# First steps to model and automate business processes with GeneXus 17

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### Video 1: BPM with GeneXus

This is a beginner's guide for developing BPM applications with GeneXus 17.

GeneXus 17 is an intelligent platform that simplifies software development, automating everything that can be automated. It is LOW-CODE, which means that the least possible code is written. Then, through artificial intelligence techniques, GeneXus automatically generates the source code, minimizing the time required for application development, evolution, and maintenance.

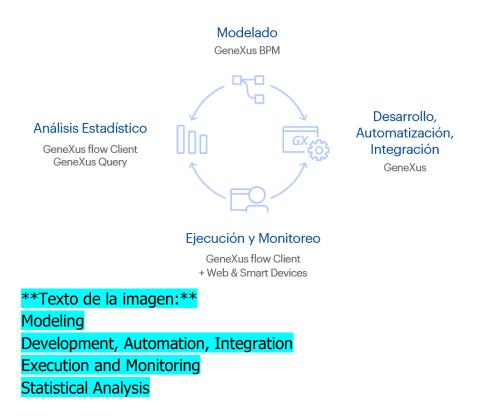
### What is BPM?

Business Process Management (BPM) is a methodology that focuses on continuously managing and optimizing the activities and business processes of organizations.

### What is GeneXus BPM Suite?

It is a Suite for managing and optimizing business processes. It allows you to:

- Model your business processes.
- Automate by integrating systems and creating applications with GeneXus.
- Manage, control, and handle your business processes.
- **Optimize** and easily identify opportunities for improvement.



Now you know what GeneXus BPM Suite is. In the next video, we will download GeneXus to start working on it.

### Video 2: Downloading and installing GeneXus

(The same video of the GX course is reused).

In the previous video, we could see all the benefits provided by GeneXus BPM Suite. So, let's download the Trial version of GeneXus 17.

Everything's ready! In the next video, we will look at a case study and start working on it.

### Video 3: Case Study

In this video, we will see a sample case to understand, in a practical way, how GeneXus BPM Suite works.

A travel agency needs an application to manage the booking of airline tickets for its customers.

The process consists of entering the data of a reservation through an Operator of the agency. If the customer is not registered, the system must automatically associate it with the previously generated reservation. Next, an availability check must be performed.

If the result is positive, the process is completed. If there is no availability, it is necessary to return to the reservation task where the details of the reservation can be changed.

The purpose of this simplified example is to show the definition of a Business Process Diagram and its follow-up, highlighting the importance of representing a Workflow that allows automating controls with the least developer intervention. In sum, by following some simple steps you can built robust BPM applications with GeneXus.

Steps to model a business process in GeneXus:

- Create the activity diagram that models the process.
- Create the objects that represent the workflow tasks.
- Associate objects with the diagram.
- Run the process.

In the next video, we will develop this case study step by step.

### Video 4: Creating a new application

Part 1. Creating a Knowledge Base using GeneXus 17

In this video, we will start creating the application for the sample case presented above.

First, run GeneXus 17 and create a new Knowledge Base (a new GeneXus project). To do so, select File > New > **Knowledge Base** from the main menu.

A dialog box will open. For example, you can name the Knowledge Base "TicketReservation."

Create Knowledge Base		×
	Name: TicketReservation	
	Directory: C:\Models	
	Language:	
	English ~ Advanced	>>
	Create Cancel	

Click "Create" to have your Knowledge Base created.

In this way, the Knowledge Base is defined. In the next video, we will model the business process.

### Video 5: Modeling a business process

In this video, we will model the business process.

It consists of creating an activity diagram for modeling the process of the case study.

To do so, select File > New > Object from the main menu (or Ctrl + N). The following dialog box will be displayed:

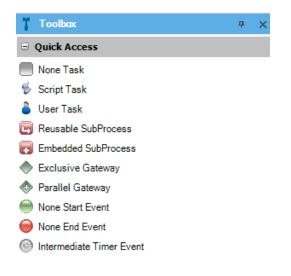
New Object						×
Select a Category Data Manageme User Interface BPM Chatbots Resources Documentation	-	Select a <u>T</u> ype:	ss Diagram			
Extensibility Deploy Reporting Represents the fl	v low of a bus	siness process that o	ccurs in rea	l life.		
<u>N</u> ame:	FlightTick	etReservation			]	
Description:	Flight Tick	et Reservation				
Module/ <u>F</u> older:	😭 Root I	Module		•	]	
					Create	Cancel

As shown, under the "BPM" category you will find the "Business Process Diagram" object type. Select it and name it "FlightTicketReservation." Click Create.

After creating the Business Process Diagram object, include in it the symbols that will define the process.

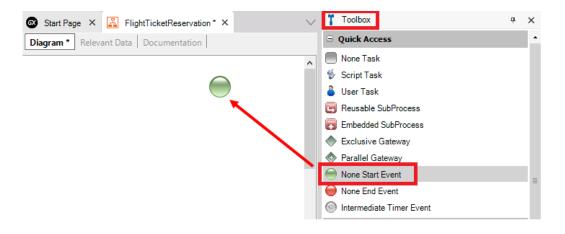
The notation used for the diagrams is **BPMN** (Business Process Modeling Notation).

