



INSTITUTO TECNOLÓGICO DE CULIACÁN

Unidad 4:

Bases de datos Semiestructuradas

MATERIA:

Temas Selectos de Base de Datos

ACTIVIDAD:

Proyecto XML

CARRERA:

Ingeniería en Sistemas Computacionales

MAESTRO:

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Culiacán Sinaloa a 27 de mayo de 2023

Migrar las tablas products, categories, suppliers (Eliminar el campo ntext e image de las tablas). Especificar paso por paso como realizaron la migración.

1.-Checamos cada tabla en la interfaz de usuario los tipos de datos de sus columnas

Products

dbo.Products
Columns
ProductID (PK, int, not null)
ProductName (nvarchar(40), not null)
SupplierID (FK, int, null)
CategoryID (FK, int, null)
QuantityPerUnit (nvarchar(20), null)
UnitPrice (money, null)
UnitsInStock (smallint, null)
UnitsOnOrder (smallint, null)
ReorderLevel (smallint, null)
Discontinued (bit, not null)

No hay ningun ntext o image.

Categories

dbo.Categories
Columns
CategoryID (PK, int, not null)
CategoryName (nvarchar(15), not null)
<u>Description (ntext, null)</u>
<u>Picture (image, null)</u>

Hay ntext e image.

Suppliers

dbo.Suppliers
Columns
SupplierID (PK, int, not null)
CompanyName (nvarchar(40), not null)
ContactName (nvarchar(30), null)
ContactTitle (nvarchar(30), null)
Address (nvarchar(60), null)
PostalCode (nvarchar(10), null)
Phone (nvarchar(24), null)
Fax (nvarchar(24), null)
<u>HomePage (ntext, null)</u>
Cityid (FK, int, null)

Hay un ntext y 0 image.

2.- Hicimos las sentencias excluyendo a los atributos con ntext e image.

```
SELECT SUPPLIERID, COMPANYNAME, CONTACTNAME, CONTACTTITLE, ADDRESS, POSTALCODE, PHONE,
FAX, CITYID
FROM SUPPLIERS-->QUITAMOS HOMEPAGE
GO
SELECT CATEGORYID, CATEGORYNAME
FROM CATEGORIES-->QUITAMOS PICTURE Y DESCRIPTION
GO
SELECT *
FROM PRODUCTS-->NO QUITAMOS NADA
```

3.-Realizamos la consulta de las 3 tablas para que nos arrojará el query XML de los campos de las tablas seleccionadas.

```
SELECT
(SELECT CATEGORYID, CATEGORYNAME
FROM CATEGORIES-->QUITAMOS PICTURE Y DESCRIPTION
FOR XML PATH('CATEGORY'), ROOT('CATEGORIES'), TYPE),

(SELECT *
FROM PRODUCTS -->NO QUITAMOS NADA
FOR XML PATH('PRODUCT'), ROOT('PRODUCTS'), TYPE),

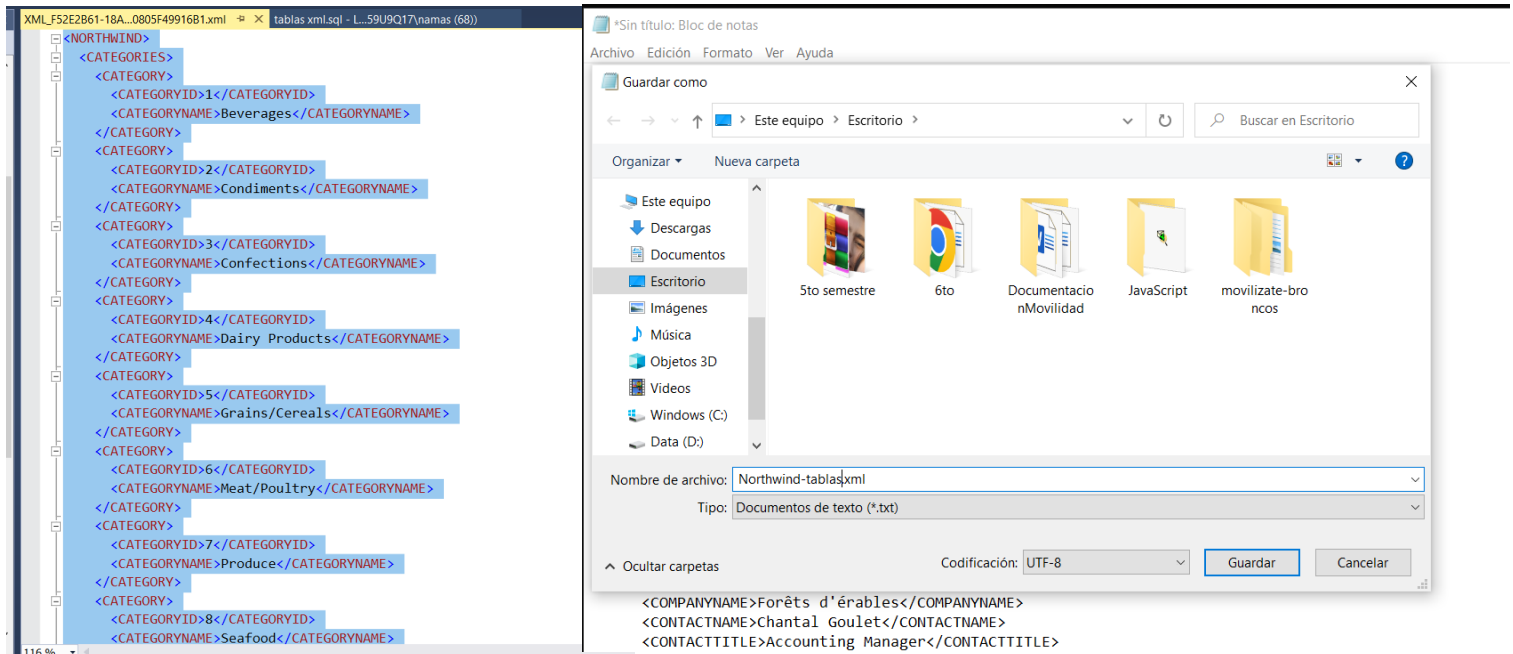
(SELECT SUPPLIERID, COMPANYNAME, CONTACTNAME, CONTACTTITLE, ADDRESS, POSTALCODE,
PHONE, FAX, CITYID
FROM SUPPLIERS-->QUITAMOS HOMEPAGE
FOR XML PATH('SUPPLIER'), ROOT('SUPPLIERS'), TYPE)

FOR XML PATH('NORTHWIND')
```

