

# Methods for Business Components

*GeneXus® 15*

**Methods available as from GeneXus 15**

- Insert()
- Update()
- InsertOrUpdate()
  
- GetByKey()
- RemoveByKey()

## Insert()

### Syntax

1) &AdditionOk = &VbleBasedOnBCType.**Insert()**



Boolean

2) if (&VbleBasedOnBCType.**Insert()**)

....

endif

&VbleBasedOnBCType can be scalar or collection.

## Insert() - Example #1

Structure Web Form Win Form Rules E

Name	Type
Show	Show
ShowId	Id
ShowName	Name
ShowDate	Date
ShowTypeId	Id
ShowTypeName	Name
VenueId	Id
VenueName	Name
ShowImage	Image
ShowLastSectorId	Id
Sector	Sector
SectorId	Id
SectorName	Name
SectorPrice	Price
CurrencyCode	Character(3)
SectorTotalQuantity	Numeric(9,0)
...	
Business Component	True

```

Event 'Insert Show - 1st level'
  &Show=new()
  &Show.ShowName="Romeo and Juliet"
  &Show.ShowDate.FromString("11/21/17")
  &Show.ShowTypeId=Find>ShowTypeId,ShowTypeName="Ballet",0)
  &Show.VenueId=Find(VenueId,VenueName="Sodre",0)
  &Show.ShowImage.FromImage(RomeoJuliet)
  if &Show.Insert()
    msg("Data has been successfully added.")
    Commit
  else
    msg(&Show.GetMessages().ToJson(), status)
  endif
Endevent
  
```

## Insert() - Example #2

The screenshot displays the GeneXus IDE interface for a business component named 'Show'.

**Structure Panel:** Shows the properties of the 'Show' business component:

Name	Type
ShowId	Id
ShowName	Name
ShowDate	Date
ShowTypeId	Id
ShowTypeName	Name
VenueId	Id
VenueName	Name
ShowImage	Image
ShowLastSectorId	Id
Sector	Sector
SectorId	Id
SectorName	Name
SectorPrice	Price
CurrencyCode	Character(3)
SectorTotalQuantity	Numeric(9,0)
...	

**KB Explorer:** The 'DPSHOW' data provider is selected under the 'Domains' folder.

**Source Code:** The 'Insert()' method is implemented as follows:

```

1 Show
2 {
3   ShowId = ShowId
4   ShowName = ShowName
5   ShowDate = ShowDate
6   ShowTypeId = ShowTypeId
7   VenueId = VenueId
8   ShowImage = ShowImage
9   ShowLastSectorId = ShowLastSectorId
10  Sector
11  {
12    SectorId = SectorId
13    SectorName = SectorName
14    SectorPrice = SectorPrice
15    CurrencyCode = CurrencyCode
16    SectorTotalQuantity = SectorTotalQuantity
17  }
18 }

```

**Method Implementation:**

```

&NewShow = DPSHOW()
If &NewShow.Insert()
  commit
Else
  msg(&Show.GetMessages().ToJson())
Endif

```

An annotation "Based on Show BC" points to the 'DPSHOW' data provider in the KB Explorer.

**Business Component Table:**

Business Component	True

## Insert() - Example #3

Based on Show BC (Collection) Win Form Rules E

Structure

Name	Type
&NewShows=DPSShows()	Show
If &NewShows.Insert()	Name
Commit	Date
Else	Id
Do ProcessErrors	Name
Endif	Id
ShowImage	Image
ShowLastSectorId	Id

```

Sub 'ProcessErrors'
  For &NewShow in &NewShows
    if (not &NewShow.Success())
      msg (&Show.GetMessages() .ToJson())
    endif
  endfor
EndSub
  
