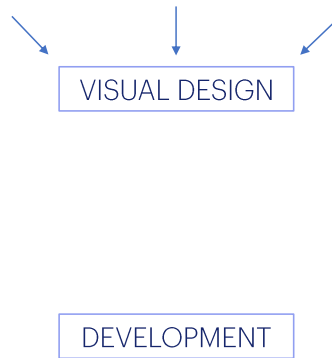


# UX Design

Introduction

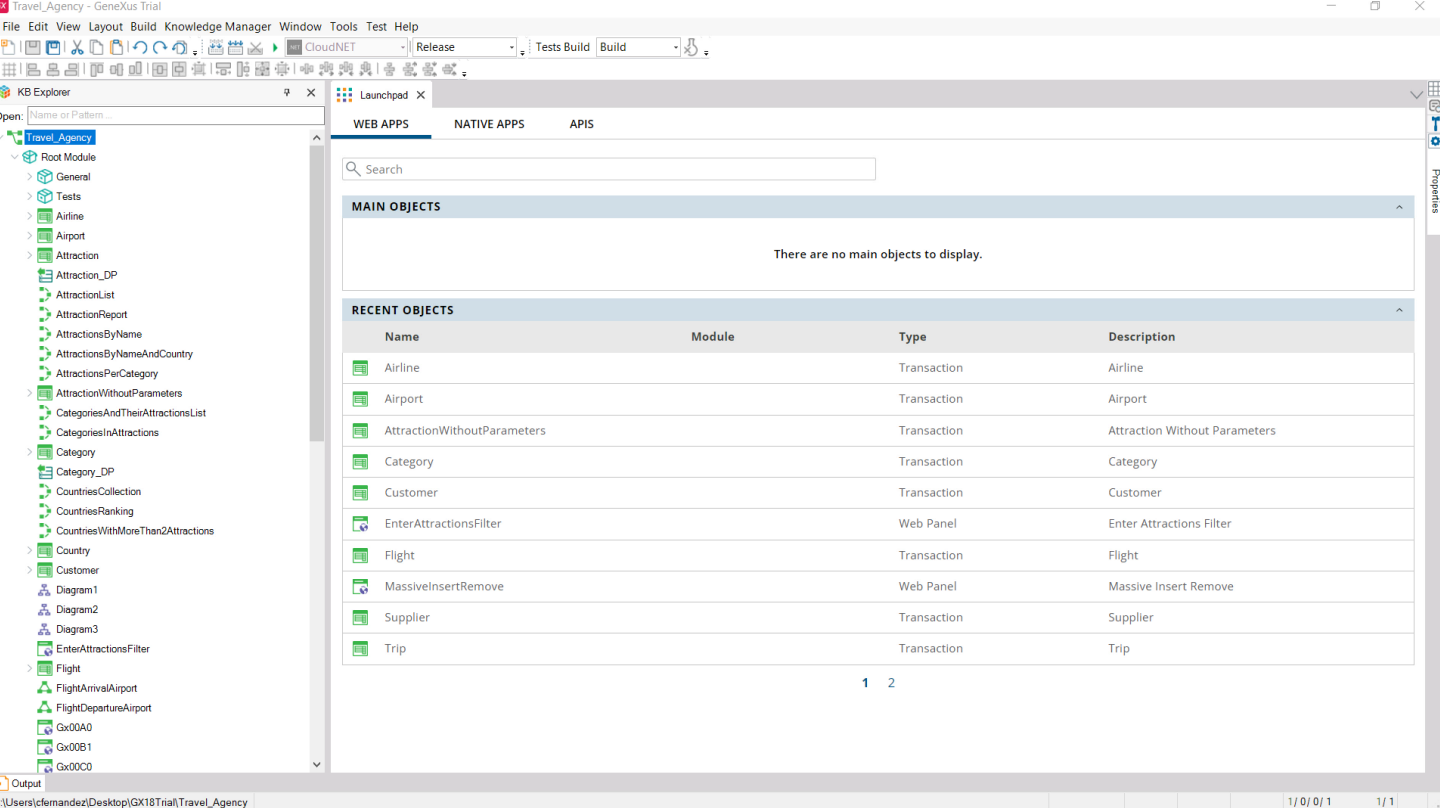
*GeneXus™*



---

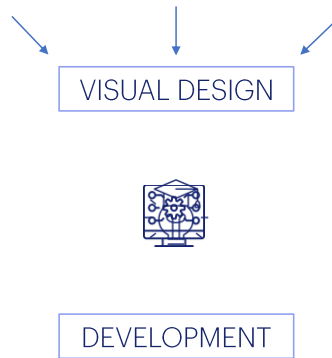
So far, we have focused only on the data model and behavior, and we have not been concerned at all with the visual design of the application.

We could say that we have been doing only development tasks.



Thus, we have created and developed a set of objects: some transactions, some lists, some web panels created automatically by applying the Work With pattern, and others that we created from scratch.

However, we don't have an organized application yet, and we haven't even started to envision it that way.

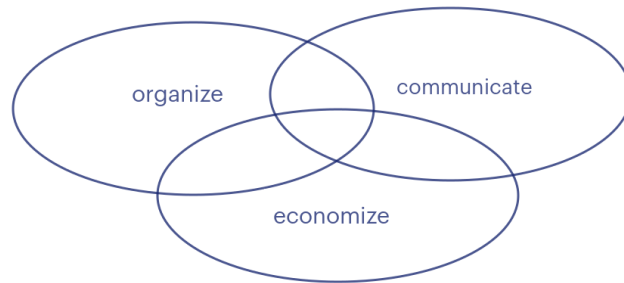


---

That is because we have been learning the basics of GeneXus, focusing on some parts, but, understandably, this is not the approach we will take when we start developing a real-life application.



## UX DESIGN



## DEVELOPMENT

In fact, the development of an application does not start with the development itself; it begins after a very important previous stage, which is the **user experience design**. There, the conceptual structure of the application as a whole is organized first. The objective is to obtain a product that meets the expectations of both the user and the business, and that communicates exactly what it should in the most effective and economical way possible.

## UX DESIGN

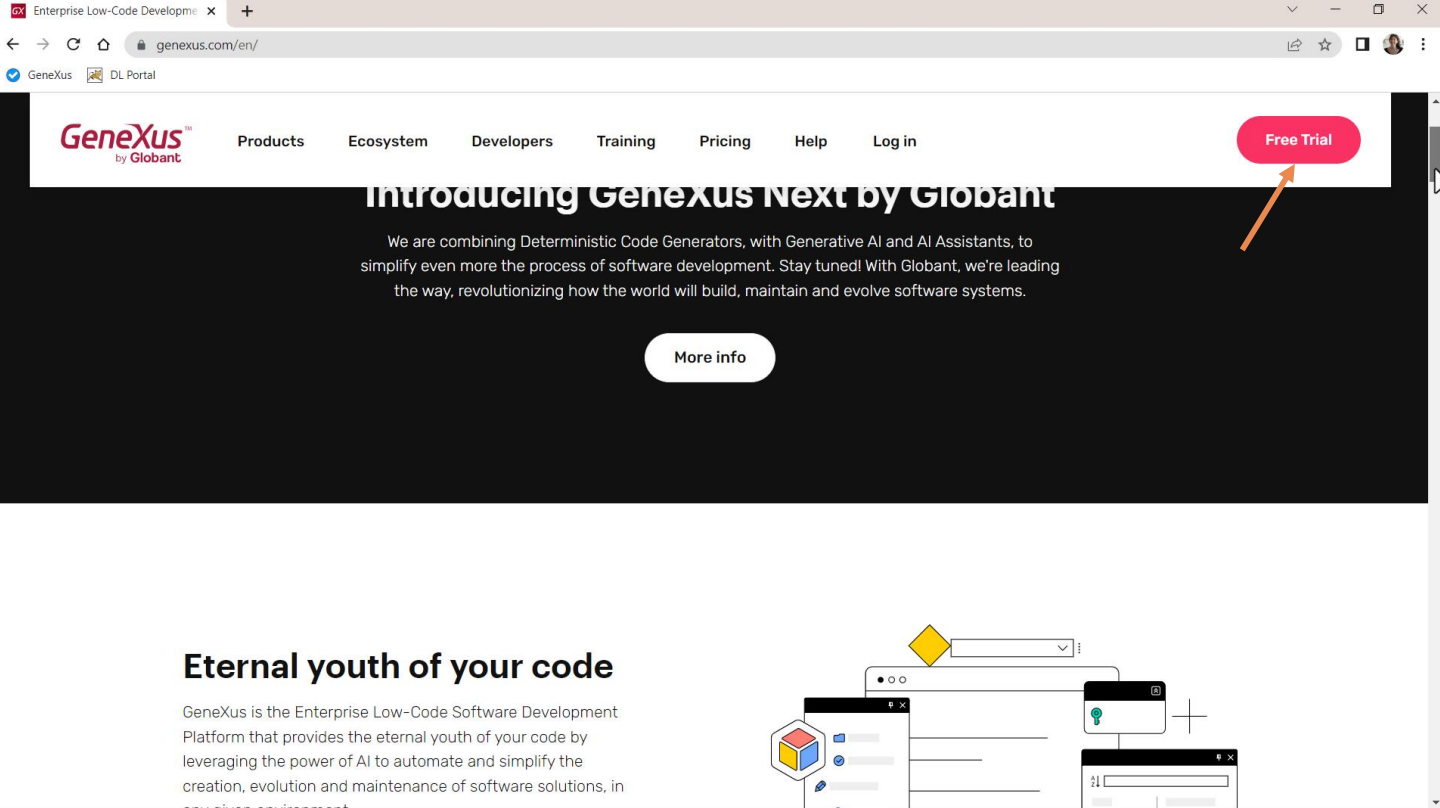


5	Surface	VISUAL DESIGN		
4	Skeleton	Interface design	Navigation design	Information design
3	Structure	Interaction design		Information architecture
2	Scope	Functional specification		Content requirements
1	Strategy	User needs & Business objectives		

## DEVELOPMENT

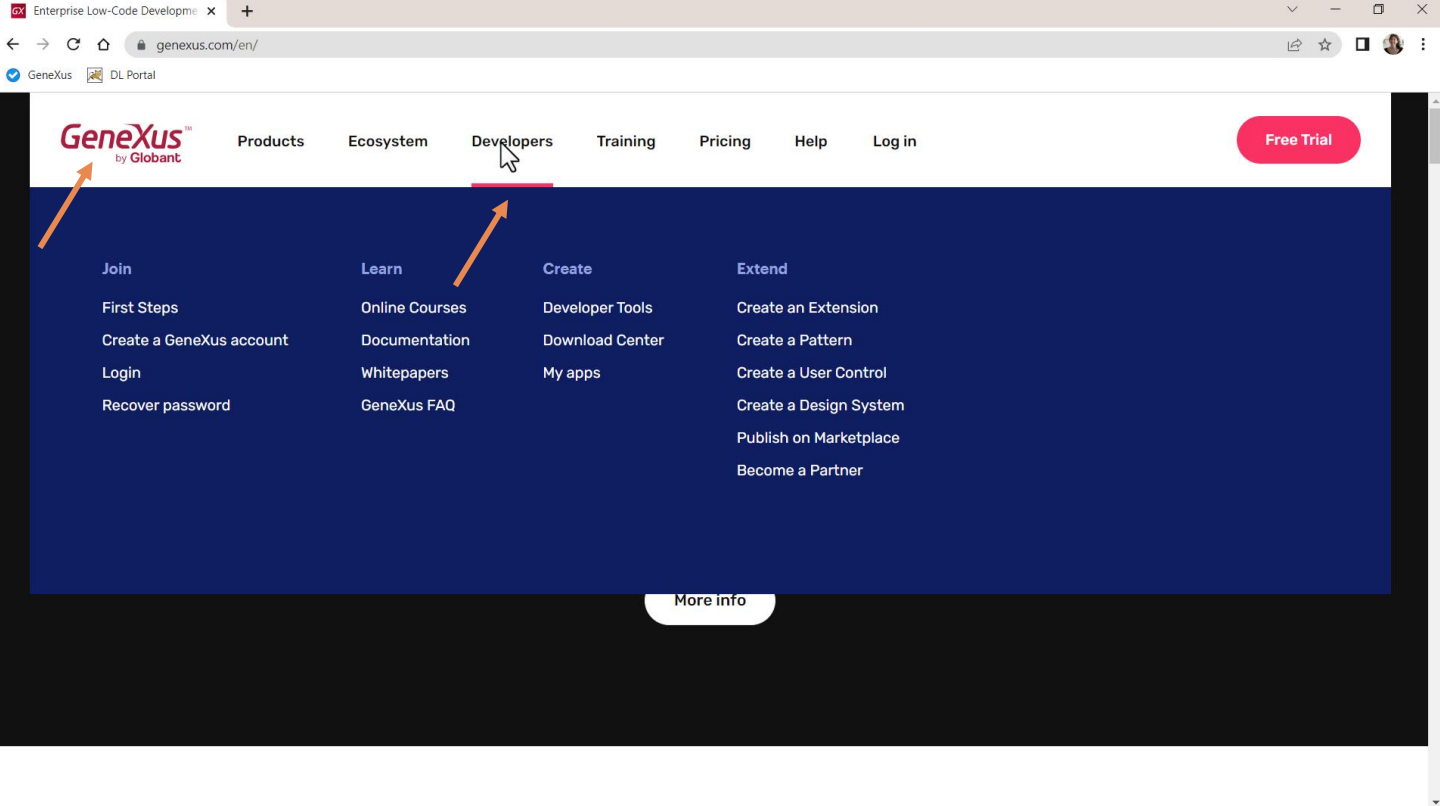
This includes the interface design as well as the navigation and information design. The visual design we see in the finished product is built on this organizational skeleton. Although we will not go into the details of this very important task here, we can realize that we will end up viewing the result of the foundations laid by these previous stages: each one is the basis for the next.

Only with the resulting surface stage will we have the visual design to start the actual development.

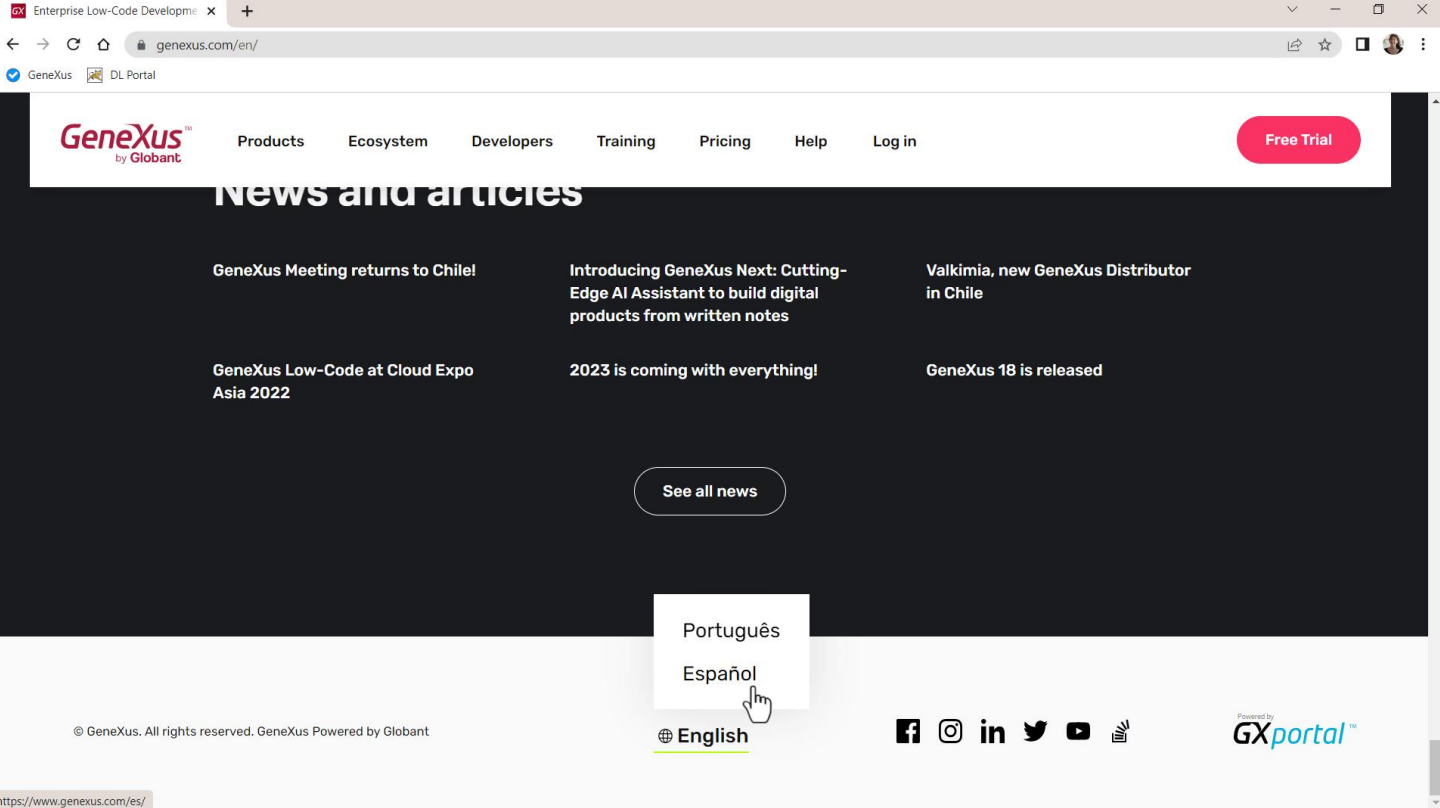


Looking at the GeneXus website we can quickly grasp the User eXperience decisions that were made when designing this web application: a basic principle is to achieve a good contrast, and here we see that it was done with white, black, gray, and red.

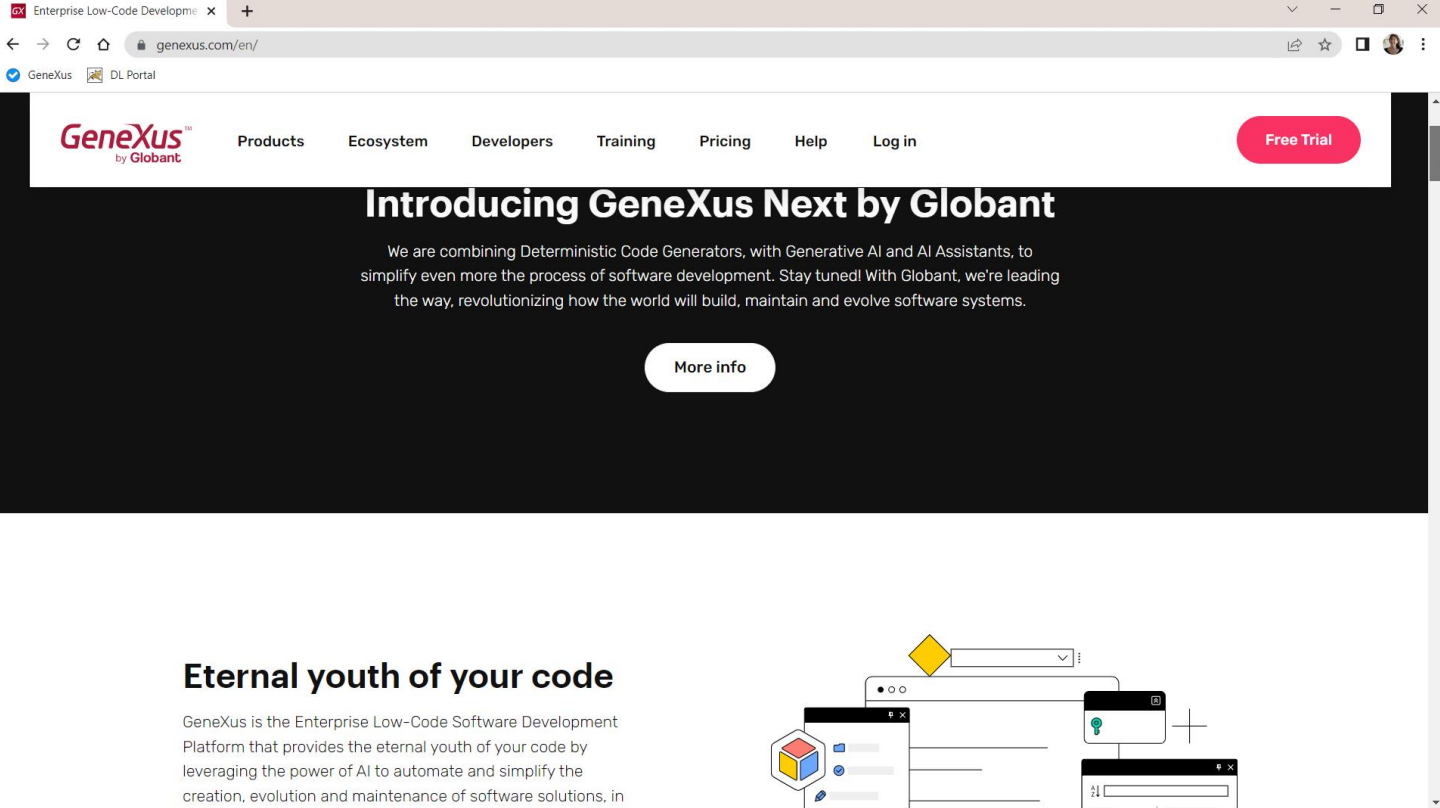
The most important actions that the user can do are shown as buttons, which have a consistent style and therefore can be easily recognized. Their color depends on the background (black or white), but clearly the main color for actions and highlights is this one.



In fact, if we look at the main navigation menu that will appear as a header on all pages, the submenus are displayed when going through the options and this is the color that indicates the active option, which looks similar to that of the company's brand.