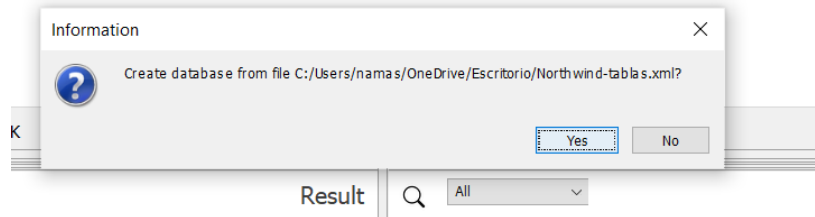


Usamos las consultas de esta manera porque selecciona todas las filas de la tabla y las estructura en formato XML utilizando las cláusulas "PATH", "ROOT" y "TYPE". El resultado será un documento XML con un elemento raíz llamado <categories> y un elemento <category> para cada fila de datos.

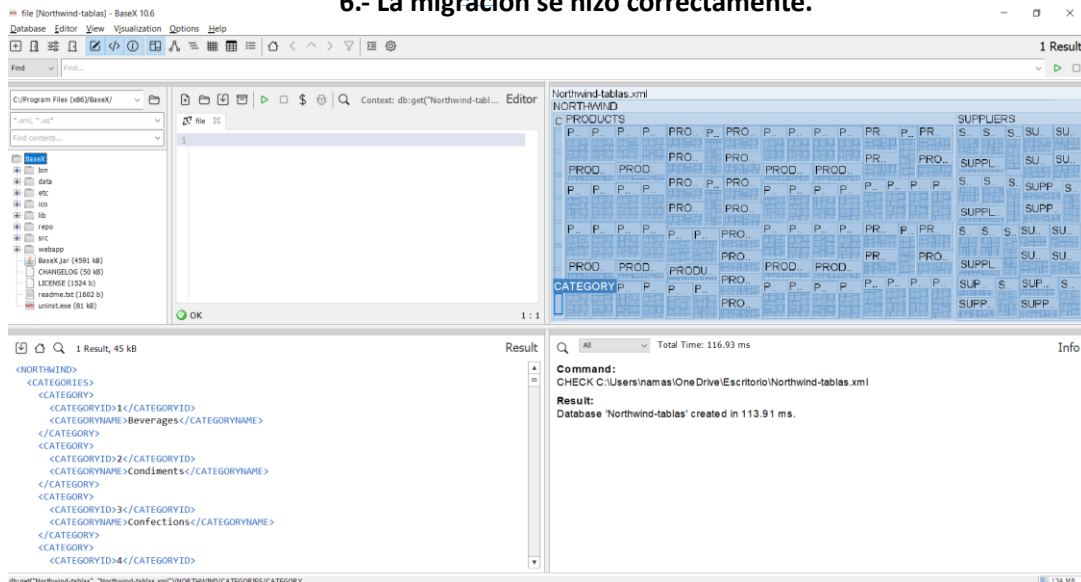
4.- Copiamos el código y creamos un archivo XML.



5.-Abrimos el archivo XML en BaseX, nos dió la opción de crear la base de datos a partir del archivo Northwind-tablas.xml, le dimo sí y se creó.



6.- La migración se hizo correctamente.



Revisar la estructura de la base de datos XML en BaseX.

