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--
*************************************************************************
*********--
-- Title: Assignment06
-- Author: QiaoyiYang
-- Desc: This file demonstrates how to use Views
-- Change Log: When,Who,What
-- 2021-11-22,QiaoyiYang,Created File
--
*************************************************************************
**********--
Begin Try
    Use Master;
    If Exists(Select Name From SysDatabases Where Name =
'Assignment06DB_QiaoyiYang')
     Begin
      Alter Database [Assignment06DB_QiaoyiYang] set Single_user
With Rollback Immediate;
      Drop Database Assignment06DB_QiaoyiYang;
     End
    Create Database Assignment06DB_QiaoyiYang;
End Try
Begin Catch
    Print Error_Number();
End Catch
go
Use Assignment06DB_QiaoyiYang;

-- Create Tables (Module 01)--
Create Table Categories
([CategoryID] [int] IDENTITY(1,1) NOT NULL
,[CategoryName] [nvarchar](100) NOT NULL
);
go

Create Table Products
```

```
([ProductID] [int] IDENTITY(1,1) NOT NULL
,[ProductName] [nvarchar](100) NOT NULL
,[CategoryID] [int] NULL
,[UnitPrice] [mOney] NOT NULL
);
go

Create Table Employees -- New Table
([EmployeeID] [int] IDENTITY(1,1) NOT NULL
,[EmployeeFirstName] [nvarchar](100) NOT NULL
,[EmployeeLastName] [nvarchar](100) NOT NULL
,[ManagerID] [int] NULL
);
go

Create Table Inventories
([InventoryID] [int] IDENTITY(1,1) NOT NULL
,[InventoryDate] [Date] NOT NULL
,[EmployeeID] [int] NOT NULL -- New Column
,[ProductID] [int] NOT NULL
,[Count] [int] NOT NULL
);
go

-- Add Constraints (Module 02) --
Begin  -- Categories
    Alter Table Categories
     Add Constraint pkCategories
      Primary Key (CategoryId);

    Alter Table Categories
     Add Constraint ukCategories
      Unique (CategoryName);
End
go
```

```
Begin -- Products
    Alter Table Products
     Add Constraint pkProducts
      Primary Key (ProductId);

    Alter Table Products
     Add Constraint ukProducts
      Unique (ProductName);

    Alter Table Products
     Add Constraint fkProductsToCategories
      Foreign Key (CategoryId) References
Categories(CategoryId);

    Alter Table Products
     Add Constraint ckProductUnitPriceZeroOrHigher
      Check (UnitPrice >= 0);
End
go

Begin -- Employees
    Alter Table Employees
     Add Constraint pkEmployees
      Primary Key (EmployeeId);

    Alter Table Employees
     Add Constraint fkEmployeesToEmployeesManager
      Foreign Key (ManagerId) References Employees(EmployeeId);
End
go

Begin -- Inventories
    Alter Table Inventories
     Add Constraint pkInventories
      Primary Key (InventoryId);
```

```
    Alter Table Inventories
     Add Constraint dfInventoryDate
      Default GetDate() For InventoryDate;

    Alter Table Inventories
     Add Constraint fkInventoriesToProducts
      Foreign Key (ProductId) References Products(ProductId);

    Alter Table Inventories
     Add Constraint ckInventoryCountZeroOrHigher
      Check ([Count] >= 0);

    Alter Table Inventories
     Add Constraint fkInventoriesToEmployees
      Foreign Key (EmployeeId) References Employees(EmployeeId);
End
go

-- Adding Data (Module 04) --
Insert Into Categories
(CategoryName)
Select CategoryName
 From Northwind.dbo.Categories
 Order By CategoryID;
go

Insert Into Products
(ProductName, CategoryID, UnitPrice)
Select ProductName,CategoryID, UnitPrice
 From Northwind.dbo.Products
  Order By ProductID;
go

Insert Into Employees
(EmployeeFirstName, EmployeeLastName, ManagerID)
```

```
Select E.FirstName, E.LastName, IsNull(E.ReportsTo,
E.EmployeeID)
 From Northwind.dbo.Employees as E
  Order By E.EmployeeID;
go