This is a basic description of the main symbols to start the modeling:

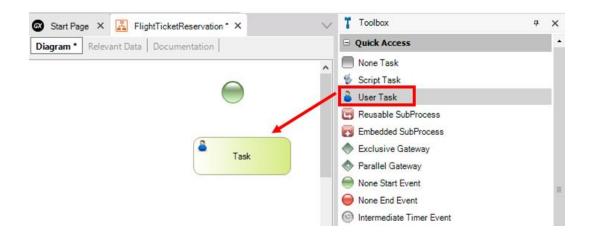


- **Task:** It allows representing a job that is performed in a business process. It is classified into three types:
  - None: It is the default value. It means it hasn't been defined yet whether it will be executed by a user or a Procedure.
  - User: Indicates that the task will be executed by a user.
  - Script: Indicates that the task will be executed by a Procedure.
- **Start Event**: The start of a process.
- **End Event**: The end of a process.
- **Gateway:** It allows you to control when a process diverges or converges in several paths.

To signal the start of a process, drag a "Start Event" symbol from the Toolbox to the Diagram.



Next, insert a Task that represents the Reservation entry.



By selecting the task, you can modify its description in the "Name" property or by pressing F2 (example: "Reservation").

Then you must join the start of the process with the Task entered. Hover the mouse over the start icon and a node will appear. Click and drag it to the task to indicate the flow direction.

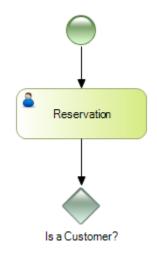


### Tip:

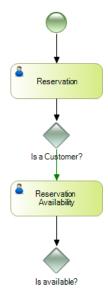
Another way to associate the elements in the diagram is to click, for example, on the Start icon, choose the desired activity or element, and drag it to where you want to place it.



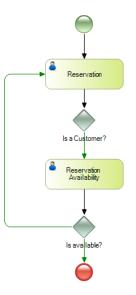
The next step is to evaluate whether the customer is registered or not. To do this, insert a "Gateway" type symbol with the description: Is this a customer?



If the customer is registered, the next step is to indicate whether the reservation is available or not. To do so, insert a Task with the description "Reservation Availability" and then a Gateway that allows you to check for availability:



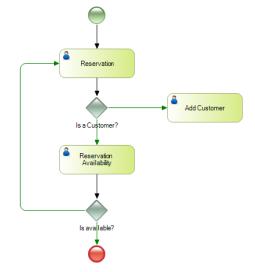
If there is availability for the requested reservation, the process ends. Otherwise, the flow must return to the initial task to change the reservation details:



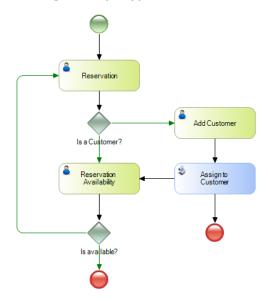
So far, we have modeled the case in which the customer is already registered. In the next video, we will see the flow when the customer doesn't exist.

## Video 6: Going on with modeling

In the previous video, we modeled the case in which the customer exists. We still need to model the situation in which the customer doesn't exist. To do so, add a Task with the description "Add Customer," which is reached from the Gateway "Is this a Customer?" if the customer is not registered.



Once the customer is registered, it will be necessary to automatically assign this customer to the generated reservation and then check for availability. You need to represent this in the diagram using a Script type task:



As you can see, only one Task called "Assign to Customer" has been added and linked from the "Add Customer" task to the "Reservation Availability" Task. Save the diagram by pressing (CTRL + S). In this way, you have completed the process flow modeling. In the next video, we will create the objects that will be part of the process.

### Video 7: Creating objects

In the previous video, we finished defining the diagram that represents the process. It is time to create the objects that will be part of the process.

In order to enter the reservation and check its availability, we need to create a Transaction object that we will call "Reservation."

In addition, a transaction named Customer must be created to enter the customer's data.

Finally, we will have to create a procedure to assign the customer to the reservation. To create a Transaction object, select File > New > Object from the main menu. The following dialog box will open:

Select a Categor	y:	Select a Type:			
Data Manageme User Interface BPM Chatbots Resources Documentation Extensibility Deploy Reporting	ent 🔺	API Data Provider Data Selector Data View Domain Procedure Structured Data Type	A Subtype Group		
÷.	ect or acto	or of reality, defining the struc	ture of the database, b	usiness rules, and t	the UI for dat
Describes an obj manipulation. Name:	ect or acto	r	ture of the database, b	usiness rules, and t	the UI for dat
Describes an obj manipulation.	ect or acto	r	ture of the database, b	usiness rules, and f	the UI for dat

In the "Data Management" group, choose the Transaction object type and name it "Customer."

Pressing the CREATE button will create the Transaction and keep it open and ready for you to define it.

	stomer * × ut *   Rules   Event	s   Variables   Help   [	Documentation	Patterns	
Name	Туре	Description	Formula	Nullable	
🖃 🗐 Customer	Customer	Customer			
CustomerCode	Numeric(4.0)	Customer Code		No	
<ul> <li>CustomerName</li> </ul>	Character(30)	Customer Name		No	
··· • CustomerSurName	Character(30)	Customer Sur Name		No	
CustomerAddress	Address, GeneXus	Customer Address		No	

We will define the CustomerCode field of type Numeric(4).

Where: **CustomerCode**\* is a primary key and its Autonumber property is set to True.

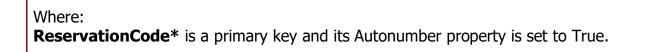
We add CustomerName, which will be Character(30), CustomerSurname, also Character(30), and CustomerAddress, of Address type.

When saving the Transaction with (CTRL + S), the (\*) displayed next to the name of the Transaction in the upper tab will disappear.

