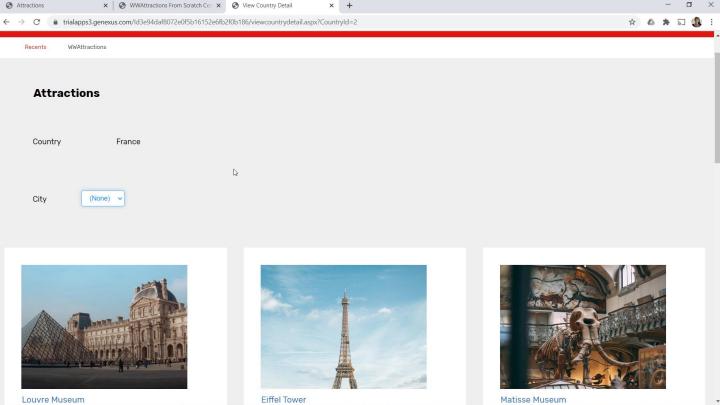
This is where we will have to send it the parameters, so that it filters by country and city.



The only thing left to do is to invoke this web panel instead of the one we had.

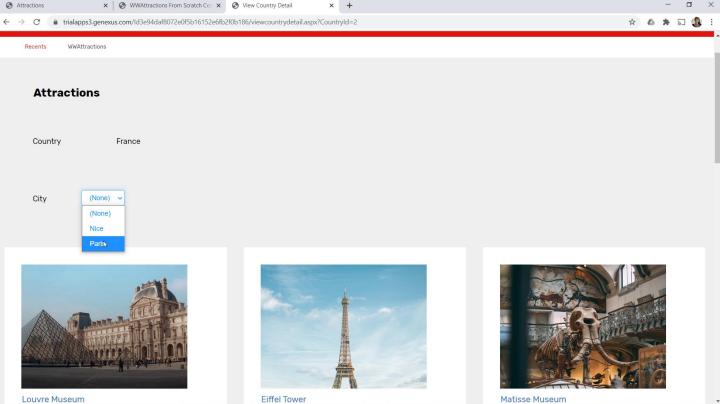
That is, instead of this one, this other one.

We save and run.

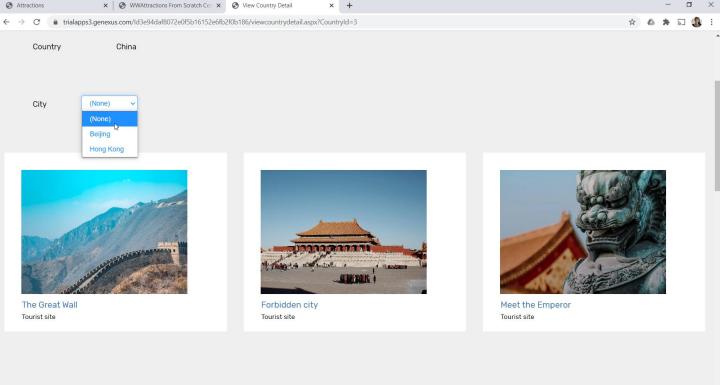


Let's select this attraction. And see the information about its country, $\ensuremath{\mathsf{France}}.$

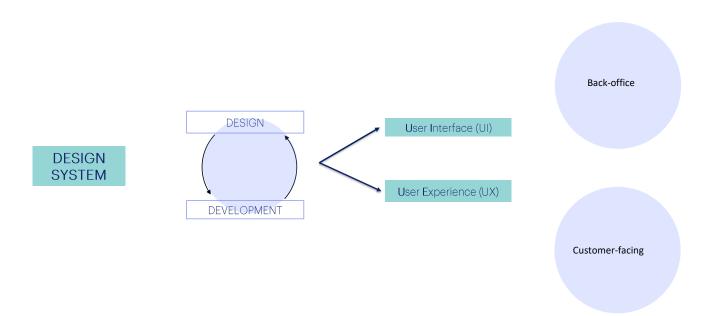
There we see deployed the three attractions that we have from France in the database.



And the two cities, and filtering by Paris we see two attractions and by Nice, one attraction. $\,$



If we choose another attraction, from China this time, we see the three attractions we have in China. $\,$



With this small example we can have an idea of how the incremental development process of an application will be, both in terms of logic and design, and to what extent we should work as a team with people with different skills.

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