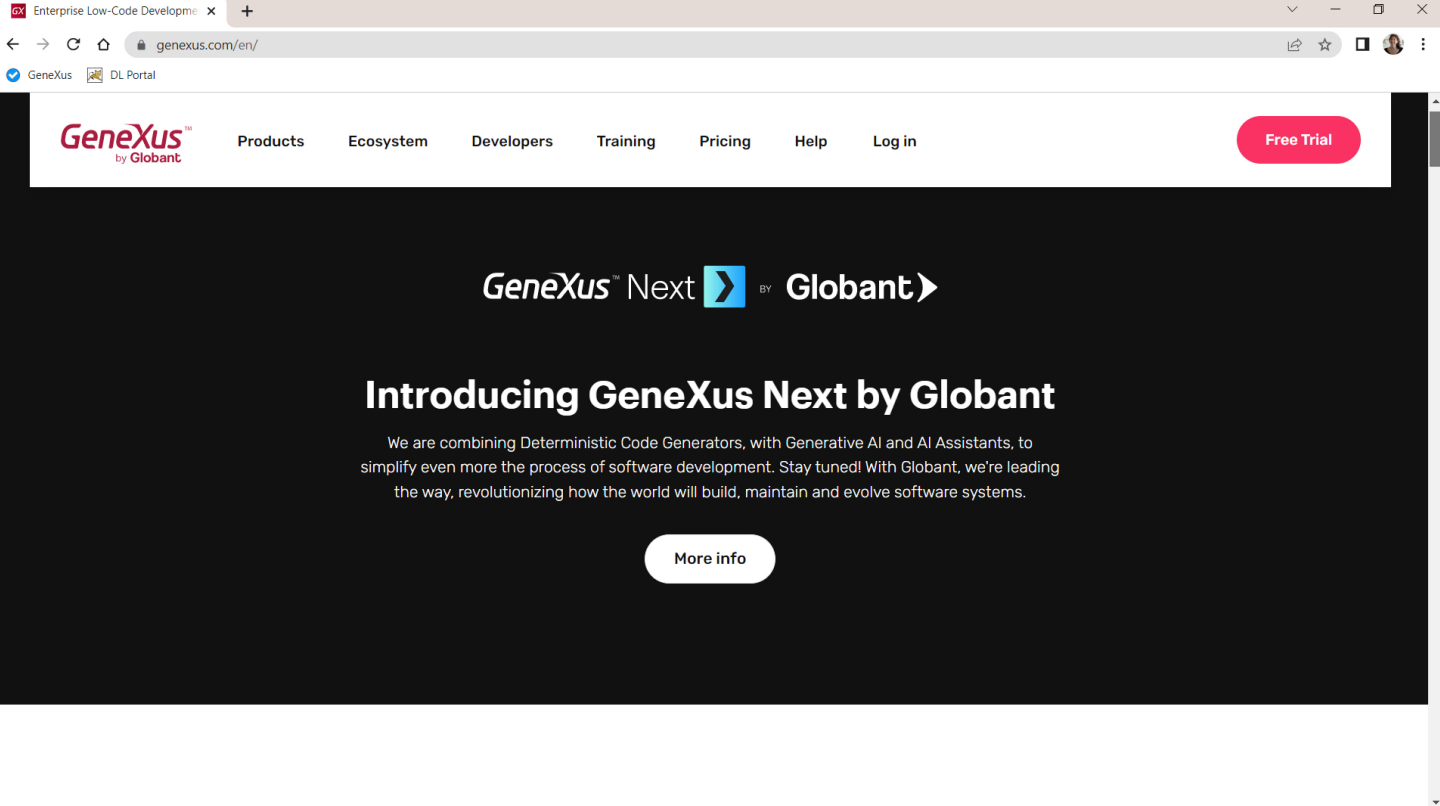


We can also see that there will be a footer repeated on all pages, which is where the language can be changed, following a convention that all internet users are familiar with: the language can be changed in the header or footer.

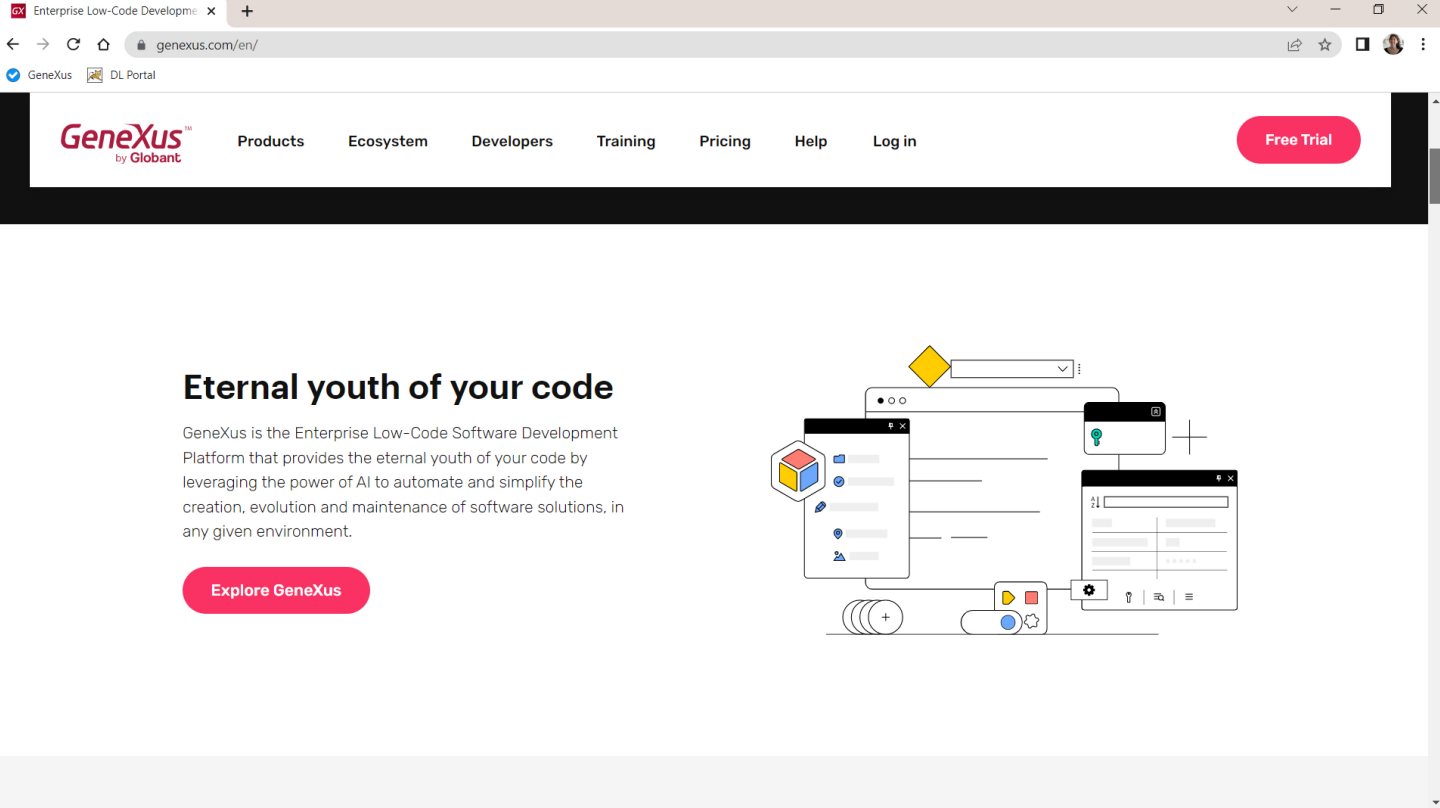


Also, note that the font families are consistent, and that they are used in the same way: the same sizes for the titles, descriptions, and so on.

In addition, it is possible to indicate which information is related and must therefore be interpreted as a whole, based on how closely the controls are placed and the spacing in relation to the others, and by alternating the background color.

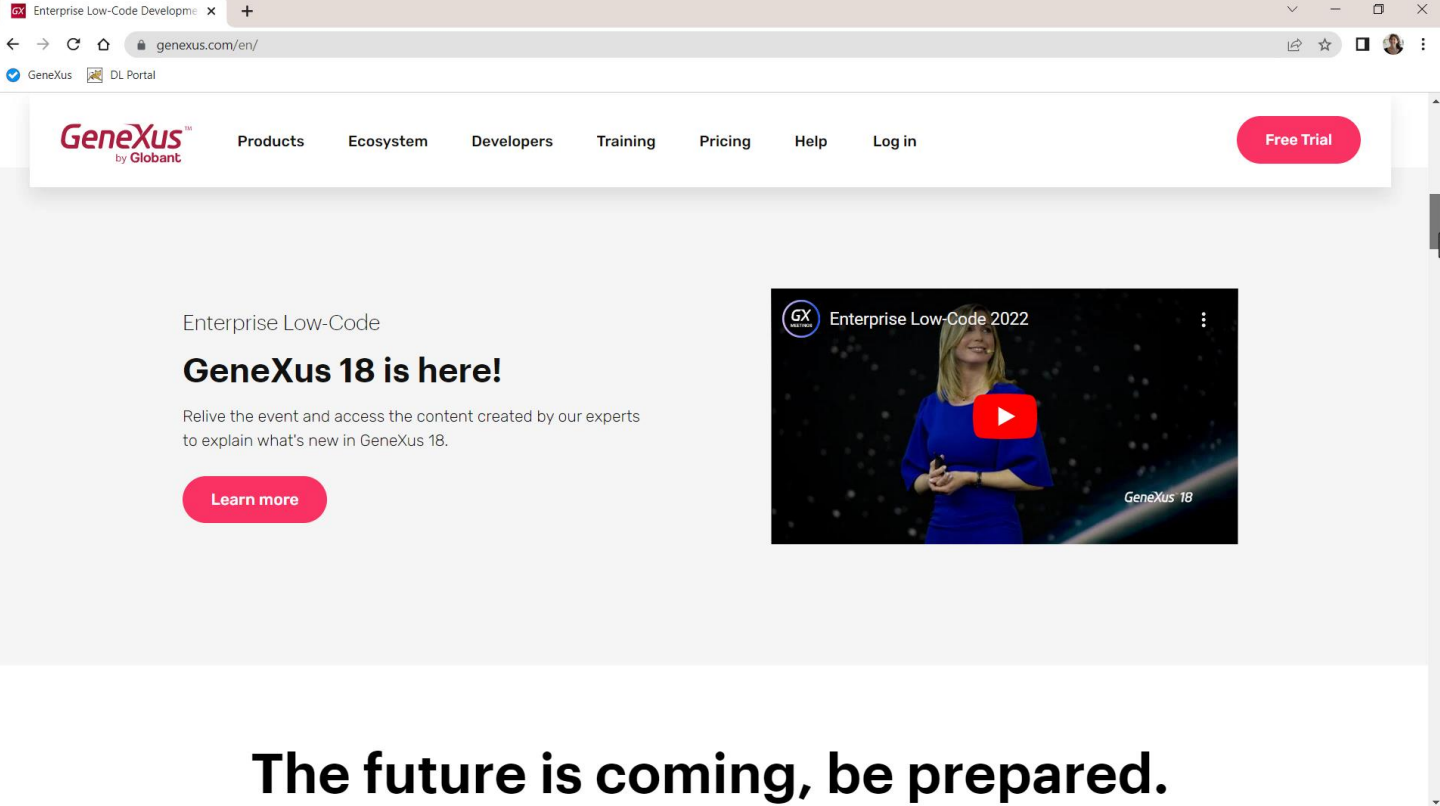


So, here we have the first set of information....



...here is another...





... and another one with a light gray background, and so on.

Enterprise Low-Code Development | genexus.com/en/ | GeneXus | DL Portal


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## Companies

These are some testimonials of the more than 9,000 companies in 50 countries that decided to embrace digital transformation and prepare for the future with GeneXus Low-Code platform.




#GeneXusStories

**Manuel Esquivel**

Head of Applications and Systems Development at Mitta

[Watch video](#)




#GeneXusStories

**Raúl G. Hinojosa**

CIO Worlds Express Cargo México

[Watch video](#)



#GeneXusStories

**Julio González**

Deputy Systems Manager at Fondo Esperanza

[Watch video](#)

If we look down here, we see that this all corresponds to a block of related information, with this repetitive pattern indicating that there are 3 subunits of information that are at the same level.

Enterprise Low-Code Development x +

genexus.com/en/

GeneXus DL Portal


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## Leading customer satisfaction


Read success stories →



**"Fast and robust solutions to address the new way of working"**

★★★★★


4.5/5



**"The ease to evolve to new technologies is one of the unique advantages of GeneXus".**

★★★★★

4.5/5



**"It's very flexible and supports a wide range of programming languages"**

★★★★★

4.7/5

<https://www.capterra.com/p/158074/GeneXus/>

Here we see another block where the user will infer a little bit the same as before. There are cognitive patterns that every user will recognize.

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GeneXusDL Portal

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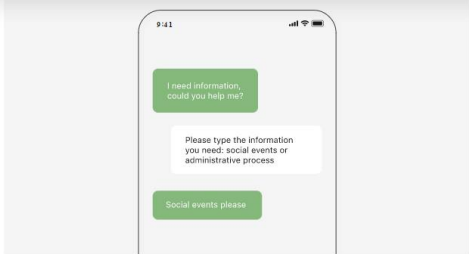
ProductsEcosystemDevelopersTrainingPricingHelpLog in

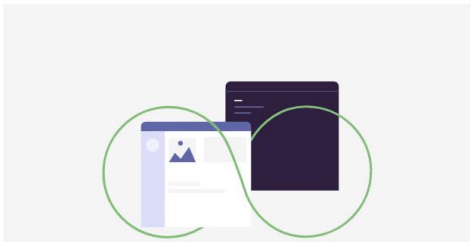
Free Trial

## Go Live!

Use an Agile methodology for development and pair it with DevOps Services like Testing, Continuous Integration, Continuous Delivery, Containers for Deployment and Monitoring Services.

**Achieve continuous integration and delivery across platforms, apps and experiences.**



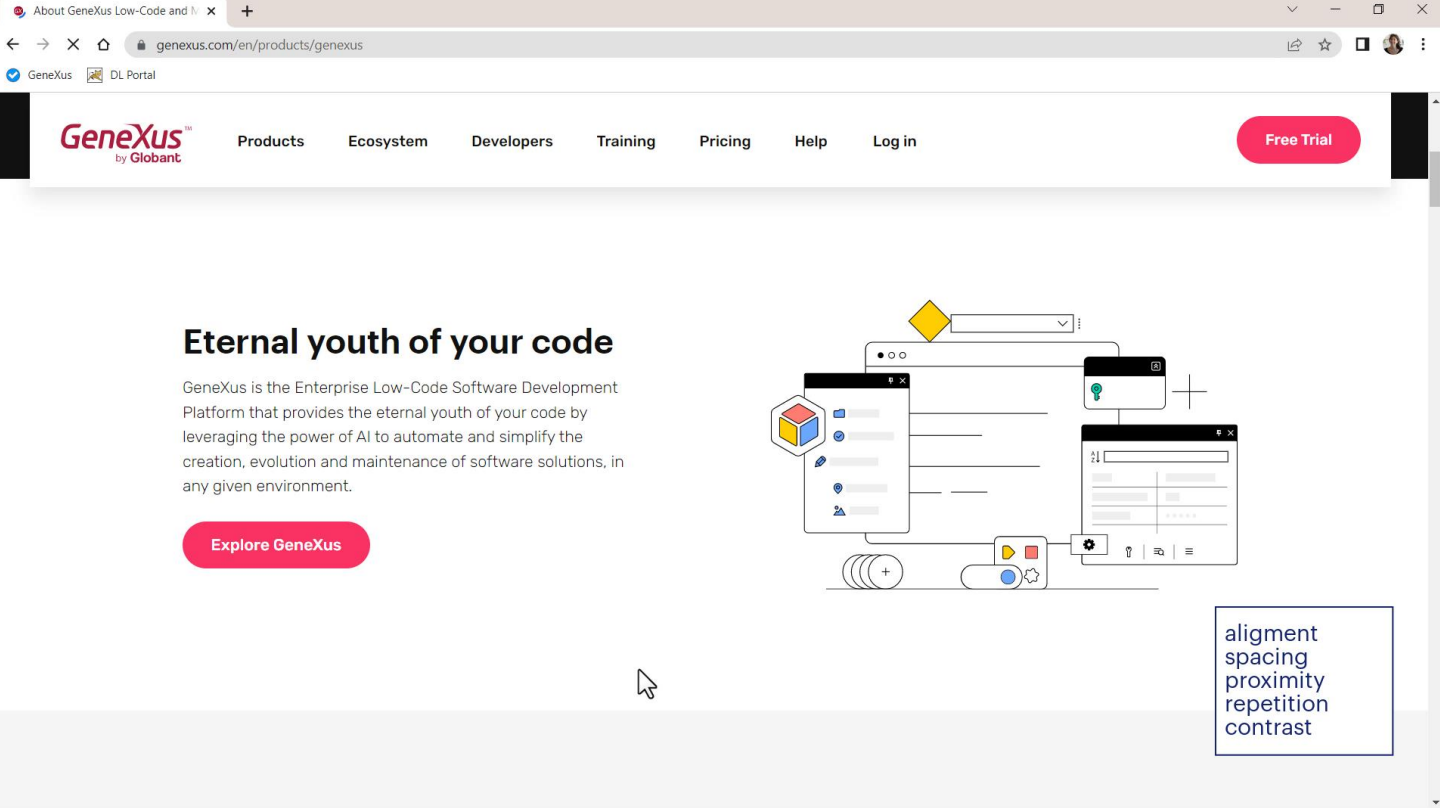


Start again

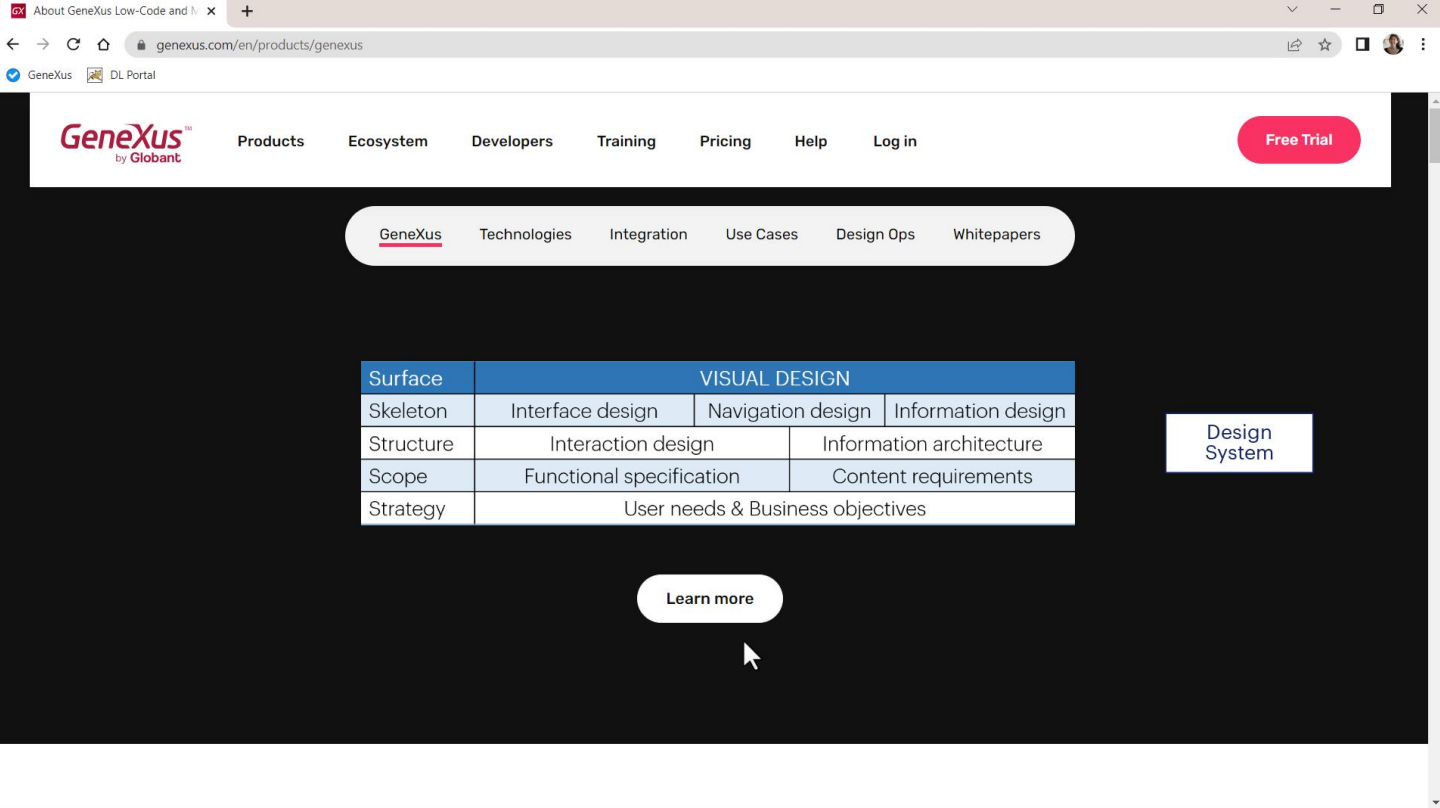
## Evolve and Maintain

Evolve and maintain your modeled applications and experiences and let GeneXus automatically refactor every technical aspect of it, to respond quicker to changes.

For example, let's look at another one: here we find another block of information, where blocks of information alternate with text on the left, an image, and then the same two things but inverted, to alternate again. Clearly this is a narrative block of information.

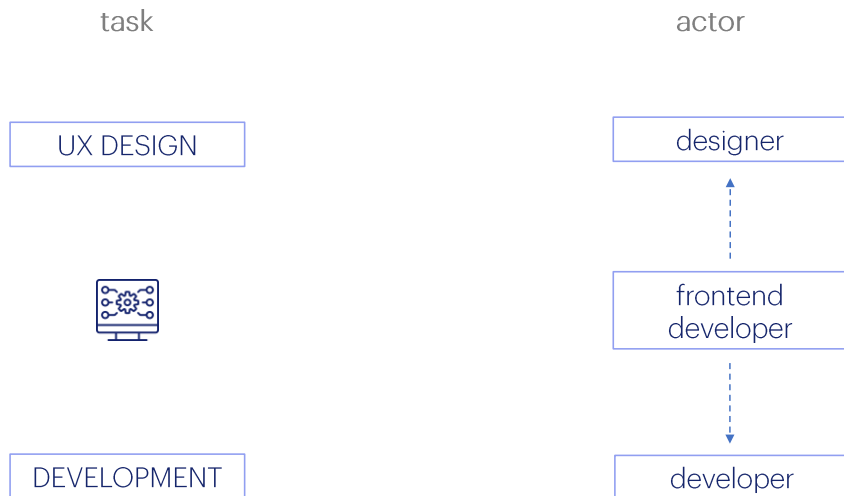


Therefore, alignment, spacing, and grouping of controls will be essential and we must know how to implement them in a layout.



Everything we've analyzed corresponds to both the design skeleton and to the visual design itself, where the choices of colors, fonts, and so on are materialized.

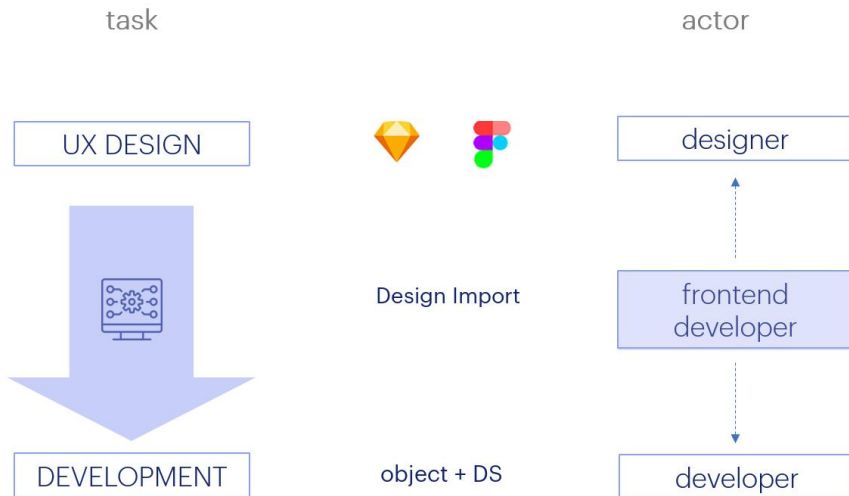
Behind a given design there is a number of fairly abstract decisions aimed at providing standardization, consistency, and ease of use. We speak of Design Systems because the design of an application or family of applications works as an interrelated system.