Now it is time to create the "Reservation" Transaction following the same steps you did to create the Customer Transaction.

Structure * 📕 Web Layout	Rules Events Var	iables Patterns		
ame	Туре	Description	Formula	Nullable
Reservation	Reservation	Reservation		
- 📍 ReservationCode	Numeric(4.0)	Reservation Code		No
··· • ReservationDate	Date	Reservation Date		No
<ul> <li>ReservationFlightDate</li> </ul>	Date	Reservation Flight Date		No
<ul> <li>ReservationQuantity</li> </ul>	Numeric(4.0)	Reservation Quantity		No
🖉 CustomerCode	Numeric(4.0)	Customer Code		Yes
🖌 CustomerName	Character(30)	Customer Name		
ReservationAvailable	Boolean	Reservation Available		No

It will have the ReservationCode fields that will be Numeric(4),



ReservationDate, of Date type; ReservationFlightDate, also of Date type; ReservationQuantity as Numeric(4); CustomerCode, whose Nullable property is set to Yes to accept null values; CustomerName and ReservationAvailable, which will be Boolean.

Now define the following rule in the "Reservation" Transaction:

```
ReservationAvailable.Visible = False if Insert;
```

The reason for this is that the *ReservationAvailable* attribute should not be visible in the Transaction form when a reservation is inserted (since this attribute is not used at that moment but when the reservation is already entered and you want to indicate if it is available or not).

Save the changes by pressing (CTRL + S).



To continue with the process flow, you need to create an object of Procedure type, but this will be explained in the next video.

### Video 8: Defining more objects

In this video, we will continue creating objects.

To assign a customer to the reservation, create a new object of Procedure type and name it *AssignToCustomer*.

Press CTRL + N, choose the procedure object type, name it "AssignToCustomer," and click Create.

New Object		>	<
Select a Categor Data Managem User Interface BPM Chatbots Resources Documentation Extensibility Deploy Reporting	-	Select a Type: API Subtype Group Data Provider Transaction Data Selector Data View Pomain Procedure Structured Data Type	
Defines a progra printing.	m or routin	e that implements an algorithm, including database access, data updates, and	
<u>N</u> ame:	AssignTo	Customer	
Description:	Assign To	o Customer	
Module/ <u>F</u> older:	😭 Root	Module 👻	
		Create Cancel	

Now, let's go to the "Variables" section and define the following:

- ReservationCode: Based on the ReservationCode attribute, and
- CustomerCode: Based on the CustomerCode attribute.

Next, go to the Rules section and define the following rule:

• Parm(in: &ReservationCode, in: &CustomerCode);

In the procedure source, define the code:

For each Reservation

Where ReservationCode= &ReservationCode

CustomerCode= &CustomerCode

Endfor

(The reservation received by parameter is searched for and the Customer previously created in the Customer transaction is assigned.)

🐼 Start Page 🗙 🌓 As	ssignToCustomer * ×				
Source Layout Rules *	Conditions Variables	Help Document	ation		
Name	Туре	Is Collection	Description		
🖃 🚷 Variables					
🛓 & Standard Variables					
<ul> <li>CustomerCode</li> </ul>	Attribute:CustomerCode		Customer Code		
<ul> <li>ReservationCode</li> </ul>	Attribute:ReservationCode		Reservation Code		
G	Start Page 🗙 🛟	AssignToCustomer	·×		
			ariables   Help   Documer		
	2		-		
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		Source	Layout Rules * Condi	tions Variables Help [	Documentation
		Subrouti	nes		~
			1 ∃ For each Rese	rvation	
			2 Where Res	ervationCode= &R	eservationCode
			3 CustomerCo	ode= &CustomerCo	de
			4 - Endfor		

Save the Procedure by pressing (CTRL + S).

We have already created the objects. In the next video, we will see how to associate them with the diagram we have previously created.

## Video 9: Associating objects with the diagram and creating relevant data

In this video, we will see how to associate the previously created objects with each one of the tasks defined in the diagram.

In the "Reservation" task, associate the Transaction of the same name (which will allow the user to enter a reservation to start the process). To do so, select the task and in the Web Object property assign the "Reservation" Transaction by clicking on the three dots and selecting the transaction.

Properties	Ф	×			
🔢 🛃 🌾 Filter		$\times$		Application Declaration	Application Declaration
<ul> <li>Task: Reservation</li> </ul>		^		Application: (none)	Application: (none)
Name	Reservation		/	Data Mappings	Data Mappings
Task Metadata Id	15			Parameter	Parameter Relevant data
Task Metadata GUID	ee43c2ab-391c-4fcb-acef-6d909	9			
Туре	User				
Application	(none)				
SD Application	(none)				
Visible in history	True				OK Can

	attem:				-All		-
Category: *ALL			*	Module/Folder:			÷
	] Modified:						
-	Name /	Туре	Module	Description		Modified Dat	Import Date
1	AppMasterPage	Web Master Panel	Root	Application Mas	ster Page	12/12/2011_	20/10/2021 11:39
	Customer	Transaction	Root_	Customer		20/10/2021_	
1	PromptMasterPage	Web Master Panel	Root	Prompt Master Page Recent Links web compo		31/01/2014_	20/10/2021 11:39
	RecentLinks	Web Component	Root_			22/08/2007_	20/10/2021 11:39
	Reservation	Transaction	Root	Reservation		20/10/2021	
1	RwdMasterPage	Web Master Panel	Root	Responsive Ma	ister Page	06/06/2016	20/10/2021 11:39
1	RwdPromptMasterPage	Web Master Panel	Root_	Rwd Prompt Ma	aster Page	06/07/2020	20/10/2021 11:39
-	RwdRecentLinks	Web Component	Root_	Responsive Re	cent Links	25/07/2014_	20/10/2021 11:39

**Concept of Relevant Data:** Relevant Data allows you to define global variables for the business process. This means that the data contained in these variables can be queried or modified throughout the entire process.

