127.0.0.1,13001 Documentation

MidtermDatabase

Server 127.0.0.1,13001

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127.0.0.1,13001

Databases (1)

• ■ MidtermDatabase

Server Properties

Property	Value
Product	Microsoft SQL Server
Version	15.0.4236.7
Language	English
Platform	NT x64
Edition	Developer Edition (64-bit)
Engine Edition	3 (Enterprise)
Processors	4
OS Version	6.2 (9200)
Physical Memory	10225
Is Clustered	False
Root Directory	C:\
Collation	SQL_Latin1_General_CP1_CI_AS

Server Settings

Property	Value
Default data file path	/var/opt/mssql/data/
Default backup file path	/var/opt/mssql/backup/
Default log file path	/var/opt/mssql/log/
Recovery Interval (minutes)	0
Default index fill factor	0
Default backup media retention	0
Compress Backup	False

Advanced Server Settings

Property	Value
Locks	0
Nested triggers enabled	True
Allow triggers to fire others	True
Default language	English

Network packet size	4096
Default fulltext language LCID	1033
Two-digit year cutoff	2049
Remote login timeout	10
Cursor threshold	-1
Max text replication size	65536
Parallelism cost threshold	5
Max degree of parallelism	0
Min server memory	16
Max server memory	2147483647
Scan for startup procs	False
Transform noise words	False
CLR enabled	False
Blocked process threshold	0
Filestream access level	False
Optimize for ad hoc workloads	False
CLR strict security	True

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Databases (1)

• 🛮 MidtermDatabase

■ MidtermDatabase Database

Database Properties

Property	Value
SQL Server Version	Max
Compatibility Level	Max
Last backup time	-
Last log backup time	-
Creation date	Oct 29 2022
Users	4
Database Encryption Enabled	False
Database Encryption Algorithm	None
Database size	16.00 MB
Unallocated space	4.93 MB

Database Options

Property	Value
Compatibility Level	150
Database collation	SQL_Latin1_General_CP1_CI_AS
Restrict access	MULTI_USER
Is read-only	False
Auto close	False
Auto shrink	False
Database status	ONLINE
In standby	False
Cleanly shutdown	False
Supplemental logging enabled	False
Snapshot isolation state	OFF
Read committed snapshot on	False
Recovery model	FULL
Page verify option	CHECKSUM
Auto create statistics	True
Auto update statistics	True
Auto update statistics asynchronously	False
ANSI NULL default	False
ANSI NULL enabled	False
ANSI padding enabled	False

ANSI warnings enabled	False
Arithmetic abort enabled	False
Concatenating NULL yields NULL	False
Numeric roundabort enabled	False
Quoted Identifier On	False
Recursive triggers enabled	False
Close cursors on commit	False
Local cursors by default	False
Fulltext enabled	True
Trustworthy	False
Database chaining	False
Forced parameterization	False
Master key encrypted by server	False
Published	False
Subscribed	False
Merge published	False
Is distribution database	False
Sync with backup	False
Service broker GUID	475f2ab2-fd3f-4e7f-b3b0-93cc4097044d
Service broker enabled	True
Log reuse wait	NOTHING
Date correlation	False
CDC enabled	False
Encrypted	False
Honor broker priority	False
Default language	English
Default fulltext language LCID	1033
Nested triggers enabled	True
Transform noise words	False
Two-digit year cutoff	2049
Containment	NONE
Target recovery time	60
Database owner	sa

Files

Name	Туре	Size	Maxsize	Autogrowth	File Name
MidtermDatabase	Data	8.00 MB	unlimited	64.00 MB	/var/opt/mssql/data/Midterm- Database.mdf
MidtermDatabase_log	Log	8.00 MB	2048.00 GB	64.00 MB	/var/opt/mssql/log/Midterm- Database_log.ldf

■ Tables

Objects

Name
Data.Membership
dbo.Nums
DbSecurity.UserAuthorization
HumanResources.Employee
Production.Category
Production.Product
Production.Supplier
Sales.Customer
Sales.OrderDetail
Sales.Orders
Sales.Shipper
Service.Feedback
SystemVersioned.Employee
Triggered.AuditTriggeredEmployeeHistory
Triggered.Employee

III [Data].[Membership]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	12:17:44 PM Saturday, October 29, 2022
Last Modified	12:17:49 PM Saturday, October 29, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity	Default
PK	MemberID	[Udt].[udtSurrogateKeyInt]	4	NOT NULL	1 - 1	
	FirstName	[Udt].[udtFirstName]	50	NULL allowed		
	LastName	[Udt].[udtLastName]	70	NOT NULL		
	Phone	[Udt].[udtTelephoneNumber]	36	NULL allowed		
	Email	[dbo].[udtEmail]	100	NOT NULL		
	DiscountCode	[Udt].[udtPercentage]	8	NULL allowed		((0))
	BirthDay	[dbo].[udtBirthDate]	8	NULL allowed		(getdate())

Indexes

Key	y Name		Unique
PKC	PKMembersh0CF04B38AF0D3873	MemberID	True

```
CREATE TABLE [Data]. [Membership]

(
[MemberID] [Udt]. [udtSurrogateKeyInt] NOT NULL IDENTITY(1, 1),

[FirstName] [Udt]. [udtFirstName] MASKED WITH (FUNCTION = 'partial(1, "xxxxx", 1)')

NULL,

[LastName] [Udt]. [udtLastName] MASKED WITH (FUNCTION = 'default()') NOT NULL,

[Phone] [Udt]. [udtTelephoneNumber] MASKED WITH (FUNCTION = 'default()') NULL,

[Email] [dbo]. [udtEmail] MASKED WITH (FUNCTION = 'email()') NOT NULL,

[DiscountCode] [Udt]. [udtPercentage] MASKED WITH (FUNCTION = 'random(1, 100)') NULL
```

```
CONSTRAINT [DF_Number_Zero_2124314267] DEFAULT ((0)),

[BirthDay] [dbo].[udtBirthDate] MASKED WITH (FUNCTION = 'default()') NULL CONSTRAINT

[DF_YYYYMMDD_Today_867066557] DEFAULT (getdate())

) ON [PRIMARY]

GO

ALTER TABLE [Data].[Membership] ADD CONSTRAINT [PK__Membersh__OCF04B38AF0D3873] PRIMARY

KEY CLUSTERED ([MemberID]) ON [PRIMARY]

GO

ALTER TABLE [Data].[Membership] ENABLE CHANGE_TRACKING

GO
```

[dbo].[udtBirthDate]

[dbo].[udtEmail]

[Udt].[udtFirstName]

[Udt].[udtLastName]

[Udt].[udtPercentage]

[Udt].[udtSurrogateKeyInt]

[Udt].[udtTelephoneNumber]

Data

[dbo].[Nums]

Properties

Property	Value
Row Count (~)	0
Created	12:17:45 PM Saturday, October 29, 2022
Last Modified	12:17:49 PM Saturday, October 29, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	
PKP C	N	[Udt].[udtSurrogateKeyInt]	4	NOT NULL	

Indexes

Key	Name	Key Columns	Unique
PKP C	PK_Nums	N	True

SQL Script

```
CREATE TABLE [dbo].[Nums]

(
[N] [Udt].[udtSurrogateKeyInt] NOT NULL

) ON [PRIMARY]

GO

ALTER TABLE [dbo].[Nums] ADD CONSTRAINT [PK_Nums] PRIMARY KEY CLUSTERED ([N]) ON [PRIMARY]

GO

ALTER TABLE [dbo].[Nums] ENABLE CHANGE_TRACKING

GO
```

Uses

[Udt].[udtSurrogateKeyInt]

[DbSecurity].[UserAuthorization]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	12:17:45 PM Saturday, October 29, 2022
Last Modified	12:17:46 PM Saturday, October 29, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Default
PKC	UserAuthorizationId	[Udt].[udtSurrogateKeyInt]	4	NOT NULL	
	ClassTime	[dbo].[udtHHMM]	5	NULL allowed	('00:00')
	IndividualProject	[dbo].[udtProjectName]	120	NULL allowed	
	GroupMemberLastName	[Udt].[udtLastName]	70	NULL allowed	
	GroupMemberFirstName	[Udt].[udtFirstName]	50	NULL allowed	
	GroupName	[Udt].[udtName]	40	NULL allowed	
	DateAdded	[Udt].[udtTimeStampNow]	6	NOT NULL	(getdate())
	DateOfLastUpdate	[Udt].[udtTimeStampNow]	6	NOT NULL	(getdate())

Indexes

Key	Name	Key Columns	Unique
PK G	XPKUserAuthorization	UserAuthorizationId	True

```
CREATE TABLE [DbSecurity].[UserAuthorization]

(
[UserAuthorizationId] [Udt].[udtSurrogateKeyInt] NOT NULL,

[ClassTime] [dbo].[udtHHMM] NULL CONSTRAINT [DF_Time_HHMM_1670105324] DEFAULT

('00:00'),

[IndividualProject] [dbo].[udtProjectName] NULL,

[GroupMemberLastName] [Udt].[udtLastName] NULL,

[GroupMemberFirstName] [Udt].[udtFirstName] NULL,
```

```
[GroupName] [Udt].[udtName] NULL,

[DateAdded] [Udt].[udtTimeStampNow] NOT NULL CONSTRAINT [DF_TimeStampNow_-
YYYYMMDDHHMMSS_891037028] DEFAULT (getdate()),

[DateOfLastUpdate] [Udt].[udtTimeStampNow] NOT NULL CONSTRAINT [DF_TimeStampNow_-
YYYYMMDDHHMMSS_472584688] DEFAULT (getdate())

) ON [PRIMARY]

GO

ALTER TABLE [DbSecurity].[UserAuthorization] ADD CONSTRAINT [XPKUserAuthorization]
PRIMARY KEY CLUSTERED ([UserAuthorizationId]) ON [PRIMARY]

GO
```

[dbo].[udtHHMM]
[dbo].[udtProjectName]
[Udt].[udtFirstName]
[Udt].[udtLastName]
[Udt].[udtName]
[Udt].[udtSurrogateKeyInt]
[Udt].[udtTimeStampNow]
DbSecurity

Ⅲ [HumanResources].[Employee]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	12:17:44 PM Saturday, October 29, 2022
Last Modified	12:17:49 PM Saturday, October 29, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullabili ty	Identity	Default
PK <mark>P</mark> C	Employeeld	[Udt].[udtSurrogateKeyInt]	4	NOT NULL	1 - 1	
	EmployeeLastName	[Udt].[udtLastName]	70	NOT NULL		
	EmployeeFirstName	[Udt].[udtFirstName]	50	NOT NULL		
	EmployeeTitle	[Udt].[udtTitle]	18	NOT NULL		
	EmployeeTitleOfCourtesy	[Udt].[udtTitleOfCourtesy]	18	NOT NULL		
	BirthDate	[dbo].[udtBirthDate]	8	NOT NULL		(getdate()
	HireDate	[Udt].[udtYYYYMMDD]	8	NOT NULL		
	EmployeeAddress	[Udt].[udtAddress]	50	NOT NULL		
	EmployeeCity	[Udt].[udtCity]	28	NULL allowed		
	EmployeeRegion	[Udt].[udtRegion]	60	NULL allowed		
	EmployeePostalCode	[Udt].[udtPostalCode]	10	NULL allowed		
	EmployeeCountry	[Udt].[udtCountry]	112	NOT NULL		
	EmployeePhoneNumber	[Udt].[udtTelephoneNumber]	36	NOT NULL		
F	EmployeeManagerId	[Udt].[udtSurrogateKeyInt]	4	NULL allowed		
	UserAuthorizationId	[Udt].[udtSurrogateKeyInt]	4	NULL allowed		
	DateAdded	[Udt].[udtTimeStampNow]	6	NOT		(getdate()

			NULL)
DateOfLastUpdate	[Udt].[udtTimeStampNow]	6	NOT NULL	(getdate()

Indexes

Key	Name	Key Columns	Unique
PK C	PK_Employees	Employeeld	True

Triggers

Name	ANSI Nulls On	Quoted Identifier On	On
tD_Employee	True	True	After Delete
TI_HumanResources_Employee_LastUpdated	True	True	After Update

Check Constraints

Name	On Column	Constraint
CHK_Birthdate	BirthDate	([BirthDate]>='1900-01-01' AND [BirthDate]<=getdate())