Until now, we have focused on a single role—the developer—who is in charge of development.

But if we look at this new task, that of user experience design, we find another role that takes the lead in this stage: the designer. He/she usually makes decisions such as the ones we have seen in the example regarding the specification of the Design System.

We would be missing the intermediary role that is the frontend developer, who is in charge of the effective and specific implementation of the design IN the application. In this case, in GeneXus using the tools provided by GeneXus to work with Design Systems.



Since we only want to see an introduction here, we will not address the ways to directly import into GeneXus the design created by the designer in his/her preferred tool, but we say that this is possible: the designer designs the screens with a tool such as Sketch or Figma and the frontend developer imports it into GeneXus, which will automatically build the objects with all the design incorporated. There the frontend developer will have minimal work to do.



DESIGN SYSTEM

UNANIMO

---

What we will do next is to see how GeneXus already provides a default Design System that we can customize: Unanimo.

Attractions

Countries

trialapps3.genexus.com/ld6c3ad4e5d6b207af3d2c6ac7a402adbe/wwattraction.aspx

GeneXusDL Portal

GeneXus

Application Name

UNANIMO

Attractions










Countries

Attractions

INSERT

ATTRACTIONS PDF

Q Name

Id	Name	Country Name	City Name	Category Name	Photo	Trips
107	<a href="#">Christ the Redemmer</a>	<a href="#">Brazil</a>	Rio De Janeiro	Monument		24 <a href="#">UPDATE</a> <a href="#">DELETE</a>
111	<a href="#">Cinque Terre</a>	<a href="#">Italy</a>	Liguria	Tourist site		0 <a href="#">UPDATE</a> <a href="#">DELETE</a>
106	<a href="#">Eiffel Tower</a>	<a href="#">France</a>	Paris	Monument		24 <a href="#">UPDATE</a> <a href="#">DELETE</a>
110	<a href="#">Forbidden city</a>	<a href="#">China</a>	Beijing	Tourist site		0 <a href="#">UPDATE</a> <a href="#">DELETE</a>
112	<a href="#">Glenfinnan Viaduct</a>	<a href="#">Scotland</a>	Glenfinnan	Tourist site		0 <a href="#">UPDATE</a> <a href="#">DELETE</a>
113	<a href="#">London Towers</a>	<a href="#">England</a>	London	Monument		1 <a href="#">UPDATE</a> <a href="#">DELETE</a>
116	<a href="#">Long Bridges</a>	<a href="#">United States</a>	San Francisco	Tourist site		0 <a href="#">UPDATE</a> <a href="#">DELETE</a>
104	<a href="#">Louvre Museum</a>	<a href="#">France</a>	Paris	Museum		1 <a href="#">UPDATE</a> <a href="#">DELETE</a>
109	<a href="#">Matisse Museum</a>	<a href="#">France</a>	Nice	Museum		13 <a href="#">UPDATE</a> <a href="#">DELETE</a>

We have seen it in action all the time; for example, let's take a close look at the running Work With. In the central area of the page, there is information from the attractions Web panel created by the pattern, with uniform criteria in relation to the countries Work With.

Attractions

Countries

trialapps3.genexus.com/ld6c3ad4e5d6b207af3d2c6ac7a402adbe/wwattraction.aspx

GeneXusDL Portal

GeneXus

Application Name

Attractions

INSERT

ATTRACTIONS PDF

Attractions

Countries

trialapps3.genexus.com/ld6c3ad4e5d6b207af3d2c6ac7a402adbe/wwcountry.aspx

GeneXusDL Portal

GeneXus

Application Name

UNANIMO

Attractions

Countries

Countries

INSERT

	Id	Name	Last Line				
	1	Brazil	2	UPDATE	DELETE		
	3	China	3	UPDATE	DELETE		
	7	England	1	UPDATE	DELETE		
	2	France	2	UPDATE	DELETE		
	5	Italy	2	UPDATE	DELETE		
	6	Scotland	1	UPDATE	DELETE		
	4	United States	3	UPDATE	DELETE		
104	Louvre Museum	France	Paris	Museum	1	UPDATE	DELETE
109	Matisse Museum	France	Nice	Museum	13	UPDATE	DELETE

Note, for example, that in both cases a search field is available, where information is filtered by name: here for attractions... and here for countries. Both fields look identical, and they behave in the same way.

Countries x Countries x +

trialapps3.genexus.com/ld6c3ad4e5d6b207af3d2c6ac7a402adbe/wwcountry.aspx

GeneXus™

Travel Agency

UNANIMO

Attractions

Countries

### Countries

INSERT

Q Name

Id	Name	Last Line
1	<a href="#">Brazil</a>	2 UPDATE DELETE
3	<a href="#">China</a>	3 UPDATE DELETE
7	<a href="#">England</a>	1 UPDATE DELETE
2	<a href="#">France</a>	2 UPDATE DELETE
5	<a href="#">Italy</a>	2 UPDATE DELETE
6	<a href="#">Scotland</a>	1 UPDATE DELETE
4	<a href="#">United States</a>	3 UPDATE DELETE

https://trialapps3.genexus.com/ld6c3ad4e5d6b207af3d2c6ac7a402adbe/country.aspx?Mode...

We can also notice another similarity: in both screens the same actions are offered to insert, update, and delete, with the same appearance.

Attractions Countries

trialapps3.genexus.com/ld6c3ad4e5d6b207af3d2c6ac7a402adbe/wwattraction.aspx

GeneXus™

# Travel Agency

UNANIMO










Attractions

Countries

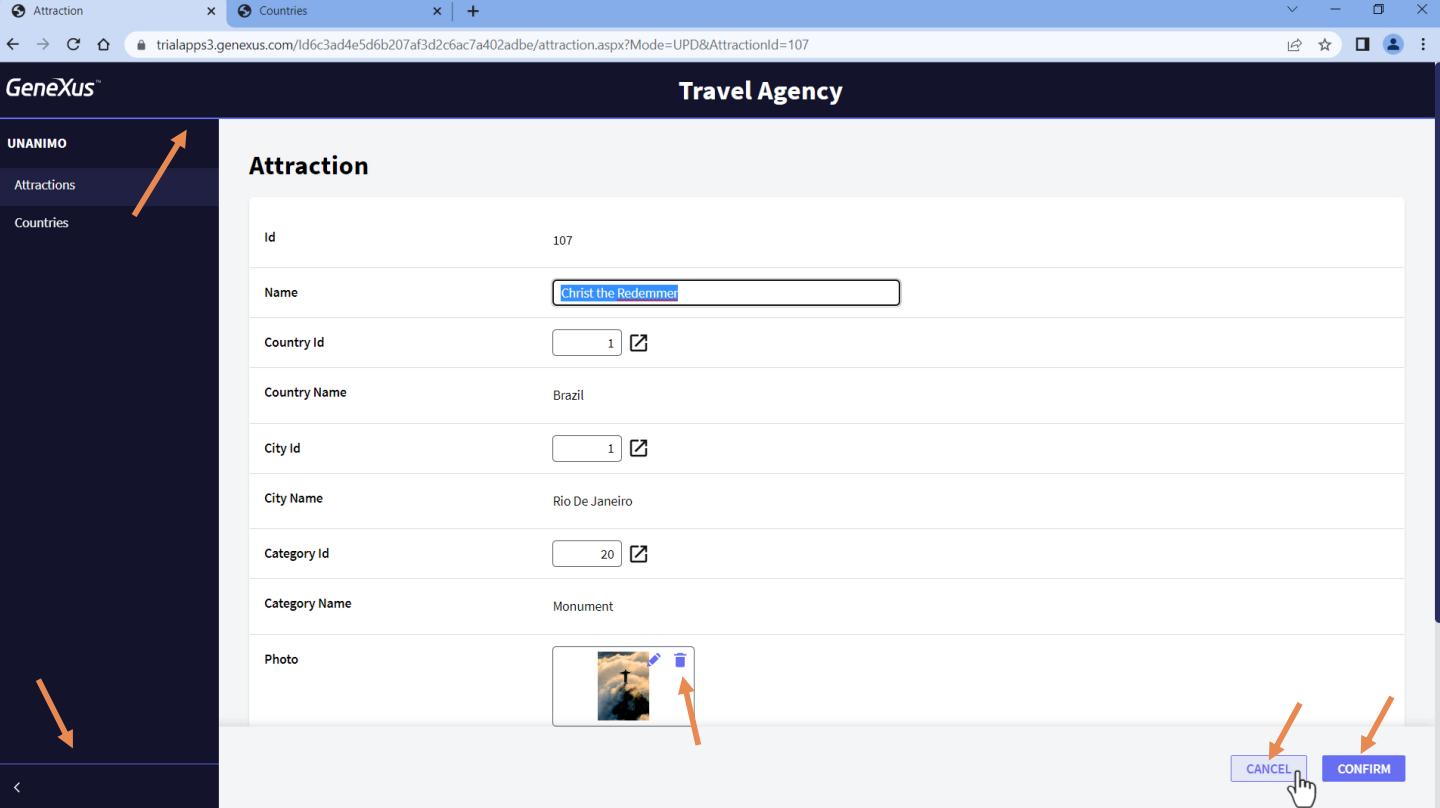
## Attractions

INSERT ATTRACTIONS PDF

Q Name

Id	Name	Country Name	City Name	Category Name	Photo	Trips		
107	<a href="#">Christ the Redemmer</a>	<a href="#">Brazil</a>	Rio De Janeiro	Monument		24	<a href="#">UPDATE</a>	<a href="#">DELETE</a>
111	<a href="#">Cinque Terre</a>	<a href="#">Italy</a>	Liguria	Tourist site		0	<a href="#">UPDATE</a>	<a href="#">DELETE</a>
106	<a href="#">Eiffel Tower</a>	<a href="#">France</a>	Paris	Monument		24	<a href="#">UPDATE</a>	<a href="#">DELETE</a>
110	<a href="#">Forbidden city</a>	<a href="#">China</a>	Beijing	Tourist site		0	<a href="#">UPDATE</a>	<a href="#">DELETE</a>
112	<a href="#">Glenfinnan Viaduct</a>	<a href="#">Scotland</a>	Glenfinnan	Tourist site		0	<a href="#">UPDATE</a>	<a href="#">DELETE</a>
113	<a href="#">London Towers</a>	<a href="#">England</a>	London	Monument		1	<a href="#">UPDATE</a>	<a href="#">DELETE</a>
116	<a href="#">Long Bridges</a>	<a href="#">United States</a>	San Francisco	Tourist site		0	<a href="#">UPDATE</a>	<a href="#">DELETE</a>
104	<a href="#">Louvre Museum</a>	<a href="#">France</a>	Paris	Museum		1	<a href="#">UPDATE</a>	<a href="#">DELETE</a>
109	<a href="#">Matisse Museum</a>	<a href="#">France</a>	Nice	Museum		13	<a href="#">UPDATE</a>	<a href="#">DELETE</a>

Here we see the same 3 actions, and we had also added another one, outside the grid, to invoke a PDF list. However, note that it is less highlighted than the Insert button. It is a more subtle button. That is a design decision.



If we go to the transaction to update this attraction we can also see that the Confirm button is the relevant one, and the Cancel button is more subtle.

The actions are displayed with a predominant color, which is also used for other things.

Christ the Redemmer x Countries x

trialapps3.genexus.com/ld6c3ad4e5d6b207af3d2c6ac7a402adbe/viewattraction.aspx?AttractionId=107&TabCode=

GeneXus™ Travel Agency

UNANIMO

Attractions

Countries

< ATTRACTIONS

Christ the Redemmer

General Supplier Trip

Id 107

Name Christ the Redemmer

Country Id 1

Country Name [Brazil](#)


City Id 1

City Name Rio De Janeiro

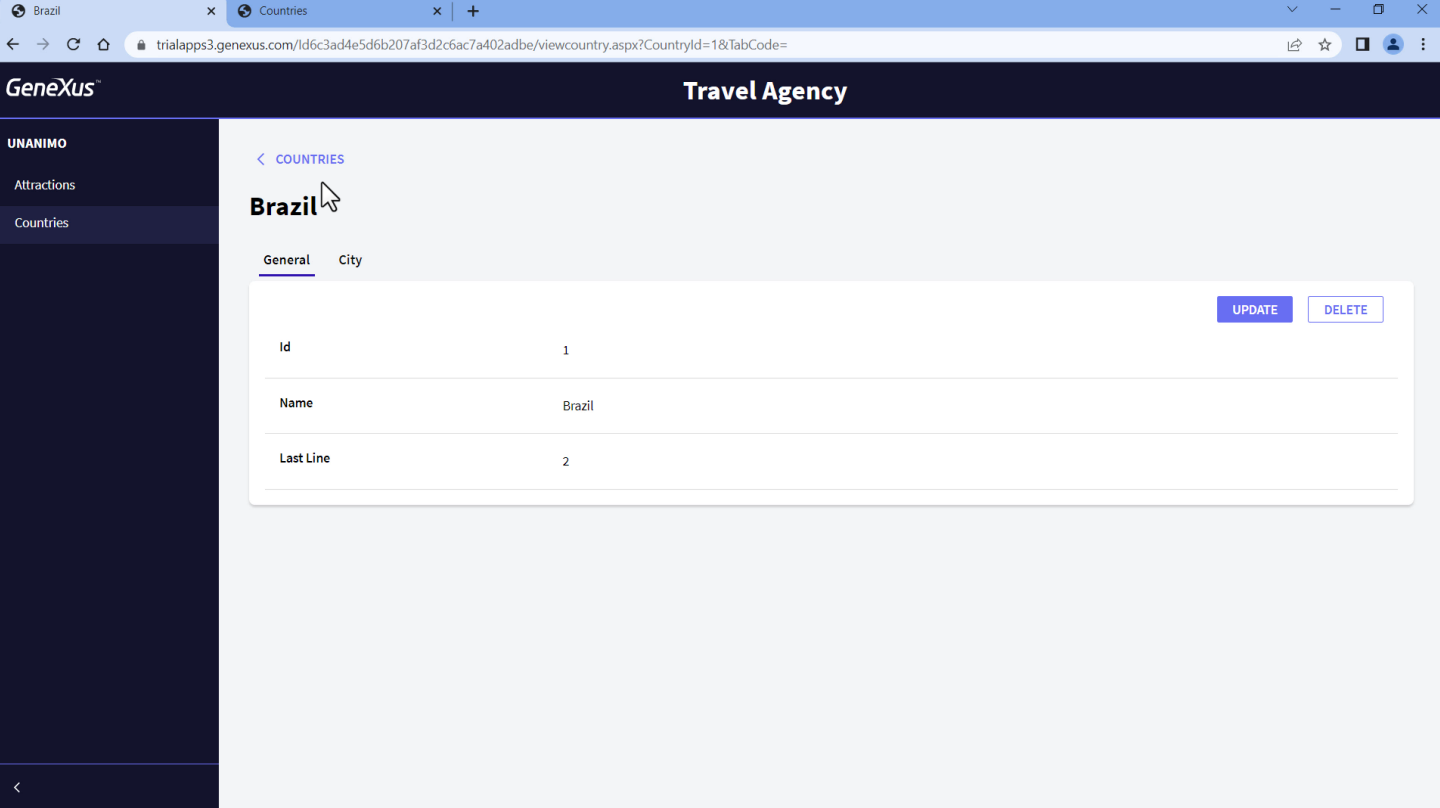
Category Id 20

Category Name Monument

UPDATE DELETE



Now let's notice that when we navigate deeper and choose to see one of the attractions, it offers the option to go back to the parent.



And this navigation is also a consistent pattern. Throughout the application we will expect this pattern of returning to the screen from which we arrived at the current one.

Now let's notice that all screens have text that clearly indicates where we are. Here we are in Brazil's information screen. Let's take a look at its appearance.



Countries

Countries

trialapps3.genexus.com/ld6c3ad4e5d6b207af3d2c6ac7a402adbe/wwcountry.aspx

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Travel Agency

UNANIMO

Attractions

Countries

Countries

INSERT

Q Name

Id		Name	Last Line		
1		<a href="#">Brazil</a>	2	UPDATE	DELETE
3		<a href="#">China</a>	3	UPDATE	DELETE
7		<a href="#">England</a>	1	UPDATE	DELETE
2		<a href="#">France</a>	2	UPDATE	DELETE
5		<a href="#">Italy</a>	2	UPDATE	DELETE
6		<a href="#">Scotland</a>	1	UPDATE	DELETE
4		<a href="#">United States</a>	3	UPDATE	DELETE

Here we are in Countries, with the same appearance.

Attractions

Countries

trialapps3.genexus.com/ld6c3ad4e5d6b207af3d2c6ac7a402adbe/wwattraction.aspx

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Travel Agency

UNANIMO

Attractions










Countries

Attractions

INSERT

ATTRACTIONS PDF

Q Name

Id	Name	Country Name	City Name	Category Name	Photo	Trips	
107	<a href="#">Christ the Redemmer</a>	<a href="#">Brazil</a>	Rio De Janeiro	Monument		24	<a href="#">UPDATE</a> <a href="#">DELETE</a>
111	<a href="#">Cinque Terre</a>	<a href="#">Italy</a>	Liguria	Tourist site		0	<a href="#">UPDATE</a> <a href="#">DELETE</a>
106	<a href="#">Eiffel Tower</a>	<a href="#">France</a>	Paris	Monument		24	<a href="#">UPDATE</a> <a href="#">DELETE</a>
110	<a href="#">Forbidden city</a>	<a href="#">China</a>	Beijing	Tourist site		0	<a href="#">UPDATE</a> <a href="#">DELETE</a>
112	<a href="#">Glenfinnan Viaduct</a>	<a href="#">Scotland</a>	Glenfinnan	Tourist site		0	<a href="#">UPDATE</a> <a href="#">DELETE</a>
113	<a href="#">London Towers</a>	<a href="#">England</a>	London	Monument		1	<a href="#">UPDATE</a> <a href="#">DELETE</a>
116	<a href="#">Long Bridges</a>	<a href="#">United States</a>	San Francisco	Tourist site		0	<a href="#">UPDATE</a> <a href="#">DELETE</a>
104	<a href="#">Louvre Museum</a>	<a href="#">France</a>	Paris	Museum		1	<a href="#">UPDATE</a> <a href="#">DELETE</a>
109	<a href="#">Matisse Museum</a>	<a href="#">France</a>	Nice	Museum		13	<a href="#">UPDATE</a> <a href="#">DELETE</a>

Here in Attractions. And if we choose to update one...

Attraction

Countries

trialapps3.genexus.com/Id6c3ad4e5d6b207af3d2c6ac7a402adbe/attraction.aspx?Mode=UPD&AttractionId=107

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Travel Agency

UNANIMO

Attractions

Countries

### Attraction

Id	107
Name	<input type="text" value="Christ the Redeemer"/>
Country Id	<input type="text" value="1"/> 
Country Name	Brazil
City Id	<input type="text" value="1"/> 
City Name	Rio De Janeiro
Category Id	<input type="text" value="20"/> 
Category Name	Monument
Photo	  

CANCEL CONFIRM

...here we are in the Attraction transaction.

The question that comes up: where has the appearance of these texts been defined (that is, their font, font size, color)? And so, what if we want to change it, for example, to red? How do we go about it?

Travel\_Agency - GeneXus Trial

File Edit View Layout Insert Build Knowledge Manager Window Tools Test Help

CloudNET Release Tests Build Build

KB Explorer

Travel\_Agency

Root Module

General

Tests

Airline

Airport

Attraction

Associated Tables

Attraction\_DataProvider

WorkWithWebAttraction

Attraction\_DP

AttractionList

AttractionsReport

AttractionsByName

AttractionsByNameAndCountry

AttractionsPerCategory

AttractionWithoutParameters

CategoriesAndTheirAttractionsList

CategoriesInAttractions

Category

Category\_DP

CountriesCollection

CountriesRanking

CountriesWithMoreThan2Attractions

Country

Customer

Diagram1

Diagram2

Diagram3

EnterAttractionsFilter

Flight

FlightArrivalAirport

FlightDepartureAirport

Gx00A0

Launchpad X Attraction X

Web Layout Rules Events Variables Help Documentation Patterns

FormButtons Confirm Cancel Delete

MainTable TitleContainer Title

Attraction

<ErrorView>ErrorViewer>

<Toolbar>

Id AttractionId

Name AttractionName

Country Id CountryId

Country Name CountryName

City Id CityId

City Name CityName

Category Id CategoryId

Category Name CategoryName

Output

Show: Build

Autoscroll

Run WAttraction Without Building started

Execution started

... waiting for server ...

Properties

General

Filter

textblock: Title

Control Name	Title
Caption	Attraction
On Click Event	
Return On Click	False

Appearance

Class	heading-01
Format	Text
Tooltip Text	

Cell information

Cell Control Name	
Cell Class	
Horizontal Alignment	Default
Vertical Alignment	Default

Row information

Row Height	
Row Class	

Class

Theme class for the attribute.

Properties Toolbox Tests Explorer Responsive Sizes

\\Users\cferandez\Desktop\GX18Trial\Travel\_Agency

Let's edit the transaction layout, and let's see the text block that implements the text that we see at runtime. If we look at its properties this one appears: Class. The class with this name has been associated with it. It is here, in this class, where most of the design properties will be defined.