Now you have to associate a relevant data item with the "Reservation" task. This will allow managing the transfer of data between the tasks in the flow. In this case, the relevant data to be generated is ReservationCode.

In the dialog box where the transaction was associated, you will see the "Data Mappings" section. In the Relevant Data column, click the sicon to associate the

Relevant Data and then OK.

Application De	eclaration	×
Application:	Reservation	
- Data Mappir	ngs	
Primary ke	y attribute	Relevant data
Reservatio	nCode	ReservationCode 🔂 🕶
		OK Cancel

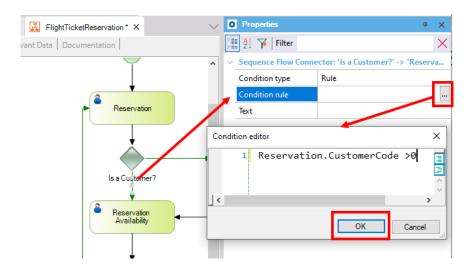
As you may have noticed, ReservationCode was automatically filled in (you didn't have to type it in). This feature is automatically provided for primary keys only. That is, there is automatic mapping between the relevant data and the primary key attribute.

When the "Reservation" Transaction is executed, the ReservationCode relevant data will be associated with the identifier of the entered reservation.

After associating the transactions, to continue defining the flow we need to define Gateways, as we will see in the next video.

# Video 10: Associating more objects with the diagram

In this video, we will associate more objects with the diagram. To continue defining the flow, you have to define the conditions to be evaluated for each of the connectors leaving the Gateway "Is this a Customer?"



Select the connector that leaves the Gateway "Is this a Customer?" and goes to "Reservation Availability." In its "Condition Rule" property, click the three dots symbol

and a condition editor will open for you to define the following:

Reservation.CustomerCode > 0

This condition evaluates if, in the Reservation Transaction, the CustomerCode was filled with some value (and since it is a foreign key, that customer value must exist). If so, the "Reservation Availability" task is continued.

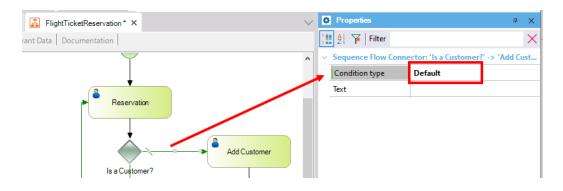
**Evaluation of conditions:** A condition can be defined in three different ways depending on the complexity of the evaluation to be performed in the Gateway.

- 1. Define a rule for each connector: It is an arithmetic expression that can be defined using attributes of the Transactions included in the diagrams (the option we are using) or by evaluating relevant data, together with operations >,<,=,+,\*.
- 2. Define a procedure that evaluates all the possible paths: In a Gateway's properties you will find the "Condition procedure" property, where you can associate a procedure that evaluates and determines the path to take. The connectors' values will depend on the paths defined by the procedure.
- 3. Define a procedure for each connector: Instead of choosing the Rule option at the connector level, there is the Procedure type that allows defining a procedure per path.

The last 2 cases apply to complex situations, which shows all the power and expressiveness of GeneXus to evaluate the path.

A diagram can evaluate the value of an attribute directly.

Now it is necessary to configure the other connector that leaves the Gateway "Is this a Customer?" and goes to the "Add Customer" task:



In its "Condition Type" property, choose the "Default" value as shown. This means that if none of the other connectors of the Gateway is met, then this one will be followed.

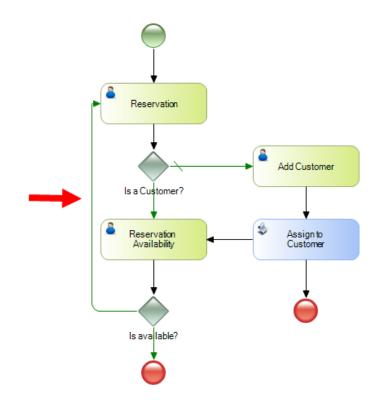
Next, the corresponding application must be associated with the "Reservation Availability" task:

 Web Object = the "Reservation" Transaction.
 In the same dialog, assign the ReservationCode relevant data as you did in the "Reservation" task.

🐼 Start Page 🗙 🔀 FlightTicketReservation * 🗙	$\sim$	0	Properties		<del>џ</del>	×
Diagram * Relevant Data Documentation		>	📱 🛃 🌾   Filter			×
	^	~	Task: Reservation Av	ailability		^
			Name	Reservation Availability		
Is a Customer?			Task Metadata Id	23		
			Task Metadata GUID	464d0d14-7dbe-4ff1-aa7f-2f7	d3	
Reservation     Availability	_	١.	Туре	User		
			Application	Reservation		
		Ľ	SD Application	(none)		

If the reservation is available, the process ends. Otherwise, the flow returns to the initial task to change the reservation details:

Select the connector that goes from the "Is it available?" Gateway to the "Reservation" task:

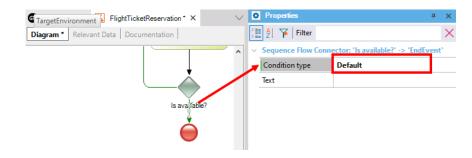


In its Condition rule property, enter:

ReservationAvailable = False

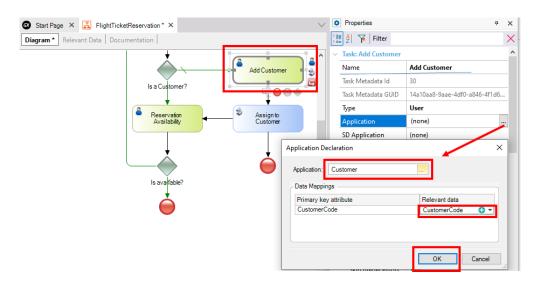
This definition is an evaluation; that is, if the reservation is not available, it will go back to the task that involves modifying the reservation data.