Foreign Keys

Name	Columns
FK_Employees_Employees	EmployeeManagerId->[HumanResources].[Employee].[EmployeeId]

```
CREATE TABLE [HumanResources].[Employee]
[EmployeeId] [Udt].[udtSurrogateKeyInt] NOT NULL IDENTITY(1, 1),
[EmployeeLastName] [Udt].[udtLastName] NOT NULL,
[EmployeeFirstName] [Udt].[udtFirstName] NOT NULL,
[EmployeeTitle] [Udt].[udtTitle] NOT NULL,
[EmployeeTitleOfCourtesy] [Udt].[udtTitleOfCourtesy] NOT NULL,
[BirthDate] [dbo].[udtBirthDate] NOT NULL CONSTRAINT [DF YYYYMMDD Today 48485300]
DEFAULT (getdate()),
[HireDate] [Udt].[udtYYYYMMDD] NOT NULL,
[EmployeeAddress] [Udt].[udtAddress] NOT NULL,
[EmployeeCity] [Udt].[udtCity] NULL,
[EmployeeRegion] [Udt].[udtRegion] NULL,
[EmployeePostalCode] [Udt].[udtPostalCode] NULL,
[EmployeeCountry] [Udt].[udtCountry] NOT NULL,
[EmployeePhoneNumber] [Udt].[udtTelephoneNumber] NOT NULL,
[{\tt EmployeeManagerId}] \quad [{\tt Udt}] \; . \; [{\tt udtSurrogateKeyInt}] \quad {\tt NULL} \text{,}
```

```
[UserAuthorizationId] [Udt].[udtSurrogateKeyInt] NULL,
[DateAdded] [Udt].[udtTimeStampNow] NOT NULL CONSTRAINT [DF TimeStampNow -
YYYYMMDDHHMMSS 822173557] DEFAULT (getdate()),
[DateOfLastUpdate] [Udt].[udtTimeStampNow] NOT NULL CONSTRAINT [DF_TimeStampNow_-
YYYYMMDDHHMMSS 187641014] DEFAULT (getdate())
ON [PRIMARY]
GO
CREATE TRIGGER [HumanResources].[tD Employee] ON [HumanResources].[Employee] FOR DELETE
/* erwin Builtin Trigger */
/* DELETE trigger on Employee */
BEGIN
 DECLARE @errno int,
          @severity int,
                  int,
           @state
           @errmsg varchar(255)
   /* erwin Builtin Trigger */
   /* HumanResources.Employee HumanResources.Employee on parent delete no action */
   /* ERWIN RELATION: CHECKSUM="00040cd6", PARENT OWNER="HumanResources", PARENT -
TABLE="Employee"
   CHILD_OWNER="HumanResources", CHILD_TABLE="Employee"
   P2C VERB PHRASE="", C2P VERB PHRASE="",
   FK CONSTRAINT="FK Employees Employees", FK COLUMNS="EmployeeManagerId" */
   IF EXISTS (
     SELECT * FROM deleted, HumanResources. Employee
     WHERE
       /* %JoinFKPK(HumanResources.Employee, deleted, " = ", " AND") */
       HumanResources.Employee.EmployeeManagerId = deleted.EmployeeId
   )
   BEGIN
     SELECT @errno = 30001,
            @errmsg = 'Cannot delete HumanResources.Employee because Human-
Resources. Employee exists.'
    GOTO error
   END
   /* erwin Builtin Trigger */
   /* HumanResources.Employee Sales.Orders on parent delete no action */
   /* ERWIN RELATION: CHECKSUM="00000000", PARENT OWNER="HumanResources", PARENT -
TABLE="Employee"
   CHILD OWNER="Sales", CHILD TABLE="Orders"
   P2C VERB PHRASE="", C2P VERB PHRASE="",
   FK CONSTRAINT="FK Order Employee", FK COLUMNS="EmployeeId" */
   IF EXISTS (
     SELECT * FROM deleted, Sales. Orders
     WHERE
        /* %JoinFKPK(Sales.Orders,deleted," = "," AND") */
       Sales.Orders.EmployeeId = deleted.EmployeeId
   BEGIN
     SELECT @errno = 30001,
            @errmsg = 'Cannot delete HumanResources.Employee because Sales.Orders
exists.'
     GOTO error
   END
```

```
/* erwin Builtin Trigger */
   /* HumanResources.Employee HumanResources.Employee on child delete no action */
   /* ERWIN RELATION: CHECKSUM="00000000", PARENT OWNER="HumanResources", PARENT -
TABLE="Employee"
   CHILD OWNER="HumanResources", CHILD TABLE="Employee"
   P2C VERB PHRASE="", C2P VERB PHRASE="",
   FK CONSTRAINT="FK Employees Employees", FK COLUMNS="EmployeeManagerId" */
   IF EXISTS (SELECT * FROM deleted, HumanResources.Employee
       /* %JoinFKPK(deleted, HumanResources.Employee, " = "," AND") */
       deleted.EmployeeManagerId = HumanResources.Employee.EmployeeId AND
       NOT EXISTS (
        SELECT * FROM HumanResources.Employee
         WHERE
           /* %JoinFKPK(HumanResources.Employee,HumanResources.Employee," = "," AND")
          HumanResources.Employee.EmployeeManagerId = Human-
Resources. Employee. EmployeeId
   BEGIN
     SELECT @errno = 30010,
      @errmsg = 'Cannot delete last HumanResources.Employee because Human-
Resources. Employee exists.'
    GOTO error
   END
   /* erwin Builtin Trigger */
   RETURN
error:
  RAISERROR (@errmsg, -- Message text.
             @severity, -- Severity (0~25).
             (0 \sim 255).
   rollback transaction
END
CREATE TRIGGER [HumanResources].[TI HumanResources Employee LastUpdated] ON [Human-
Resources].[Employee]
   AFTER UPDATE
 AS
 UPDATE
    HumanResources.[Employee]
     DateOfLastUpdate = GETDATE()
    HumanResources.[Employee] as c
  INNER JOIN
    Inserted i
 ON c.EmployeeId = i.EmployeeId
```

```
ALTER TABLE [HumanResources].[Employee] ADD CONSTRAINT [CHK_Birthdate] CHECK (([Birth-Date]>='1900-01-01' AND [BirthDate]<=getdate()))

GO

ALTER TABLE [HumanResources].[Employee] ADD CONSTRAINT [PK_Employees] PRIMARY KEY
CLUSTERED ([EmployeeId]) ON [PRIMARY]

GO

ALTER TABLE [HumanResources].[Employee] ADD CONSTRAINT [FK_Employees_Employees] FOREIGN
KEY ([EmployeeManagerId]) REFERENCES [HumanResources].[Employee] ([EmployeeId])

GO

ALTER TABLE [HumanResources].[Employee] ENABLE CHANGE_TRACKING
GO
```

[dbo].[udtBirthDate]

[Udt].[udtAddress]

[Udt].[udtCity]

[Udt].[udtCountry]

[Udt].[udtFirstName]

[Udt].[udtLastName]

[Udt].[udtPostalCode]

[Udt].[udtRegion]

[Udt].[udtSurrogateKeyInt]

[Udt].[udtTelephoneNumber]

[Udt].[udtTimeStampNow]

[Udt].[udtTitle]

[Udt].[udtTitleOfCourtesy]

[Udt].[udtYYYYMMDD]

HumanResources

Used By

[Sales].[Orders]

[JsonOutput].[uvw_HumanResourcesEmployee]

[JsonOutput].[MongoOrder]

■ [Production].[Category]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	12:17:44 PM Saturday, October 29, 2022
Last Modified	12:17:49 PM Saturday, October 29, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity	Default
PK <mark>P</mark> C	Categoryld	[Udt].[udtSurrogateKeyInt]	4	NOT NULL	1 - 1	
	CategoryName	[Udt].[udtCategoryName]	30	NOT NULL		
	Description	[Udt].[udtDescription]	500	NOT NULL		
	UserAuthorizationId	[Udt].[udtSurrogateKeyInt]	4	NULL allowed		
	DateAdded	[Udt].[udtTimeStampNow]	6	NOT NULL		(getdate())
	DateOfLastUpdate	[Udt].[udtTimeStampNow]	6	NOT NULL		(getdate())

Indexes

Key	Name	Key Columns	Unique
PK G	PK_Categories	Categoryld	True

Triggers

Name	ANSI Nulls On	Quoted Identifier On	On
tD_Category	True	True	After Delete
TI_Production_Category_LastUpdated	True	True	After Update

SQL Script

CREATE TABLE [Production].[Category]

```
[CategoryId] [Udt].[udtSurrogateKeyInt] NOT NULL IDENTITY(1, 1),
[CategoryName] [Udt].[udtCategoryName] NOT NULL,
[Description] [Udt].[udtDescription] NOT NULL,
[UserAuthorizationId] [Udt].[udtSurrogateKeyInt] NULL,
[DateAdded] [Udt].[udtTimeStampNow] NOT NULL CONSTRAINT [DF TimeStampNow -
YYYYMMDDHHMMSS 1039616390] DEFAULT (getdate()),
[DateOfLastUpdate] [Udt].[udtTimeStampNow] NOT NULL CONSTRAINT [DF TimeStampNow -
YYYYMMDDHHMMSS 98421045] DEFAULT (getdate())
ON [PRIMARY]
GO
CREATE TRIGGER [Production].[tD Category] ON [Production].[Category] FOR DELETE AS
/* erwin Builtin Trigger */
/* DELETE trigger on Category */
BEGIN
 DECLARE @errno int,
          @severity int,
          @state int,
           @errmsq varchar(255)
   /* erwin Builtin Trigger */
   /* Production.Category Production.Product on parent delete no action */
    /* ERWIN RELATION: CHECKSUM="000135d0", PARENT OWNER="Production", PARENT -
TABLE="Category"
   CHILD OWNER="Production", CHILD TABLE="Product"
   P2C VERB PHRASE="", C2P VERB PHRASE="",
   FK CONSTRAINT="FK Product Category", FK COLUMNS="CategoryId" */
   IF EXISTS (
    SELECT * FROM deleted, Production. Product
     WHERE
       /* %JoinFKPK(Production.Product, deleted, " = ", " AND") */
       Production.Product.CategoryId = deleted.CategoryId
   BEGIN
     SELECT @errno = 30001,
           @errmsg = 'Cannot delete Production.Category because Production.Product
exists.'
    GOTO error
   END
   /* erwin Builtin Trigger */
   RETURN
error:
  RAISERROR (@errmsg, -- Message text.
             @severity, -- Severity (0~25).
             @state) -- State (0~255).
   rollback transaction
END
CREATE TRIGGER [Production].[TI Production Category LastUpdated] ON
[Production].[Category]
   AFTER UPDATE
 AS
```

```
UPDATE
    Production.[Category]
SET
    DateOfLastUpdate = GETDATE()
FROM
    Production.[Category] as c
INNER JOIN
    Inserted i
    ON c.CategoryId = i.CategoryId

GO
ALTER TABLE [Production].[Category] ADD CONSTRAINT [PK_Categories] PRIMARY KEY CLUSTERED ([CategoryId]) ON [PRIMARY]
GO
ALTER TABLE [Production].[Category] ENABLE CHANGE_TRACKING
GO
```

[Udt].[udtCategoryName] [Udt].[udtDescription] [Udt].[udtSurrogateKeyInt] [Udt].[udtTimeStampNow] Production

Used By

[Production].[Product]
[JsonOutput].[uvw_ProductionCategory]
[JsonOutput].[uvw_ProductionProduct]
[JsonOutput].[MongoOrderDetail]

■ [Production].[Product]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	12:17:45 PM Saturday, October 29, 2022
Last Modified	12:17:49 PM Saturday, October 29, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity	Default
PK <mark>P</mark> C	ProductId	[Udt].[udtSurrogateKeyInt]	4	NOT NULL	1 - 1	
	ProductName	[Udt].[udtProductName]	60	NOT NULL		
FK	SupplierId	[Udt].[udtSurrogateKeyInt]	4	NOT NULL		
FK	Categoryld	[Udt].[udtSurrogateKeyInt]	4	NOT NULL		
⊞	UnitPrice	[Udt].[udtCurrency]	8	NOT NULL		((0))
	Discontinued	[Udt].[udtFlagBit]	1	NOT NULL		((0))
	UserAuthorizationId	[Udt].[udtSurrogateKeyInt]	4	NULL allowed		
	DateAdded	[Udt].[udtTimeStampNow]	6	NOT NULL		(getdate())
	DateOfLastUpdate	[Udt].[udtTimeStampNow]	6	NOT NULL		(getdate())

Indexes

Key	Name	Key Columns	Unique
PKC	PK_Products	ProductId	True

Triggers

Name	ANSI Nulls On	Quoted Identifier On	On
tD_Product	True	True	After Delete

TI_Production_Product_LastUpdated	True	True	After Update
-----------------------------------	------	------	--------------

Check Constraints

Name	On Column	Constraint
CHK_Products_unitprice	UnitPrice	([UnitPrice]>=(0))

Foreign Keys

Name	Columns
FK_Product_Category	CategoryId->[Production].[Category].[CategoryId]
FK_product_supplier	SupplierId->[Production].[Supplier].[SupplierId]

```
CREATE TABLE [Production].[Product]
[ProductId] [Udt].[udtSurrogateKeyInt] NOT NULL IDENTITY(1, 1),
[ProductName] [Udt].[udtProductName] NOT NULL,
[SupplierId] [Udt].[udtSurrogateKeyInt] NOT NULL,
[CategoryId] [Udt].[udtSurrogateKeyInt] NOT NULL,
[UnitPrice] [Udt].[udtCurrency] NOT NULL CONSTRAINT [DFT Products unitprice] DEFAULT
[Discontinued] [Udt].[udtFlagBit] NOT NULL CONSTRAINT [DFT Products discontinued]
DEFAULT ((0)),
[UserAuthorizationId] [Udt].[udtSurrogateKeyInt] NULL,
[DateAdded] [Udt].[udtTimeStampNow] NOT NULL CONSTRAINT [DF TimeStampNow -
YYYYMMDDHHMMSS_1118912117] DEFAULT (getdate()),
[DateOfLastUpdate] [Udt].[udtTimeStampNow] NOT NULL CONSTRAINT [DF TimeStampNow -
YYYYMMDDHHMMSS 186481879] DEFAULT (getdate())
) ON [PRIMARY]
CREATE TRIGGER [Production].[tD Product] ON [Production].[Product] FOR DELETE AS
/* erwin Builtin Trigger */
/* DELETE trigger on Product */
BEGIN
 DECLARE @errno int,
          @severity int,
                   int,
           @state
           @errmsq varchar(255)
    /* erwin Builtin Trigger */
   /* Production.Product Sales.OrderDetail on parent delete no action */
   /* ERWIN RELATION: CHECKSUM="00040747", PARENT OWNER="Production", PARENT -
TABLE="Product"
   CHILD OWNER="Sales", CHILD TABLE="OrderDetail"
   P2C VERB PHRASE="", C2P VERB PHRASE="",
   FK CONSTRAINT="R 23", FK COLUMNS="ProductId" */
   IF EXISTS (
      SELECT * FROM deleted, Sales.OrderDetail
```

```
WHERE
       /* %JoinFKPK(Sales.OrderDetail, deleted, " = "," AND") */
       Sales.OrderDetail.ProductId = deleted.ProductId
   BEGIN
     SELECT @errno = 30001,
            @errmsg = 'Cannot delete Production.Product because Sales.OrderDetail
exists.'
    GOTO error
   END
   /* erwin Builtin Trigger */
   /* Production.Supplier Production.Product on child delete no action */
   /* ERWIN RELATION: CHECKSUM="00000000", PARENT OWNER="Production", PARENT -
TABLE="Supplier"
   CHILD OWNER="Production", CHILD TABLE="Product"
   P2C VERB PHRASE="", C2P VERB PHRASE="",
   FK_CONSTRAINT="FK_product_supplier", FK_COLUMNS="SupplierId" */
   IF EXISTS (SELECT * FROM deleted, Production. Supplier
     WHERE
        /* %JoinFKPK(deleted, Production. Supplier, " = ", " AND") */
       deleted.SupplierId = Production.Supplier.SupplierId AND
       NOT EXISTS (
         SELECT * FROM Production.Product
         WHERE
           /* %JoinFKPK(Production.Product, Production.Supplier," = "," AND") */
            Production.Product.SupplierId = Production.Supplier.SupplierId
   )
   BEGIN
     SELECT @errno = 30010,
            @errmsg = 'Cannot delete last Production.Product because
Production. Supplier exists.'
    GOTO error
   END
    /* erwin Builtin Trigger */
   /* Production.Category Production.Product on child delete no action */
   /* ERWIN RELATION: CHECKSUM="00000000", PARENT OWNER="Production", PARENT -
TABLE="Category"
   CHILD OWNER="Production", CHILD TABLE="Product"
   P2C VERB PHRASE="", C2P VERB PHRASE="",
   FK CONSTRAINT="FK Product Category", FK COLUMNS="CategoryId" */
   IF EXISTS (SELECT * FROM deleted, Production.Category
     WHERE
        /* %JoinFKPK(deleted, Production.Category," = "," AND") */
       deleted.CategoryId = Production.Category.CategoryId AND
       NOT EXISTS (
         SELECT * FROM Production.Product
         WHERE
           /* %JoinFKPK(Production.Product, Production.Category," = "," AND") */
            Production.Product.CategoryId = Production.Category.CategoryId
   )
```

```
BEGIN
     SELECT @errno = 30010,
            @errmsg = 'Cannot delete last Production.Product because
Production.Category exists.'
     GOTO error
   END
   /* erwin Builtin Trigger */
   RETURN
error:
  RAISERROR (@errmsg, -- Message text.
             @severity, -- Severity (0~25).
             @state) -- State (0~255).
   rollback transaction
END
CREATE TRIGGER [Production].[TI Production Product LastUpdated] ON
[Production].[Product]
   AFTER UPDATE
 AS
 UPDATE
    Production.[Product]
     DateOfLastUpdate = GETDATE()
 FROM
     Production.[Product] as c
 INNER JOIN
     Inserted i
 ON c.ProductId = i.ProductId
GO
ALTER TABLE [Production].[Product] ADD CONSTRAINT [CHK Products unitprice] CHECK
(([UnitPrice]>=(0)))
ALTER TABLE [Production].[Product] ADD CONSTRAINT [PK Products] PRIMARY KEY CLUSTERED
([ProductId]) ON [PRIMARY]
ALTER TABLE [Production].[Product] ADD CONSTRAINT [FK Product Category] FOREIGN KEY
([CategoryId]) REFERENCES [Production].[Category] ([CategoryId])
ALTER TABLE [Production].[Product] ADD CONSTRAINT [FK product supplier] FOREIGN KEY
([SupplierId]) REFERENCES [Production].[Supplier] ([SupplierId])
ALTER TABLE [Production].[Product] ENABLE CHANGE TRACKING
```