Travel\_Agency - GeneXus Trial

File Edit View Layout Insert Build Knowledge Manager Window Tools Test Help

CloudNET Release Tests Build Build

KB Explorer

Travel\_Agency

Root Module

- General
- Tests
- Airline
- Airport
- Attraction
  - Associated Tables
    - Attraction\_DataProvider
    - WorkWithWebAttraction
      - AttractionAttraction1WC
      - AttractionAttraction1WC
      - AttractionGeneral
      - ViewAttraction
      - WWAttraction
    - Attraction\_DP
    - AttractionList
    - AttractionReport
    - AttractionsByName
    - AttractionsByAndCountry
    - AttractionsPerCategory
    - AttractionWithoutParameters
    - CategoriesAndTheirAttractionsList
    - CategoriesInAttractions
    - Category
      - Category\_DP
      - CountriesCollection
      - CountriesRanking
      - CountriesWithMoreThan2Attractions
    - Country
    - Customer
    - Diagram1
    - Diagram2
    - Diagram3

Web Layout Rules Events Conditions Variables Help Documentation

Actions Insert Attractions PDF

MainTable GridTable TableTop TitleText

Attractions

Actions &AttractionName Show Filters

TitleText

ErrorViewer: ErrorViewer

GRID

Id	Name	Country Name	City Name	Category Name	Photo	Trips	&trips	&Update	&Delete
AttractionId	AttractionName	CountryName	CityName	CategoryName					

Output

Show: Build

Autoscroll

Properties

General

Filter

textblock: TitleText

Control Name	TitleText
Caption	Attractions
On Click Event	
Return On Click	False

Appearance

Class	heading-01
Format	Text
Tooltip Text	

Cell information

Cell Control Name	
Cell Class	ww_title-cell
Horizontal Alignment	Default
Vertical Alignment	Default

Layout Behavior

Flex Grow	1
Flex Shrink	1
Align Self	Auto
Width	
Height	
Min Width	
Min Height	

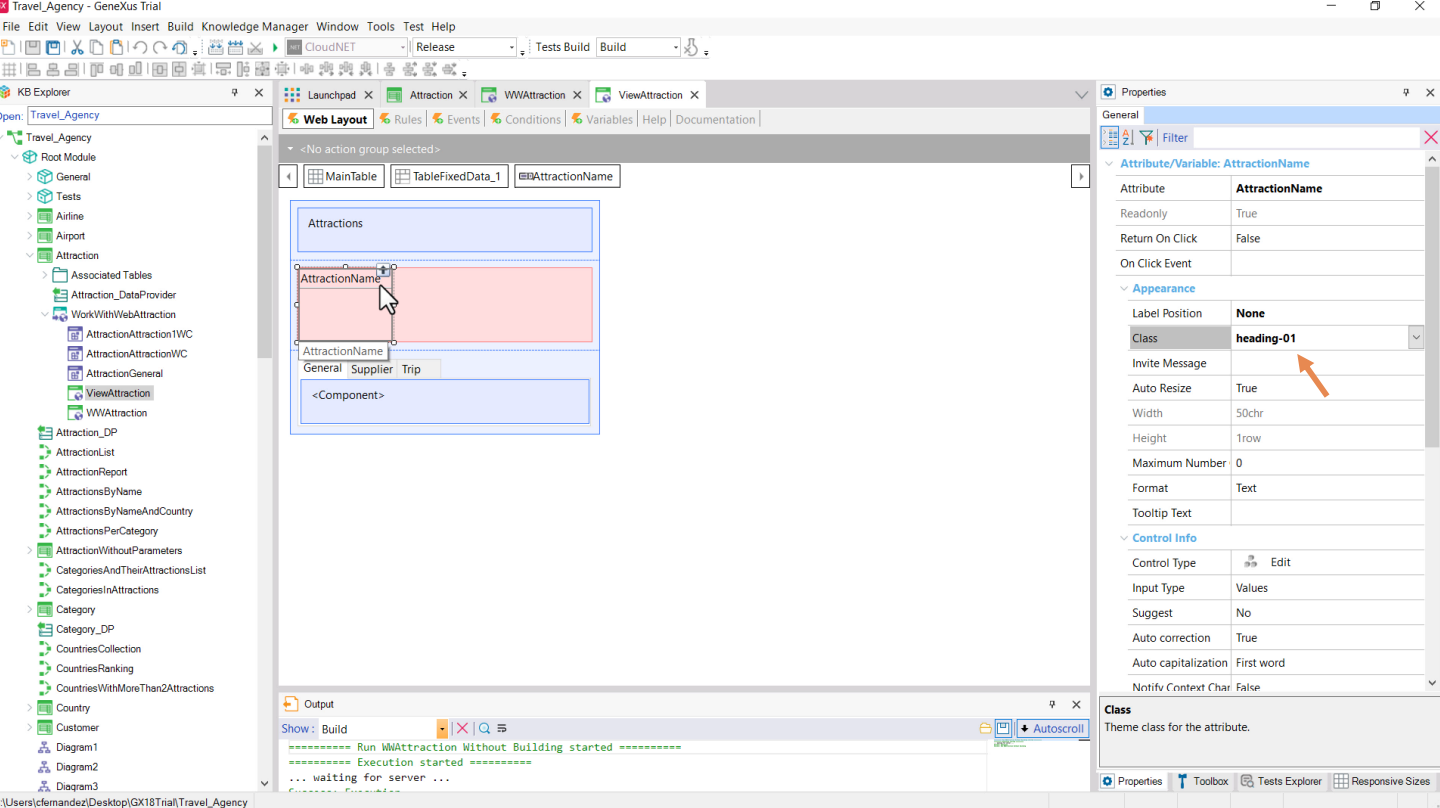
Class

Theme class for the attribute.

Properties Toolbox Tests Explorer Responsive Sizes

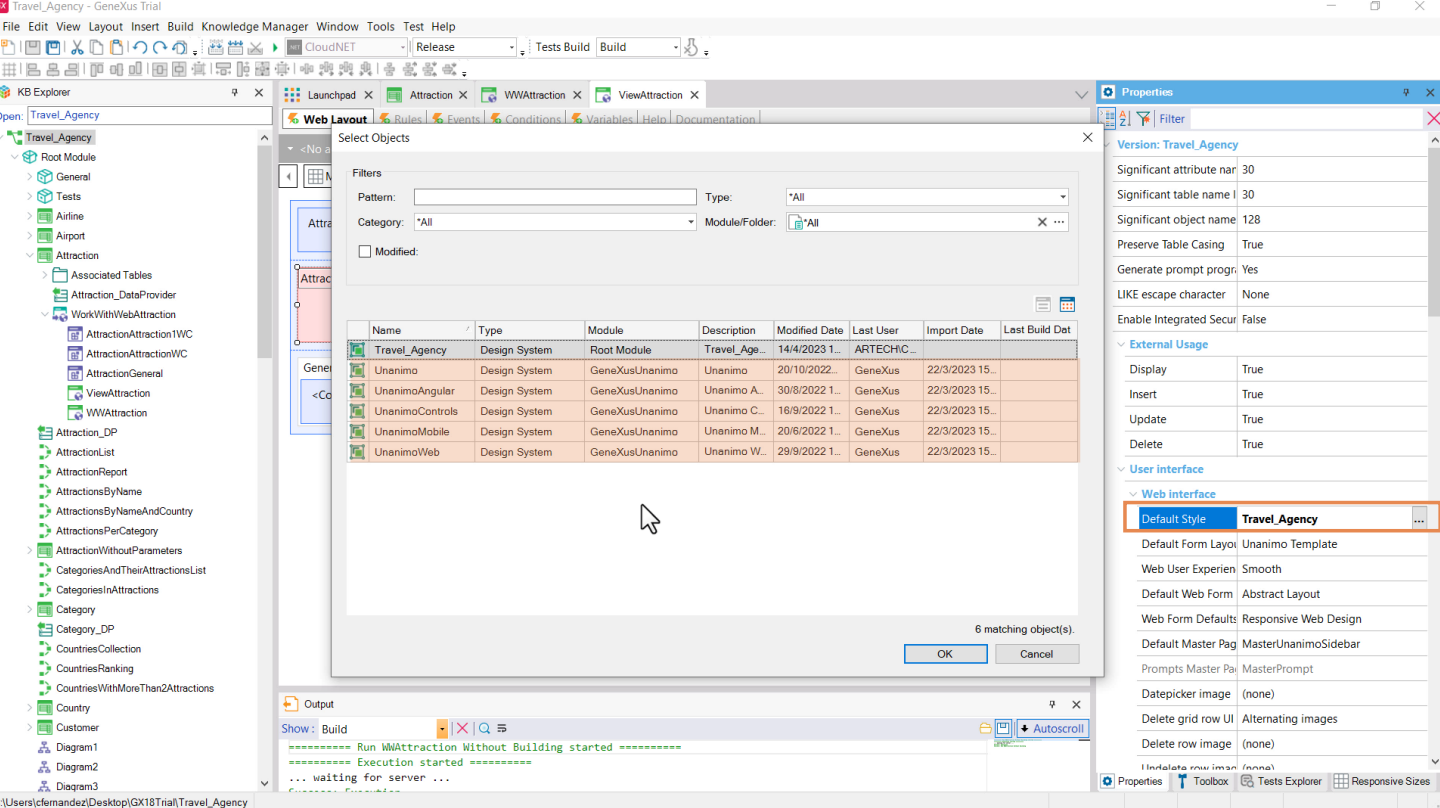
\\Users\\clemandez\\Desktop\\GX18Trial\\Travel\_Agency

If we go to see the text in the attractions Work With, it is also a text block control, which also has the same class assigned to it. It also has a class assigned for the cell where the control is located in the table. For now, we will not pay attention to it.



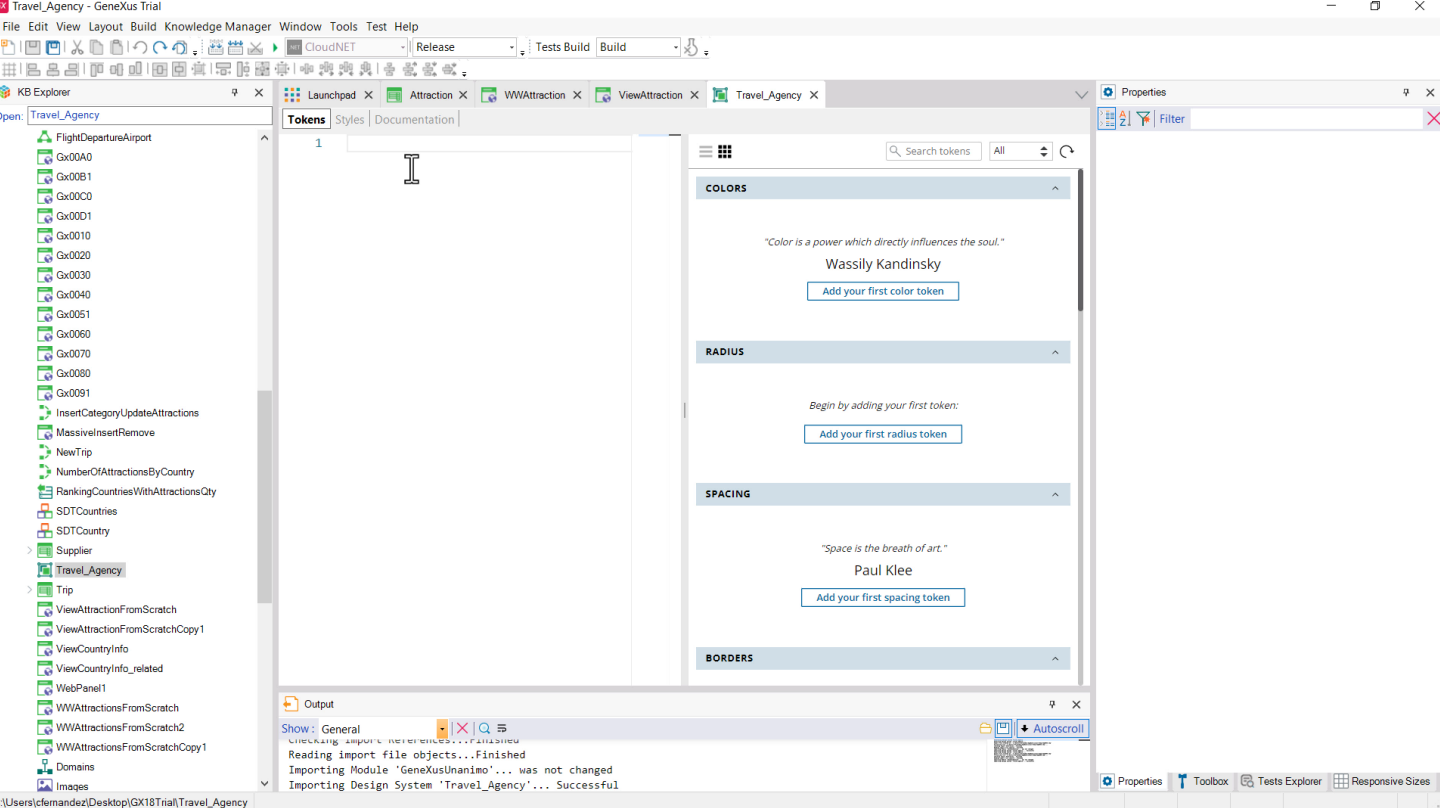
If we now see the view of an attraction, it is the `AttractionName` attribute control that marks the page where we are, and it is not a coincidence that it has this class associated with it.

The question now is this: where are the style definitions of that class located?



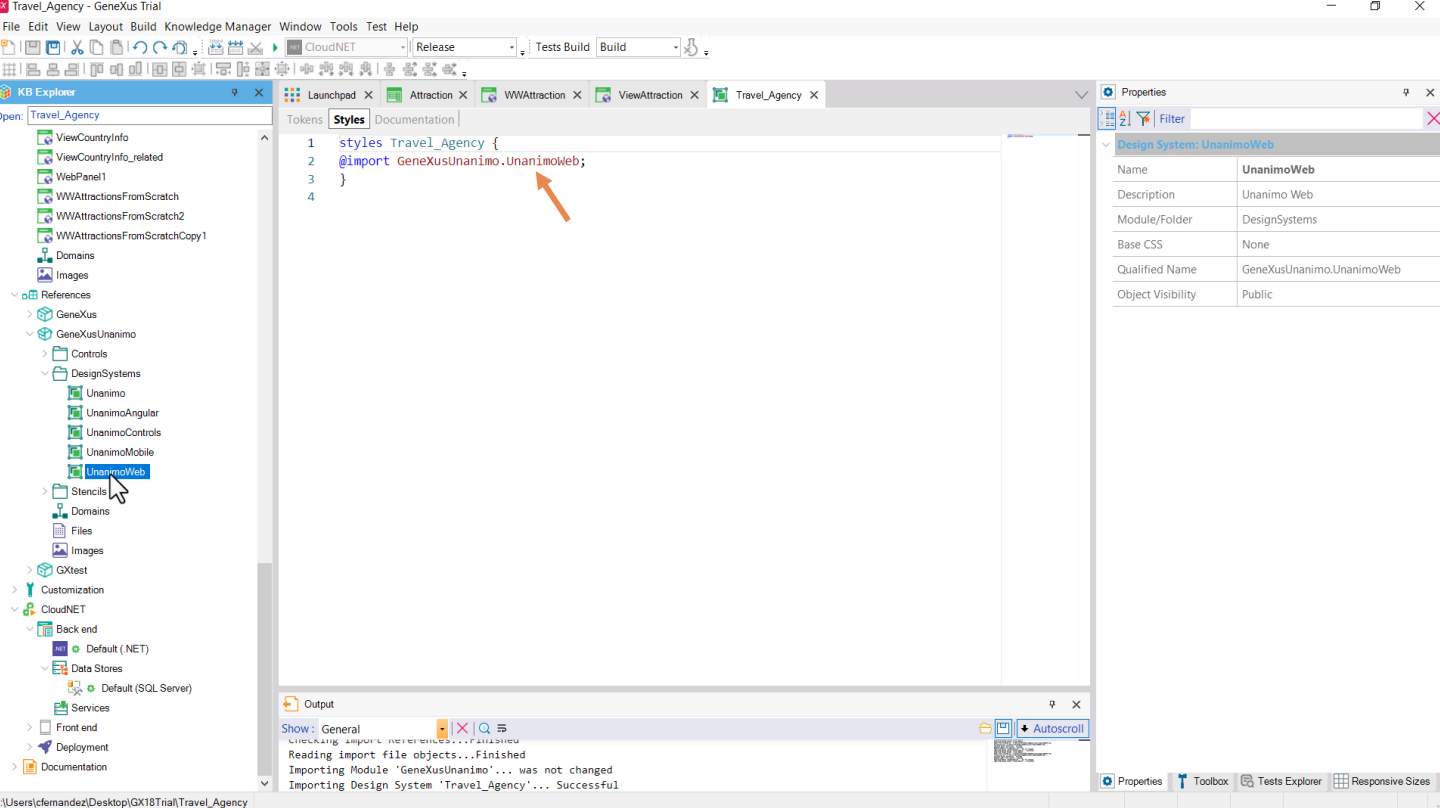
If we go to see the properties of the version of the KB we are working with, among them we see one, Default Style. It has an associated object, which happens to have the same name as the KB. When we open the window to make a selection, we see that the types of objects of the KB that could be specified here are of the Design System type. In our KB we have one that is created by default in the root module, and that we can modify: it is the default one, precisely. In addition, there are these other ones in the GeneXusUnanimo module that come by default in every KB we create, and will be read-only objects: that is to say, they can be used but not modified.

Let's look for our default object, the Design System that will govern most of the design of the controls and layouts of our KB. We open it.



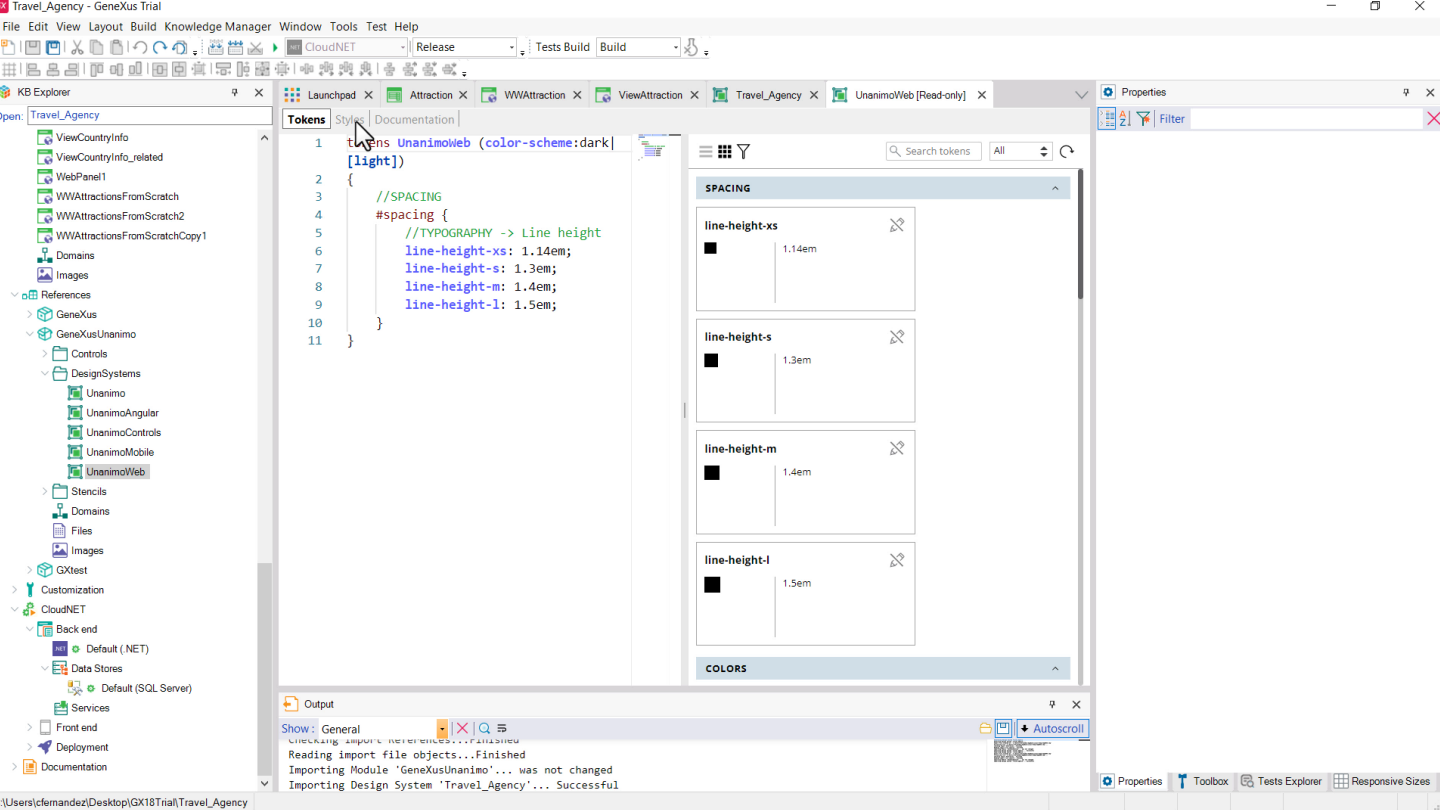
We have this Tokens tab, and later we will see what it is used for...





...and this other one, Styles, which is the most relevant one. It seems to be empty, but it is not. Note that it is asking to import everything that comes from this other Design System object, which is one of the Design System objects that come with every KB and that implement the Unanimo Design System.

It can be found in the GeneXusUnanimo module, under the References node.



Here the Tokens section is no longer empty.

Travel\_Agency - GeneXus Trial

File Edit View Layout Build Knowledge Manager Window Tools Test Help

CloudNET Release Tests Build Build

KB Explorer

Open: Travel\_Agency

- ViewCountryInfo
- ViewCountryInfo\_related
- WebPanel1
- WWAttractionsFromScratch
- WWAttractionsFromScratch2
- WWAttractionsFromScratchCopy1
- Domains
- Images
- References
  - GeneXus
  - GeneXusUnanimio
    - Controls
    - DesignSystems
      - Unanimio
      - UnanimioAngular
      - UnanimioControls
      - UnanimioMobile
      - UnanimioWeb
  - Stencils
  - Domains
  - Files
  - Images
  - GXtest
  - Customization
  - CloudNET
    - Back end
      - Default (.NET)
      - Data Stores
        - Default (SQL Server)
    - Services
    - Front end
    - Deployment
    - Documentation

Tokens Styles Documentation

```
1 styles UnanimioWeb
2 {
3   @import GeneXusUnanimio.Unanimio;
4   @import GeneXusUnanimio.UnanimioControls;
5
6   #region GENERAL
7     //hide submit button in iPhone/iPad
8     input [title="submit"] [disabled] {
9       -webkit-appearance: none;
10    }
11
12    html, body {
13      background-color: $colors.alt-surface !important;
14      margin: 0px;
15      font-family: $fonts.primary-regular,Helvetica,Arial,sans-serif;
16      font-size: $fontSizes.s;
17      line-height: 1.42857143; //bootstrap-based value
18      height: 100%;
19      scrollbar-width: thin;
20      scrollbar-color: $colors.secondary-active $colors.gray01;
21    }
22
23    1 reference
24    .MainContainer {
25      padding-right: 15px;
26      padding-left: 15px;
27      margin-right: auto;
28      margin-left: auto;
29    }
30
31    0 references
32    .gx-ajax-error {
33      width: 100%;
34      background-color: $colors.error-light;
35    }
36  }
```

heading-01 class? → Travel\_Agency

```
graph TD
    Travel_Agency --> UnanimioWeb
    UnanimioWeb --> Unanimio
    UnanimioWeb --> UnanimioControls
```

Output

Show: General

Checking imports...Finished

Reading import file objects...Finished

Importing Module 'GeneXusUnanimio'... was not changed

Importing Design System 'Travel\_Agency'... Successful

Properties | Filter

Properties | Toolbox | Tests Explorer | Responsive Sizes

\\Users\\cfernandez\\Desktop\\GX18Trial\\Travel\_Agency

And the styles section is much less so. This is where the classes that are later associated with the controls are defined. We see that this DSO (Design System Object) is not starting from scratch either. It is importing all the definitions of these two. Therefore, we have the DSO of our KB built from this DSO tree.