Insert Into Inventories
(InventoryDate, EmployeeID, ProductID, [Count])
Select '20170101' as InventoryDate, 5 as EmployeeID, ProductID,
UnitsInStock
From Northwind.dbo.Products
UNIOn
Select '20170201' as InventoryDate, 7 as EmployeeID, ProductID,
UnitsInStock + 10 -- Using this is to create a made up value
From Northwind.dbo.Products
UNIOn
Select '20170301' as InventoryDate, 9 as EmployeeID, ProductID,
UnitsInStock + 20 -- Using this is to create a made up value
From Northwind.dbo.Products
Order By 1, 2
go

-- Show the Current data in the Categories, Products, and
Inventories Tables
Select * From Categories;
go
Select * From Products;
go
Select * From Employees;
go
Select * From Inventories;
go

/********************************* Questions and Answers
*********************************/
print
```

```
'NOTES-------------------------------------------------------------
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 1) You can use any name you like for you views, but be
descriptive and consistent
 2) You can use your working code from assignment 5 for much of
this assignment
 3) You must use the BASIC views for each table after they are
created in Question 1
-------------------------------------------------------------------
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-- Question 1 (5% pts): How can you create BACIC views to show
data from each table in the database.
-- NOTES: 1) Do not use a *, list out each column!
--        2) Create one view per table!
--        3) Use SchemaBinding to protect the views from being
orphaned!

Create View vCategories
With SchemaBinding
As
Select CategoryID, CategoryName
From dbo.Categories;
go
Select * From vCategories;

Create
View vProducts
With SchemaBinding
As
Select ProductID, ProductName, CategoryID, UnitPrice
From dbo.Products;
go
Select * From vProducts;

Create
```

```
View vEmployees
With SchemaBinding
As
Select EmployeeID, EmployeeFirstName, EmployeeLastName,
ManagerID
From dbo.Employees;
go
Select * From vEmployees;

Create
View vInventories
With SchemaBinding
As
Select InventoryID, InventoryDate, EmployeeID, ProductID,
[Count]
From dbo.Inventories;
go
Select * From vInventories;



-- Question 2 (5% pts): How can you set permissions, so that the
public group CANNOT select data
-- from each table, but can select data from each view?
Use Assignment06DB_QiaoyiYang;

Deny Select On Categories to Public;
Grant Select On vCategories to Public;

Deny Select On Products to Public;
Grant Select On vProducts to Public;

Deny Select On Employees to Public;
Grant Select On vEmployees to Public;
```

```
Deny Select On Inventories to Public;
Grant Select On vInventories to Public;

go

-- Question 3 (10% pts): How can you create a view to show a
list of Category and Product names,
-- and the price of each product?
-- Order the result by the Category and Product!

-- Here is an example of some rows selected from the view:
-- CategoryName ProductName       UnitPrice
-- Beverages    Chai              18.00
-- Beverages    Chang             19.00
-- Beverages    Chartreuse verte  18.00

Create View vProductsByCategories
As
Select Top 100 Percent
CategoryName, ProductName, UnitPrice From Products as p
Join Categories as c
On p.CategoryID = c.CategoryID
Order By CategoryName, ProductName
go
--Select * From vProductsByCategories;


-- Question 4 (10% pts): How can you create a view to show a
list of Product names
-- and Inventory Counts on each Inventory Date?
-- Order the results by the Product, Date, and Count!

-- Here is an example of some rows selected from the view:
-- ProductName    InventoryDate Count
-- Alice Mutton   2017-01-01      0
-- Alice Mutton   2017-02-01      10
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```
-- Alice Mutton   2017-03-01      20
-- Aniseed Syrup    2017-01-01    13
-- Aniseed Syrup    2017-02-01    23
-- Aniseed Syrup    2017-03-01    33

Create View vInventoriesByProductsByDates
As
Select Top 100 Percent
ProductName, InventoryDate, Count From Inventories as i
Join Products as p
On i.ProductID = p.ProductID
Order By ProductName, InventoryDate, Count
go
Select * From vInventoriesByProductsByDates;


-- Question 5 (10% pts): How can you create a view to show a
list of Inventory Dates
-- and the Employee that took the count?
-- Order the results by the Date and return only one row per
date!