Northwind-tablas.xml																			
NORTHWIND																			
C. PRODUCTS														SUPPLIERS					
C..	PRODU..	P..	PRODU..	PRODU..	p..	PRODU..	PR..	PR..	PR..	PR..	PROD..	p..	PROD..	SUP..	SUP..	s..	SUPP..	SUPP..	
C..	PRODU..		PRODU..	PRODU..		PRODU..					PROD..		PRODU..				SUPP..	SUPP..	
C..	PRODU..		PRODU..	PRODU..		PRODU..							U						
C.	PRODU..	P..	PRODU..	PRODU..	p..	PRODU..								SUP..	SUP..	s..	SUPPLI..	s..	
C..	PRODU..		PRODU..	PRODU..		PRODU..											SUPPLI..		
C..	PR..	PRO..	ProductID	O..	PROD..	p..	PROD..	PR..	PR..	PR..	PR..	PRO..	PRO..	PROD..	SU..	SU..	s..	SUPPL..	SUPPL..
C..					PROD..		PRODU..							PRODU..				SUPPL..	SUPPL..
C..	PRODUCT		PRODUCT					PRODUCT		PRODUCT		PRODUCT			SUPPLIER				
C..	PRO..	PR..	PRO..	PR..	PR..	PR..	PR..	PR..	PR..	PR..	PR..	PR..	PR..		SUPPLI..	SU..	SUPPLI..	SU..	
C..															SUPPLIER		SUPPLIER		

Así es como aparece la interfaz de la estructura XML

Podemos indagar entre los elementos consultado en el lenguaje nativo

The screenshot shows a SQL IDE with a query editor on the left and a data grid on the right. The query editor contains the following code:

```

1 for $element in doc('Northwind-tblas')/*
2 return $element
3

```

The data grid displays the results of the query. The columns are labeled 'CATEGORYNAME', 'PRODUCT', 'SUPPLIER', and 'SUP'. The grid contains multiple rows of data, with some cells highlighted in red. The data appears to be a list of products and their suppliers, with some cells containing values like 'PR', 'PROD', 'PRO...', 'SUP...', 'SU...', 'SC...', 'C...', 'P...', 'Q...', 'D...', 'U...', 'R...', 'S...', 'A...', 'E...', 'F...', 'G...', 'H...', 'I...', 'J...', 'K...', 'L...', 'M...', 'N...', 'O...', 'P...', 'Q...', 'R...', 'S...', 'T...', 'U...', 'V...', 'W...', 'X...', 'Y...', 'Z...'.

Realizar consultas sobre cada tabla individual con XPath, Xquery o el lenguaje de consulta nativo.

Consultas con Xquery

1.-Consulta de los productos que su categoría sea la 2

```
for $products in doc('Northwind-tablas.xml')/NORTHWIND/PRODUCTS/PRODUCT
```

```
where $products/CategoryID=2
```

```
return $products
```

Resultado:

```
<PRODUCT>
```

```
<ProductID>3</ProductID>
```

```
<ProductName>Aniseed Syrup</ProductName>
```

```
<SupplierID>1</SupplierID>
```

```
<CategoryID>2</CategoryID>
```

```
<QuantityPerUnit>12 - 550 ml bottles</QuantityPerUnit>
```

```
<UnitPrice>10.0000</UnitPrice>
```

```
<UnitsInStock>13</UnitsInStock>
```

```
<UnitsOnOrder>70</UnitsOnOrder>
```

```
<ReorderLevel>25</ReorderLevel>
```

```
<Discontinued>0</Discontinued>
```

```
</PRODUCT>
```

```
<PRODUCT>
```

```
<ProductID>4</ProductID>
```

```
<ProductName>Chef Anton's Cajun Seasoning</ProductName>
```

```
<SupplierID>2</SupplierID>
```

```
<CategoryID>2</CategoryID>
```

```
<QuantityPerUnit>48 - 6 oz jars</QuantityPerUnit>
```

```
<UnitPrice>22.0000</UnitPrice>
```

```
<UnitsInStock>53</UnitsInStock>
```

```
<UnitsOnOrder>0</UnitsOnOrder>
```

<ReorderLevel>0</ReorderLevel>

<Discontinued>0</Discontinued>

</PRODUCT>

<PRODUCT>

<ProductID>5</ProductID>

<ProductName>Chef Anton's Gumbo Mix</ProductName>

<SupplierID>2</SupplierID>

<CategoryID>2</CategoryID>

<QuantityPerUnit>36 boxes</QuantityPerUnit>

<UnitPrice>21.3500</UnitPrice>

<UnitsInStock>0</UnitsInStock>

<UnitsOnOrder>0</UnitsOnOrder>

<ReorderLevel>0</ReorderLevel>

<Discontinued>1</Discontinued>

</PRODUCT>

```
1 for $products in doc('Northwind-tablas.xml')/NORTHWIND/PRODUCTS/PRODUCT
2 where $products/CategoryID=2
3 return $products
```