On the other hand, the connector that goes from the "Is it available?" Gateway to the end of the process must have a connector of Default type:



Next, configure the "Add Customer" task.

• Web Object = "Customer" transaction. In the same dialog, assign the CustomerCode relevant data.



To complete the flow, it is necessary to assign the customer to the reservation. So, after inserting the customer, it must be automatically assigned to the reservation. To do so, assign the "AssignToCustomer" procedure to the "AssignToCustomer" task.

Configure the following for the "AssignToCustomer" task:

- Procedure = the AssignToCustomer object.
- Relevant data: ReservationCode and CustomerCode.

🖁 FlightTicketReservation * 🗙	$\sim$	Properties	<del>4</del>	×
ant Data Documentation		🔠 🦺 🌾   Filter	2	X
+	^	<ul> <li>Task: Assign to Custo</li> </ul>	mer	^
Add Custom	her	Name	Assign to Customer	
Is a Customer?		Task Metadata Id	32	
is a customer?		Task Metadata GUID	6593e439-24bf-44e4-a84d-9d5fc	
		Туре	Script	
Reservation Availability Assign to Customer	· •	Procedure	(none)	
		Visible in history	True	
		Roles		
	Application	Declaration	>	×
Is available?	Application	: AssignToCustomer		
<b></b>	Data Map	pings		
	Paramete		Relevant data	
		vationCode	ReservationCode	
	In: Custo	merCode	CustomerCode 🕀 🗸	
			OK Cancel	

Save the changes by pressing (CTRL + S).

TIP: You can add labels to the connectors to make the process more descriptive. For example, select a connector from the Is this a customer? conditional, press F2, and type Yes or No as appropriate. Repeat the steps with the connectors of Is it available?

The flow will be as shown below.

All the objects are now associated with each of the tasks in the flow. In the next video, we will see the execution of the diagram.

### Video 11: Execution

Now that we have associated all the objects with each of the tasks in the flow, let's execute the diagram.

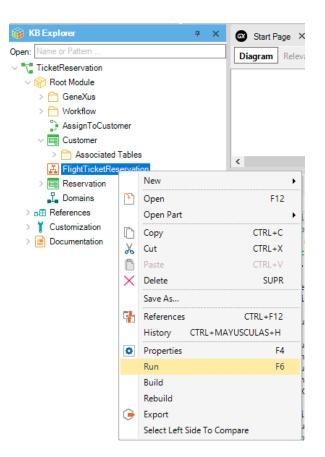
Select Build > Build All from the Main Menu and the following dialog box will appear:

GeneXus Account Authentication				
Create a GeneXus account or Sign in				
Please, enter your email address below:	_			
I Remember me				
Do you have a GeneXus account?				
No, I'm new in GeneXus, I need to create an account				
O Yes! I already have one and my password is:				
Forgot your password?				
Create Accourt	<i>i</i> t			

If you don't have a GeneXus account, you can create one at this point. If you already have an account, log in.

As part of the process, GeneXus will evaluate the impact caused by the definitions in the Knowledge Base and will show an Impact Analysis report. This report shows the structural changes that must be made in the database; click the "Create" button to create the normalized database and generate the programs.

To execute the process, right-click the name of the diagram that appears in the tree of the "KB Explorer" window and select the "Run" option:



Next, GeneXus will perform the necessary actions to execute this diagram:

- Update workflow objects
- Specify objects
- Generate objects
- Compile workflow objects
- Make an impact analysis of the diagram on the database

These steps will be performed depending on the changes made; that is, a change in the diagram will cause all its objects to be specified and generated, impacting the diagram.

Once the diagram is executed, a browser will automatically open showing the application.

GeneXus GXflow™				Tuesday 1	5 June 2021	- 03:44:34 AM	Workflow
🖵 DESKTOP	^ 1	INBOX	🕂 New	🎨 Execute	➢ Send	More Actions	•
INBOX		1 🖾 (	💿 🙉 Subj	ect		Task	Created 🔻
оитвох	_		🕚 🙆 Fligh	t Ticket Reservat	ion	Reservation	06/15/21 10:4
MY PROCESSES	_						
MY PERFORMANCE	_						
PROCESS MANAGER	~						
	~						
STATISTICS	~			FIR	ST / PREV / NE	EXT / LAST 🔇	1 - 1 of 1

By default, it will be run in a Prototype environment, so a new instance of the process is generated that allows the developer (**Prototyper**) to perform all the steps without defining roles or assigning users.

We already have the diagram running. In the next video, we will see the process flow for the cases of a customer that needs to be registered in the system and a customer that is already registered.

### Video 12: First run

In this video, we will see the case of a client that needs to be registered.