We are looking for the characteristics of the heading-01 class....

Travel\_Agency - GeneXus Trial

File Edit View Layout Build Knowledge Manager Window Tools Test Help

CloudNET Release Tests Build Build

KB Explorer

Open: Travel\_Agency

- ViewCountryInfo
- ViewCountryInfo\_related
- WebPanel1
- WWAttractionsFromScratch
- WWAttractionsFromScratch2
- WWAttractionsFromScratchCopy1
- Domains
- Images
- References
- GeneXus
- GeneXusUnanimo
- Controls
- DesignSystems
- Unanimo
- UnanimoAngular
- UnanimoControls
- UnanimoMobile
- UnanimoWeb
- Stencils
- Domains
- Files
- Images
- GXtest
- Customization
- CloudNET
- Back end
  - Default (NET)
  - Data Stores
- Services
  - Default (SQL Server)
- Front end
- Deployment
- Documentation

Tokens Styles Documentation

```
83      gx-button-disabled-clas
84    }
85
86    //BUTTON ROUNDED
87    .Button.Rounded {
88      @include button-rounded;
89      gx-button-hovered-class: button-rounded--hover;
90      gx-button-focused-class: button-rounded--focused;
91      gx-button-highlighted-class: button-rounded--active;
92      gx-button-disabled-class: button-rounded--disabled;
93    }
94    #endregion
95
96    #region Textblock
97      0 references
98      .heading-01 {
99        display: inline-block;
100        font-family: $fonts.primary-bold;
101        font-size: $fontSizes.xl;
102        color: $colors.on-background;
103        letter-spacing: 0.25px;
104        line-height: 32px;
105      }
106      0 references
107      .heading-02 {
108        @include heading-01;
109        font-size: $fontSizes.l;
110        letter-spacing: 0.6px;
111        line-height: 18px;
112      }
113    }
```

Output

Show: General

Checking imports...Finished

Reading import file objects...Finished

Importing Module 'GeneXusUnanimo'... was not changed

Importing Design System 'Travel\_Agency'... Successful

Properties

Filter

Travel\_Agency

heading-01 class → UnanimoWeb

Unanimo UnanimoControls

Properties

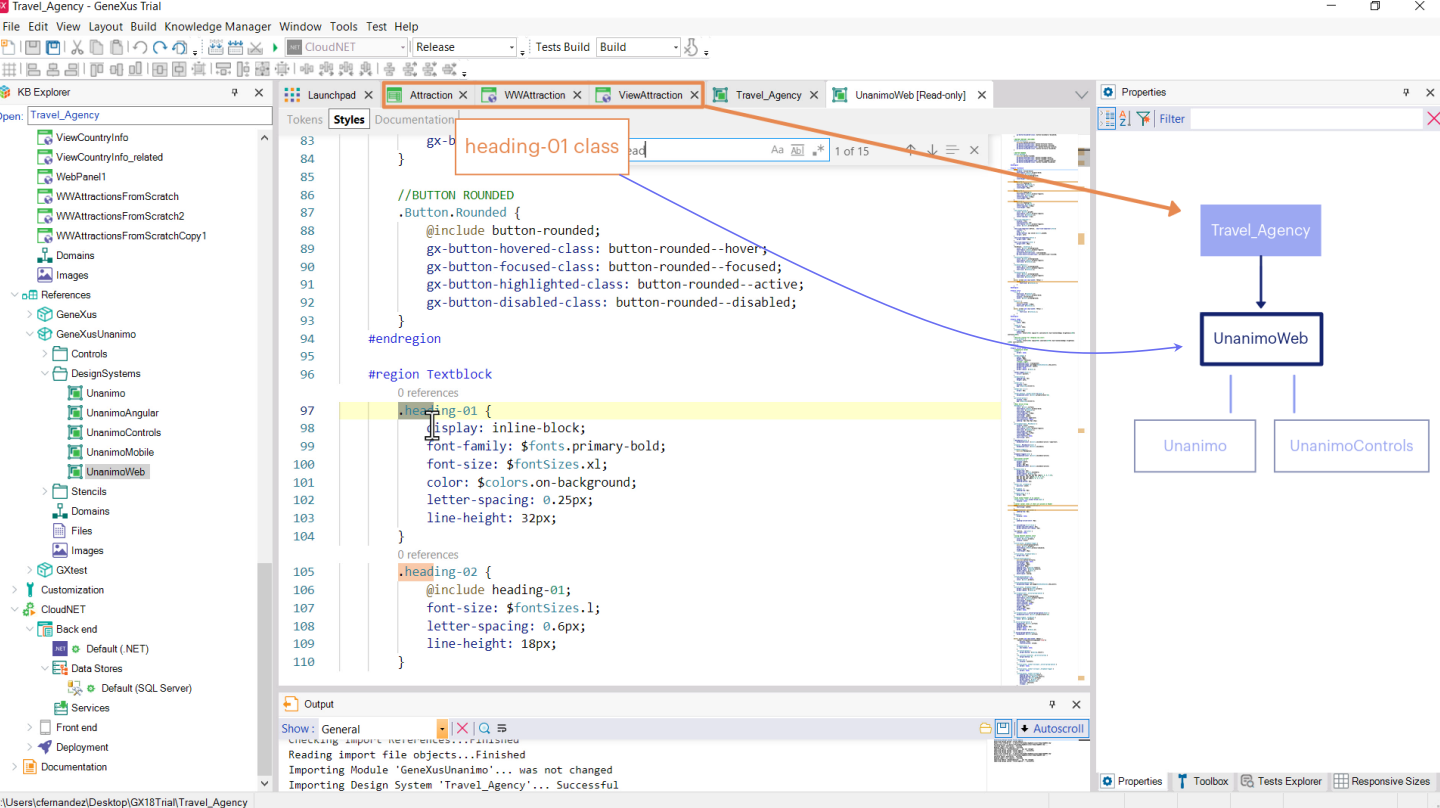
Toolbox

Tests Explorer

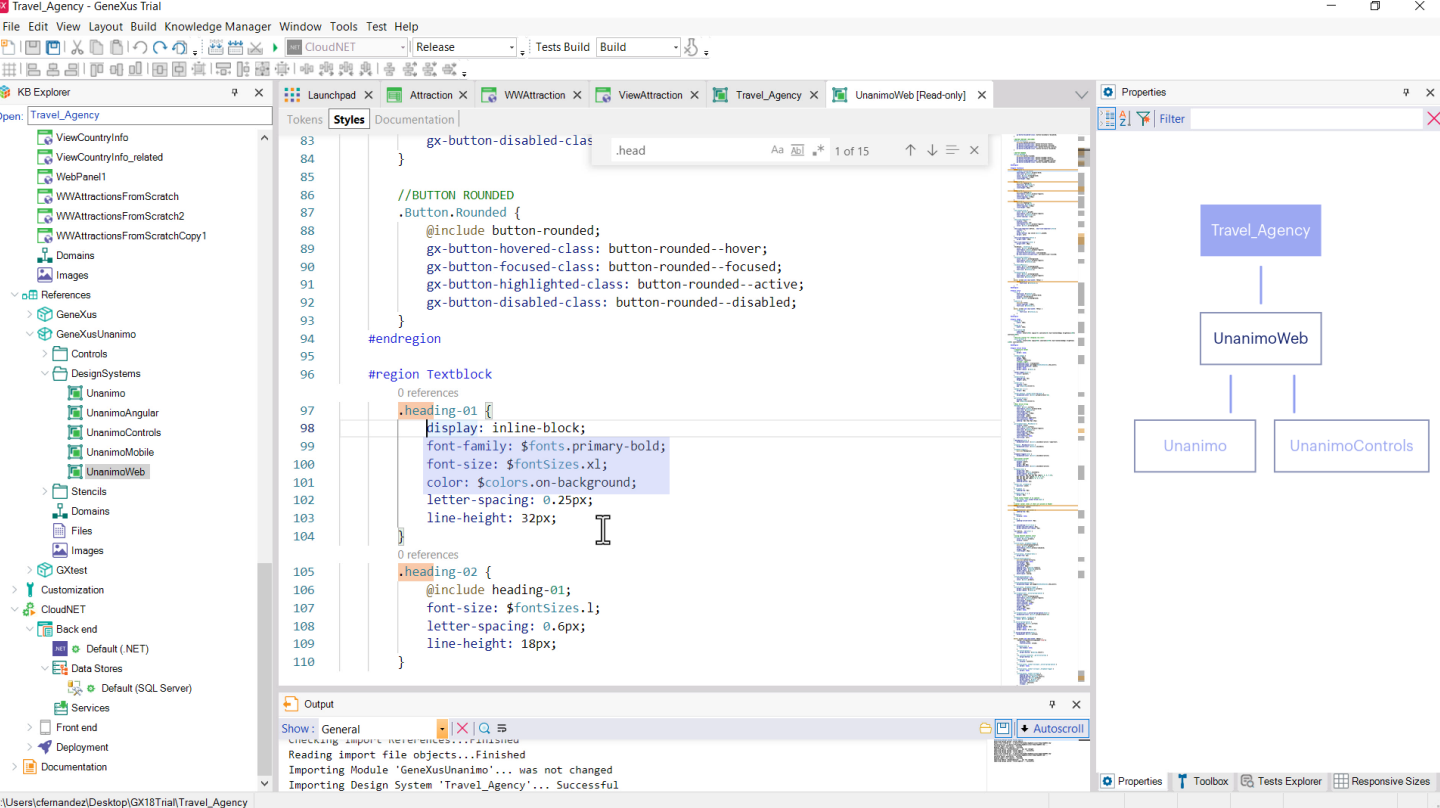
Responsive Sizes

\\Users\\cfernandez\\Desktop\\GX18Trial\\Travel\_Agency

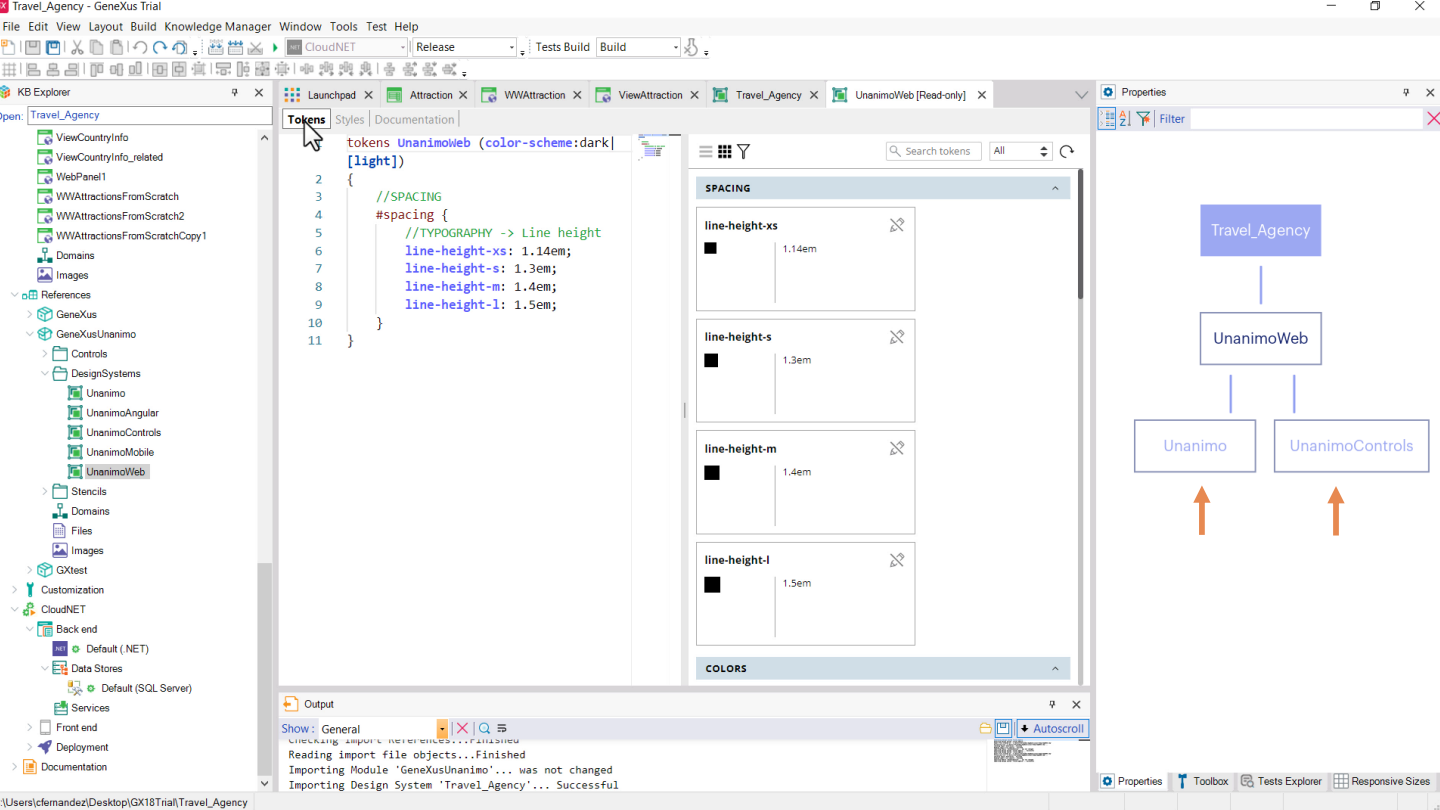
...so we can search for it by pressing Ctrl + F. Classes are selected with a period. Here we find it.



Before going on, let's review what we were doing: the textblock or attribute controls of web panels and transactions whose function was to show a title on each screen to indicate where we are had this associated class. These web panels and transactions have a Design System object defined by default. It is that of the KB, so they will look for the class properties there. But for now this object does not have its own classes. It only has the ones imported from this DSO. It is as if they were copied. That is why we look for them here.

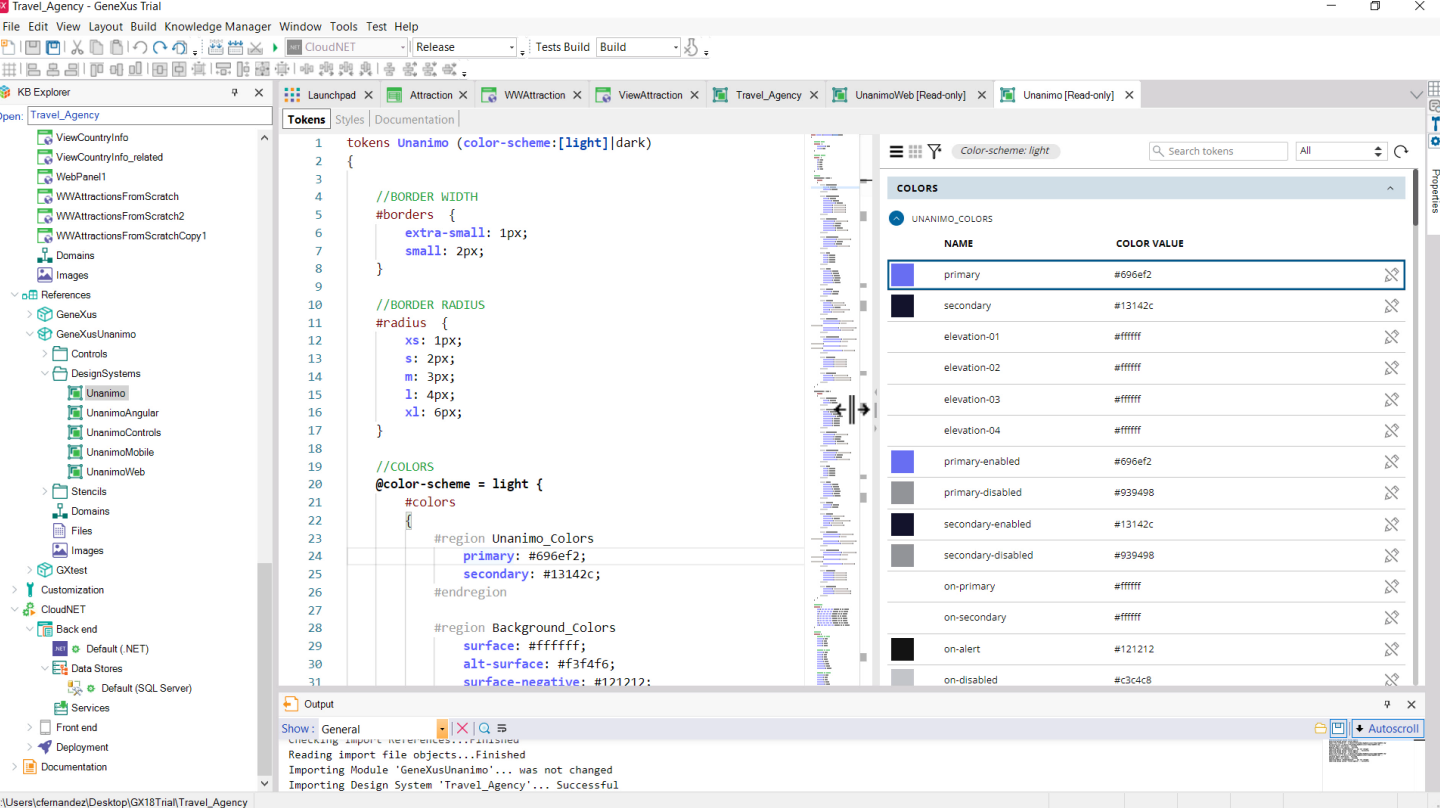


Let's look at the properties it has configured. They include the font family, font size, and color. What do the dollar signs before fonts, fontSizes, and colors mean? They are references to **tokens**. And what are tokens? Names given to values. In programming, we call them constants. For example, let's analyze the color property. We are indicating that the color will be taken from the value of the color constant named "on-background." Where should we look for it? In the Tokens tab.



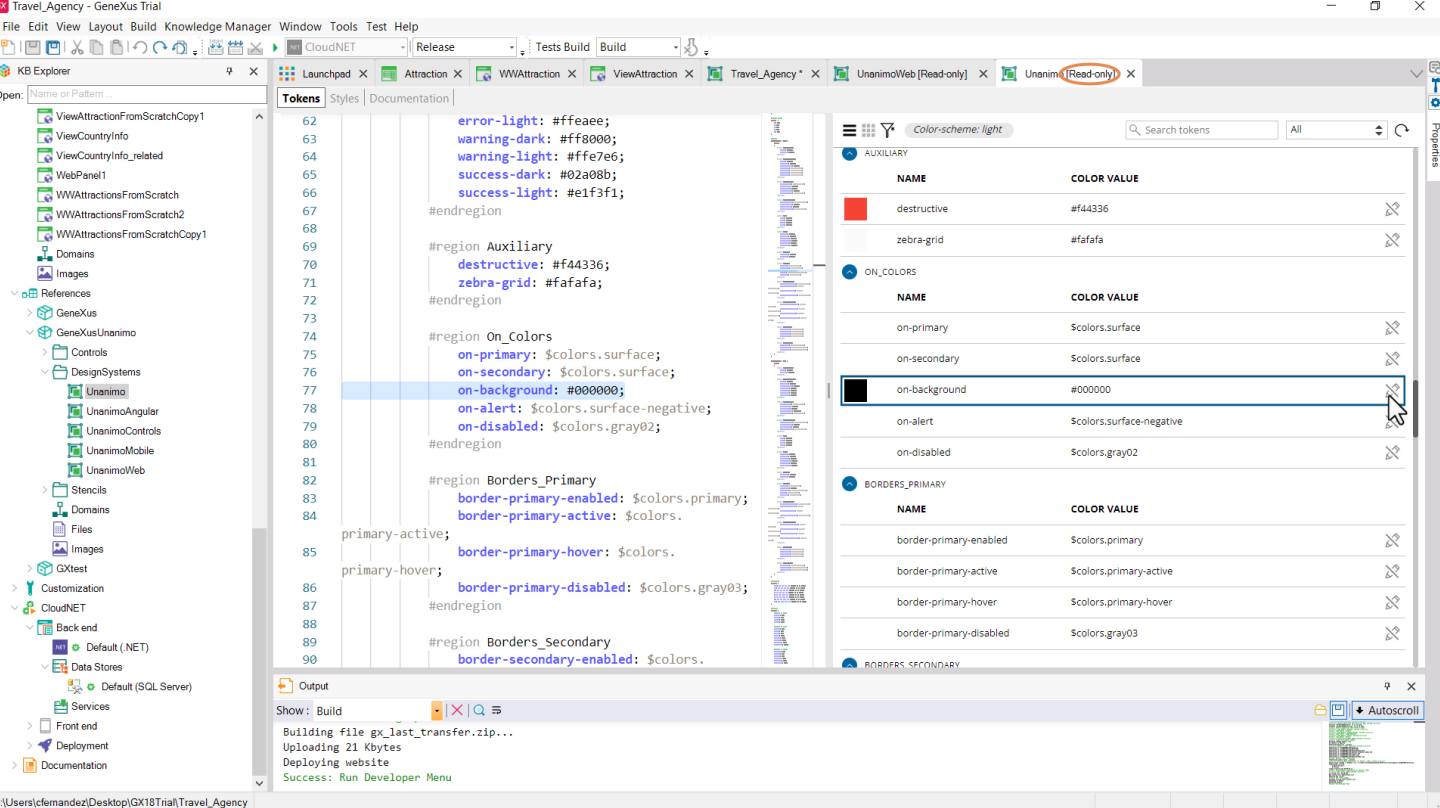
But it is not here! So?

Oh, that's right, this DSO is importing two others. Among those that matter are the tokens. Let's look for our color token in one of those two DSOs, because it will have to be in one of them.



Here the Tokens tab appears very crowded. It is possible that here we will find what we are looking for. Let's see that the editor is double. And so, if we select this color token, the one named "primary," in the graphical editor on the right we see a color that on the left is defined with a hexadecimal value. This color looks familiar, doesn't it? It is the one we have seen repeatedly in the actions and buttons. It has not been named "primary" just for the sake of it.