OK

12 Results, 5202 b

Result

```
<PRODUCT>
  <ProductID>3</ProductID>
  <ProductName>Aniseed Syrup</ProductName>
  <SupplierID>1</SupplierID>
  <CategoryID>2</CategoryID>
  <QuantityPerUnit>12 - 550 ml bottles</QuantityPerUnit>
  <UnitPrice>10.0000</UnitPrice>
  <UnitsInStock>13</UnitsInStock>
  <UnitsOnOrder>70</UnitsOnOrder>
  <ReorderLevel>25</ReorderLevel>
  <Discontinued>0</Discontinued>
</PRODUCT>
<PRODUCT>
  <ProductID>4</ProductID>
  <ProductName>Chef Anton's Cajun Seasoning</ProductName>
  <SupplierID>2</SupplierID>
  <CategoryID>2</CategoryID>
  <QuantityPerUnit>48 - 6 oz jars</QuantityPerUnit>
  <UnitPrice>22.0000</UnitPrice>
  <UnitsInStock>53</UnitsInStock>
  <UnitsOnOrder>0</UnitsOnOrder>
  <ReorderLevel>0</ReorderLevel>
  <Discontinued>0</Discontinued>
</PRODUCT>
```

2.-Consulta de los productos que tienen 5 o menos unidades en stock

for \$products in doc('Northwind-tablas.xml')/NORTHWIND/PRODUCTS/PRODUCT

where \$products/UnitsInStock<=5

order by \$products/UnitsInStock

return (\$products/ProductName, \$products/UnitsInStock)

Resultado:

<ProductName>Chef Anton's Gumbo Mix</ProductName>

<UnitsInStock>0</UnitsInStock>

<ProductName>Alice Mutton</ProductName>

<UnitsInStock>0</UnitsInStock>

<ProductName>Thüringer Rostbratwurst</ProductName>

<UnitsInStock>0</UnitsInStock>

<ProductName>Gorgonzola Telino</ProductName>

<UnitsInStock>0</UnitsInStock>

<ProductName>Perth Pasties</ProductName>

<UnitsInStock>0</UnitsInStock>

<ProductName>Sir Rodney's Scones</ProductName>

<UnitsInStock>3</UnitsInStock>

<ProductName>Louisiana Hot Spiced Okra</ProductName>

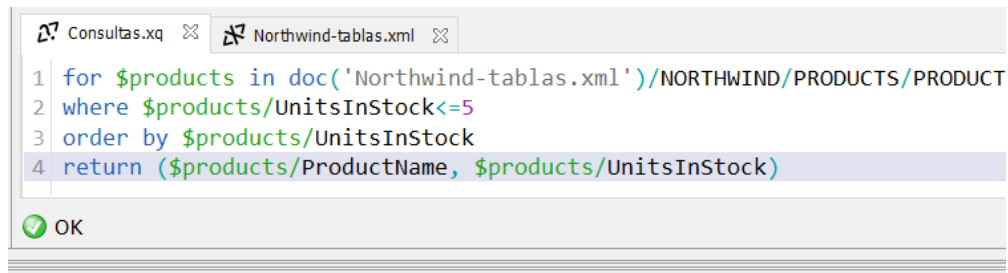
<UnitsInStock>4</UnitsInStock>

<ProductName>Longlife Tofu</ProductName>

<UnitsInStock>4</UnitsInStock>

<ProductName>Rogede sild</ProductName>

<UnitsInStock>5</UnitsInStock>



The screenshot shows a query editor with two tabs: 'Consultas.xq' and 'Northwind-tablas.xml'. The query in the editor is as follows:

```
1 for $products in doc('Northwind-tablas.xml')/NORTHWIND/PRODUCTS/PRODUCT
2 where $products/UnitsInStock<=5
3 order by $products/UnitsInStock
4 return ($products/ProductName, $products/UnitsInStock)
```

Below the query, there is a green checkmark icon and the text 'OK'.

18 Results, 703 b

```
<ProductName>Chef Anton's Gumbo Mix</ProductName>
<UnitsInStock>0</UnitsInStock>
<ProductName>Alice Mutton</ProductName>
<UnitsInStock>0</UnitsInStock>
<ProductName>Thüringer Rostbratwurst</ProductName>
<UnitsInStock>0</UnitsInStock>
<ProductName>Gorgonzola Telino</ProductName>
<UnitsInStock>0</UnitsInStock>
<ProductName>Perth Pasties</ProductName>
<UnitsInStock>0</UnitsInStock>
<ProductName>Sir Rodney's Scones</ProductName>
<UnitsInStock>3</UnitsInStock>
<ProductName>Louisiana Hot Spiced Okra</ProductName>
<UnitsInStock>4</UnitsInStock>
<ProductName>Longlife Tofu</ProductName>
<UnitsInStock>4</UnitsInStock>
<ProductName>Rogede sild</ProductName>
<UnitsInStock>5</UnitsInStock>
```

3.- Consulta de todas las categorías

for \$categories in doc('Northwind-tablas.xml')/NORTHWIND/CATEGORIES/CATEGORY

return \$categories

Resultado:

```
<CATEGORY>
  <CATEGORYID>1</CATEGORYID>
  <CATEGORYNAME>Beverages</CATEGORYNAME>
</CATEGORY>
<CATEGORY>
  <CATEGORYID>2</CATEGORYID>
  <CATEGORYNAME>Condiments</CATEGORYNAME>
</CATEGORY>
<CATEGORY>
```