[Production].[Category] [Production].[Supplier] [Udt].[udtCurrency]

[Udt].[udtFlagBit]

[Udt].[udtProductName]

[Udt].[udtSurrogateKeyInt]

[Udt].[udtTimeStampNow]

Production

Used By

[Sales].[OrderDetail]
[JsonOutput].[uvw_ProductionProduct]
[JsonOutput].[MongoOrderDetail]
[Sales].[utvf_FindAllCustomerOrder]

I [Production].[Supplier]

Properties

Property Value	
Collation SQL_Latin1_General_CP1_CI_AS	
Row Count (~)	0
Created	12:17:45 PM Saturday, October 29, 2022
Last Modified	12:17:49 PM Saturday, October 29, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullabilit y	Identity	Default
PK <mark>P</mark> C	SupplierId	[Udt].[udtSurrogateKeyInt]	4	NOT NULL	1 - 1	
	SupplierCompanyName	[Udt].[udtCompanyName]	60	NOT NULL		
	SupplierContactName	[Udt].[udtFullName]	124	NOT NULL		
⊞	SupplierContactTitle	[Udt].[udtContactTitle]	20	NOT NULL		(")
	SupplierAddress	[Udt].[udtAddress]	50	NOT NULL		
	SupplierCity	[Udt].[udtCity]	28	NOT NULL		
	SupplierRegion	[Udt].[udtRegion]	60	NULL allowed		
	SupplierPostalCode	[Udt].[udtPostalCode]	10	NULL allowed		
	SupplierCountry	[Udt].[udtCountry]	112	NOT NULL		
	SupplierPhoneNumber	[Udt].[udtTelephoneNumber]	36	NOT NULL		
	SupplierFaxNumber	[Udt].[udtTelephoneNumber]	36	NULL allowed		
	UserAuthorizationId	[Udt].[udtSurrogateKeyInt]	4	NULL allowed		
	DateAdded	[Udt].[udtTimeStampNow]	6	NOT NULL		(getdate()
	DateOfLastUpdate	[Udt].[udtTimeStampNow]	6	NOT NULL		(getdate()

Indexes

Key	Name	Key Columns	Unique
PK2 C	PK_Suppliers	SupplierId	True

Triggers

Name	ANSI Nulls On	Quoted Identifier On	On
tD_Supplier	True	True	After Delete
TI_Production_Supplier_LastUpdated	True	True	After Update

Check Constraints

Name	On Column	Constraint
CHK_ContactTitle_543910528	SupplierContactTitle	([SupplierContactTitle]='Sir' OR [SupplierContact-Title]='Madam' OR [SupplierContactTitle]='Mr.' OR [SupplierContact-Title]='Mrs.' OR [SupplierContact-Title]='Ms.' OR [SupplierContact-Title]='Dr.' OR [SupplierContact-Title]='Professor' OR [SupplierContactTitle]=")

```
CREATE TABLE [Production].[Supplier]
[SupplierId] [Udt].[udtSurrogateKeyInt] NOT NULL IDENTITY(1, 1),
[SupplierCompanyName] [Udt].[udtCompanyName] NOT NULL,
[SupplierContactName] [Udt].[udtFullName] NOT NULL,
[SupplierContactTitle] [Udt].[udtContactTitle] NOT NULL CONSTRAINT [DF Empty-
String_1092354455] DEFAULT (''),
[SupplierAddress] [Udt].[udtAddress] NOT NULL,
[SupplierCity] [Udt].[udtCity] NOT NULL,
[SupplierRegion] [Udt].[udtRegion] NULL,
[SupplierPostalCode] [Udt].[udtPostalCode] NULL,
[SupplierCountry] [Udt].[udtCountry] NOT NULL,
[SupplierPhoneNumber] [Udt].[udtTelephoneNumber] NOT NULL,
[SupplierFaxNumber] [Udt].[udtTelephoneNumber] NULL,
[UserAuthorizationId] [Udt].[udtSurrogateKeyInt] NULL,
[DateAdded] [Udt].[udtTimeStampNow] NOT NULL CONSTRAINT [DF TimeStampNow -
YYYYMMDDHHMMSS_1108105077] DEFAULT (getdate()),
[DateOfLastUpdate] [Udt].[udtTimeStampNow] NOT NULL CONSTRAINT [DF TimeStampNow -
YYYYMMDDHHMMSS 186524094] DEFAULT (getdate())
) ON [PRIMARY]
GO
CREATE TRIGGER [Production].[tD Supplier] ON [Production].[Supplier] FOR DELETE AS
/* erwin Builtin Trigger */
/* DELETE trigger on Supplier */
BEGIN
 DECLARE @errno
                   int,
```

```
@severity int,
           @state
                  int,
           @errmsg varchar(255)
    /* erwin Builtin Trigger */
   /* Production.Supplier Production.Product on parent delete no action */
    /* ERWIN RELATION: CHECKSUM="000136d7", PARENT OWNER="Production", PARENT -
TABLE="Supplier"
   CHILD OWNER="Production", CHILD TABLE="Product"
   P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
   FK CONSTRAINT="FK product supplier", FK COLUMNS="SupplierId" */
   IF EXISTS (
     SELECT * FROM deleted, Production. Product
     WHERE
       /* %JoinFKPK(Production.Product, deleted, " = ", " AND") */
       Production.Product.SupplierId = deleted.SupplierId
   )
   BEGIN
     SELECT @errno = 30001,
            @errmsg = 'Cannot delete Production.Supplier because Production.Product
exists.'
     GOTO error
   END
   /* erwin Builtin Trigger */
   RETURN
error:
  RAISERROR (@errmsg, -- Message text.
             @severity, -- Severity (0~25).
             @state) -- State (0~255).
   rollback transaction
END
CREATE TRIGGER [Production].[TI Production Supplier LastUpdated] ON
[Production].[Supplier]
   AFTER UPDATE
 AS
 UPDATE
    Production.[Supplier]
     DateOfLastUpdate = GETDATE()
     Production.[Supplier] as c
 INNER JOIN
     Inserted i
 ON c.SupplierId = i.SupplierId
GO
ALTER TABLE [Production].[Supplier] ADD CONSTRAINT [CHK ContactTitle 543910528] CHECK
(([SupplierContactTitle]='Sir' OR [SupplierContactTitle]='Madam' OR [SupplierContact-
Title]='Mr.' OR [SupplierContactTitle]='Mrs.' OR [SupplierContactTitle]='Ms.' OR
[SupplierContactTitle]='Miss' OR [SupplierContactTitle]='Dr.' OR [SupplierContact-
Title]='Professor' OR [SupplierContactTitle]=''))
```

```
GO
ALTER TABLE [Production].[Supplier] ADD CONSTRAINT [PK_Suppliers] PRIMARY KEY CLUSTERED
([SupplierId]) ON [PRIMARY]
GO
ALTER TABLE [Production].[Supplier] ENABLE CHANGE_TRACKING
GO
```

[Udt].[udtAddress]

[Udt].[udtCity]

[Udt].[udtCompanyName]

[Udt].[udtContactTitle]

[Udt].[udtCountry]

[Udt].[udtFullName]

[Udt].[udtPostalCode]

[Udt].[udtRegion]

[Udt].[udtSurrogateKeyInt]

[Udt].[udtTelephoneNumber]

[Udt].[udtTimeStampNow]

Production

Used By

[Production].[Product]

[JsonOutput].[uvw_ProductionProduct]

[JsonOutput].[uvw_ProductionSupplier]

[JsonOutput].[MongoOrderDetail]

[Sales].[utvf_FindAllCustomerOrder]

☐ [Sales].[Customer]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	12:17:44 PM Saturday, October 29, 2022
Last Modified	12:17:49 PM Saturday, October 29, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullabili ty	Identity	Default
PK	CustomerId	[Udt].[udtSurrogateKeyInt]	4	NOT NULL	1 - 1	
	CustomerCompanyName	[Udt].[udtCompanyName]	60	NOT NULL		
	CustomerContactName	[Udt].[udtFullName]	124	NOT NULL		
	CustomerContactTitle	[Udt].[udtTitle]	18	NOT NULL		
	CustomerAddress	[Udt].[udtAddress]	50	NOT NULL		
	CustomerCity	[Udt].[udtCity]	28	NOT NULL		
	CustomerRegion	[Udt].[udtRegion]	60	NULL allowed		
	CustomerPostalCode	[Udt].[udtPostalCode]	10	NULL allowed		
	CustomerCountry	[Udt].[udtCountry]	112	NOT NULL		
	CustomerPhoneNumber	[Udt].[udtTelephoneNumber]	36	NOT NULL		
	CustomerFaxNumber	[Udt].[udtTelephoneNumber]	36	NULL allowed		
	UserAuthorizationId	[Udt].[udtSurrogateKeyInt]	4	NULL allowed		
	DateAdded	[Udt].[udtTimeStampNow]	6	NOT NULL		(getdate(
	DateOfLastUpdate	[Udt].[udtTimeStampNow]	6	NOT NULL		(getdate(

Indexes

Key	Name	Key Columns	Unique
PK	PK_Customers	CustomerId	True

Triggers

Name	ANSI Nulls On	Quoted Identifier On	On
tD_Customer	True	True	After Delete
TI_Sales_Customer_LastUpdated	True	True	After Update

```
CREATE TABLE [Sales].[Customer]
[CustomerId] [Udt].[udtSurrogateKeyInt] NOT NULL IDENTITY(1, 1),
[CustomerCompanyName] [Udt].[udtCompanyName] NOT NULL,
[CustomerContactName] [Udt].[udtFullName] NOT NULL,
[CustomerContactTitle] [Udt].[udtTitle] NOT NULL,
[CustomerAddress] [Udt].[udtAddress] NOT NULL,
[CustomerCity] [Udt].[udtCity] NOT NULL,
[CustomerRegion] [Udt].[udtRegion] NULL,
[CustomerPostalCode] [Udt].[udtPostalCode] NULL,
[CustomerCountry] [Udt].[udtCountry] NOT NULL,
[CustomerPhoneNumber] [Udt].[udtTelephoneNumber] NOT NULL,
[CustomerFaxNumber] [Udt].[udtTelephoneNumber] NULL,
[UserAuthorizationId] [Udt].[udtSurrogateKeyInt] NULL,
[DateAdded] [Udt].[udtTimeStampNow] NOT NULL CONSTRAINT [DF_TimeStampNow_-
YYYYMMDDHHMMSS 1174363000] DEFAULT (getdate()),
[DateOfLastUpdate] [Udt].[udtTimeStampNow] NOT NULL CONSTRAINT [DF_TimeStampNow_-
YYYYMMDDHHMMSS 135933626] DEFAULT (getdate())
) ON [PRIMARY]
GO
CREATE TRIGGER [Sales].[tD Customer] ON [Sales].[Customer] FOR DELETE AS
/* erwin Builtin Trigger */
/* DELETE trigger on Customer */
BEGIN
  DECLARE @errno int,
          @severity int,
           @state int,
           @errmsg varchar(255)
   /* erwin Builtin Trigger */
   /* Sales.Customer Sales.Orders on parent delete no action */
   /* ERWIN RELATION: CHECKSUM="00011c8b", PARENT OWNER="Sales", PARENT -
TABLE="Customer"
   CHILD OWNER="Sales", CHILD TABLE="Orders"
   P2C VERB PHRASE="", C2P VERB PHRASE="",
   FK CONSTRAINT="FK Order Customer1", FK COLUMNS="CustomerId" */
   IF EXISTS (
      SELECT * FROM deleted, Sales. Orders
```

```
WHERE
       /* %JoinFKPK(Sales.Orders, deleted, " = "," AND") */
       Sales.Orders.CustomerId = deleted.CustomerId
   BEGIN
     SELECT @errno = 30001,
            @errmsg = 'Cannot delete Sales.Customer because Sales.Orders exists.'
     GOTO error
   END
   /* erwin Builtin Trigger */
   RETURN
error:
  RAISERROR (@errmsg, -- Message text.
             @severity, -- Severity (0~25).
             @state) -- State (0~255).
   rollback transaction
END
CREATE TRIGGER [Sales].[TI_Sales_Customer_LastUpdated] ON [Sales].[Customer]
  AFTER UPDATE
 AS
 UPDATE
    Sales.[Customer]
 SET
    DateOfLastUpdate = GETDATE()
 FROM
    Sales.[Customer] as c
 INNER JOIN
    Inserted i
 ON c.CustomerId = i.CustomerId
ALTER TABLE [Sales].[Customer] ADD CONSTRAINT [PK Customers] PRIMARY KEY CLUSTERED
([CustomerId]) ON [PRIMARY]
ALTER TABLE [Sales].[Customer] ENABLE CHANGE TRACKING
GO
```

[Udt].[udtAddress]
[Udt].[udtCity]
[Udt].[udtCompanyName]
[Udt].[udtCountry]
[Udt].[udtFullName]
[Udt].[udtPostalCode]
[Udt].[udtRegion]
[Udt].[udtSurrogateKeyInt]