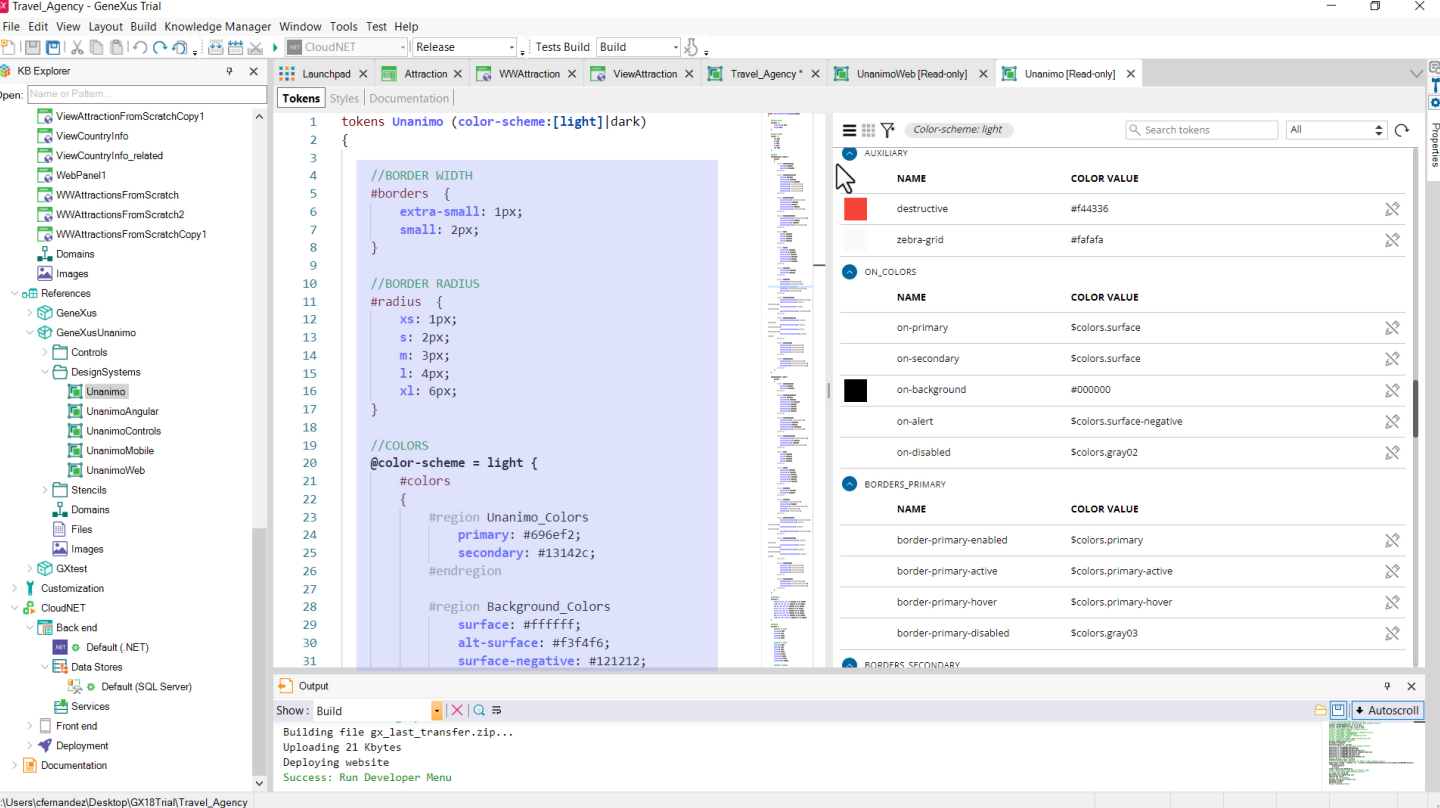




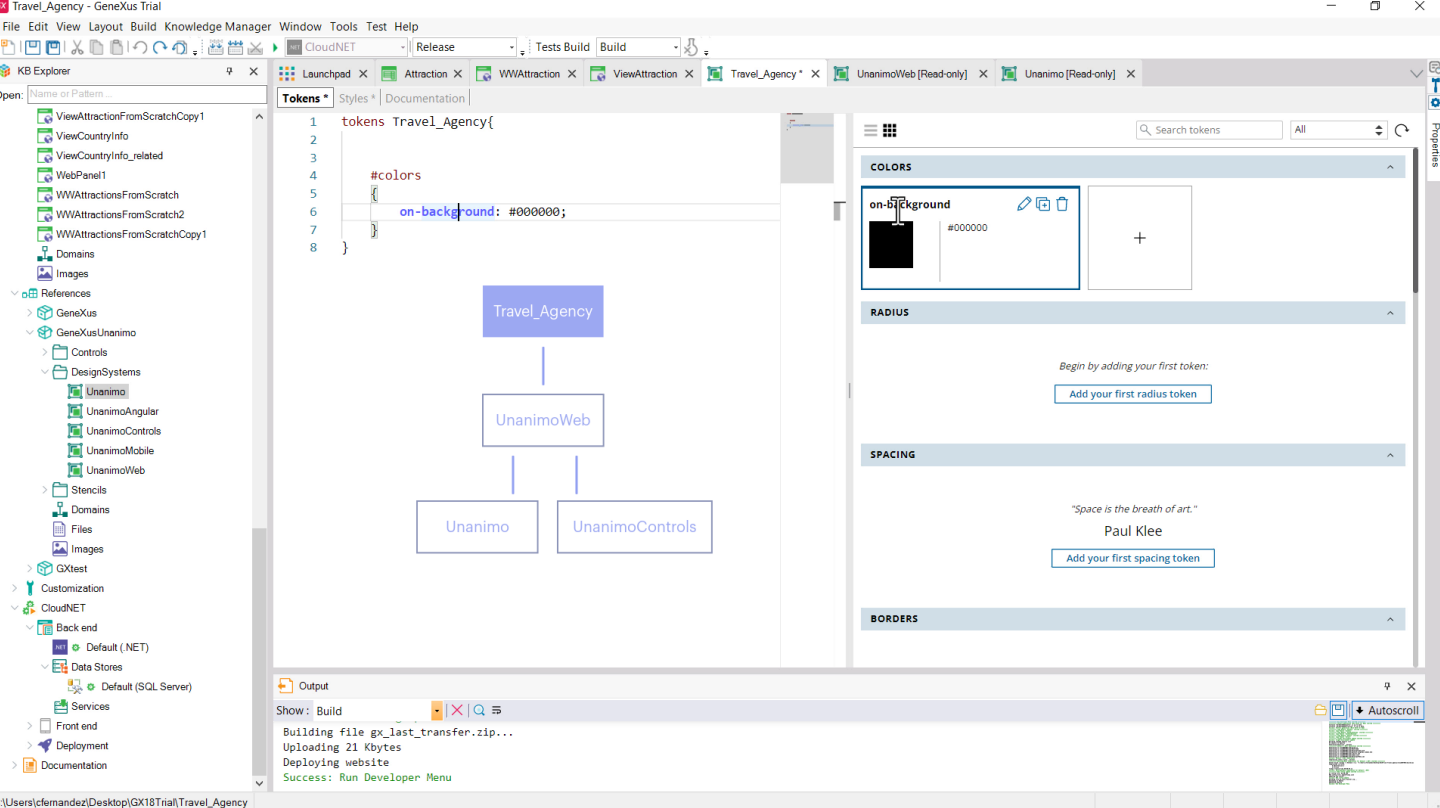
The one we are looking for is the color token named “on-background.” If the token was given a semantically clear name, we can assume it is the color that will be used to contrast against the background. Here we have it.

What happens if we change the value of the token, so that it goes from black to red? Supposedly, with that we will be able to change the color of the texts that we were interested in, those of the heading\_01 class. Let's try it.

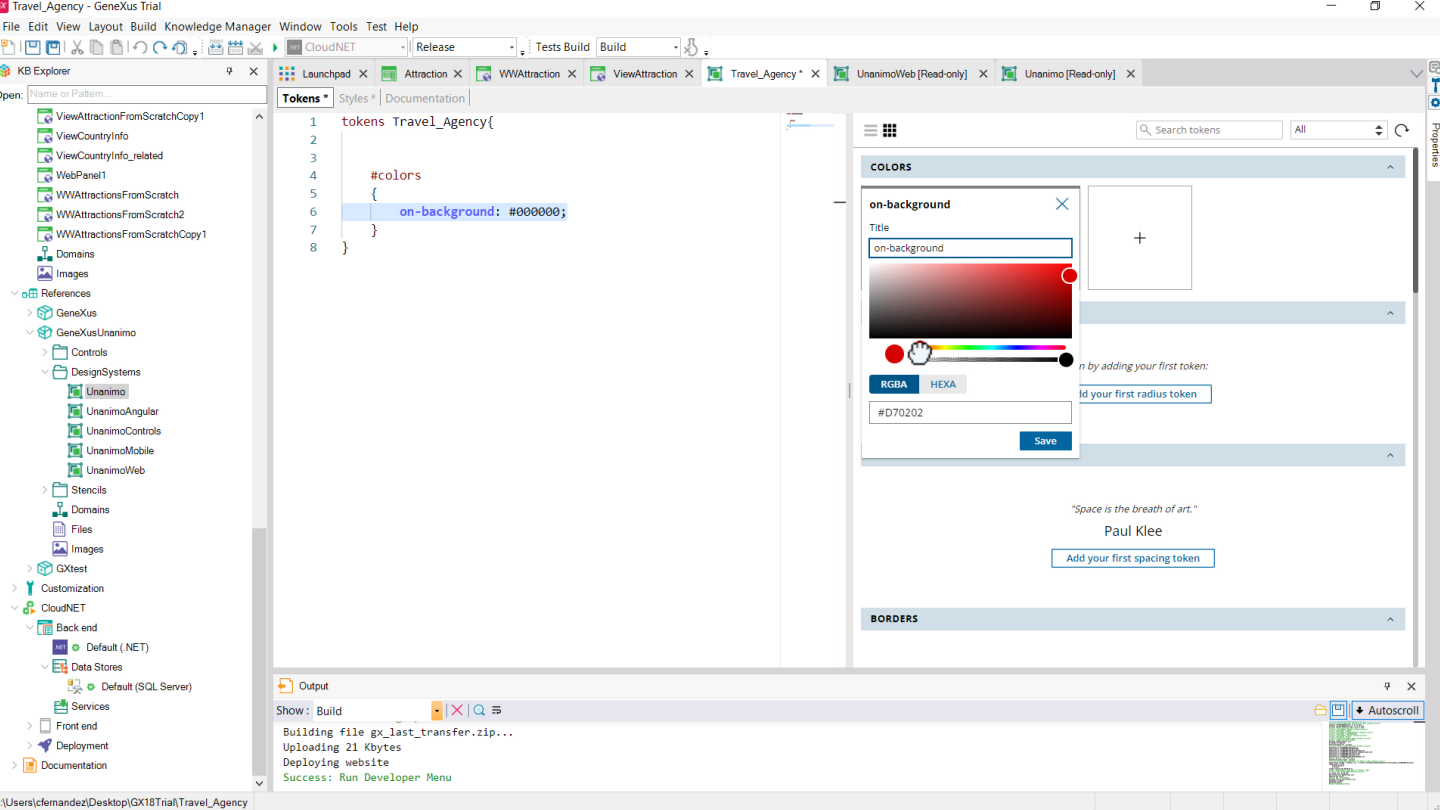
We want to modify its value, but we do not have the change enabled. The reason is that this object is read-only. So, this customization will have to be done in our Design System object, that of our application. Let's copy the definition of the token.



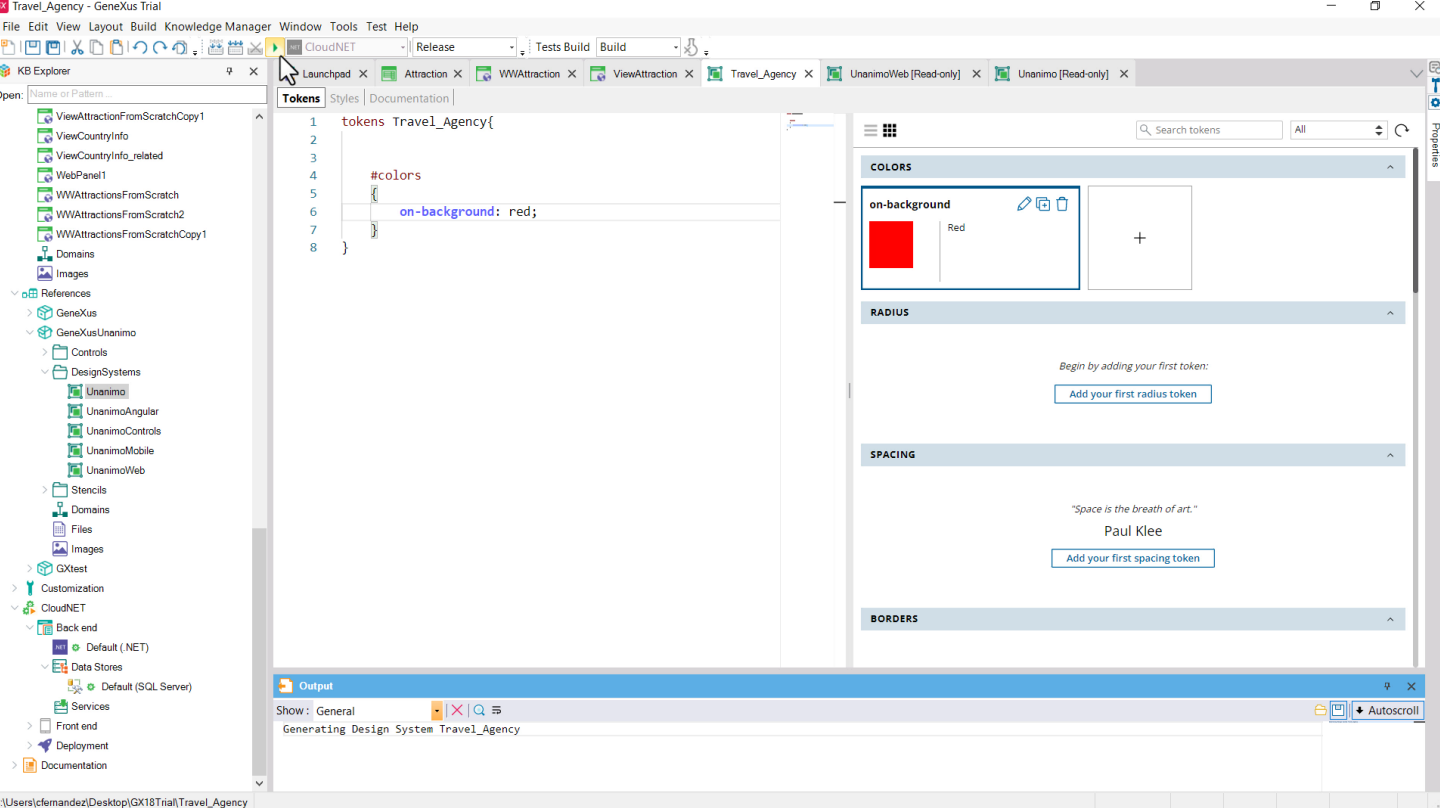
Note that tokens are specified within a set of all the tokens of the object. We will not go into details about the light and dark options here. We will only say that the token definitions can vary according to these parameters.



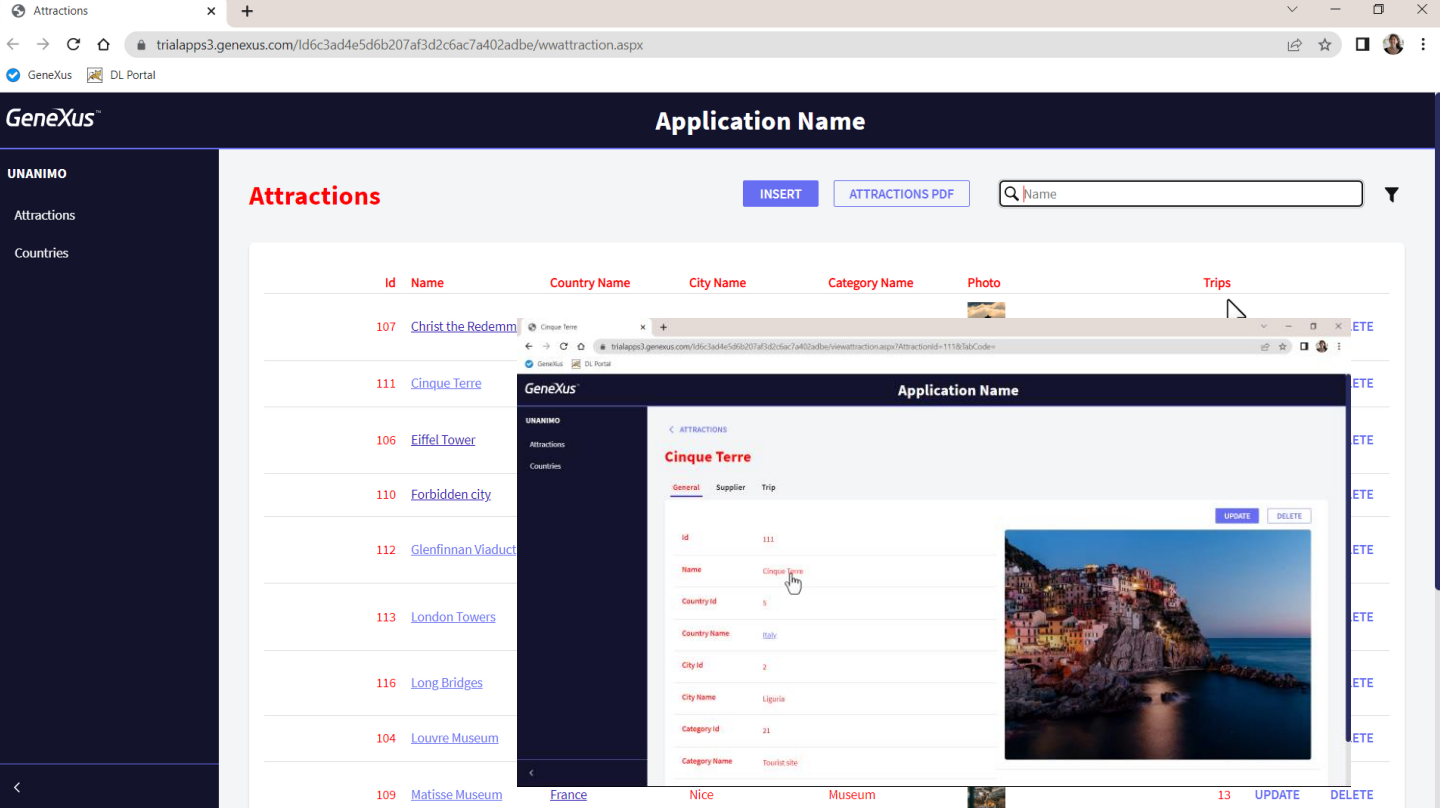
Therefore, in the Tokens tab of our Design System object we define the set following the syntax. What we do is simply overwrite the color token that will be imported along with all the others of the DSO that in turn imports those of the other ones.



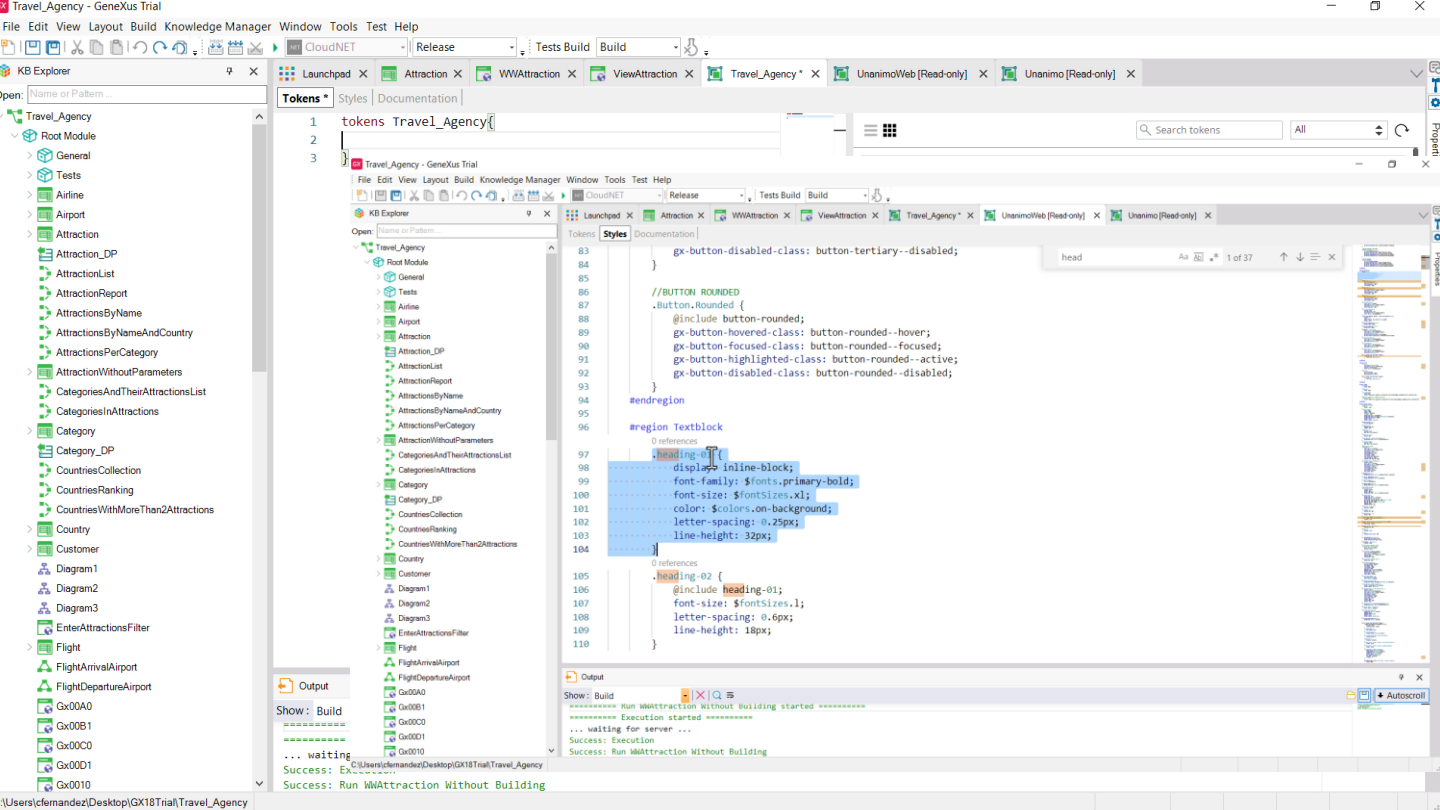
We change the color value here, with this hexadecimal...