<CATEGORYID>3</CATEGORYID>

<CATEGORYNAME>Confections</CATEGORYNAME>

</CATEGORY>

<CATEGORY>

<CATEGORYID>4</CATEGORYID>

<CATEGORYNAME>Dairy Products</CATEGORYNAME>

</CATEGORY>

<CATEGORY>

<CATEGORYID>5</CATEGORYID>

<CATEGORYNAME>Grains/Cereals</CATEGORYNAME>

</CATEGORY>

<CATEGORY>

<CATEGORYID>6</CATEGORYID>

<CATEGORYNAME>Meat/Poultry</CATEGORYNAME>

</CATEGORY>

<CATEGORY>

<CATEGORYID>7</CATEGORYID>

<CATEGORYNAME>Produce</CATEGORYNAME>

</CATEGORY>

<CATEGORY>

<CATEGORYID>8</CATEGORYID>

<CATEGORYNAME>Seafood</CATEGORYNAME>

</CATEGORY>

```
Consultas.xq*
1 for $categories in doc('Northwind-tablas.xml')/NORTHWIND/CATEGORIES/CATEGORY
2 return $categories
OK

8 Results, 882 b

<CATEGORY>
  <CATEGORYID>1</CATEGORYID>
  <CATEGORYNAME>Beverages</CATEGORYNAME>
</CATEGORY>
<CATEGORY>
  <CATEGORYID>2</CATEGORYID>
  <CATEGORYNAME>Condiments</CATEGORYNAME>
</CATEGORY>
<CATEGORY>
  <CATEGORYID>3</CATEGORYID>
  <CATEGORYNAME>Confections</CATEGORYNAME>
</CATEGORY>
<CATEGORY>
  <CATEGORYID>4</CATEGORYID>
  <CATEGORYNAME>Dairy Products</CATEGORYNAME>
</CATEGORY>
<CATEGORY>
  <CATEGORYID>5</CATEGORYID>
  <CATEGORYNAME>Grains/Cereals</CATEGORYNAME>
</CATEGORY>
<CATEGORY>
  <CATEGORYID>6</CATEGORYID>
  <CATEGORYNAME>Meat/Poultry</CATEGORYNAME>
</CATEGORY>
<CATEGORY>
  <CATEGORYID>7</CATEGORYID>
  <CATEGORYNAME>Produce</CATEGORYNAME>
```

4.- Consulta de las categorías que tienen una c en su nombre

```
for $categories in doc('Northwind-tablas.xml')/NORTHWIND/CATEGORIES/CATEGORY
where matches($categories, '.*[cC].*', 'i')
return $categories
```

NOTA: En esta consulta nos dimos cuenta que el entorno es sensible a mayúsculas y minúsculas por lo que encontramos la función matches donde busca la c minúscula y C mayúscula y la 'i' lo hace insensible a minúsculas, entonces ya obtuvimos los 5 products que son. Si era c minúscula salían si era C mayúscula 3.

```
Consultas.xq*
1 for $categories in doc('Northwind-tablas.xml')/NORTHWIND/CATEGORIES/CATEGORY
2 where matches($categories, '.*[cC].*', 'i')
3 return $categories

OK

5 Results, 554 b

<CATEGORY>
  <CATEGORYID>2</CATEGORYID>
  <CATEGORYNAME>Condiments</CATEGORYNAME>
</CATEGORY>
<CATEGORY>
  <CATEGORYID>3</CATEGORYID>
  <CATEGORYNAME>Confections</CATEGORYNAME>
</CATEGORY>
<CATEGORY>
  <CATEGORYID>4</CATEGORYID>
  <CATEGORYNAME>Dairy Products</CATEGORYNAME>
</CATEGORY>
<CATEGORY>
  <CATEGORYID>5</CATEGORYID>
  <CATEGORYNAME>Grains/Cereals</CATEGORYNAME>
</CATEGORY>
<CATEGORY>
  <CATEGORYID>7</CATEGORYID>
  <CATEGORYNAME>Produce</CATEGORYNAME>
</CATEGORY>
```

5.- Consulta de los suppliers que su ciudad sea la del id 70

```
for $suppliers in doc('Northwind-tablas.xml')/NORTHWIND/SUPPLIERS/SUPPLIER
where $suppliers/CITYID=70
return $suppliers
```

Resultado:

```
<SUPPLIER>
  <SUPPLIERID>2</SUPPLIERID>
  <COMPANYNAME>New Orleans Cajun Delights</COMPANYNAME>
  <CONTACTNAME>Shelley Burke</CONTACTNAME>
  <CONTACTTITLE>Order Administrator</CONTACTTITLE>
  <ADDRESS>P.O. Box 78934</ADDRESS>
  <POSTALCODE>70117</POSTALCODE>
  <PHONE>(100) 555-4822</PHONE>
  <CITYID>70</CITYID>
</SUPPLIER>
```

```
Consultas.xq*
1 for $suppliers in doc ('Northwind-tablas.xml')/NORTHWIND/SUPPLIERS/SUPPLIER
2 where $suppliers/CITYID=70
3 return $suppliers
```