When the application is run, the inbox is displayed with a task ready to be executed. The first thing to do is select the task and click the **Execute** button (another option is to double-click the task). The associated object (Reservation) will open for you to enter the reservation details. Leave the CustomerCode field empty (the customer has not been registered yet).

Image: Content of the servation       Task       Created T         Image: Flight Ticket Reservation       Reservation       06/15/21 104             Image: PREV/NEXT/LAST (*)       1 - 1 of 1             Image: Prev/Next/Prev/Next/Last (*)       1 - 1 of 1             Image: Prev       0 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	ілвох 🧲	New 🎨 Execute	Send N	lore Actions 🗸		
ainaspst       1 - 1 of 1         ainaspst       1 - 1 of 1         RESERVATION       () > SELECT         Code       0         Date       06/17/21         Date       06/21/21         Elight Date       06/21/21         Customer Code       0         Customer Name       0	1 🖂 🎯 🤇	Subject	Task		Created	•
RESERVATION  Reservation  ( ( ) ) SELECT  Code  Date  06/17/21  Flight Date  06/21/21  Customer Code  Customer Code  Customer Name		Flight Ticket Reserve	ation Reser	vation	06/15/21	10:4
All and and a servation  Reservation  Reservation  Reservation  Code  O  Date  O6/17/21  Date  O6/21/21  Date  Customer Code  O  Customer Code  O  Customer Name  Customer						
Anasyst# RESERVATION Reservation (<) >> SELECT   Code 0   Date 06/17/21   Date 06/21/21   Eight Date 06/21/21   Quantity 2   Customer Code 0   Customer Name						
Anasyst# RESERVATION Reservation (<) >> SELECT   Code 0   Date 06/17/21   Date 06/21/21   Eight Date 06/21/21   Quantity 2   Customer Code 0   Customer Name						
Anasyst# RESERVATION Reservation (<) >> SELECT   Code 0   Date 06/17/21   Date 06/21/21   Eight Date 06/21/21   Quantity 2   Customer Code 0   Customer Name						
Keservation     (< < ) > SELECT     Code     Date     06/17/21     Flight Date     06/21/21     Quantity     2     Customer Code     0     Customer Name	ain.aspx#	FI	RST / PREV / NEXT / L/	AST 🔇	1 -	1 of 1
Code 0   Date 06/17/21   Flight Date 06/21/21   Quantity 2   Customer Code 0   O •	RESERVATION					
Code 0   Date 06/17/21   Flight Date 06/21/21   Quantity 2   Customer Code 0   Customer Name		Reservation				
Date 06/17/21   Flight Date 06/21/21   Quantity 2   Customer Code 0   Customer Name			« < > » :	SELECT		
Flight Date 06/21/21 29 Quantity 2 Customer Code 0 😭 Customer Name		Code	0			
Quantity 2 Customer Code 0 👔 Customer Name		Date	06/17/21	9		
Customer Code 0 👔		Flight Date	06/21/21	9		
Customer Name		Quantity	2			
		Customer Code	0			
CONFIRM		Customer Name				
CONFIRM CANCEL						
		CON	IFIRM CANC	EL		

Click CONFIRM. You will see a message indicating that the data has been successfully added, so you should click the close icon at the top right  $\times$  to return to the inbox. The task has been executed and you just need to complete it. Click the **Send** button:

INBOX	🕀 New 🐁 Execute	Send More Action	ns 🗸
() 🖾 🤇	Subject	Task	Created 🔻
	Flight Ticket Reservation	Reservation	06/15/21 11:39 PM

Now the Gateway condition will be evaluated. Since the client doesn't exist, you will have to register it. To confirm this, select **Execute**:

INBOX	🕂 New 🛞	Execute 🖂 Send	More Actions +	٩
1 🛛 🔘	🛞 Subject		Task	Created 💌
0 🛛 🛈	Flight Ticke	t Reservation	Add Customer	06/16/21 10:15 PM
CUSTOMER				
		« < > » select		
	Code	0		
	Name	John		
	Sur Name	Smith		
	Address	Av. Brazil 23465		
			ĺ.	
	CON	FIRM CANCEL		

Complete the customer's data. Click CONFIRM and you will see a message indicating that the data has been successfully added. Click the close icon  $\times$  to close the client entry form.

To complete the task, click the **Send** button.

Once the "Add Customer" task is complete, as defined in the flow, the "AssignToCustomer" Procedure will be automatically executed assigning the customer to the reservation.

The next task in the flow is "Reservation Availability." Click **Execute** to confirm it:

INBOX	H New	🎨 Execute	Send	More Actions -	٩
1 🛛 🤇	Subjec	t		Task	Created 🔻
	S 🕘 Flight	Ticket Reservatio	on	Reservation Availabili	ty 06/16/21 10:19 PM

The Reservation Transaction (associated with the "Reservation Availability" task) will open, this time showing the Availability checkbox:

RESERVATION		
	Reservation	
		« < > » select
	Code	1
	Date	06/17/21 29
	Flight Date	06/21/21
	Quantity	2
	Customer Code	1
	Customer Name	John
	Available	
	CONF	IRM CANCEL DELETE

Mark the reservation as available and click CONFIRM. You will see a message informing you that the data was successfully updated. Click the close icon  $\times$ .

Click **Send**. Once this task is complete, the process ends.

We have already completed the process for an unregistered customer. In the next video, we will see the case of an already registered customer.

### Video 13: Second run

In the previous video, we saw the process for a customer who is not registered. In this video, we will work with a customer who is already registered. Create a new task by clicking the "New" option in the inbox.