```

Business Component True

DPSShows \* X

Source Rules Variables Help Documentation

Output Show

Collection True

```

1 Show
2 {
3   ShowName = "Madonna In Concert"
4   ShowDate = CtoD("10/10/17")
5   ShowTypeId = Find(ShowTypeId, ShowTypeName="Concert", 0)
6   VenueId = Find(VenueId, VenueName="Madison Square Garden", 0)
7   ShowImage = MadonnaInConcert.Link()
8   Sector
9   {
10    SectorName = "Orchestra Platinum"
11    SectorPrice = 200
12    CurrencyCode = "USD"
13    SectorTotalQuantity = 500
14  }
15  Sector
16  {
17    SectorName = "Orchestra Gold"
18    SectorPrice = 150
19    CurrencyCode = "USD"
20    SectorTotalQuantity = 700
21  }
22 }
23 Show
24 {
25   ShowName = "David Bisbal - Tour 2017"
26   ShowDate = CtoD("12/15/17")
27   ShowTypeId = Find(ShowTypeId, ShowTypeName="Concert", 0)
28   VenueId = Find(VenueId, VenueName="EstadioCentenario", 0)
29   ShowImage = DavidBisbal.Link()
30   Sector
31   {
32    SectorName = "America Rosstrum"
33    SectorPrice = 3500
34    CurrencyCode = "UYU"
35    SectorTotalQuantity = 10000
36  }
37 }
  
```

## Insert() - Example #4

### Procedure: InsertShow

**Parm**(in:&Show); ..... ➔ Based On Show BC

If &Show.**Insert()**

    commit

else

    msg(&Show.GetMessages().ToJson())

endif

## Update()

### Syntax

1) &UpdateOk = &VbleBasedOnBCType.**Update()**



Boolean

2) if (&VbleBasedOnBCType.**Update()**)

....

endif

&VbleBasedOnBCType can be scalar or collection.



## Update() - Example #1

Show X

Structure Web Form Win Form Rules E

Name	Type
Show	Show
ShowId	Id
ShowName	Name
ShowDate	Date
ShowTypeId	Id
ShowTypeName	Name
VenueId	Id
VenueName	Name
ShowImage	Image
ShowLastSectorId	Id
Sector	Sector
SectorId	Id
SectorName	Name
SectorPrice	Price
CurrencyCode	Character(3)
SectorTotalQuantity	Numeric(9,0)
...	

Business Component

True

```

&Show.Load(3)
&Show.ShowDate.FromString("12/15/17")
If &Show.Update()
    commit
else
    msg (&Show.GetMessages() .ToJson())
endif

=

&Show = new()
&Show.ShowId = 3
&Show.ShowDate.FromString("12/15/17")
If &Show.Update()
    commit
Else
    msg (&Show.GetMessages() .ToJson())
endif

```

## Update() - Example #2

Structure | Web Form | Win Form | Rules | E

Name	Type
Show	Show
ShowId	Id
ShowName	Name
ShowDate	Date
ShowTypeId	Id
ShowTypeName	Name
VenueId	Id
VenueName	Name
ShowImage	Image
ShowLastSectorId	Id
Sector	Sector
SectorId	Id
SectorName	Name
SectorPrice	Price
CurrencyCode	Character(3)
SectorTotalQuantity	Numeric(9,0)
...	
Business Component	True

Update Venue

```

Event 'Update Venue'
For each Show order VenueId
where VenueId=&VenueIdFrom and ShowDate>=&DateFrom and ShowDate<=&DateTo
  &Show = new()
  &Show.ShowId = ShowId
  &Show.VenueId=&VenueIdTo
  if &Show.Update()
    Commit
    msg("The update has been succesfully completed")
  else
    msg(&Show.Getmessages().ToJson(),status)
  endif
endfor
Endevent
  
```

## Update() - Example #2 - Another Alternative?

The image shows a GeneXus application interface and its underlying code. The interface at the top is a form with four input fields: 'Date From' with value '&DateFrom', 'Date To' with value '&DateTo', 'Venue Id' with value '&VenueIdFrom' and a dropdown arrow, and another 'Venue Id' with value '&VenueIdTo' and a dropdown arrow. Below these fields is a button labeled 'Update Venue'. A dashed arrow points from this button to the 'Event' 'Update Venue' in the code editor below. The code editor shows the following logic:

```
Event 'Update Venue'  
  &Shows = DPUpdateVenue(&VenueIdFrom,&VenueIdTo,&DateFrom,&DateTo)  
  if &Shows.Update()  
    Commit  
    msg("The update has been successfully completed")  
  else  
    msg(&Show.Getmessages().ToJson(),status)  
  endif  
Endevent
```