-- Here is are the rows selected from the view:

-- InventoryDate    EmployeeName
-- 2017-01-01       Steven Buchanan
-- 2017-02-01       Robert King
-- 2017-03-01       Anne Dodsworth

Create View vInventoriesByEmployeesByDates
As
Select DISTINCT Top 100 Percent
InventoryDate, [EmployeeName] = EmployeeFirstName + ' ' +
EmployeeLastName From Inventories as i
Join Employees as e
On i.EmployeeID = e.EmployeeID
```

```
Order By InventoryDate, EmployeeName;
go
Select * From vInventoriesByEmployeesByDates

-- Question 6 (10% pts): How can you create a view show a list
of Categories, Products,
-- and the Inventory Date and Count of each product?
-- Order the results by the Category, Product, Date, and Count!

-- Here is an example of some rows selected from the view:
-- CategoryName,ProductName,InventoryDate,Count
-- CategoryName ProductName InventoryDate   Count
-- Beverages      Chai        2017-01-01      39
-- Beverages      Chai        2017-02-01      49
-- Beverages      Chai        2017-03-01      59
-- Beverages      Chang       2017-01-01      17
-- Beverages      Chang       2017-02-01      27
-- Beverages      Chang       2017-03-01      37

Create View vInventoriesByProductsByCategories
As
Select Top 100 Percent
CategoryName,ProductName,InventoryDate,Count From Inventories as
i
Join Products as p
On i.ProductID = p.ProductID
Join Categories as c
On p.CategoryID = c.CategoryID
Order By CategoryName,ProductName,InventoryDate,Count;
go
Select * From vInventoriesByProductsByCategories

-- Question 7 (10% pts): How can you create a view to show a
list of Categories, Products,
-- the Inventory Date and Count of each product, and the
EMPLOYEE who took the count?
```

```
-- Order the results by the Inventory Date, Category, Product
and Employee!

-- Here is an example of some rows selected from the view:
-- CategoryName ProductName         InventoryDate   Count
EmployeeName
-- Beverages      Chai                2017-01-01      39
Steven Buchanan
-- Beverages      Chang               2017-01-01      17
Steven Buchanan
-- Beverages      Chartreuse verte    2017-01-01      69
Steven Buchanan
-- Beverages      C�te de Blaye       2017-01-01      17
Steven Buchanan
-- Beverages      Guaran� Fant�stica    2017-01-01    20
Steven Buchanan
-- Beverages      Ipoh Coffee           2017-01-01    17
Steven Buchanan
-- Beverages      Lakkalik��ri        2017-01-01      57
Steven Buchanan

Create View vInventoriesByProductsByEmployees
As
Select Top 100 Percent
CategoryName,ProductName,InventoryDate,Count, [EmployeeName] =
EmployeeFirstName + ' ' + EmployeeLastName
From Inventories as i
Join Products as p
On i.ProductID = p.ProductID
Join Categories as c
On p.CategoryID = c.CategoryID
Join Employees as e
On i.EmployeeID = e.EmployeeID
Order By CategoryName,ProductName,InventoryDate,Count,
EmployeeName;
go
```

```
Select * From vInventoriesByProductsByEmployees

-- Question 8 (10% pts): How can you create a view to show a
list of Categories, Products,
-- the Inventory Date and Count of each product, and the
Employee who took the count
-- for the Products 'Chai' and 'Chang'?

-- Here are the rows selected from the view:

-- CategoryName ProductName InventoryDate   Count   EmployeeName
-- Beverages      Chai        2017-01-01      39      Steven
Buchanan
-- Beverages      Chang       2017-01-01      17      Steven
Buchanan
-- Beverages      Chai        2017-02-01      49      Robert
King
-- Beverages      Chang       2017-02-01      27      Robert
King
-- Beverages      Chai        2017-03-01      59      Anne
Dodsworth
-- Beverages      Chang       2017-03-01      37      Anne
Dodsworth

Create View vInventoriesForChaiAndChangByEmployees
As
Select Top 100 Percent
CategoryName,ProductName,InventoryDate,Count, [EmployeeName] =
EmployeeFirstName + ' ' + EmployeeLastName
From Inventories as i
Join Products as p
On i.ProductID = p.ProductID
Join Categories as c
On p.CategoryID = c.CategoryID
Join Employees as e
On i.EmployeeID = e.EmployeeID
```

```
Where
   i.ProductID in (Select ProductID From Products Where
ProductName in ('Chai','Chang'))
Order By CategoryName,ProductName,InventoryDate,Count,
EmployeeName;
go
Select * From vInventoriesForChaiAndChangByEmployees

-- Question 9 (10% pts): How can you create a view to show a
list of Employees and the Manager who manages them?
-- Order the results by the Manager's name!