OK

1 Result, 369 b

```
<SUPPLIER>
  <SUPPLIERID>2</SUPPLIERID>
  <COMPANYNAME>New Orleans Cajun Delights</COMPANYNAME>
  <CONTACTNAME>Shelley Burke</CONTACTNAME>
  <CONTACTTITLE>Order Administrator</CONTACTTITLE>
  <ADDRESS>P.O. Box 78934</ADDRESS>
  <POSTALCODE>70117</POSTALCODE>
  <PHONE>(100) 555-4822</PHONE>
  <CITYID>70</CITYID>
</SUPPLIER>
```

6.-Consulta de los suppliers donde el contactname tenga almenos una C y el phone tenga almenos un 5.

```
for $suppliers in doc ('Northwind-tablas.xml')/NORTHWIND/SUPPLIERS/SUPPLIER
where contains($suppliers/CONTACTNAME, 'C') and contains($suppliers/PHONE, '5')
return $suppliers
```

Resultado:

```
<SUPPLIER>
  <SUPPLIERID>1</SUPPLIERID>
  <COMPANYNAME>Exotic Liquids</COMPANYNAME>
  <CONTACTNAME>Charlotte Cooper</CONTACTNAME>
  <CONTACTTITLE>Purchasing Manager</CONTACTTITLE>
  <ADDRESS>49 Gilbert St.</ADDRESS>
  <POSTALCODE>EC1 4SD</POSTALCODE>
  <PHONE>(171) 555-2222</PHONE>
  <CITYID>3</CITYID>
</SUPPLIER>

<SUPPLIER>
  <SUPPLIERID>10</SUPPLIERID>
```

<COMPANYNAME>Refrescos Americanas LTDA</COMPANYNAME>

<CONTACTNAME>Carlos Diaz</CONTACTNAME>

<CONTACTTITLE>Marketing Manager</CONTACTTITLE>

<ADDRESS>Av. das Americanas 12.890</ADDRESS>

<POSTALCODE>5442</POSTALCODE>

<PHONE>(11) 555 4640</PHONE>

<CITYID>12</CITYID>

</SUPPLIER>

<SUPPLIER>

<SUPPLIERID>16</SUPPLIERID>

<COMPANYNAME>Bigfoot Breweries</COMPANYNAME>

<CONTACTNAME>Cheryl Saylor</CONTACTNAME>

<CONTACTTITLE>Regional Account Rep.</CONTACTTITLE>

<ADDRESS>3400 - 8th Avenue Suite 210</ADDRESS>

<POSTALCODE>97101</POSTALCODE>

<PHONE>(503) 555-9931</PHONE>

<CITYID>82</CITYID>

</SUPPLIER>

<SUPPLIER>

<SUPPLIERID>20</SUPPLIERID>

<COMPANYNAME>Leka Trading</COMPANYNAME>

<CONTACTNAME>Chandra Leka</CONTACTNAME>

<CONTACTTITLE>Owner</CONTACTTITLE>

<ADDRESS>471 Serangoon Loop, Suite #402</ADDRESS>

<POSTALCODE>0512</POSTALCODE>

<PHONE>555-8787</PHONE>

<CITYID>85</CITYID>

</SUPPLIER>

<SUPPLIER>

<SUPPLIERID>29</SUPPLIERID>

<COMPANYNAME>Forêts d'érables</COMPANYNAME>

<CONTACTNAME>Chantal Goulet</CONTACTNAME>

<CONTACTTITLE>Accounting Manager</CONTACTTITLE>

<ADDRESS>148 rue Chasseur</ADDRESS>

<POSTALCODE>J2S 7S8</POSTALCODE>

<PHONE>(514) 555-2955</PHONE>

<FAX>(514) 555-2921</FAX>

<CITYID>93</CITYID>

</SUPPLIER>

```
Consultas.xq*
1 for $suppliers in doc ('Northwind-tablas.xml')/NORTHWIND/SUPPLIERS/SUPPLIER
2 where contains($suppliers/CONTACTNAME, 'C') and contains($suppliers/PHONE, '5')
3 return $suppliers
```