To the right of the code editor is a window titled 'DPUpdateVenue' with a 'Source' tab selected. It contains the following SQL query:

```
1 Show from Show  
2 where VenueId=&VenueIdFrom and ShowDate=&DateFrom and ShowDate=&DateTo  
3 {  
4   ShowId  
5   ShowName  
6   ShowDate  
7   ShowTypeId  
8   VenueId = &VenueIdTo  
9   ShowImage  
10 }
```

A red arrow points from the 'Update Venue' button in the form to the 'DPUpdateVenue' window title bar.

## Update() - Example #3

### Procedure: UpdateShow

**Parm**(in:&Show); ..... → Based On Show BC

If &Show.**Update()**

    commit

else

    msg(&Show.GetMessages().ToJson())

endif

## InsertOrUpdate()

### Syntax

**1)** &Ok = &VbleBasedOnBCType.InsertOrUpdate()



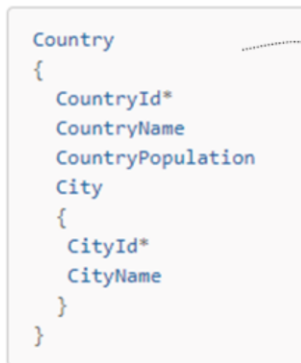
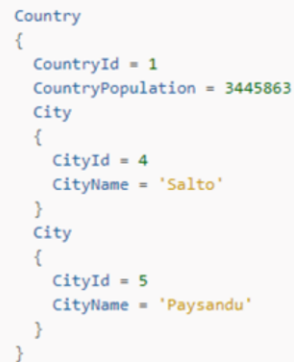
Boolean

**2)** if (&VbleBasedOnBCType.InsertOrUpdate())

....

endif

&VbleBasedOnBCType can be scalar or collection.

**InsertOrUpdate() - Example #1****DPCountry****COUNTRY**

1, 'Uruguay', 3300000,

**COUNTRYCITY**

1, 1, Montevideo

1, 2, Maldonado

1, 3, Colonia

```

&Country = DPCountry()
If &Country.InsertOrUpdate()
  Commit
else
  msg (&Country.GetMessages() .ToJson())
Endif

```

## InsertOrUpdate() - Example #2

### Procedure: InsertOrUpdateShow

Based On Show BC

```
Parm(in:&Show);
```

```
If &Show.InsertOrUpdate()
```

```
    commit
```

```
else
```

```
    msg(&Show.GetMessages().ToJson())
```

```
endif
```

## GetByKey()

- Allows to **get** a record that corresponds to a "line" by specifying its key.
  - First, all the structure must be loaded in memory by using the Load method.



## GetByKey() - Example

The screenshot displays the GeneXus IDE interface. On the left, the 'Structure' pane shows the 'Show' business component with its attributes and relationships. The 'Show' component has attributes: ShowId (Id), ShowName (Name), ShowDate (Date), ShowTypeId (Id), ShowTypeName (Name), VenueId (Id), VenueName (Name), ShowImage (Image), and ShowLastSectorId. It is related to the 'Sector' component via ShowLastSectorId. The 'Sector' component has attributes: SectorId (Id), SectorName (Name), SectorPrice (Name), CurrencyCode (Id), and SectorTotalQuantity (Id).

On the right, the 'SHOW Magazine' application window is shown. It has a title bar 'SHOW Magazine by GeneXus' and a menu bar with 'Recents', 'Show', and 'Increase Prices'. The application contains a 'Show Id' dropdown menu with 'Opera Phantom' selected, a 'Sector Id' dropdown menu with 'Balcony' selected, and a 'Percentage' input field with '0'. An 'Increase Price' button is located below these fields. A dashed arrow points from the 'Increase Price' button to the event handler code.