[Udt].[udtTelephoneNumber] [Udt].[udtTimeStampNow] [Udt].[udtTitle] Sales

Used By

[Sales].[Orders]
[JsonOutput].[uvw_SalesCustomer]
[JsonOutput].[MongoOrder]

☐ [Sales].[OrderDetail]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	12:17:45 PM Saturday, October 29, 2022
Last Modified	12:17:49 PM Saturday, October 29, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Default
	UnitPrice	[Udt].[udtCurrency]	8	NOT NULL	((0))
	Quantity	[Udt].[udtQuantitySmall]	18	NOT NULL	((1))
	DiscountPercentage	[Udt].[udtPercentage]	8	NOT NULL	((0))
	UserAuthorizationId	[Udt].[udtSurrogateKeyInt]	4	NULL allowed	
	DateAdded	[Udt].[udtTimeStampNow]	6	NOT NULL	(getdate())
	DateOfLastUpdate	[Udt].[udtTimeStampNow]	6	NOT NULL	(getdate())
PKO FKO	Orderld	[Udt].[udtSurrogateKeyInt]	4	NOT NULL	
PKO FKO	ProductId	[Udt].[udtSurrogateKeyInt]	4	NOT NULL	

Indexes

Key	Name	Key Columns	Unique
PK C	PK_OrderDetails	Orderld, Productld	True

Triggers

Name	ANSI Nulls On	Quoted Identifier On	On
tD_OrderDetail	True	True	After Delete
TI_Sales_OrderDetail_LastUpdated	True	True	After Update

Check Constraints

Name	On Column	Constraint
CHK_DiscountPercentage	DiscountPercentage	([DiscountPercentage]>=(0) AND [Discount- Percentage]<=(1))
CHK_IsDeletion_303262850	UnitPrice	([UnitPrice]='Y' OR [UnitPrice]='N')
CHK_Quantity	Quantity	([Quantity]>(0))

Foreign Keys

Name	Columns
R_22	Orderld->[Sales].[Orders].[Orderld]
R_23	ProductId->[Production].[Product].[ProductId]

```
CREATE TABLE [Sales].[OrderDetail]
[UnitPrice] [Udt].[udtCurrency] NOT NULL CONSTRAINT [DFT OrderDetails UnitPrice]
DEFAULT ((0)),
[Quantity] [Udt].[udtQuantitySmall] NOT NULL CONSTRAINT [DFT OrderDetails Quantity]
DEFAULT ((1)),
[DiscountPercentage] [Udt].[udtPercentage] NOT NULL CONSTRAINT [DFT OrderDetails -
DiscountPercentage] DEFAULT ((0)),
[UserAuthorizationId] [Udt].[udtSurrogateKeyInt] NULL,
[DateAdded] [Udt].[udtTimeStampNow] NOT NULL CONSTRAINT [DF TimeStampNow -
YYYYMMDDHHMMSS 1792631873] DEFAULT (getdate()),
[DateOfLastUpdate] [Udt].[udtTimeStampNow] NOT NULL CONSTRAINT [DF_TimeStampNow_-
YYYYMMDDHHMMSS 1060436103] DEFAULT (getdate()),
[OrderId] [Udt].[udtSurrogateKeyInt] NOT NULL,
[ProductId] [Udt].[udtSurrogateKeyInt] NOT NULL
) ON [PRIMARY]
CREATE TRIGGER [Sales].[tD OrderDetail] ON [Sales].[OrderDetail] FOR DELETE AS
/* erwin Builtin Trigger */
/* DELETE trigger on OrderDetail */
BEGIN
 DECLARE @errno int,
           @severity int,
          @state
                   int,
           @errmsg varchar(255)
   /* erwin Builtin Trigger */
   /* Production.Product Sales.OrderDetail on child delete no action */
    /* ERWIN RELATION: CHECKSUM="0002ccb1", PARENT OWNER="Production", PARENT -
TABLE="Product"
   CHILD OWNER="Sales", CHILD TABLE="OrderDetail"
   P2C VERB PHRASE="", C2P VERB PHRASE="",
   FK CONSTRAINT="R 23", FK COLUMNS="ProductId" */
   IF EXISTS (SELECT * FROM deleted, Production.Product
     WHERE
        /* %JoinFKPK(deleted, Production.Product, " = "," AND") */
```

```
deleted.ProductId = Production.Product.ProductId AND
       NOT EXISTS (
         SELECT * FROM Sales.OrderDetail
         WHERE
           /* %JoinFKPK(Sales.OrderDetail, Production.Product," = "," AND") */
           Sales.OrderDetail.ProductId = Production.Product.ProductId
   )
   BEGIN
     SELECT @errno = 30010,
          @errmsg = 'Cannot delete last Sales.OrderDetail because Production.Product
exists.'
    GOTO error
   END
   /* erwin Builtin Trigger */
   /* Sales.Orders Sales.OrderDetail on child delete no action */
   /* ERWIN RELATION:CHECKSUM="00000000", PARENT OWNER="Sales", PARENT TABLE="Orders"
   CHILD OWNER="Sales", CHILD TABLE="OrderDetail"
   P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
   FK CONSTRAINT="R 22", FK COLUMNS="OrderId" */
   IF EXISTS (SELECT * FROM deleted, Sales.Orders
     WHERE
       /* %JoinFKPK(deleted, Sales.Orders," = "," AND") */
       deleted.OrderId = Sales.Orders.OrderId AND
       NOT EXISTS (
         SELECT * FROM Sales.OrderDetail
           /* %JoinFKPK(Sales.OrderDetail, Sales.Orders," = "," AND") */
           Sales.OrderDetail.OrderId = Sales.Orders.OrderId
   )
    SELECT @errno = 30010,
            @errmsg = 'Cannot delete last Sales.OrderDetail because Sales.Orders
exists.'
    GOTO error
   END
   /* erwin Builtin Trigger */
   RETURN
error:
  RAISERROR (@errmsg, -- Message text.
             @severity, -- Severity (0~25).
             @state) -- State (0~255).
   rollback transaction
END
CREATE TRIGGER [Sales].[TI Sales OrderDetail LastUpdated] ON [Sales].[OrderDetail]
  AFTER UPDATE
 AS
```

```
UPDATE
     Sales.[OrderDetail]
 SET
     DateOfLastUpdate = GETDATE()
 FROM
     Sales.[OrderDetail] as c
 INNER JOIN
    Inserted i
 ON c.OrderId = i.OrderId and c.ProductId = i.ProductId
GO
ALTER TABLE [Sales].[OrderDetail] ADD CONSTRAINT [CHK DiscountPercentage] CHECK
(([DiscountPercentage]>=(0) AND [DiscountPercentage]<=(1)))
ALTER TABLE [Sales].[OrderDetail] ADD CONSTRAINT [CHK IsDeletion 303262850] CHECK
(([UnitPrice]='Y' OR [UnitPrice]='N'))
ALTER TABLE [Sales].[OrderDetail] ADD CONSTRAINT [CHK_Quantity] CHECK
(([Quantity]>(0)))
ALTER TABLE [Sales].[OrderDetail] ADD CONSTRAINT [PK OrderDetails] PRIMARY KEY
CLUSTERED ([OrderId], [ProductId]) ON [PRIMARY]
ALTER TABLE [Sales].[OrderDetail] ADD CONSTRAINT [R_22] FOREIGN KEY ([OrderId])
REFERENCES [Sales].[Orders] ([OrderId])
ALTER TABLE [Sales].[OrderDetail] ADD CONSTRAINT [R 23] FOREIGN KEY ([ProductId])
REFERENCES [Production].[Product] ([ProductId])
ALTER TABLE [Sales].[OrderDetail] ENABLE CHANGE TRACKING
GO
```

[Production].[Product]

[Sales].[Orders]

[Udt].[udtCurrency]

[Udt].[udtPercentage]

[Udt].[udtQuantitySmall]

[Udt].[udtSurrogateKeyInt]

[Udt].[udtTimeStampNow]

Sales

Used By

[JsonOutput].[MongoOrderDetail] [Sales].[utvf_FindAllCustomerOrder]

☐ [Sales].[Orders]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	12:17:45 PM Saturday, October 29, 2022
Last Modified	12:17:49 PM Saturday, October 29, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity	Default
PK <mark>P</mark> C	Orderld	[Udt].[udtSurrogateKeyInt]	4	NOT NULL	1 - 1	
F	CustomerId	[Udt].[udtSurrogateKeyInt]	4	NULL allowed		
FK	Employeeld	[Udt].[udtSurrogateKeyInt]	4	NOT NULL		
FK	ShipperId	[Udt].[udtSurrogateKeyInt]	4	NOT NULL		
	OrderDate	[Udt].[udtYYYYMMDD]	8	NOT NULL		
	RequiredDate	[Udt].[udtYYYYMMDD]	8	NOT NULL		
	ShipToDate	[Udt].[udtYYYYMMDD]	8	NULL allowed		
⊞	Freight	[Udt].[udtCurrency]	8	NOT NULL		((0))
	ShipToName	[Udt].[udtFullName]	124	NOT NULL		
	ShipToAddress	[Udt].[udtAddress]	50	NOT NULL		
	ShipToCity	[Udt].[udtCity]	28	NOT NULL		
	ShipToRegion	[Udt].[udtRegion]	60	NULL allowed		
	ShipToPostalCode	[Udt].[udtPostalCode]	10	NULL allowed		
	ShipToCountry	[Udt].[udtCountry]	112	NOT NULL		
	UserAuthorizationId	[Udt].[udtSurrogateKeyInt]	4	NULL allowed		
	DateAdded	[Udt].[udtTimeStampNow]	6	NOT		(getdate())

			NULL	
DateOfLastUpdate	[Udt].[udtTimeStampNow]	6	NOT NULL	(getdate())

Indexes

Key	Name	Key Columns	Unique
PK C	PK_Orders	Orderld	True

Triggers

Name	ANSI Nulls On	Quoted Identifier On	On
tD_Orders	True	True	After Delete
TI_Sales_Orders_LastUpdated	True	True	After Update

Check Constraints

Name	On Column	Constraint
CHK_IsDeletion_1154070433	Freight	([Freight]='Y' OR [Freight]='N')

Foreign Keys

Name	Columns
FK_Order_Customer1	CustomerId->[Sales].[Customer].[CustomerId]
FK_Order_Employee	Employeeld->[HumanResources].[Employee].[Employeeld]
FK_Order_Shipper	ShipperId->[Sales].[Shipper].[ShipperId]

```
CREATE TABLE [Sales].[Orders]

(
[OrderId] [Udt].[udtSurrogateKeyInt] NOT NULL IDENTITY(1, 1),

[CustomerId] [Udt].[udtSurrogateKeyInt] NOT NULL,

[EmployeeId] [Udt].[udtSurrogateKeyInt] NOT NULL,

[ShipperId] [Udt].[udtSurrogateKeyInt] NOT NULL,

[OrderDate] [Udt].[udtYYYYMMDD] NOT NULL,

[RequiredDate] [Udt].[udtYYYYMMDD] NOT NULL,

[ShipToDate] [Udt].[udtYYYYMMDD] NULL,

[Freight] [Udt].[udtCurrency] NOT NULL CONSTRAINT [DFT_Orders_freight] DEFAULT ((0)),

[ShipToName] [Udt].[udtFullName] NOT NULL,

[ShipToAddress] [Udt].[udtAddress] NOT NULL,

[ShipToCity] [Udt].[udtCity] NOT NULL,

[ShipToRegion] [Udt].[udtRegion] NULL,

[ShipToPostalCode] [Udt].[udtPostalCode] NULL,
```

```
[ShipToCountry] [Udt].[udtCountry] NOT NULL,
[UserAuthorizationId] [Udt].[udtSurrogateKeyInt] NULL,
[DateAdded] [Udt].[udtTimeStampNow] NOT NULL CONSTRAINT [DF TimeStampNow -
YYYYMMDDHHMMSS_1152441953] DEFAULT (getdate()),
[DateOfLastUpdate] [Udt].[udtTimeStampNow] NOT NULL CONSTRAINT [DF_TimeStampNow_-YYYYMMDDHHMMSS_521895223] DEFAULT (getdate())
) ON [PRIMARY]
GO
CREATE TRIGGER [Sales].[tD Orders] ON [Sales].[Orders] FOR DELETE AS
/* erwin Builtin Trigger */
/* DELETE trigger on Orders */
 DECLARE @errno int,
           @severity int,
           Ostate int,
           @errmsq varchar(255)
   /* erwin Builtin Trigger */
    /* Sales.Orders Sales.OrderDetail on parent delete no action */
   /* ERWIN RELATION: CHECKSUM="0005242b", PARENT OWNER="Sales", PARENT TABLE="Orders"
   CHILD OWNER="Sales", CHILD TABLE="OrderDetail"
   P2C VERB PHRASE="", C2P VERB PHRASE="",
   FK CONSTRAINT="R 22", FK COLUMNS="OrderId" */
   IF EXISTS (
     SELECT * FROM deleted, Sales.OrderDetail
     WHERE
       /* %JoinFKPK(Sales.OrderDetail, deleted, " = ", " AND") */
        Sales.OrderDetail.OrderId = deleted.OrderId
    BEGIN
     SELECT @errno = 30001,
            @errmsg = 'Cannot delete Sales.Orders because Sales.OrderDetail exists.'
     GOTO error
   END
    /* erwin Builtin Trigger */
    /* Sales.Shipper Sales.Orders on child delete no action */
    /* ERWIN RELATION: CHECKSUM="00000000", PARENT OWNER="Sales", PARENT TABLE="Shipper"
    CHILD OWNER="Sales", CHILD TABLE="Orders"
   P2C VERB PHRASE="", C2P VERB PHRASE="",
    FK CONSTRAINT="FK Order Shipper", FK COLUMNS="ShipperId" */
   IF EXISTS (SELECT * FROM deleted, Sales.Shipper
        /* %JoinFKPK(deleted, Sales. Shipper, " = ", " AND") */
       deleted.ShipperId = Sales.Shipper.ShipperId AND
       NOT EXISTS (
         SELECT * FROM Sales.Orders
            /* %JoinFKPK(Sales.Orders, Sales.Shipper, " = "," AND") */
            Sales.Orders.ShipperId = Sales.Shipper.ShipperId
    BEGIN
      SELECT @errno = 30010,
             @errmsg = 'Cannot delete last Sales.Orders because Sales.Shipper exists.'
```

```
GOTO error
   END
   /* erwin Builtin Trigger */
   /* HumanResources.Employee Sales.Orders on child delete no action */
   /* ERWIN RELATION: CHECKSUM="00000000", PARENT OWNER="HumanResources", PARENT -
TABLE="Employee"
   CHILD OWNER="Sales", CHILD TABLE="Orders"
   P2C_VERB_PHRASE="", C2P_VERB_PHRASE="",
   FK CONSTRAINT="FK Order Employee", FK COLUMNS="EmployeeId" */
   IF EXISTS (SELECT * FROM deleted, HumanResources. Employee
       /* %JoinFKPK(deleted, HumanResources.Employee, " = "," AND") */
       deleted.EmployeeId = HumanResources.Employee.EmployeeId AND
       NOT EXISTS (
         SELECT * FROM Sales.Orders
           /* %JoinFKPK(Sales.Orders, HumanResources.Employee, " = "," AND") */
           Sales.Orders.EmployeeId = HumanResources.Employee.EmployeeId
   BEGIN
     SELECT @errno = 30010,
           @errmsg = 'Cannot delete last Sales.Orders because HumanResources.Employee
exists.'
    GOTO error
   END
   /* erwin Builtin Trigger */
   /* Sales.Customer Sales.Orders on child delete no action */
   /* ERWIN RELATION: CHECKSUM="00000000", PARENT OWNER="Sales", PARENT -
TABLE="Customer"
   CHILD OWNER="Sales", CHILD TABLE="Orders"
   P2C VERB PHRASE="", C2P VERB PHRASE="",
   FK CONSTRAINT="FK Order Customer1", FK COLUMNS="CustomerId" */
   IF EXISTS (SELECT * FROM deleted, Sales.Customer
       /* %JoinFKPK(deleted, Sales.Customer, " = ", " AND") */
       deleted.CustomerId = Sales.Customer.CustomerId AND
       NOT EXISTS (
         SELECT * FROM Sales.Orders
           /* %JoinFKPK(Sales.Orders, Sales.Customer, " = ", " AND") */
            Sales.Orders.CustomerId = Sales.Customer.CustomerId
   BEGIN
     SELECT @errno = 30010,
           @errmsq = 'Cannot delete last Sales.Orders because Sales.Customer exists.'
     GOTO error
   END
    /* erwin Builtin Trigger */
```

```
RETURN
error:
  RAISERROR (@errmsg, -- Message text.
             @severity, -- Severity (0~25).
             @state) -- State (0~255).
   rollback transaction
END
CREATE TRIGGER [Sales].[TI Sales Orders LastUpdated] ON [Sales].[Orders]
   AFTER UPDATE
 AS
 UPDATE
     Sales.[Orders]
     DateOfLastUpdate = GETDATE()
     Sales.[Orders] as c
 INNER JOIN
    Inserted i
 ON c.OrderId = i.OrderId
ALTER TABLE [Sales].[Orders] ADD CONSTRAINT [CHK IsDeletion 1154070433] CHECK
(([Freight]='Y' OR [Freight]='N'))
ALTER TABLE [Sales].[Orders] ADD CONSTRAINT [PK Orders] PRIMARY KEY CLUSTERED ([Order-
Id]) ON [PRIMARY]
ALTER TABLE [Sales].[Orders] ADD CONSTRAINT [FK Order Customer1] FOREIGN KEY ([Customer-
Id]) REFERENCES [Sales].[Customer] ([CustomerId])
ALTER TABLE [Sales].[Orders] ADD CONSTRAINT [FK Order Employee] FOREIGN KEY ([Employee-
Id]) REFERENCES [HumanResources].[Employee] ([EmployeeId])
ALTER TABLE [Sales].[Orders] ADD CONSTRAINT [FK Order Shipper] FOREIGN KEY ([Shipper-
Id]) REFERENCES [Sales].[Shipper] ([ShipperId])
ALTER TABLE [Sales].[Orders] ENABLE CHANGE TRACKING
GO
```

```
[HumanResources].[Employee]
[Sales].[Customer]
[Sales].[Shipper]
[Udt].[udtAddress]
[Udt].[udtCity]
[Udt].[udtCountry]
[Udt].[udtCurrency]
[Udt].[udtFullName]
[Udt].[udtPostalCode]
```