OK

5 Results, 1867 b

<SUPPLIER>

 <SUPPLIERID>1</SUPPLIERID>

 <COMPANYNAME>Exotic Liquids</COMPANYNAME>

 <CONTACTNAME>Charlotte Cooper</CONTACTNAME>

 <CONTACTTITLE>Purchasing Manager</CONTACTTITLE>

 <ADDRESS>49 Gilbert St.</ADDRESS>

 <POSTALCODE>EC1 4SD</POSTALCODE>

 <PHONE>(171) 555-2222</PHONE>

 <CITYID>3</CITYID>

</SUPPLIER>

<SUPPLIER>

 <SUPPLIERID>10</SUPPLIERID>

 <COMPANYNAME>Refrescos Americanas LTDA</COMPANYNAME>

 <CONTACTNAME>Carlos Diaz</CONTACTNAME>

 <CONTACTTITLE>Marketing Manager</CONTACTTITLE>

 <ADDRESS>Av. das Americanas 12.890</ADDRESS>

 <POSTALCODE>5442</POSTALCODE>

 <PHONE>(11) 555 4640</PHONE>

 <CITYID>12</CITYID>

</SUPPLIER>

<SUPPLIER>

 <SUPPLIERID>16</SUPPLIERID>

 <COMPANYNAME>Bigfoot Breweries</COMPANYNAME>

 <CONTACTNAME>Cheryl Saylor</CONTACTNAME>

 <CONTACTTITLE>Regional Account Rep.</CONTACTTITLE>

 <ADDRESS>3400 - 8th Avenue Suite 210</ADDRESS>

Realizar una consulta combinando las 3 tablas con XPath, Xquery o el lenguaje de consulta nativo.

7.-Consulta de los productos (nombre y precio unitario) donde su categoría sea igual a 1 (Beverages) y el supplierid sea igual a 12 (Plutzer Lebensmittelgroßmärkte AG)

```
let $doc := doc('Northwind-tablas.xml')
for $products in $doc/NORTHWIND/PRODUCTS/PRODUCT
for $categories in $doc/NORTHWIND/CATEGORIES/CATEGORY
for $suppliers in $doc/NORTHWIND/SUPPLIERS/SUPPLIER
where $products/UnitPrice > 100 and $categories/CATEGORYID=1 and $suppliers/SUPPLIERID=12
return($products/ProductName, $products/UnitPrice, $categories/CATEGORYNAME,
$suppliers/COMPANYNAME)
```

Resultado:

```
<ProductName>Thüringer Rostbratwurst</ProductName>
<UnitPrice>123.7900</UnitPrice>
<CATEGORYNAME>Beverages</CATEGORYNAME>
<COMPANYNAME>Plutzer Lebensmittelgroßmärkte AG</COMPANYNAME>
<ProductName>Côte de Blaye</ProductName>
<UnitPrice>263.5000</UnitPrice>
<CATEGORYNAME>Beverages</CATEGORYNAME>
<COMPANYNAME>Plutzer Lebensmittelgroßmärkte AG</COMPANYNAME>
```

Consultas.xq*

```
1 let $doc := doc('Northwind-tablas.xml')
2 for $products in $doc/NORTHWIND/PRODUCTS/PRODUCT
3 for $categories in $doc/NORTHWIND/CATEGORIES/CATEGORY
4 for $suppliers in $doc/NORTHWIND/SUPPLIERS/SUPPLIER
5 where $products/UnitPrice > 100 and $categories/CATEGORYID=1 and $suppliers/SUPPLIERID=12
6 return($products/ProductName, $products/UnitPrice, $categories/CATEGORYNAME, $suppliers/COMPANYNAME)
```

OK

8 Results, 368 b

Result

```
<ProductName>Thüringer Rostbratwurst</ProductName>
<UnitPrice>123.7900</UnitPrice>
<CATEGORYNAME>Beverages</CATEGORYNAME>
<COMPANYNAME>Plutzer Lebensmittelgroßmärkte AG</COMPANYNAME>
<ProductName>Côte de Blaye</ProductName>
<UnitPrice>263.5000</UnitPrice>
<CATEGORYNAME>Beverages</CATEGORYNAME>
<COMPANYNAME>Plutzer Lebensmittelgroßmärkte AG</COMPANYNAME>
```

Compilin

- rewrite >
- move wh
- rewrite tc
- move wh
- rewrite tc
- rewrite tc
- inline for

Verificar y especificar si se puede Insertar un registro en cada tabla.

Sí se pueden insertar datos en tablas, hay una sintaxis específica. También se pueden modificar y eliminar elementos de la base de datos.

Insert en Products:

insert node <PRODUCT>

<ProductID>78</ProductID>

<ProductName>Leche lala</ProductName>

<SupplierID>2</SupplierID>

<CategoryID>2</CategoryID>

<QuantityPerUnit>1 litro</QuantityPerUnit>

<UnitPrice>23</UnitPrice>

<UnitsInStock>12</UnitsInStock>

<UnitsOnOrder>2</UnitsOnOrder>

<ReorderLevel>10</ReorderLevel>

<Discontinued>0</Discontinued>

</PRODUCT> into doc('Northwind-tablas.xml')/NORTHWIND/PRODUCTS

Comprobación de inserción:

The screenshot displays a database management interface with three main sections:

- Editor:** Shows an XML document titled "Northwind-tablas.xml". The content is an XML structure for the Northwind database, including a root element "NORTHWIND" with two child elements: "PRODUCTS" and "SUPPLIERS". The "PRODUCTS" element contains a list of product entries, each with attributes like ProductID, ProductName, SupplierID, CategoryID, QuantityPerUnit, UnitPrice, UnitsInStock, UnitsOnOrder, ReorderLevel, and Discontinued. The "SUPPLIERS" element contains a list of supplier entries with attributes like SupplierID, CompanyName, and ContactName. The XML is displayed in a tree view.
- Query Editor:** Shows a query in XQuery syntax. The query is:

```
1 for $b in doc('Northwind-tablas.xml')/NORTHWIND/PRODUCTS/PRODUCT
2 where $b/ProductID = 78
3 return $b
```
- Result:** Shows the result of the query. It displays a single XML element:

```
<PRODUCT><ProductID>78</ProductID><ProductName>Leche lala</ProductName><SupplierID>2</SupplierID><CategoryID>2</CategoryID><QuantityPerUnit>1 litro</QuantityPerUnit><UnitPrice>23</UnitPrice><UnitsInStock>12</UnitsInStock><UnitsOnOrder>2</UnitsOnOrder><ReorderLevel>10</ReorderLevel><Discontinued>0</Discontinued></PRODUCT>
```

At the bottom right, there is a "Compiling:" section with the following information:

- rewrite to predicate: (ProductID = 78)
- inline for \$b_0 in doc("Northwind-tablas.xml")/NORTHWIND/PRODUCTS/PRODUCT[(ProductID = 78)]
- simplify FLWOR expression: doc("Northwind-tablas.xml")/NORTHWIND/PRODUCTS/PRODUCT[(ProductID = 78)]

Insert en categories:

insert node <CATEGORIES>

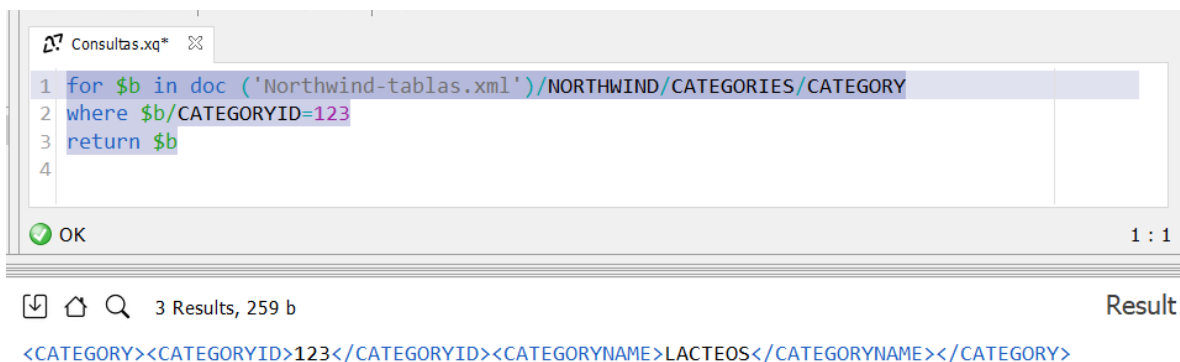
<CATEGORYID>123</CATEGORYID>

<CATEGORYNAME>LACTEOS</CATEGORYNAME>

</CATEGORIES>

into doc ('Northwind-tablas.xml')/NORTHWIND/CATEGORIES

comprobación:



The screenshot shows an XQuery editor window titled 'Consultas.xq*' with the following code:

```
1 for $b in doc ('Northwind-tablas.xml')/NORTHWIND/CATEGORIES/CATEGORY
2 where $b/CATEGORYID=123
3 return $b
4
```

Below the editor is a status bar with a green checkmark, 'OK', and '1 : 1'. Below that is a result viewer showing '3 Results, 259 b' and the XML output:

```
<CATEGORY><CATEGORYID>123</CATEGORYID><CATEGORYNAME>LACTEOS</CATEGORYNAME></CATEGORY>
```

Insert en suppliers:

insert node <SUPPLIER>

<SUPPLIERID>20</SUPPLIERID>

<COMPANYNAME>Google</COMPANYNAME>

<CONTACTNAME>America Flores</CONTACTNAME>

<CONTACTTITLE>Ing. Namascasia</CONTACTTITLE>

<ADDRESS>10 de mayo</ADDRESS>

<POSTALCODE>80270</POSTALCODE>

<PHONE>6671874227</PHONE>

<CITYID>82</CITYID>

</SUPPLIER>

into doc('Northwind-tablas.xml')/NORTHWIND/SUPPLIERS

comprobación:

```
1 for $item in doc ('Northwind-tablas.xml')/NORTHWIND/SUPPLIERS/SUPPLIER
2 where $item/SUPPLIERID=20
3 return $item
```

<SUPPLIER><SUPPLIERID>20</SUPPLIERID><COMPANYNAME>Google</COMPANYNAME><CONTACTNAME>America
Flores</CONTACTNAME><CONTACTTITLE>Ing. Namascasia</CONTACTTITLE><ADDRESS>10 de mayo</
ADDRESS><POSTALCODE>80270</POSTALCODE><PHONE>6671874227</PHONE><CITYID>82</CITYID></
SUPPLIER>