INBOX 🕂 New	) Execute 🛛 Send	More Actions -	٩
! 🖂 🚳 🛞 Subject		Task	Created 💌
	NEW PROCESS Select Process/Task:		×
	Flight Ticket Reserve	ation	
	Subject	OK CANCEL	4

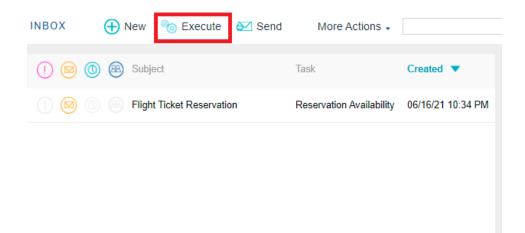
Select "Flight Ticket Reservation" and click OK.

In the inbox, you will see the new task (Reservation). Click **Execute** or double-click it to execute it.

RESERVATION	
	Reservation
	« < > » select
	Code 0
	Date 06/17/21 29
	Flight Date 11/21/21 29
	Quantity 3
	Customer Code 1
	Customer Name John
	CONFIRM

Enter the details of the reservation with an existing customer. Click CONFIRM and you will see a message indicating that the data has been successfully added. Click close  $\times$  to return to the inbox. To complete the task, click the **Send** button.

Next, the Gateway condition is evaluated and the workflow continues to "Reservation Availability." Execute this task.



In order to test the entire flow defined, assume that there is no availability for the reservation (don't select the "Available" checkbox) and click CONFIRM:

RESERVATION			>
	Reservation		
		« < > » select	
	Code	2	
	Date	06/16/21 29	
	Flight Date	11/21/21	
	Quantity	3	
	Customer Code	1	
	Customer Name	John	
	Available		
	CON	FIRM CANCEL DELETE	

This implies returning to the initial task to edit the reservation (change its data to start the flow again). Click Close  $\times$  to return to the inbox. Click **Send**. You can confirm that the Reservation is opened for editing.

## Congratulations, you have created your first BPM application in GeneXus 17!

In the next video, we will talk about security and monitoring.

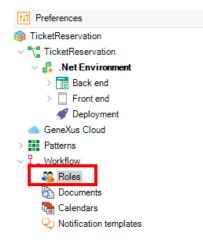
### Video 14: Security

Now let's talk about security and monitoring.

Disclaimer: In order to achieve what is proposed in this section regarding the assignment of different roles to users, it is necessary to have **GXflow user licenses for the full version**.

Nevertheless, this section shows how to configure the assignment of roles to tasks and users.

For this simple example, only one profile is used: The Agency "Operator," a profile that is represented as a "Role." Roles can be viewed in (Preferences > Workflow > Roles):



Double-click "Roles" and a screen will appear for you to insert the role.

Click ENTER and a line will open under Roles to insert the Operator role:

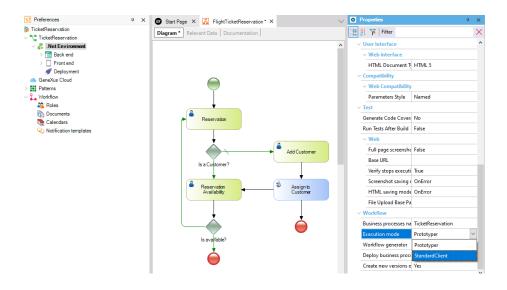
🐼 Start Page 🗙 🔏 Roles 🗙	
Name	Description
🖃 🚟 Roles	
	Operador

The next step is to associate the Role with each of the user's activities. To do so, select the Task and click its "Roles" property to associate it in this way.

FlightTicketReservation * ×	/ [	• Properties	<del>4</del> ×
ant Data Documentation	>	🔢 🛃 🌾 🛛 Filter	×
^		/ Task: Reservation	^
		Name	Reservation
		Task Metadata Id	15
		Task Metadata GUID	ee43c2ab-391c-4fcb-acef-6d9099
		Туре	User
		Application	Reservation
		SD Application	(none)
🕨 🔍 Reservation		Visible in history	True
		Roles	
		Subject rule	
Assign roles to	task		×
Is a Custom			
		×	X
Reservatio Availabilit		Add All	>>
Is ava/fable		<pre>&lt; Remo</pre>	OK Cancel

Repeat the process for AddCustomer, Reservation Availability and even the Start event. When it ends, save the changes by pressing (CTRL + S).

Once you have assigned the role, you will be able to test the application as it will be run in production. For this, change the "Prototyper" default execution mode and select "StandardClient." In the **Preferences** section, click **Environment**. In its "Workflow" group properties, change the default value of the "Execution Mode" property as follows.



Run the diagram and you will be ready to test it. In the next video, we will learn more about execution and monitoring.

### Video 15: Execution and Monitoring

In the previous video, we ran the diagram.

You will note that, instead of opening the client for prototyping, a GXflow login page opens:

GeneXus <sup>™</sup> GXflow <sup>™</sup>			
Role	~		
SIGN IN			
FORGOT YOUR PASSWORD?			

Log in with the administrator user—username and password: WFADMINISTRATOR— to insert the user that will be part of the system.

User: WFADMINISTRATOR	
Password: WFADMINISTRATOR	

Select "Management Console > User"

GeneXus GXflow™			Thursday	17 June 2021	- 06:36:44 AM	Workflow
DESKTOP	<b>~</b>	INBOX	Hew New	le Execute	➢ Send	More Actions -
PROCESS MANAGER	~	1 🛛 🔘	🛞 Subje	ect	Task	Created <b>▼</b>
EVENT VIEWER	~					
	~					
BACKEND	~					
MANAGEMENT CONSOLE	^					
USERS						
ROLES						
ORG. UNIT DEFINITIONS						
				FIRST / P	REV / NEXT / LAS	то

Select the option: New. A pop-up dialog will be displayed to register the user's data.