Author: StudentCSCI381Erwin

[Udt].[udtRegion] [Udt].[udtSurrogateKeyInt] [Udt].[udtTimeStampNow] [Udt].[udtYYYYMMDD] Sales

Used By

[Sales].[OrderDetail]
[JsonOutput].[uvw_Order]
[JsonOutput].[MongoOrder]
[Sales].[utvf_FindAllCustomerOrder]

☐ [Sales].[Shipper]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	12:17:45 PM Saturday, October 29, 2022
Last Modified	12:17:49 PM Saturday, October 29, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullabilit y	Identity	Default
PK	ShipperId	[Udt].[udtSurrogateKeyInt]	4	NOT NULL	1 - 1	
	ShipperCompanyName	[Udt].[udtCompanyName]	60	NOT NULL		
	PhoneNumber	[Udt].[udtTelephoneNumber]	36	NOT NULL		
	UserAuthorizationId	[Udt].[udtSurrogateKeyInt]	4	NULL allowed		
	DateAdded	[Udt].[udtTimeStampNow]	6	NOT NULL		(getdate())
	DateOfLastUpdate	[Udt].[udtTimeStampNow]	6	NOT NULL		(getdate())

Indexes

Key	Name	Key Columns	Unique
PKP C	PK_Shippers	ShipperId	True

Triggers

Name	ANSI Nulls On	Quoted Identifier On	On
tD_Shipper	True	True	After Delete
TI_Sales_Shipper_LastUpdated	True	True	After Insert Update
tU_Shipper	True	True	After Update

```
CREATE TABLE [Sales].[Shipper]
[ShipperId] [Udt].[udtSurrogateKeyInt] NOT NULL IDENTITY(1, 1),
[ShipperCompanyName] [Udt].[udtCompanyName] NOT NULL,
[PhoneNumber] [Udt].[udtTelephoneNumber] NOT NULL,
[UserAuthorizationId] [Udt].[udtSurrogateKeyInt] NULL,
[DateAdded] [Udt].[udtTimeStampNow] NOT NULL CONSTRAINT [DF TimeStampNow -
YYYYMMDDHHMMSS 985480301] DEFAULT (getdate()),
[DateOfLastUpdate] [Udt].[udtTimeStampNow] NOT NULL CONSTRAINT [DF_TimeStampNow_-
YYYYMMDDHHMMSS 321220825] DEFAULT (getdate())
ON [PRIMARY]
CREATE TRIGGER [Sales].[tD_Shipper] ON [Sales].[Shipper] FOR DELETE AS
/* erwin Builtin Trigger */
/* DELETE trigger on Shipper */
BEGIN
  DECLARE @errno int,
          @severity int,
          @state int,
           @errmsq varchar(255)
   /* erwin Builtin Trigger */
   /* Sales.Shipper Sales.Orders on parent delete no action */
   /* ERWIN RELATION: CHECKSUM="00011ad6", PARENT OWNER="Sales", PARENT TABLE="Shipper"
   CHILD OWNER="Sales", CHILD TABLE="Orders"
   P2C VERB PHRASE="", C2P VERB PHRASE="",
   FK CONSTRAINT="FK Order Shipper", FK COLUMNS="ShipperId" */
   IF EXISTS (
     SELECT * FROM deleted, Sales.Orders
     WHERE
       /* %JoinFKPK(Sales.Orders, deleted, " = "," AND") */
       Sales.Orders.ShipperId = deleted.ShipperId
   )
     SELECT @errno = 30001,
            @errmsg = 'Cannot delete Sales.Shipper because Sales.Orders exists.'
     GOTO error
   END
   /* erwin Builtin Trigger */
   RETURN
error:
  RAISERROR (@errmsg, -- Message text.
             @severity, -- Severity (0~25).
             @state) -- State (0~255).
   rollback transaction
END
GO
CREATE TRIGGER [Sales].[TI Sales Shipper LastUpdated] ON [Sales].[Shipper]
   AFTER INSERT, UPDATE
```

```
AS
 UPDATE
    Sales.[Shipper]
     DateOfLastUpdate = GETDATE()
 FROM
    Sales.[Shipper] as c
 INNER JOIN
    Inserted i
 ON c.ShipperId = i.ShipperId
CREATE TRIGGER [Sales].[tU Shipper] ON [Sales].[Shipper] FOR UPDATE AS
/* erwin Builtin Trigger */
/* UPDATE trigger on Shipper */
BEGIN
 DECLARE @numrows int,
          @nullcnt int,
          @validcnt int,
          @insShipperId Udt.udtSurrogateKeyInt,
          @errno int,
          @severity int,
          Ostate int,
          @errmsg varchar(255)
 SELECT @numrows = @@rowcount
 /* erwin Builtin Trigger */
 /* Sales.Shipper Sales.Orders on parent update no action */
  /* ERWIN RELATION: CHECKSUM="000132f9", PARENT OWNER="Sales", PARENT TABLE="Shipper"
  CHILD_OWNER="Sales", CHILD_TABLE="Orders"
  P2C VERB PHRASE="", C2P VERB PHRASE="",
   FK CONSTRAINT="FK Order Shipper", FK COLUMNS="ShipperId" */
   /* %ParentPK(" OR",UPDATE) */
  UPDATE (ShipperId)
   IF EXISTS (
    SELECT * FROM deleted, Sales. Orders
     WHERE
       /* %JoinFKPK(Sales.Orders, deleted, " = "," AND") */
       Sales.Orders.ShipperId = deleted.ShipperId
    SELECT @errno = 30005,
           @errmsg = 'Cannot update Sales.Shipper because Sales.Orders exists.'
     GOTO error
   END
 END
  /* erwin Builtin Trigger */
```

```
RETURN
error:

RAISERROR (@errmsg, -- Message text.

@severity, -- Severity (0~25).

@state) -- State (0~255).

rollback transaction

END

GO

ALTER TABLE [Sales].[Shipper] ADD CONSTRAINT [PK_Shippers] PRIMARY KEY CLUSTERED ([ShipperId]) ON [PRIMARY]

GO

ALTER TABLE [Sales].[Shipper] ENABLE CHANGE_TRACKING

GO
```

[Udt].[udtCompanyName] [Udt].[udtSurrogateKeyInt] [Udt].[udtTelephoneNumber] [Udt].[udtTimeStampNow] Sales

Used By

[Sales].[Orders]
[JsonOutput].[uvw_SalesShipper]
[JsonOutput].[MongoOrder]
[Sales].[utvf_FindAllCustomerOrder]

☐ [Service].[Feedback]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	12:17:44 PM Saturday, October 29, 2022
Last Modified	12:17:49 PM Saturday, October 29, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity
PK C	MemberID	[Udt].[udtSurrogateKeyInt]	4	NOT NULL	1 - 1
	Feedback	[Udt].[udtDescription]	500	NULL allowed	
	Rating	[Udt].[udtScore]	4	NULL allowed	
	Received_On	[dbo].[udtDateTime]	4	NULL allowed	

Indexes

Key	Name	Key Columns	Unique
PK G	PKFeedback0CF04B38E2275530	MemberID	True

```
CREATE TABLE [Service].[Feedback]

(
[MemberID] [Udt].[udtSurrogateKeyInt] NOT NULL IDENTITY(1, 1),

[Feedback] [Udt].[udtDescription] MASKED WITH (FUNCTION = 'default()') NULL,

[Rating] [Udt].[udtScore] MASKED WITH (FUNCTION = 'default()') NULL,

[Received_On] [dbo].[udtDateTime] NULL

) ON [PRIMARY]

GO

ALTER TABLE [Service].[Feedback] ADD CONSTRAINT [PK_Feedback_OCF04B38E2275530]

PRIMARY KEY CLUSTERED ([MemberID]) ON [PRIMARY]

GO

ALTER TABLE [Service].[Feedback] ENABLE CHANGE_TRACKING

GO
```

[dbo].[udtDateTime]
[Udt].[udtDescription]
[Udt].[udtScore]
[Udt].[udtSurrogateKeyInt]
Service

■ [SystemVersioned].[Employee]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Неар	True
Row Count (~)	0
Created	12:17:45 PM Saturday, October 29, 2022
Last Modified	12:17:49 PM Saturday, October 29, 2022
System Versioned	True
Remote Data Archive	Disabled
History Table	[Audit].[VersionedEmployeeHistory]
History Table Row Count (~)	0
History Table Created	12:17:45 PM Saturday, October 29, 2022
History Table Last Modified	12:17:46 PM Saturday, October 29, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability
PK	Employeeld	[Udt].[udtSurrogateKeyInt]	4	NOT NULL
	EmployeeFullName	[Udt].[udtFullName]	124	NOT NULL
	Department	[dbo].[udtDepartment]	100	NOT NULL
	Salary	[dbo].[udtSalary]	4	NOT NULL
	Notes	[Udt].[udtNote]	120	NOT NULL

Indexes

Key	Name	Key Columns	Unique
PK	PK_EmployeeVersioned	Employeeld	True

```
CREATE TABLE [Audit].[VersionedEmployeeHistory]

(
[EmployeeId] [Udt].[udtSurrogateKeyInt] NOT NULL,

[EmployeeFullName] [Udt].[udtFullName] NOT NULL,

[Department] [dbo].[udtDepartment] NOT NULL,

[Salary] [dbo].[udtSalary] NOT NULL,

[Notes] [Udt].[udtNote] NOT NULL,
```

```
[SysStart] [dbo].[udtTimeStampNow4] NOT NULL,
[SysEnd] [dbo].[udtTimeStampNow4] NOT NULL
ON [PRIMARY]
GO
CREATE CLUSTERED INDEX [ix VersionedEmployeeHistory] ON [Audit].[VersionedEmployee-
History] ([SysEnd], [SysStart]) ON [PRIMARY]
CREATE TABLE [SystemVersioned].[Employee]
[EmployeeId] [Udt].[udtSurrogateKeyInt] NOT NULL,
[EmployeeFullName] [Udt].[udtFullName] NOT NULL,
[Department] [dbo].[udtDepartment] NOT NULL,
[Salary] [dbo].[udtSalary] NOT NULL,
[Notes] [Udt].[udtNote] NOT NULL,
[SysStart] [dbo].[udtTimeStampNow4] GENERATED ALWAYS AS ROW START HIDDEN NOT NULL,
[SysEnd] [dbo].[udtTimeStampNow4] GENERATED ALWAYS AS ROW END HIDDEN NOT NULL,
PERIOD FOR SYSTEM TIME (SysStart, SysEnd),
CONSTRAINT [PK EmployeeVersioned] PRIMARY KEY NONCLUSTERED ([EmployeeId]) ON [PRIMARY]
ON [PRIMARY]
WITH
SYSTEM VERSIONING = ON (HISTORY TABLE = [Audit].[VersionedEmployeeHistory])
)
GO
ALTER TABLE [SystemVersioned].[Employee] ENABLE CHANGE_TRACKING
```