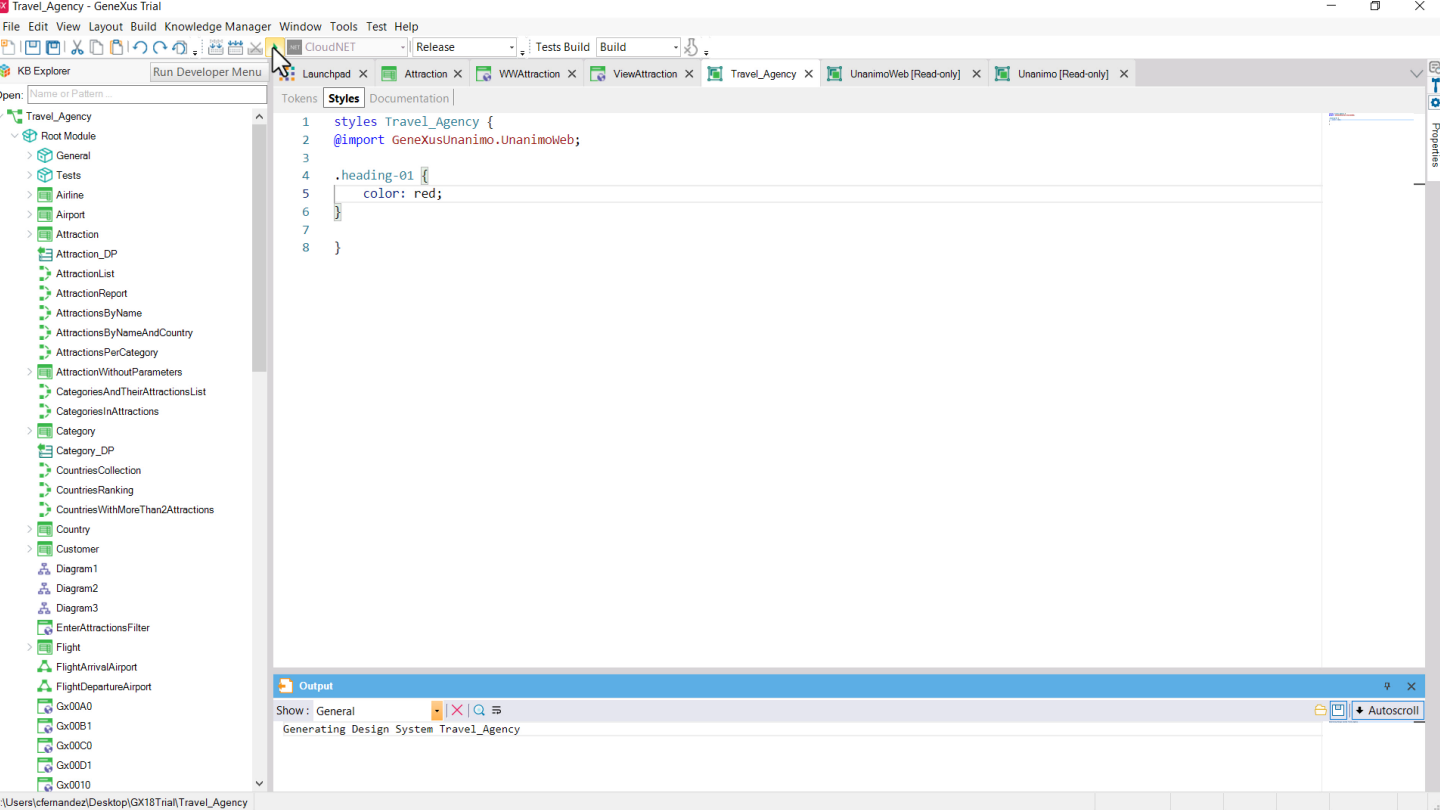
...or, directly, with the value red. Let's save and run.



We managed to change the color of the title of each page, but not just that. We changed the color of many more controls than we wanted. It is that, of course, the “on-background” color token is used in the class of these controls, but obviously it is also used in many others.



If we only want to change it for that class, then... what we have to overwrite is the class (here we can't, it's read-only). So we copy it...



...and paste it into our DSO. But actually, since it is imported we don't need to overwrite everything, but only the property that we are interested in changing. We save and run...



Attraction

Attractions

Attractions

+

trialapps3.genexus.com/ld6c3ad4e5d6b207af3d2c6ac7a402adbe/wwattraction.aspx

GeneXusDL Portal

GeneXus

Application Name

UNANIMO

Attractions










Countries

Attractions

INSERT

ATTRACTIONS PDF

QName

Id	Name	Country Name	City Name	Category Name	Photo	Trips
107	<a href="#">Christ the Redemmer</a>	<a href="#">Brazil</a>	Rio De Janeiro	Monument		24 <a href="#">UPDATE</a> <a href="#">DELETE</a>
111	<a href="#">Cinque Terre</a>	<a href="#">Italy</a>	Liguria	Tourist site		0 <a href="#">UPDATE</a> <a href="#">DELETE</a>
116	<a href="#">Eiffel Tower</a>	<a href="#">France</a>	Paris	Monument		24 <a href="#">UPDATE</a> <a href="#">DELETE</a>
110	<a href="#">Forbidden city</a>	<a href="#">China</a>	Beijing	Tourist site		0 <a href="#">UPDATE</a> <a href="#">DELETE</a>
112	<a href="#">Glenfinnan Viaduct</a>	<a href="#">Scotland</a>	Glenfinnan	Tourist site		0 <a href="#">UPDATE</a> <a href="#">DELETE</a>
113	<a href="#">London Towers</a>	<a href="#">England</a>	London	Monument		1 <a href="#">UPDATE</a> <a href="#">DELETE</a>
116	<a href="#">Long Bridges</a>	<a href="#">United States</a>	San Francisco	Tourist site		0 <a href="#">UPDATE</a> <a href="#">DELETE</a>
104	<a href="#">Louvre Museum</a>	<a href="#">France</a>	Paris	Museum		1 <a href="#">UPDATE</a> <a href="#">DELETE</a>
109	<a href="#">Matisse Museum</a>	<a href="#">France</a>	Nice	Museum		13 <a href="#">UPDATE</a> <a href="#">DELETE</a>

We press Ctrl + F5 so that it is refreshed... and now it does. Only the color of the controls that have the heading-01 class associated with them changed.

Attraction

Attractions

Christ the Redemmer

trialapps3.genexus.com/Id6c3ad4e5d6b207af3d2c6ac7a402adbe/viewattraction.aspx?AttractionId=107&TabCode=

GeneXusDL Portal

GeneXus

Application Name

UNANIMO

Attractions

Countries


< ATTRactions

Christ the Redemmer

GeneralSupplierTrip

Id	107
Name	Christ the Redemmer
Country Id	1
Country Name	<a href="#">Brazil</a>
City Id	1
City Name	Rio De Janeiro
Category Id	20
Category Name	Monument

UPDATEDELETE



Attraction

Attractions

Attraction

trialapps3.genexus.com/Id6c3ad4e5d6b207af3d2c6ac7a402adbe/attraction.aspx?Mode=UPD&AttractionId=107

GeneXusDL Portal

GeneXus


Application Name

UNANIMO

Attractions

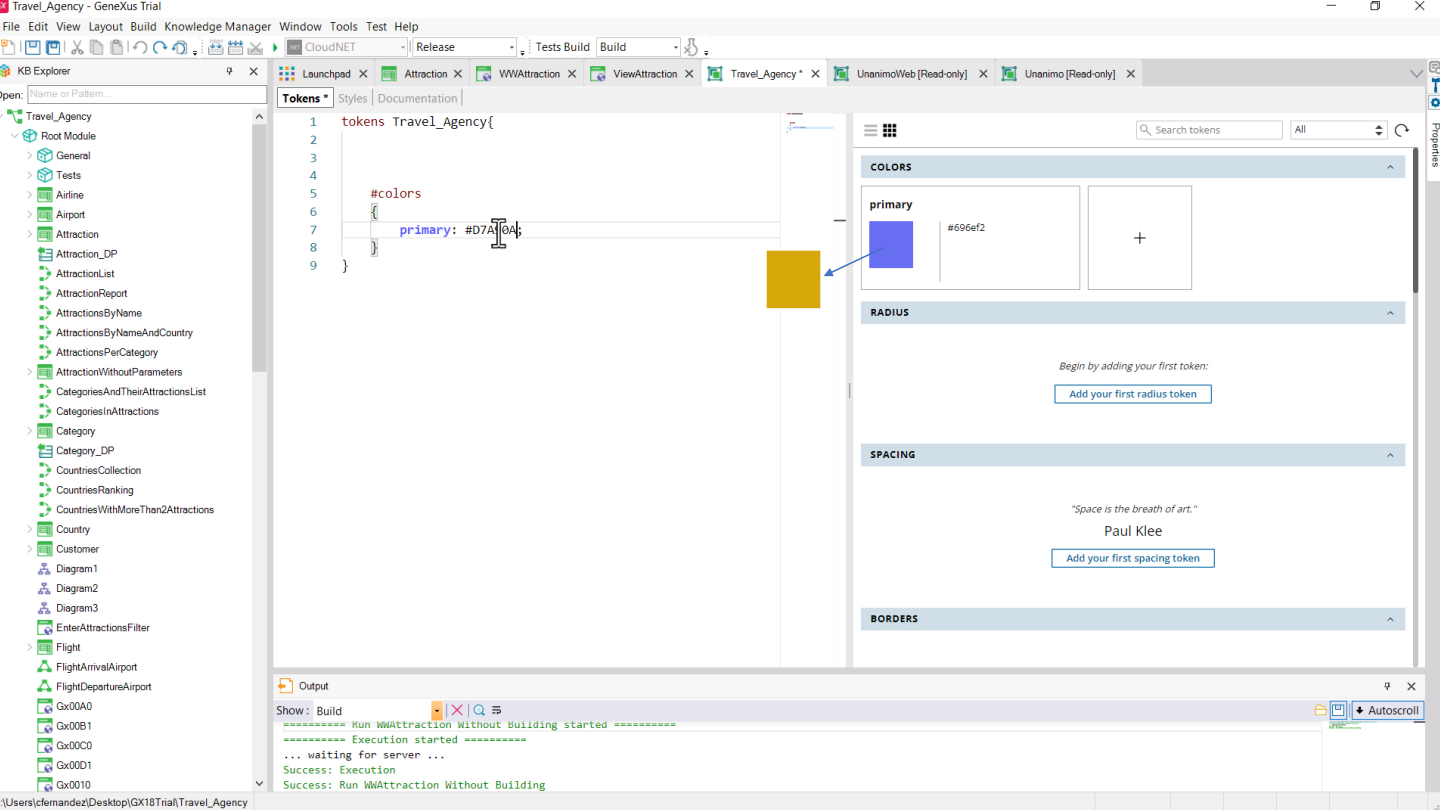
Countries

Attraction

Id	107
Name	Christ the Redemmer
Country Id	1
Country Name	Brazil
City Id	1
City Name	Rio De Janeiro
Category Id	20
Category Name	Monument
Photo	

CANCEL

CONFIRM



Considering everything we've seen so far, what should happen if we change the value of the "primary" color token?

Attractions

trialapps3.genexus.com/ld6c3ad4e5d6b207af3d2c6ac7a402adbe/wwattraction.aspx

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Application Name

UNANIMO

Attractions










Countries

Attractions

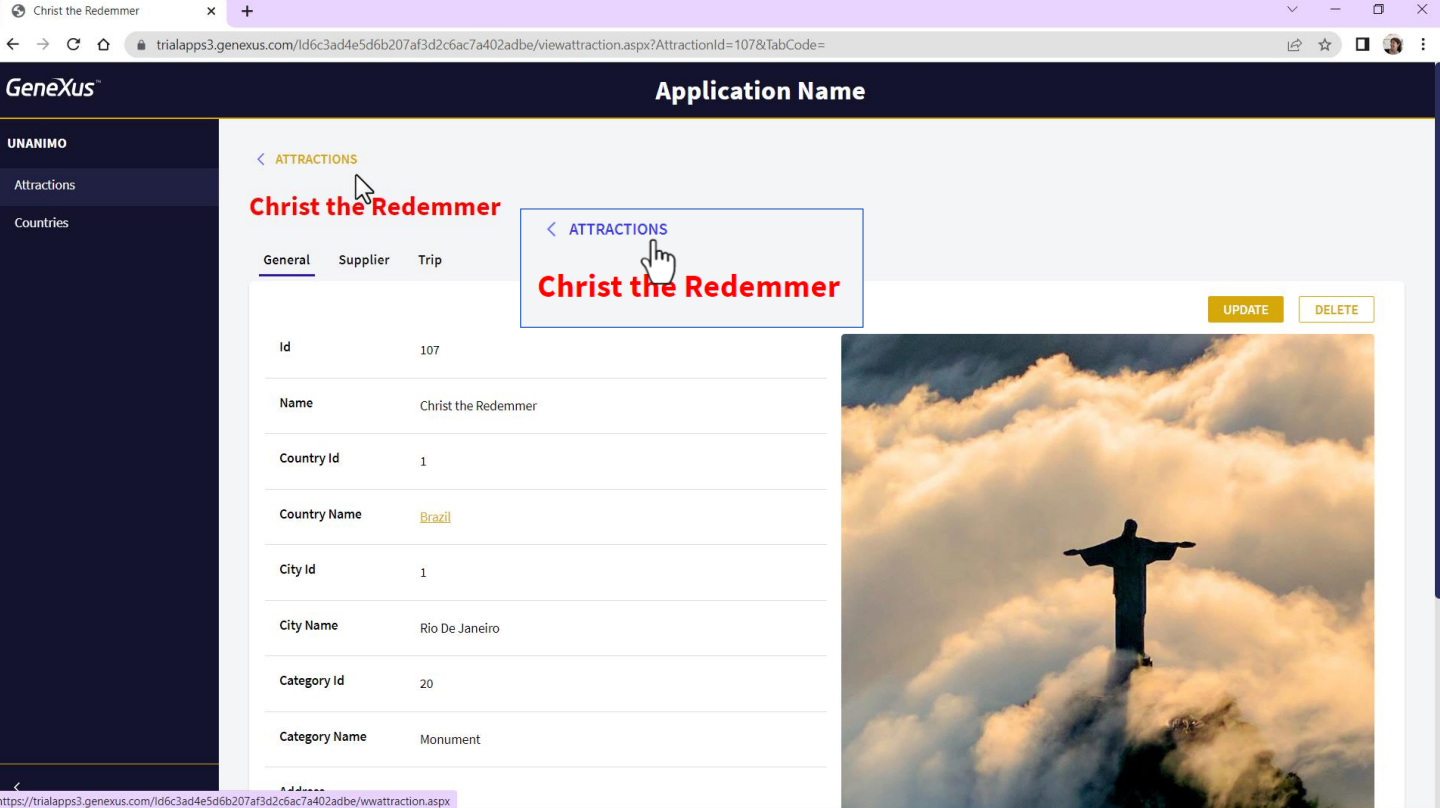
INSERT

ATTRACTIONS PDF

Q Name

Id	Name	Country Name	City Name	Category Name	Photo	Trips
107	<a href="#">Christ the Redemmer</a>	<a href="#">Brazil</a>	Rio De Janeiro	Monument		24 <a href="#">UPDATE</a> <a href="#">DELETE</a>
111	<a href="#">Cinque Terre</a>	<a href="#">Italy</a>	Liguria	Tourist site		0 <a href="#">UPDATE</a> <a href="#">DELETE</a>
106	<a href="#">Eiffel Tower</a>	<a href="#">France</a>	Paris	Monument		24 <a href="#">UPDATE</a> <a href="#">DELETE</a>
110	<a href="#">Forbidden city</a>	<a href="#">China</a>	Beijing	Tourist site		0 <a href="#">UPDATE</a> <a href="#">DELETE</a>
112	<a href="#">Glenfinnan Viaduct</a>	<a href="#">Scotland</a>	Glenfinnan	Tourist site		0 <a href="#">UPDATE</a> <a href="#">DELETE</a>
113	<a href="#">London Towers</a>	<a href="#">England</a>	London	Monument		1 <a href="#">UPDATE</a> <a href="#">DELETE</a>
116	<a href="#">Long Bridges</a>	<a href="#">United States</a>	San Francisco	Tourist site		0 <a href="#">UPDATE</a> <a href="#">DELETE</a>
104	<a href="#">Louvre Museum</a>	<a href="#">France</a>	Paris	Museum		1 <a href="#">UPDATE</a> <a href="#">DELETE</a>
109	<a href="#">Matisse Museum</a>	<a href="#">France</a>	Nice	Museum		13 <a href="#">UPDATE</a> <a href="#">DELETE</a>

Note how the color of the buttons and actions in general have changed.



Here we can see that the hover action changes the color and we can assume that this will be a property of the class that controls the hover effect. The same goes for the buttons.

Attractions

trialapps3.genexus.com/ld6c3ad4e5d6b207af3d2c6ac7a402adbe/wwattraction.aspx

GeneXus™

Application Name

UNANIMO










Attractions

Countries

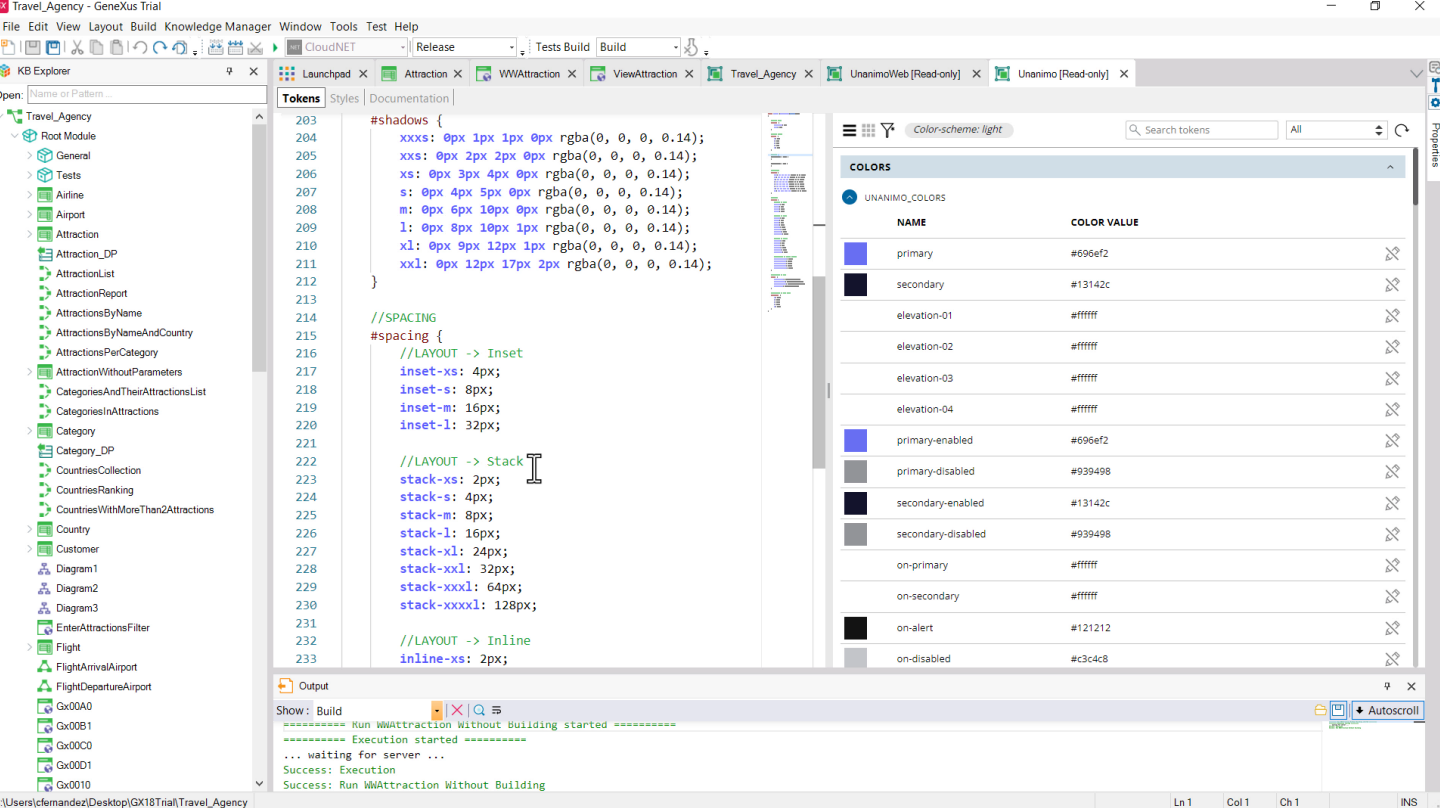
Attractions

INSERT

ATTRACTIONS PDF

Id	Name	Country Name	City Name	Category Name	Photo	Trips
107	<a href="#">Christ the Redemmer</a>	<a href="#">Brazil</a>	Rio De Janeiro	Monument		24 <a href="#">UPDATE</a> <a href="#">DELETE</a>
111	<a href="#">Cinque Terre</a>	<a href="#">Italy</a>	Liguria	Tourist site		0 <a href="#">UPDATE</a> <a href="#">DELETE</a>
106	<a href="#">Eiffel Tower</a>	<a href="#">France</a>	Paris	Monument		24 <a href="#">UPDATE</a> <a href="#">DELETE</a>
110	<a href="#">Forbidden city</a>	<a href="#">China</a>	Beijing	Tourist site		0 <a href="#">UPDATE</a> <a href="#">DELETE</a>
112	<a href="#">Glenfinnan Viaduct</a>	<a href="#">Scotland</a>	Glenfinnan	Tourist site		0 <a href="#">UPDATE</a> <a href="#">DELETE</a>
113	<a href="#">London Towers</a>	<a href="#">England</a>	London	Monument		1 <a href="#">UPDATE</a> <a href="#">DELETE</a>
116	<a href="#">Long Bridges</a>	<a href="#">United States</a>	San Francisco	Tourist site		0 <a href="#">UPDATE</a> <a href="#">DELETE</a>
104	<a href="#">Louvre Museum</a>	<a href="#">France</a>	Paris	Museum		1 <a href="#">UPDATE</a> <a href="#">DELETE</a>
109	<a href="#">Matisse Museum</a>	<a href="#">France</a>	Nice	Museum		13 <a href="#">UPDATE</a> <a href="#">DELETE</a>

Even here the visited link is shown in this color, something that we can also change in the DSO.



We talked about the importance of spacing, for example, and of defining appropriate font families and sizes to be used consistently in the application. We will not be surprised to find these tokens in Unanimous...