USERS	🕂 New	🚸 Roles	A Org.Units	More Actions 🗸	
🙆 🙆 Id			Name	Email	
		Workflow	Administrator		

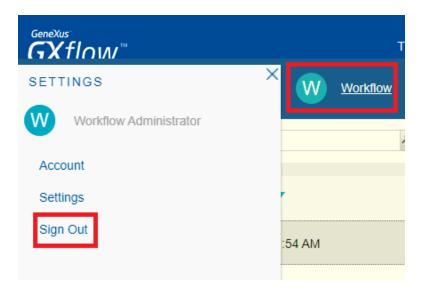
BENERAL	AVAILABILITY	CERTIFICATES
ser	USER1	
ame	Charles Wilson	
mail	cwilson@correo.con	n
assword		
. Password		
lser must cha	nge password at next lo	gon OTrue False

For example, the User will be USER1, named Charles Wilson, with email address cwilson@email.com. Also, we define his password.

Now, you will have to associate the role corresponding to the user's profile, which will be Operator.

SER ROLES
Gerente
GXflow Administrator
GXflow Backend Administrator
GXflow Form Designer
GXflow Manager
GXflow Manager Read Only
GXflow Prototyper
GXflow Security Administrator
Manager
Operator
OK CANCEL

Once the role has been assigned, close the administrator session and log in with USER1.





USER1	
[	
Role	
SIGN II	N

Note that when you enter the client, the following is displayed:

- Name of the logged in user.
- Desktop on the left side.
- Permissions to create an instance of the process.

GeneXus <sup>™</sup> GXflow <sup>™</sup>		Thurs	day 17 Jun	e 2021 - 05:2	8:45 AM	C <u>Charles</u>
DESKTOP	^	INBOX	🕂 New	🇞 Execute	🜌 Send	More Actions
INBOX		1 🛛 🤇	) 🛞 Subje	ect	Task	Created 🔻
оитвох						
MY PROCESSES						
MY PERFORMANCE						

Enter a reservation and save the changes, but don't finish the task (Send). Close the session of USER1 to log in again as administrator (WFADMINISTRATOR).

The administrator user will be able to monitor the processes that were run or are currently running through (ProcessManager > Process).

Select the process and click More Actions > History:

GeneXus GXflow™	Thursday 17 June 2021 - 07:45:01 AM W Workflow	M
PROCESS MANAGER	PROCESSES      Abort      Reactivate      Suspend      More Actions	
·*·	💍 Resume	
PROCESSES	() ( Subject Process V State Owner History	
TASKS	High Priority	
INDIG	() C Flight FlightTi 10 running Workflow Administ	
BUSINESS EVENTS	🕕 💿 🕞 Flight T Flight Ti 10 running Workflow Administ 🗰 Change Deadline	AM
	A 0	L

You will see that the Reservation task is associated with the user "Charles Wilson." The task status, creation date, and completion date are also displayed.

HISTORY				
C Comments Consult	🔷 Conditionals	Optionals	More Actions -	
🙆 💿 🎛 Step	State	User	Created	Ended
	completed	Workflow Engine	06/17/21 12:32 AM	06/17/21 12:32 AM
Reservation	in process	Charles Wilson	06/17/21 12:32 AM	

If Charles Wilson can't continue with the workflow because he is absent, he can temporarily delegate his tasks through the "Out of Office" functionality. To do so, he only has to click his username in the upper right corner of his inbox. In the configuration pop-up dialog that is displayed, he has to click Account.

Wednesday 24 Novembe	er 2021 - 11:22:15 AM	C <u>Charles</u>
		٩
	SETTINGS	×
n	C Charles Wilson	
	Account	
	Settings Sign Out	
		*

Next, he has to select the property **User is currently out of the office** and confirm. It will be possible for him to choose a role or user as a substitute and all the pending tasks will be transferred to the substitute. When he returns, all the unfinished tasks will be returned to him.

ACCOUNT		×
Name	Charles Wilson	*
Email	cwilson@correo.com	
Availability	OUser is currently in the office	
[	Ouser is currently out of the office	
Password	••••••	
R. Password	•••••	
	OK CANCEL	-
•	•	Á

In this way, we have seen how to apply security to our application. In the next video, we will see the statistics that we have available.

### Video 16: Statistics

In the previous video, we saw how to apply security to our application. In this video, we will talk about statistics.

**Statistics** allow us to obtain information in graphic form about the status of business processes; that is, to know the number of processes completed in a period of time, those that were aborted, or those that were not completed on time, as well as the number of completed tasks per user, and the duration of processes, tasks, etc.

To view the statistics, click "Statistics" and you will find different categories to analyze. In this case, select "Process Analysis."

PROCESS ANALYSIS
TASK ANALYSIS
PROCESS PERFORMANCE
TASK PERFORMANCE
TEAM PERFORMANCE

Browse the main menu options to learn more about the features of the GXflow client. This is the end of the course. We hope you enjoyed it! Continue to be part of the GeneXus Community.

### Video 17: What's next?

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Contact Us

o Contact us at our offices or through our sales partners at <u>genexus.com/contactus</u>

We hope to hear from you soon!

The Gene Kur Veam