[dbo].[udtDepartment]
[dbo].[udtSalary]
[dbo].[udtTimeStampNow4]
[Udt].[udtFullName]
[Udt].[udtNote]
[Udt].[udtSurrogateKeyInt]
SystemVersioned

[Triggered].[AuditTriggeredEmployeeHistory]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	12:17:44 PM Saturday, October 29, 2022
Last Modified	12:17:48 PM Saturday, October 29, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullabil ity	Identity	Default
P / P	TriggeredEmployeeHistoryId	[Udt].[udtSurrogateKeyInt]	4	NOT NULL	1 - 1	
	AuditTriggeredEmployeeHistory- Timestamp	[Udt].[udtTimeStampNow]	6	NULL allowed		(sysdat etime())
	TriggerOption	[Udt].[udtTriggerOption]	1	NULL allowed		
P	Employeeld	[Udt].[udtSurrogateKeyInt]	4	NOT NULL		
	EmployeeFullName	[Udt].[udtFullName]	124	NOT NULL		
	Department	[dbo].[udtDepartment]	100	NOT NULL		
	Salary	[dbo].[udtSalary]	4	NOT NULL		
	Notes	[Udt].[udtNote]	120	NOT NULL		
	IsDeleted	[Udt].[udtFlagChar]	1	NULL allowed		('N')
	TransactionNumber	[Udt].[udtSequenceNo]	4	NULL allowed		((1))
	UserAuthenticatedKey	[Udt].[udtSurrogateKeyInt]	4	NULL allowed		((37))
P	SysStartTime	[dbo].[udtTimeStamp- Now4]	7	NULL allowed		
P	SysEndTime	[dbo].[udtTimeStamp- Now4]	7	NULL allowed		
	TimestampRowChanged	[dbo].[udtTimeStamp- Now4]	7	NULL allowed		

Indexes

Key	Name	Key Columns	Unique
PK	PK_TriggeredEmployeeHistoryId	TriggeredEmployeeHistoryId	True
<i>></i>	ix_Employees	Employeeld, SysStartTime, Sys- EndTime, TriggeredEmployee- HistoryId	True

Check Constraints

Name	On Column	Constraint
CHK_Flag_Char_1188749860	IsDeleted	([IsDeleted]='U' OR [IsDeleted]='D')

```
CREATE TABLE [Triggered].[AuditTriggeredEmployeeHistory]
[TriggeredEmployeeHistoryId] [Udt].[udtSurrogateKeyInt] NOT NULL IDENTITY(1, 1),
[AuditTriggeredEmployeeHistoryTimestamp] [Udt].[udtTimeStampNow] NULL CONSTRAINT [DF -
AuditTrig_Audit_6383C8BA] DEFAULT (sysdatetime()),
[TriggerOption] [Udt].[udtTriggerOption] NULL,
[EmployeeId] [Udt].[udtSurrogateKeyInt] NOT NULL,
[EmployeeFullName] [Udt].[udtFullName] NOT NULL,
[Department] [dbo].[udtDepartment] NOT NULL,
[Salary] [dbo].[udtSalary] NOT NULL,
[Notes] [Udt].[udtNote] NOT NULL,
[IsDeleted] [Udt].[udtFlagChar] NULL CONSTRAINT [DF AuditTrig IsDel 656C112C]
DEFAULT ('N'),
[TransactionNumber] [Udt].[udtSequenceNo] NULL CONSTRAINT [DF AuditTrig -
Trans 66603565] DEFAULT ((1)),
[UserAuthenticatedKey] [Udt].[udtSurrogateKeyInt] NULL CONSTRAINT [DF AuditTrig User-
A 6754599E] DEFAULT ((37)),
[SysStartTime] [dbo].[udtTimeStampNow4] NULL,
[SysEndTime] [dbo].[udtTimeStampNow4] NULL,
[TimestampRowChanged] [dbo].[udtTimeStampNow4] NULL
) ON [PRIMARY]
GO
ALTER TABLE [Triggered].[AuditTriggeredEmployeeHistory] ADD CONSTRAINT [CHK Flag -
Char 1188749860] CHECK (([IsDeleted]='U' OR [IsDeleted]='D'))
ALTER TABLE [Triggered].[AuditTriggeredEmployeeHistory] ADD CONSTRAINT [PK Triggered-
EmployeeHistoryId] PRIMARY KEY NONCLUSTERED ([TriggeredEmployeeHistoryId]) ON
[PRTMARY]
GO
CREATE UNIQUE CLUSTERED INDEX [ix Employees] ON [Triggered].[AuditTriggeredEmployee-
History] ([EmployeeId], [SysStartTime], [SysEndTime], [TriggeredEmployeeHistoryId]) ON
[PRIMARY]
ALTER TABLE [Triggered].[AuditTriggeredEmployeeHistory] ENABLE CHANGE TRACKING
```

Project > 127.0.0.1,13001 > User databases > MidtermDatabase > Tables > Triggered.AuditTriggeredEmployee-History

Uses

[dbo].[udtDepartment]

[dbo].[udtSalary]

[dbo].[udtTimeStampNow4]

[Udt].[udtFlagChar]

[Udt].[udtFullName]

[Udt].[udtNote]

[Udt].[udtSequenceNo]

[Udt].[udtSurrogateKeyInt]

[Udt].[udtTimeStampNow]

[Udt].[udtTriggerOption]

Triggered

Used By

[Triggered].[utvf_EmployeeCurrentAndHistory]

 $[Triggered]. [utvf_EmployeeCurrentAndHistoryCTE] \\$

III [Triggered].[Employee]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	12:17:44 PM Saturday, October 29, 2022
Last Modified	12:17:49 PM Saturday, October 29, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Default
P / P	Employeeld	[Udt].[udtSurrogateKeyInt]	4	NOT NULL	
	EmployeeFullName	[Udt].[udtName]	40	NOT NULL	
	Department	[Udt].[udtName]	40	NOT NULL	
	Salary	[Udt].[udtCurrency]	8	NOT NULL	
	Notes	[Udt].[udtNote]	120	NOT NULL	
III	IsDeleted	[Udt].[udtFlagChar]	1	NULL allowed	('N')
	TransactionNumber	[Udt].[udtSequenceNo]	4	NULL allowed	((1))
	UserAuthenticatedKey	[Udt].[udtSurrogateKeyInt]	4	NULL allowed	((37))
9	SysStartTime	[dbo].[udtTimeStampNow4]	7	NULL allowed	
/	SysEndTime	[dbo].[udtTimeStampNow4]	7	NULL allowed	
	TimestampRowChanged	[dbo].[udtTimeStampNow4]	7	NULL allowed	

Indexes

Key	Name	Key Columns	Unique
PK	PK_TriggeredEmployee	Employeeld	True
/	ix_Employees	Employeeld, SysStartTime, SysEnd-Time	

Triggers

Name	ANSI Nulls On	Quoted Identifier On	On
uTdu_AuditTriggeredEmployeeHistory	True	True	After Delete Update

Check Constraints

Name	On Column	Constraint
CHK_Flag_Char_2035157222	IsDeleted	([IsDeleted]='U' OR [IsDeleted]='D')
CHK_IsDeletion_2129636034	Salary	([Salary]='Y' OR [Salary]='N')

```
CREATE TABLE [Triggered].[Employee]
[EmployeeId] [Udt].[udtSurrogateKeyInt] NOT NULL,
[EmployeeFullName] [Udt].[udtName] NOT NULL,
[Department] [Udt].[udtName] NOT NULL,
[Salary] [Udt].[udtCurrency] NOT NULL,
[Notes] [Udt].[udtNote] NOT NULL,
[IsDeleted] [Udt].[udtFlagChar] NULL CONSTRAINT [DF_Employee_IsDele_6B24EA82]
DEFAULT ('N'),
[TransactionNumber] [Udt].[udtSequenceNo] NULL CONSTRAINT [DF Employee -
Transa 6C190EBB] DEFAULT ((1)),
[UserAuthenticatedKey] [Udt].[udtSurrogateKeyInt] NULL CONSTRAINT [DF Employee User-
Au 6D0D32F4] DEFAULT ((37)),
[SysStartTime] [dbo].[udtTimeStampNow4] NULL,
[SysEndTime] [dbo].[udtTimeStampNow4] NULL,
[TimestampRowChanged] [dbo].[udtTimeStampNow4] NULL
) ON [PRIMARY]
CREATE TRIGGER [Triggered].[uTdu AuditTriggeredEmployeeHistory] ON
[Triggered].[Employee]
  WITH
EXECUTE AS CALLER AFTER DELETE, UPDATE
 AS
begin
           declare @action char(1) = 'I';
           declare @IsDeleted char(1) = 'N';
           declare @DeletedMessage char(25) = 'Rows has been deleted';
           declare @SysStartTimeAsSysEnd datetime2;
           if (exists (select * from inserted) and exists (select * from deleted))
           begin
               set @action = 'U';
               SELECT @SysStartTimeAsSysEnd = Inserted.SysStartTime FROM Inserted
            else if (exists (select * from deleted))
```

```
begin
               set @action = 'D';
               set @IsDeleted = 'Y';
           end;
           else
               set @action = 'I';
           if (@action <> 'I')
               insert into Triggered.AuditTriggeredEmployeeHistory
                   AuditTriggeredEmployeeHistoryTimestamp
                 , TriggerOption
                 , EmployeeId
                 , EmployeeFullName
                 , Department
                 , Salary
                 , Notes
                 , IsDeleted
                 , TransactionNumber
                 , UserAuthenticatedKey
                 , TimestampRowChanged
                 , SysStartTime
                 , SysEndTime
               select sysdatetime() as AuditTriggeredEmployeeHistoryTimestamp
                    , @action
                                         as TriggerOption
                    , EmployeeId
                    , EmployeeFullName
                    , Department
                     , Salary
                     , case
                          when @action <> 'D' then
                             Deleted.Notes
                          else
                             @DeletedMessage
                      end
                     , @IsDeleted as IsDeleted
                     , Deleted.TransactionNumber
                    , UserAuthenticatedKey
                     , TimestampRowChanged
                     , Deleted.SysStartTime
                     , case
                          when @action <> 'D' then
                             @SysStartTimeAsSysEnd
                              sysdatetime()
                      end as SysEndTime
               from Deleted;
       end;
ALTER TABLE [Triggered].[Employee] ADD CONSTRAINT [CHK_Flag_Char_2035157222] CHECK
```

```
(([IsDeleted]='U' OR [IsDeleted]='D'))
GO
ALTER TABLE [Triggered].[Employee] ADD CONSTRAINT [CHK_IsDeletion_2129636034] CHECK
(([Salary]='Y' OR [Salary]='N'))
GO
ALTER TABLE [Triggered].[Employee] ADD CONSTRAINT [PK_TriggeredEmployee] PRIMARY KEY
NONCLUSTERED ([EmployeeId]) ON [PRIMARY]
GO
CREATE CLUSTERED INDEX [ix_Employees] ON [Triggered].[Employee] ([EmployeeId], [Sys-StartTime], [SysEndTime]) ON [PRIMARY]
GO
ALTER TABLE [Triggered].[Employee] ENABLE CHANGE_TRACKING
GO
```

[dbo].[udtTimeStampNow4]

[Udt].[udtCurrency]

[Udt].[udtFlagChar]

[Udt].[udtName]

[Udt].[udtNote]

[Udt].[udtSequenceNo]

[Udt].[udtSurrogateKeyInt]

Triggered

Used By

[Triggered].[utvf_EmployeeCurrentAndHistory]

[Triggered].[utvf_EmployeeCurrentAndHistoryCTE]

■ Views

Objects

Name
JsonOutput.uvw_HumanResourcesEmployee
JsonOutput.uvw_Order
JsonOutput.uvw_ProductionCategory
JsonOutput.uvw_ProductionProduct
JsonOutput.uvw_ProductionSupplier
JsonOutput.uvw_SalesCustomer
JsonOutput.uvw_SalesShipper
Utils.uvw_FindColumnDefinitionPlusDefaultAndCheckConstraint
Utils.uw_FindAllDatabaseColumnsOnTheServer

[JsonOutput].[uvw_HumanResourcesEmployee]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
ANSI Nulls On	True
Quoted Identifier On	True
Created	12:17:46 PM Saturday, October 29, 2022
Last Modified	12:17:46 PM Saturday, October 29, 2022

Columns

Name	Data Type	Max Length (Bytes)	Identity
EmployeeObjectId	[Udt].[udtSurrogateKeyInt]	4	0 - 0
EmployeeLastName	[Udt].[udtLastName]	70	
EmployeeFirstName	[Udt].[udtFirstName]	50	
EmployeeTitle	[Udt].[udtTitle]	18	
EmployeeTitleOfCourtesy	[Udt].[udtTitleOfCourtesy]	18	
BirthDate	[dbo].[udtBirthDate]	8	
HireDate	[Udt].[udtYYYYMMDD]	8	
EmployeeAddress	[Udt].[udtAddress]	50	
EmployeeCity	[Udt].[udtCity]	28	
EmployeeRegion	[Udt].[udtRegion]	60	
EmployeePostalCode	[Udt].[udtPostalCode]	10	
EmployeeCountry	[Udt].[udtCountry]	112	
EmployeePhoneNumber	[Udt].[udtTelephoneNumber]	36	
EmployeeManagerId	[Udt].[udtSurrogateKeyInt]	4	

```
CREATE VIEW [JsonOutput].[uvw HumanResourcesEmployee]([EmployeeObjectId],[EmployeeLast-
Name],[EmployeeFirstName],[EmployeeTitle],[EmployeeTitleOfCourtesy],[BirthDate],[Hire-
Date], [EmployeeAddress], [EmployeeCity], [EmployeeRegion], [EmployeePostalCode], [Employee-
Country], [EmployeePhoneNumber], [EmployeeManagerId])
SELECT E. [EmployeeId], E. [EmployeeLastName], E. [EmployeeFirstName], E. [Employee-
Title], E. [EmployeeTitleOfCourtesy], E. [BirthDate], E. [HireDate], E. [Employee-
Address], E. [EmployeeCity], E. [EmployeeRegion], E. [EmployeePostalCode], E. [Employee-
Country], E.[EmployeePhoneNumber], E.[EmployeeManagerId]
    FROM [HumanResources].[Employee] E
GO
```

[HumanResources].[Employee]

[dbo].[udtBirthDate]

[Udt].[udtAddress]

[Udt].[udtCity]

[Udt].[udtCountry]

[Udt].[udtFirstName]

[Udt].[udtLastName]

[Udt].[udtPostalCode]

[Udt].[udtRegion]

[Udt].[udtSurrogateKeyInt]

[Udt].[udtTelephoneNumber]

[Udt].[udtTitle]