Travel\_Agency - GeneXus Trial

File Edit View Layout Build Knowledge Manager Window Tools Test Help

CloudNET Release Tests Build Build

KB Explorer

Launchpad x Attraction x WWAttraction x ViewAttraction x Travel\_Agency x UnanimoWeb [Read-only] x Unanimo [Read-only] x

Tokens Styles Documentation

Travel\_Agency

- Root Module
  - General
    - Tests
    - Airline
    - Airport
    - Attraction
      - Attraction\_DP
      - AttractionList
      - AttractionReport
      - AttractionsByName
      - AttractionsByNameAndCountry
      - AttractionsPerCategory
      - AttractionWithoutParameters
      - CategoriesAndTheirAttractionsList
      - CategoriesInAttractions
      - Category
        - Category\_DP
        - CountriesCollection
        - CountriesRanking
        - CountriesWithMoreThan2Attractions
      - Country
        - Customer
        - Diagram1
        - Diagram2
        - Diagram3
        - EnterAttractionsFilter
        - Flight
        - FlightArrivalAirport
        - FlightDepartureAirport
      - Gx00A0
      - Gx00B1
      - Gx00C0
      - Gx00D1
      - Gx00I0

```
235 inline-l: 8px;
236 inline-xl: 16px;
237 inline-xxl: 24px;
238 inline-xxxl: 32px;
239
240 //TYPOGRAPHY -> Letter spacing
241 letter-spacing-xs: 0.2px;
242 letter-spacing-s: 0.4px;
243 letter-spacing-m: 0.8px;
244 letter-spacing-l: 1.6px;
245 letter-spacing-xl: 3.2px;
246 }
247
248 //TYPOGRAPHY -> Font
249 #fonts {
250   primary-light: SourceSansPro-Light;
251   primary-regular: SourceSansPro-Regular;
252   primary-semibold: SourceSansPro-SemiBold;
253   primary-bold: SourceSansPro-Bold;
254 }
255
256 //TYPOGRAPHY -> Font Sizes
257 #fontSizes {
258   xs: 11px;
259   s: 14px;
260   m: 18px;
261   l: 22px;
262   xl: 28px;
263 }
264
265
```

Output

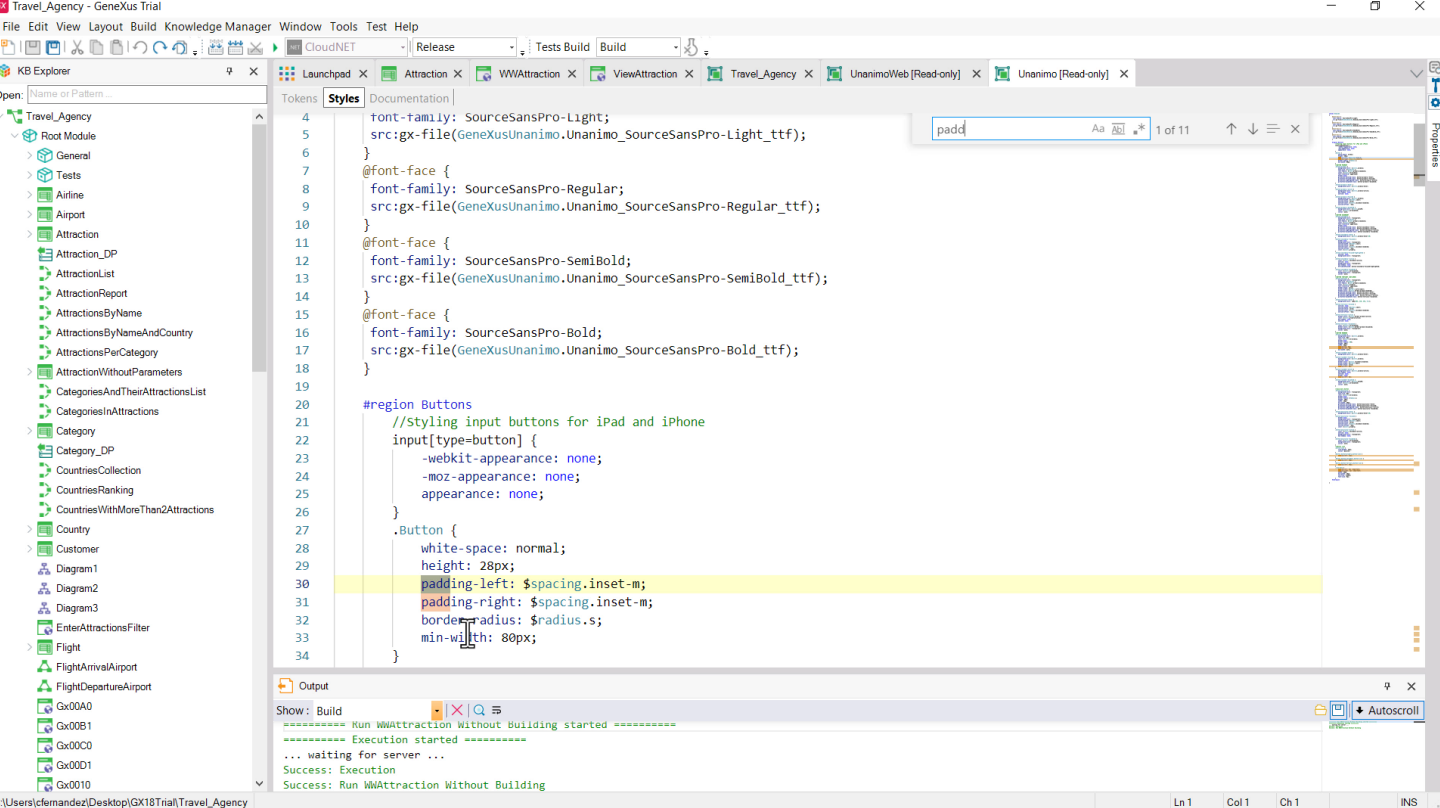
Show: Build

```
***** Run WWAttraction Without Building started *****
***** Execution started *****
... waiting for server ...
Success: Execution
Success: Run WWAttraction Without Building
```

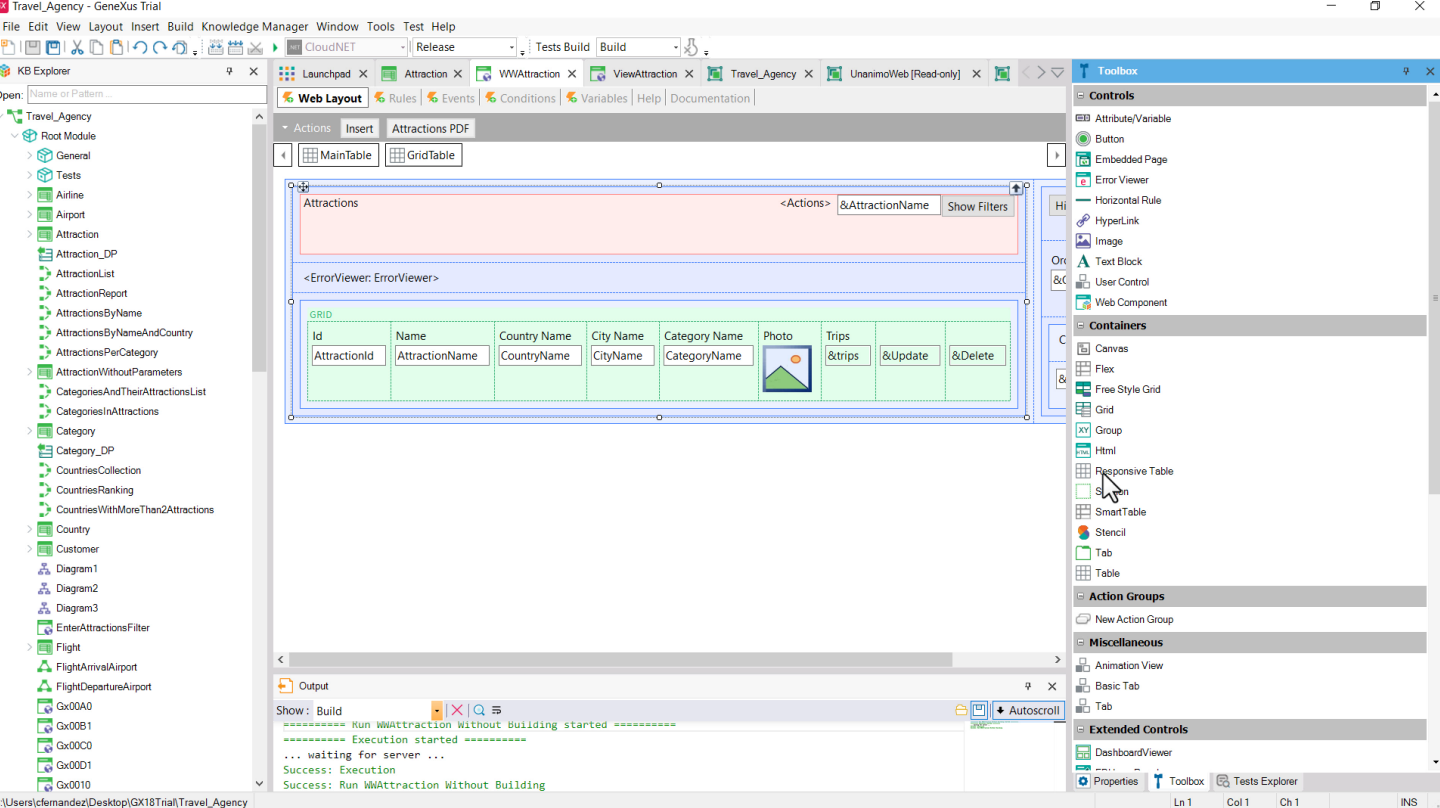
Ln 1 Col 1 Ch 1 INS

UNANIMO\_COLORS

NAME	COLOR VALUE
primary	#696ef2
secondary	#13142c
elevation-01	#ffffff
elevation-02	#ffffff
elevation-03	#ffffff
elevation-04	#ffffff
primary-enabled	#696ef2
primary-disabled	#939498
secondary-enabled	#13142c
secondary-disabled	#939498
on-primary	#ffffff
on-secondary	#ffffff
on-alert	#121212
on-disabled	#c3c4c8

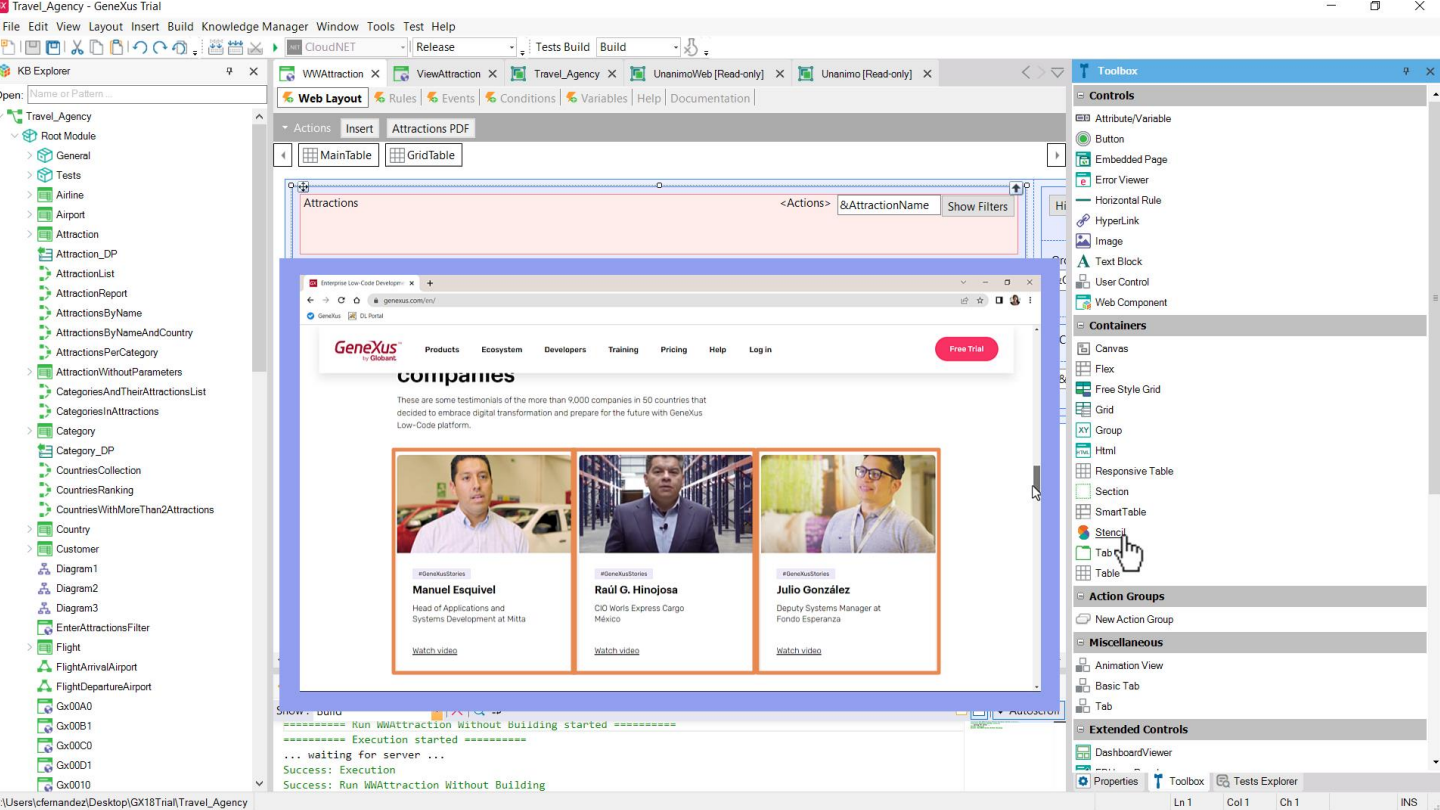


... they will be used in the classes assigned to the properties to give space or to choose fonts.

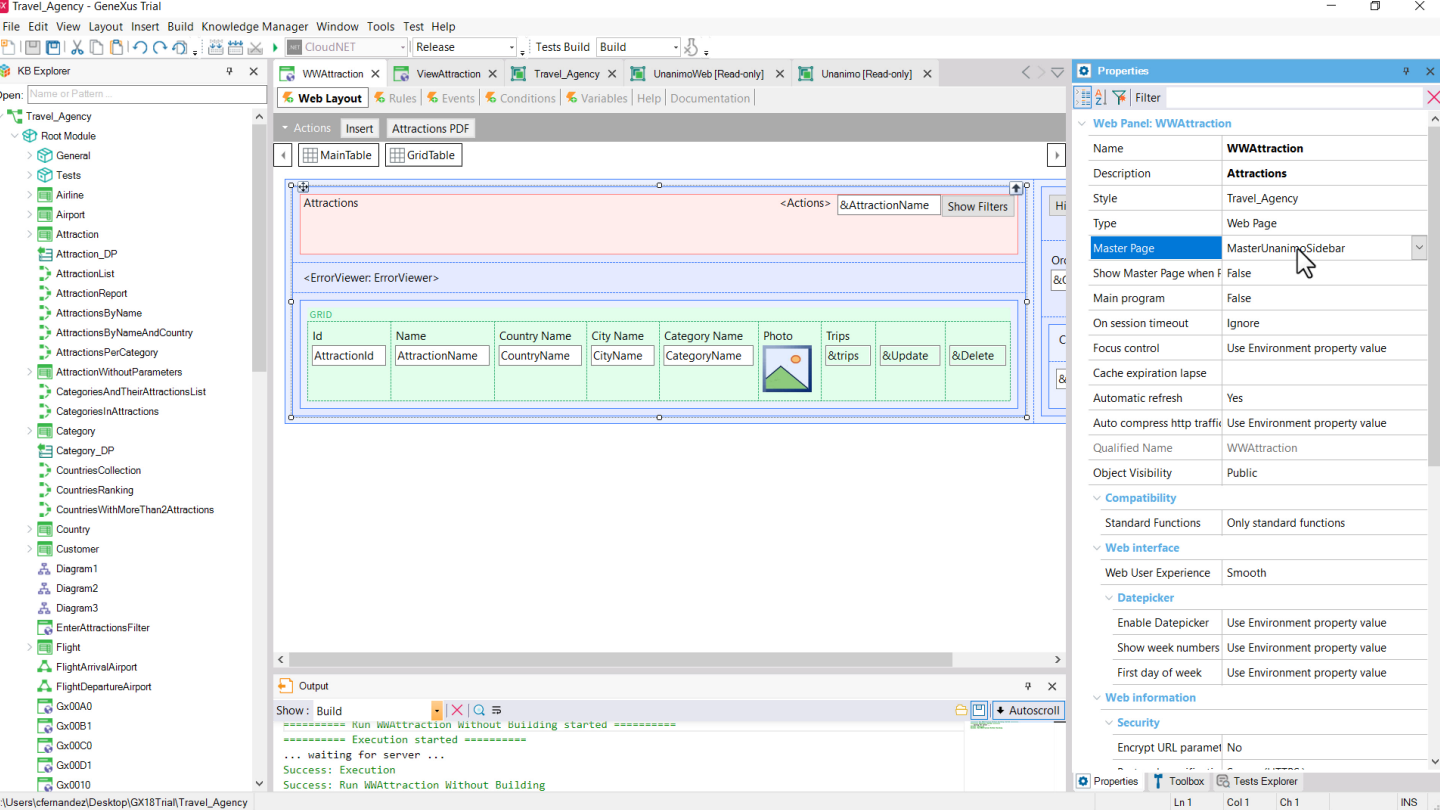


On the other hand, how do you achieve alignment and combine information elements so that they work as a block? That is where GeneXus controls are involved. Mainly the tables.

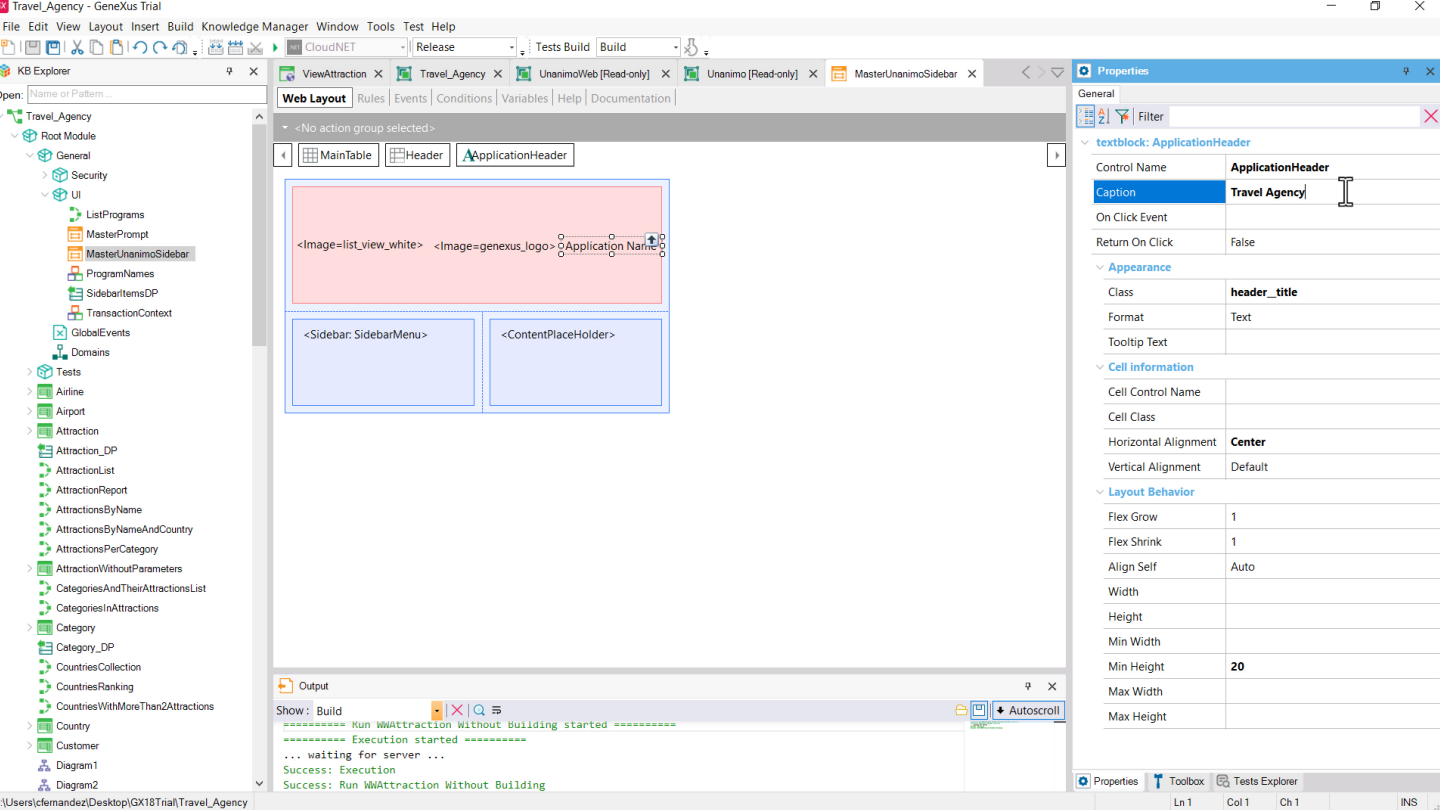
In other words, two key players will be involved: the controls in layouts and their classes in the DSO.



In addition, in order to save resources, we will be able to encapsulate repetitive information units in independent objects that can then be inserted in the layouts, such as stencils or web components.



Even the header and footer are separated in another object, the Master Page.



Here it is. Let's see what happens when we change this text block.

Attractions

trialapps3.genexus.com/ld6c3ad4e5d6b207af3d2c6ac7a402adbe/wwattraction.aspx

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


Attractions

Countries

Attractions

INSERT

ATTRACTIONS PDF

Id	Name	Country Name	City Name	Category Name	Photo	Trips		
107	<a href="#">Christ the Redemmer</a>	<a href="#">Brazil</a>	Rio De Janeiro	Monument		24	UPDATE	DELETE
111	<a href="#">Cinque Terre</a>	<a href="#">Italy</a>	Liguria	Tourist site		0	UPDATE	DELETE
106	<a href="#">Eiffel Tower</a>	<a href="#">France</a>	Paris	Monument		24	UPDATE	DELETE
110	<a href="#">Forbidden city</a>	<a href="#">China</a>	Beijing	Tourist site		0	UPDATE	DELETE
112	<a href="#">Glenfinnan Viaduct</a>	<a href="#">Scotland</a>	Glenfinnan	Tourist site		0	UPDATE	DELETE
113	<a href="#">London Towers</a>	<a href="#">England</a>	London	Monument		1	UPDATE	DELETE
116	<a href="#">Long Bridges</a>	<a href="#">United States</a>	San Francisco	Tourist site		0	UPDATE	DELETE
104	<a href="#">Louvre Museum</a>	<a href="#">France</a>	Paris	Museum		1	UPDATE	DELETE
109	<a href="#">Matisse Museum</a>	<a href="#">France</a>	Nice	Museum		13	UPDATE	DELETE

In this way, we start to understand how to use a Design System in GeneXus.

# *GeneXus*<sup>TM</sup>

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[wiki.genexus.com](http://wiki.genexus.com)