The event handler code for the 'Increase Price' button is as follows:

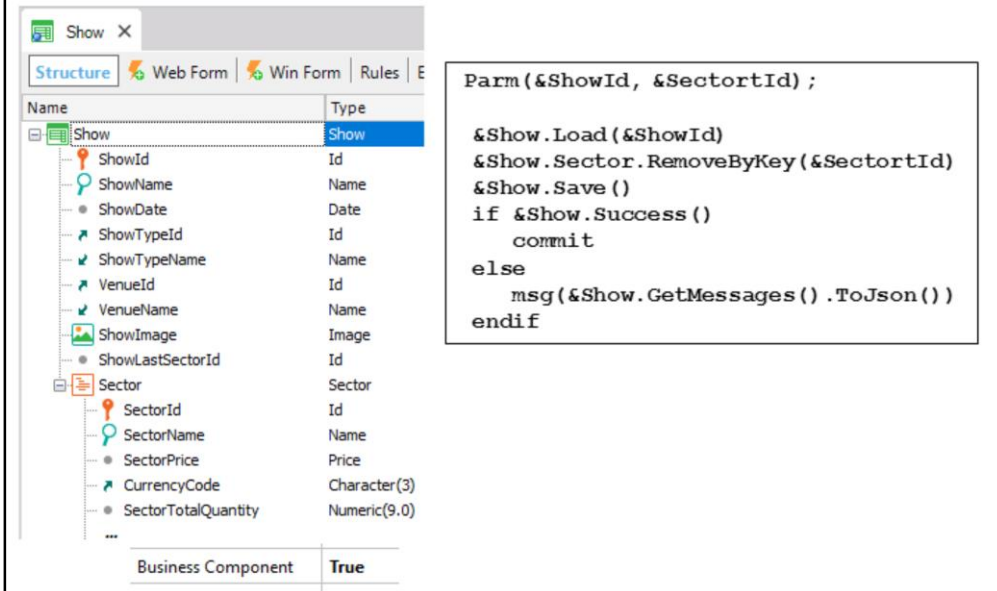
```
Event 'Increase Price'  
&Show.Load(&ShowId)  
&OneSector=&Show.Sector.GetByKey(&SectorId)  
&OneSector.SectorPrice = &OneSector.SectorPrice * (1 + &Percentage/100)  
&Show.Save()  
commit  
Endevent
```

At the bottom of the IDE, the 'Business Component' tab is active, showing the 'Show' component with the 'Business Component' property set to 'True'.

## RemoveByKey()

- Allows to **remove** a record that corresponds to a "line" by specifying its key.
  - First, all the structure must be loaded in memory by using the Load method.

## RemoveByKey() - Example



The screenshot displays the GeneXus IDE interface. On the left, the 'Structure' pane shows the 'Show' business component with its attributes and relationships. The 'Show' component has attributes: ShowId (Id), ShowName (Name), ShowDate (Date), ShowTypeId (Id), ShowTypeName (Name), VenueId (Id), VenueName (Name), ShowImage (Image), and ShowLastSectorId (Id). It is related to the 'Sector' component via ShowLastSectorId. The 'Sector' component has attributes: SectorId (Id), SectorName (Name), SectorPrice (Price), CurrencyCode (Character(3)), and SectorTotalQuantity (Numeric(9,0)).

On the right, a code snippet is shown in a text box:

```

Parm(&ShowId, &SectorId);

&Show.Load (&ShowId)
&Show.Sector.RemoveByKey (&SectorId)
&Show.Save ()
if &Show.Success ()
    commit
else
    msg (&Show.GetMessages () .ToJson ())
endif
  
```

At the bottom of the structure pane, a table indicates the business component status:

Business Component	True

If the developer needs to delete, for a certain &ShowId, the line whose identifier line =&SectorId, he/she can solve it with the showed code.