[Udt].[udtTitleOfCourtesy]

[Udt].[udtYYYYMMDD]

JsonOutput

[JsonOutput].[uvw_Order]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
ANSI Nulls On	True
Quoted Identifier On	True
Created	12:17:46 PM Saturday, October 29, 2022
Last Modified	12:17:46 PM Saturday, October 29, 2022

Columns

Name	Data Type	Max Length (Bytes)	Identity
Orderld	[Udt].[udtSurrogateKeyInt]	4	0 - 0
CustomerId	[Udt].[udtSurrogateKeyInt]	4	
Employeeld	[Udt].[udtSurrogateKeyInt]	4	
ShipperId	[Udt].[udtSurrogateKeyInt]	4	
OrderDate	[Udt].[udtYYYYMMDD]	8	
RequiredDate	[Udt].[udtYYYYMMDD]	8	
ShipToDate	[Udt].[udtYYYYMMDD]	8	
Freight	[Udt].[udtCurrency]	8	
ShipToName	[Udt].[udtFullName]	124	
ShipToAddress	[Udt].[udtAddress]	50	
ShipToCity	[Udt].[udtCity]	28	
ShipToRegion	[Udt].[udtRegion]	60	
ShipToPostalCode	[Udt].[udtPostalCode]	10	
ShipToCountry	[Udt].[udtCountry]	112	

```
CREATE VIEW [JsonOutput]. [uvw_Order] ([OrderId], [CustomerId], [EmployeeId], [Shipper-Id], [OrderDate], [RequiredDate], [ShipToDate], [Freight], [ShipToName], [ShipTo-Address], [ShipToCity], [ShipToRegion], [ShipToPostalCode], [ShipToCountry])

AS

SELECT O.[OrderId], O.[CustomerId], O.[EmployeeId], O.[ShipperId], O.[Order-Date], O.[RequiredDate], O.[ShipToDate], O.[Freight], O.[ShipToName], O.[ShipTo-Address], O.[ShipToCity], O.[ShipToRegion], O.[ShipToPostalCode], O.[ShipToCountry]

FROM [Sales].[Orders] O

GO
```

[Sales].[Orders]

[Udt].[udtAddress]

[Udt].[udtCity]

[Udt].[udtCountry]

[Udt].[udtCurrency]

[Udt].[udtFullName]

[Udt].[udtPostalCode]

[Udt].[udtRegion]

[Udt].[udtSurrogateKeyInt]

[Udt].[udtYYYYMMDD]

JsonOutput

[JsonOutput].[uvw_ProductionCategory]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
ANSI Nulls On	True
Quoted Identifier On	True
Created	12:17:46 PM Saturday, October 29, 2022
Last Modified	12:17:46 PM Saturday, October 29, 2022

Columns

Name	Data Type	Max Length (Bytes)	Identity
CategoryObjectId	[Udt].[udtSurrogateKeyInt]	4	0 - 0
CategoryName	[Udt].[udtCategoryName]	30	
Description	[Udt].[udtDescription]	500	

SQL Script

```
CREATE VIEW [JsonOutput].[uvw_ProductionCategory]([CategoryObjectId],[Category-Name],[Description])

AS

SELECT [Production].[Category].[CategoryId],[Production].[Category].[Category-Name],[Production].[Category].[Description]

FROM [Production].[Category]

GO
```

Uses

[Production].[Category]
[Udt].[udtCategoryName]
[Udt].[udtDescription]
[Udt].[udtSurrogateKeyInt]
JsonOutput

[JsonOutput].[uvw_ProductionProduct]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
ANSI Nulls On	True
Quoted Identifier On	True
Created	12:17:46 PM Saturday, October 29, 2022
Last Modified	12:17:46 PM Saturday, October 29, 2022

Columns

Name	Data Type	Max Length (Bytes)
ProductObjectId	[Udt].[udtSurrogateKeyInt]	4
ProductName	[Udt].[udtProductName]	60
SupplierId	[Udt].[udtSurrogateKeyInt]	4
Categoryld	[Udt].[udtSurrogateKeyInt]	4
UnitPrice	[Udt].[udtCurrency]	8
Discontinued	[Udt].[udtFlagBit]	1
CategoryObjectId	[Udt].[udtSurrogateKeyInt]	4
CategoryName	[Udt].[udtCategoryName]	30
Description	[Udt].[udtDescription]	500
SupplierCompanyName	[Udt].[udtCompanyName]	60
SupplierContactName	[Udt].[udtFullName]	124
SupplierPhoneNumber	[Udt].[udtTelephoneNumber]	36
SupplierFaxNumber	[Udt].[udtTelephoneNumber]	36

```
CREATE VIEW [JsonOutput].[uvw_ProductionProduct]([ProductObjectId], [Product-
Name], [SupplierId], [CategoryId], [UnitPrice], [Discontinued], [CategoryObjectId], [Category-
Name], [Description], [SupplierCompanyName], [SupplierContactName], [SupplierPhone-
Number], [SupplierFaxNumber])

AS

SELECT P.[ProductId], P.[ProductName], S.[SupplierId], P.[CategoryId], P.[Unit-
Price], P.[Discontinued], C.[CategoryId], C.[CategoryName], C.[Description], S.[Supplier-
CompanyName], S.[SupplierContactName], S.[SupplierPhoneNumber], S.[SupplierFaxNumber]

FROM [Production].[Supplier] S,[Production].[Category] C,[Production].[Product] P
GO
```

[Production].[Category]

[Production].[Product]

[Production].[Supplier]

[Udt].[udtCategoryName]

[Udt].[udtCompanyName]

[Udt].[udtCurrency]

[Udt].[udtDescription]

[Udt].[udtFlagBit]

[Udt].[udtFullName]

[Udt].[udtProductName]

[Udt].[udtSurrogateKeyInt]

[Udt].[udtTelephoneNumber]

JsonOutput

[JsonOutput].[uvw_ProductionSupplier]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
ANSI Nulls On	True
Quoted Identifier On	True
Created	12:17:46 PM Saturday, October 29, 2022
Last Modified	12:17:46 PM Saturday, October 29, 2022

Columns

Name	Data Type	Max Length (Bytes)	Identity
SupplierObjectId	[Udt].[udtSurrogateKeyInt]	4	0 - 0
SupplierCompanyName	[Udt].[udtCompanyName]	60	
SupplierContactName	[Udt].[udtFullName]	124	
SupplierContactTitle	[Udt].[udtContactTitle]	20	
SupplierAddress	[Udt].[udtAddress]	50	
SupplierCity	[Udt].[udtCity]	28	
SupplierRegion	[Udt].[udtRegion]	60	
SupplierPostalCode	[Udt].[udtPostalCode]	10	
SupplierCountry	[Udt].[udtCountry]	112	
SupplierPhoneNumber	[Udt].[udtTelephoneNumber]	36	
SupplierFaxNumber	[Udt].[udtTelephoneNumber]	36	

```
CREATE VIEW [JsonOutput].[uvw_ProductionSupplier]([SupplierObjectId],[SupplierCompany-Name],[SupplierContactName],[SupplierContactTitle],[SupplierAddress],[Supplier-City],[SupplierRegion],[SupplierPostalCode],[SupplierCountry],[SupplierPhone-Number],[SupplierFaxNumber])
AS
SELECT S.[SupplierId],S.[SupplierCompanyName],S.[SupplierContactName],S.[Supplier-ContactTitle],S.[SupplierAddress],S.[SupplierCity],S.[SupplierRegion],S.[SupplierPostal-Code],S.[SupplierCountry],S.[SupplierPhoneNumber],S.[SupplierFaxNumber]
FROM [Production].[Supplier] S
```

[Production].[Supplier]

[Udt].[udtAddress]

[Udt].[udtCity]

[Udt].[udtCompanyName]

[Udt].[udtContactTitle]

[Udt].[udtCountry]

[Udt].[udtFullName]

[Udt].[udtPostalCode]

[Udt].[udtRegion]

[Udt].[udtSurrogateKeyInt]

[Udt].[udtTelephoneNumber]

JsonOutput

[JsonOutput].[uvw_SalesCustomer]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
ANSI Nulls On	True
Quoted Identifier On	True
Created	12:17:46 PM Saturday, October 29, 2022
Last Modified	12:17:46 PM Saturday, October 29, 2022

Columns

Name	Data Type	Max Length (Bytes)	Identity
CustomerObjectId	[Udt].[udtSurrogateKeyInt]	4	0 - 0
CustomerCompanyName	[Udt].[udtCompanyName]	60	
CustomerContactName	[Udt].[udtFullName]	124	
CustomerContactTitle	[Udt].[udtTitle]	18	
CustomerAddress	[Udt].[udtAddress]	50	
CustomerCity	[Udt].[udtCity]	28	
CustomerRegion	[Udt].[udtRegion]	60	
CustomerPostalCode	[Udt].[udtPostalCode]	10	
CustomerCountry	[Udt].[udtCountry]	112	
CustomerPhoneNumber	[Udt].[udtTelephoneNumber]	36	
CustomerFaxNumber	[Udt].[udtTelephoneNumber]	36	

```
CREATE VIEW [JsonOutput].[uvw_SalesCustomer]([CustomerObjectId], [CustomerCompany-Name], [CustomerContactName], [CustomerContactTitle], [CustomerAddress], [Customer-City], [CustomerRegion], [CustomerPostalCode], [CustomerCountry], [CustomerPhone-Number], [CustomerFaxNumber])

AS

SELECT C.[CustomerId], C.[CustomerCompanyName], C.[CustomerContactName], C.[Customer-ContactTitle], C.[CustomerAddress], C.[CustomerCity], C.[CustomerRegion], C.[CustomerPostal-Code], C.[CustomerCountry], C.[CustomerPhoneNumber], C.[CustomerFaxNumber]

FROM [Sales].[Customer] C

GO
```

Uses

[Sales].[Customer]

[Udt].[udtAddress]

[Udt].[udtCity]

[Udt].[udtCompanyName]

[Udt].[udtCountry]

[Udt].[udtFullName]

[Udt].[udtPostalCode]

[Udt].[udtRegion]

[Udt].[udtSurrogateKeyInt]

[Udt].[udtTelephoneNumber]

[Udt].[udtTitle]

JsonOutput

[JsonOutput].[uvw_SalesShipper]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
ANSI Nulls On	True
Quoted Identifier On	True
Created	12:17:46 PM Saturday, October 29, 2022
Last Modified	12:17:46 PM Saturday, October 29, 2022

Columns

Name	Data Type	Max Length (Bytes)	Identity
ShipperObjectId	[Udt].[udtSurrogateKeyInt]	4	0 - 0
ShipperCompanyName	[Udt].[udtCompanyName]	60	
PhoneNumber	[Udt].[udtTelephoneNumber]	36	

SQL Script

```
CREATE VIEW [JsonOutput].[uvw_SalesShipper]([ShipperObjectId],[ShipperCompany-
Name],[PhoneNumber])
AS
SELECT S.[ShipperId],S.[ShipperCompanyName],S.[PhoneNumber]
    FROM [Sales].[Shipper] S
GO
```

Uses

[Sales].[Shipper] [Udt].[udtCompanyName] [Udt].[udtSurrogateKeyInt] [Udt].[udtTelephoneNumber] JsonOutput

[Utils].[uvw_FindColumnDefinitionPlusDefaultAndCheckConstraint]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
ANSI Nulls On	True
Quoted Identifier On	True
Created	12:17:46 PM Saturday, October 29, 2022
Last Modified	12:17:46 PM Saturday, October 29, 2022

Columns

Name	Data Type	Max Length (Bytes)
FullyQualifiedTableName	nvarchar(257)	514
SchemaName	[sys].[sysname]	256
TableName	[sys].[sysname]	256
ColumnName	[sys].[sysname]	256
OrdinalPosition	int	4
FullyQualifiedDomainName	nvarchar(257)	514
DomainName	[sys].[sysname]	256
DataType	nvarchar(128)	256
IsNullable	varchar(3)	3
DefaultName	[sys].[sysname]	256
DefaultNameDefinition	nvarchar(4000)	8000
CheckConstraintRuleName	[sys].[sysname]	256
CheckConstraintRuleNameDefinition	nvarchar(4000)	8000

SQL Script

CREATE VIEW [Utils].[uvw_FindColumnDefinitionPlusDefaultAndCheckConstraint] AS SELECT concat(tbl.TABLE_SCHEMA , '.' , tbl.TABLE_NAME) AS FullyQualifiedTableName, tbl.TABLE_SCHEMA AS SchemaName, tbl.TABLE_NAME AS TableName, col.COLUMN_NAME AS Column-Name, col.ORDINAL_POSITION AS OrdinalPosition, concat(col.DOMAIN_SCHEMA , '.' , col.DOMAIN_NAME) AS FullyQualifiedDomainName, col.DOMAIN_NAME AS DomainName, CASE WHEN col.DATA_TYPE = 'varchar' THEN concat('varchar(' , CHARACTER_MAXIMUM_LENGTH , ')') WHEN col.DATA_TYPE = 'char' THEN concat('char(' , CHARACTER_MAXIMUM_LENGTH , ')') WHEN col.DATA_TYPE = 'nvarchar' THEN concat('nvarchar(' , CHARACTER_MAXIMUM_LENGTH , ')') WHEN col.DATA_TYPE = 'nchar' THEN concat('nchar(' , CHARACTER_MAXIMUM_LENGTH , ')') WHEN col.DATA_TYPE = 'nchar' THEN concat('nchar(' , CHARACTER_-MAXIMUM_LENGTH , ')') WHEN col.DATA_TYPE = 'numeric' THEN concat('numeric(' , NUMERIC_PRECISION_RADIX , ', ' , NUMERIC_SCALE , ')') WHEN col.DATA_TYPE = 'decimal' THEN concat('decimal(' , NUMERIC_PRECISION_RADIX , ', ' , NUMERIC_SCALE , ')') ELSE col.DATA_TYPE END AS DataType, col.IS_NULLABLE AS IsNullable, dcn.DefaultName, col.COLUMN_DEFAULT AS DefaultNameDefinition, cc.CONSTRAINT_NAME AS CheckConstraintRule-Name, cc.CHECK CLAUSE AS CheckConstraintRuleNameDefinition FROM (SELECT TABLE -