-- Here are teh rows selected from the view:
-- Manager          Employee
-- Andrew Fuller      Andrew Fuller
-- Andrew Fuller      Janet Leverling
-- Andrew Fuller      Laura Callahan
-- Andrew Fuller      Margaret Peacock
-- Andrew Fuller      Nancy Davolio
-- Andrew Fuller      Steven Buchanan
-- Steven Buchanan  Anne Dodsworth
-- Steven Buchanan  Michael Suyama
-- Steven Buchanan  Robert King

Create View vEmployeesByManager
As
Select Top 100 Percent
[Manager] = m.EmployeeFirstName +' '+ m.EmployeeLastName,
[Employee] = e.EmployeeFirstName +' '+ e.EmployeeLastName
From Employees as e
Join Employees as m
On e.ManagerID = m.EmployeeID
Order By Manager, Employee;

Select * From vEmployeesByManager;
```

```
-- Question 10 (20% pts): How can you create one view to show
all the data from all four
-- BASIC Views? Also show the Employee's Manager Name and order
the data by
-- Category, Product, InventoryID, and Employee.

-- Here is an example of some rows selected from the view:
-- CategoryID     CategoryName  ProductID   ProductName
UnitPrice   InventoryID InventoryDate   Count   EmployeeID
Employee
-- 1              Beverages     1           Chai
18.00     1             2017-01-01      39      5
Steven Buchanan
-- 1              Beverages     1           Chai
18.00     78          2017-02-01    49      7           Robert
King
-- 1              Beverages     1           Chai
18.00     155         2017-03-01    59      9           Anne
Dodsworth
-- 1              Beverages     2           Chang
19.00     2             2017-01-01      17      5
Steven Buchanan
-- 1              Beverages     2           Chang
19.00     79          2017-02-01    27      7           Robert
King
-- 1              Beverages     2           Chang
19.00     156         2017-03-01    37      9           Anne
Dodsworth
-- 1              Beverages     24        Guaran? Fant?stica
4.50        24          2017-01-01    20      5           Steven
Buchanan
-- 1              Beverages     24        Guaran? Fant?stica
4.50        101         2017-02-01    30      7           Robert
King
```

```
-- 1              Beverages     24        Guaran? Fant?stica
4.50        178         2017-03-01    40      9           Anne
Dodsworth
-- 1              Beverages     34        Sasquatch Ale
14.00     34          2017-01-01    111     5           Steven
Buchanan
-- 1              Beverages     34        Sasquatch Ale
14.00     111         2017-02-01    121     7           Robert
King
-- 1              Beverages     34        Sasquatch Ale
14.00     188         2017-03-01    131     9           Anne
Dodsworth

Create View vInventoriesByProductsByCategoriesByEmployees
As
Select Top 100 Percent
c.CategoryID, c.CategoryName,
p.ProductID, p.ProductName, p.UnitPrice,
i.InventoryID, i.InventoryDate, i.Count,
e.EmployeeID, [Employee] = e.EmployeeFirstName + ' ' +
e.EmployeeLastName,
[Manager] = m.EmployeeFirstName +' '+ m.EmployeeLastName

From Categories as c
Join Products as p
On c.CategoryID = p.CategoryID
Join Inventories as i
On p.ProductID = i.ProductID
Join Employees as e
On e.EmployeeID = i.EmployeeID
Join Employees as m
On e.ManagerID = m.EmployeeID

Order By CategoryID,ProductID,InventoryID,Count, EmployeeID;
go
Select * From vInventoriesByProductsByCategoriesByEmployees;
```

```
-- Test your Views (NOTE: You must change the names to match
yours as needed!)
Print 'Note: You will get an error until the views are created!'
Select * From vCategories;
Select * From vProducts;
Select * From vInventories;
Select * From vEmployees;

Select * From vProductsByCategories;
Select * From vInventoriesByProductsByDates;
Select * From vInventoriesByEmployeesByDates;
Select * From vInventoriesByProductsByCategories;
Select * From vInventoriesByProductsByEmployees;
Select * From vInventoriesForChaiAndChangByEmployees;
Select * From vEmployeesByManager;
Select * From vInventoriesByProductsByCategoriesByEmployees;

/***************************************************************************
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```