CATALOG, TABLE SCHEMA, TABLE NAME, TABLE TYPE FROM INFORMATION SCHEMA.TABLES WHERE (TABLE TYPE = 'BASE TABLE')) AS tbl INNER JOIN (SELECT TABLE CATALOG, TABLE -SCHEMA, TABLE_NAME, COLUMN_NAME, ORDINAL_POSITION, COLUMN DEFAULT, IS NULLABLE, DATA -TYPE, CHARACTER_MAXIMUM_LENGTH, CHARACTER_OCTET_LENGTH, NUMERIC_PRECISION, NUMERIC_-PRECISION RADIX, NUMERIC SCALE, DATETIME PRECISION, CHARACTER SET CATALOG, CHARACTER SET SCHEMA, CHARACTER SET NAME, COLLATION CATALOG, COLLATION SCHEMA, COLLATION NAME, DOMAIN CATALOG, DOMAIN SCHEMA, DOMAIN NAME FROM INFORMATION SCHEMA.COLUMNS) AS col col.TABLE_CATALOG = tbl.TABLE_CATALOG AND col.TABLE_SCHEMA = tbl.TABLE_SCHEMA AND col.TABLE NAME = tbl.TABLE NAME LEFT OUTER JOIN (SELECT t.name AS TableName, schema_name(s.schema_id) AS SchemaName, ac.name AS ColumnName, d.name AS DefaultName FROM sys.all_columns AS ac INNER JOIN sys.tables AS t ON ac.object_id = t.object_id INNER JOIN sys.schemas AS s ON t.schema_id = s.schema_id INNER JOIN sys.default constraints AS d ON ac.default object id = d.object id) AS dcn ON dcn.SchemaName = tbl.TABLE SCHEMA AND dcn.TableName = tbl.TABLE NAME AND dcn.ColumnName = col.COLUMN_NAME LEFT OUTER JOIN (SELECT cu.TABLE_CATALOG, cu.TABLE_SCHEMA, cu. TABLE NAME, cu. COLUMN NAME, c. CONSTRAINT CATALOG, c. CONSTRAINT SCHEMA, c. CONSTRAINT -NAME, c. CHECK CLAUSE FROM INFORMATION SCHEMA. CONSTRAINT COLUMN USAGE AS CU INNER JOIN INFORMATION SCHEMA.CHECK CONSTRAINTS AS c ON c.CONSTRAINT NAME = cu.CONSTRAINT NAME) AS CC ON CC.TABLE SCHEMA = tbl.TABLE SCHEMA AND CC.TABLE NAME = tbl.TABLE NAME AND cc.COLUMN NAME = col.COLUMN NAMEGO

ш	0	0	0
U	J	C	J

Utils

Used By

[Utils].[uw FindAllDatabaseColumnsOnTheServer]

[Utils].[uw_FindAllDatabaseColumnsOnTheServer]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
ANSI Nulls On	True
Quoted Identifier On	True
Created	12:17:46 PM Saturday, October 29, 2022
Last Modified	12:17:46 PM Saturday, October 29, 2022

Columns

Name	Data Type	Max Length (Bytes)
FullyQualifiedTableName	nvarchar(257)	514
SchemaName	[sys].[sysname]	256
ColumnName	[sys].[sysname]	256
OrdinalPosition	int	4
FullyQualifiedDomainName	nvarchar(257)	514
DataType	nvarchar(128)	256
IsNullable	varchar(3)	3
DefaultName	[sys].[sysname]	256
DefaultNameDefinition	nvarchar(4000)	8000
CheckConstraintRuleName	[sys].[sysname]	256
CheckConstraintRuleNameDefinition	nvarchar(4000)	8000
Server_Name	nvarchar(128)	256
Target_Database_Version	nvarchar(300)	600
Instance_Name	nvarchar(128)	256
Database_Name	nvarchar(128)	256
Host_Name	nvarchar(128)	256

```
CREATE VIEW [Utils].[uw FindAllDatabaseColumnsOnTheServer]([FullyQualifiedTable-
Name], [SchemaName], [ColumnName], [OrdinalPosition], [FullyQualifiedDomainName], [Data-
Type],[IsNullable],[DefaultName],[DefaultNameDefinition],[CheckConstraintRule-
Name],[CheckConstraintRuleNameDefinition],[Server_Name],[Target_Database_-
Version], [Instance Name], [Database Name], [Host Name])
SELECT vw.FullyQualifiedTableName, vw.SchemaName, vw.ColumnName, vw.Ordinal-
Position, vw.FullyQualifiedDomainName, vw.DataType, vw.IsNullable, vw.Default-
{\tt Name, vw.DefaultNameDefinition, vw.CheckConstraintRuleName, vw.CheckConstraintRuleName-numbers of the action of the constraint of the
```

Project > 127.0.0.1,13001 > User databases > MidtermDatabase > Views > Utils.uw_FindAllDatabaseColumnsOnTheServer

```
Definition,@@servername,@@version,@@servicename,db_name(),host_name()
FROM [Utils].[uvw_FindColumnDefinitionPlusDefaultAndCheckConstraint] vw
WHERE vw.SchemaName IN ('Sales', 'Production', 'HumanResources')
GO
```

Uses

[Utils].[uvw_FindColumnDefinitionPlusDefaultAndCheckConstraint] Utils

Stored Procedures Objects

Name
Sales.usp_getorders

[Sales].[usp_getorders]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

Name	Data Type	Max Length (Bytes)
@country	nvarchar(40)	80

SQL Script

Uses

Sales

■ Table-valued Functions

Objects

Name

JsonOutput.MongoOrder

JsonOutput.MongoOrderDetail

Sales.utvf_FindAllCustomerOrder

Triggered.utvf_EmployeeCurrentAndHistory

 $Triggered.utvf_EmployeeCurrentAndHistoryCTE$

[JsonOutput].[MongoOrder]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

```
CREATE FUNCTION [JsonOutput].[MongoOrder] ()
 RETURNS TABLE
as RETURN
   select o.OrderId as OrderObjectId
        , o.OrderDate
        , o.RequiredDate
        , o.ShipToDate
        , o.Freight
        , o.ShipToName
        , o.ShipToAddress
        , o.ShipToCity
        , o.ShipToRegion
        , o.ShipToPostalCode
        , o.ShipToCountry
             , SalesCustomer.CustomerCompanyName as 'CustomerCompanyName'
                  , SalesCustomer.CustomerContactName as 'CustomerContactName'
                  , SalesCustomer.CustomerPhoneNumber as 'CustomerPhoneNumber'
                  , SalesCustomer.CustomerFaxNumber as 'CustomerFaxNumber'
             from Sales.[Orders]
                                   as o2
                 inner join Sales.Customer as SalesCustomer
                    on SalesCustomer.CustomerId = o.CustomerId
             where o.OrderId = o2.OrderId
             for json path, include null values
                  as SalesCustomer
             select HumanResourcesEmployee.EmployeeId as 'EmployeeObjectId'
                  , HumanResourcesEmployee.EmployeeLastName as 'EmployeeLastName'
                  , HumanResourcesEmployee.EmployeeFirstName as 'EmployeeFirstName'
                  , HumanResourcesEmployee.EmployeePhoneNumber as 'EmployeePhone-
Number'
                  , HumanResourcesEmployee.EmployeeManagerId as 'EmployeeManagerId'
                                                  as o2
             from Sales.[Orders]
```

```
inner join HumanResources.Employee as HumanResourcesEmployee
                    on HumanResourcesEmployee.EmployeeId = o2.EmployeeId
              where o.OrderId = o2.OrderId
              for json path, include null values
                  as HumanResourcesEmployee
          )
        , (
              select SalesShipper.ShipperId
as 'ShipperObjectId'
                  , SalesShipper.ShipperCompanyName as 'ShipperCompanyName'
                  , SalesShipper.PhoneNumber as 'PhoneNumber'
              from Sales.[Orders] as o2
                 inner join Sales. Shipper as Sales Shipper
                    on SalesShipper.ShipperId = o2.ShipperId
             where o.OrderId = o2.OrderId
              for json path, include null values
          )
                   as SalesShipper
   from Sales.[Orders]
                                        as o
       inner join Sales.Customer as SalesCustomer
          on SalesCustomer.CustomerId = o.CustomerId
       inner join HumanResources.Employee as HumanResourcesEmployee
         on HumanResourcesEmployee.EmployeeId = o.EmployeeId
       inner join Sales.Shipper as SalesShipper
          on SalesShipper.ShipperId = o.ShipperId
);
GO
```

Uses

```
[HumanResources].[Employee]
[Sales].[Customer]
[Sales].[Orders]
[Sales].[Shipper]
[Udt].[udtAddress]
[Udt].[udtCity]
[Udt].[udtCountry]
[Udt].[udtCurrency]
[Udt].[udtFullName]
[Udt].[udtPostalCode]
[Udt].[udtRegion]
[Udt].[udtSurrogateKeyInt]
[Udt].[udtYYYYMMDD]
JsonOutput
```

[JsonOutput].[MongoOrderDetail]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

Name	Data Type	Max Length (Bytes)
@Orderld	int	4

```
CREATE FUNCTION [JsonOutput].[MongoOrderDetail] (@OrderId int )
 RETURNS TABLE
as RETURN
   select OrderDetail.OrderId
as OrderObjectId
         , row number() over (partition by OrderDetail.OrderId order by Order-
Detail.OrderId) as LineItemNumer
        , OrderDetail.UnitPrice
         , OrderDetail.Quantity
         , OrderDetail.DiscountPercentage
         , OrderDetail.UnitPrice * OrderDetail.Quantity
as TotalCost
        , (OrderDetail.UnitPrice * OrderDetail.Quantity) * (1. - OrderDetail.Discount-
Percentage) as TotalDiscountedCost
         , OrderDetail.OrderId
              select distinct
                    ProductionProduct.ProductId as 'ProductionProduct.Product-
ObjectId'
                   , ProductionProduct.ProductName as 'ProductionProduct.ProductName'
                    , ProductionProduct.SupplierId as 'ProductionProduct.SupplierId'
                    , ProductionProduct.CategoryId as 'ProductionProduct.CategoryId'
                    , ProductionProduct.UnitPrice as 'ProductionProduct.UnitPrice'
                    , ProductionProduct.Discontinued as 'Production-
Product.Discontinued'
              from Production.Product
                                                as ProductionProduct
                  inner join Production.Category as ProductionCategory
                      on ProductionCategory.CategoryId = ProductionProduct.CategoryId
                  inner join Production.Supplier as ProductionSupplier
```

```
on ProductionSupplier.SupplierId = ProductionProduct.SupplierId
                  inner join Sales.OrderDetail as od
                      on OrderDetail.ProductId = ProductionProduct.ProductId
               where od.OrderId = OrderDetail.OrderId
               for json path, include null values
as ProductionProduct
        , (
               select distinct
                     ProductionCategory.CategoryId as 'ProductionCategory.Category-
ObjectId'
                    , ProductionCategory.CategoryName as 'ProductionCategory.Category-
Name'
                    , ProductionCategory.Description as 'Production-
Category.Description'
               from Production.Product
                                                 as ProductionProduct
                  inner join Production. Category as Production Category
                      on ProductionCategory.CategoryId = ProductionProduct.CategoryId
                  inner join Sales.OrderDetail as od
                      on OrderDetail.ProductId = ProductionProduct.ProductId
               where od.OrderId = OrderDetail.OrderId
               for json path, include null values
as ProductionCategory
         , (
              select distinct
                     ProductionSupplier.SupplierId
                                                           as 'Production-
Supplier.SupplierObjectId'
                    , ProductionSupplier.SupplierCompanyName as 'Production-
Supplier.SupplierCompanyName
                    , ProductionSupplier.SupplierContactName as 'Production-
Supplier.SupplierContactName'
                    , ProductionSupplier.SupplierPhoneNumber as 'Production-
Supplier.SupplierPhoneNumber'
                    , ProductionSupplier.SupplierFaxNumber as 'Production-
Supplier.SupplierFaxNumber'
              from Production.Product
                                                as ProductionProduct
                   inner join Production. Supplier as Production Supplier
                     on ProductionSupplier.SupplierId = ProductionProduct.SupplierId
                  inner join Sales.OrderDetail as od
                       on OrderDetail.ProductId = ProductionProduct.ProductId
               where od.OrderId = OrderDetail.OrderId
               for json path, include null values
as ProductionSupplier
   from Production.Product
                                     as ProductionProduct
        inner join Production. Category as Production Category
           on ProductionCategory.CategoryId = ProductionProduct.CategoryId
       inner join Production.Supplier as ProductionSupplier
           on ProductionSupplier.SupplierId = ProductionProduct.SupplierId
        inner join Sales.OrderDetail as OrderDetail
           on OrderDetail.ProductId = ProductionProduct.ProductId
   where OrderDetail.OrderId = @OrderId
);
```

GO

Uses

JsonOutput

[Production].[Category]
[Production].[Product]
[Production].[Supplier]
[Sales].[OrderDetail]
[Udt].[udtCurrency]
[Udt].[udtPercentage]
[Udt].[udtQuantitySmall]
[Udt].[udtSurrogateKeyInt]

☐ [Sales].[utvf_FindAllCustomerOrder]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

Name	Data Type	Max Length (Bytes)
@CustomerId	int	4

```
CREATE FUNCTION [Sales].[utvf_FindAllCustomerOrder] (@CustomerId int )
 RETURNS TABLE
as RETURN
   select o.OrderId
       , o.OrderDate
         , o.RequiredDate
         , o.ShipToDate
         , o.EmployeeId
         , o.ShipperId
         , sh.ShipperCompanyName
         , p.ProductName
         , su.SupplierCompanyName
         , su.SupplierCountry
         , o.Freight
         , (od.Quantity * od.UnitPrice) * (1.0 - od.DiscountPercentage) as LineAmount
         , (od.Quantity * od.UnitPrice) * (1.0 - od.DiscountPercentage) as LineAmount-
Discounted
        , od.Quantity
         , od.UnitPrice
         , od.DiscountPercentage
   from Sales.[Orders]
                                      as o
       inner join Sales.OrderDetail as od
          on od.OrderId = o.OrderId
        inner join Production. Product as p
          on p.ProductId = od.ProductId
       inner join Production. Supplier as su
           on su.SupplierId = p.SupplierId
       inner join Sales.Shipper
```

```
on sh.ShipperId = o.ShipperId
  where o.CustomerId = @CustomerId
);

GO
```

Uses

[Production].[Product]

[Production].[Supplier]

[Sales].[OrderDetail]

[Sales].[Orders]

[Sales].[Shipper]

[Udt].[udtCompanyName]

[Udt].[udtCountry]

[Udt].[udtCurrency]

[Udt].[udtPercentage]

[Udt].[udtProductName]

[Udt].[udtQuantitySmall]

[Udt].[udtSurrogateKeyInt]

[Udt].[udtYYYYMMDD]

Sales

[Triggered].[utvf_EmployeeCurrentAndHistory]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

Name	Data Type	Max Length (Bytes)
@EmployeeId	int	4

```
CREATE FUNCTION [Triggered].[utvf_EmployeeCurrentAndHistory] (@EmployeeId int )
 RETURNS TABLE
as RETURN
           select 'Current row' as TransactionRow
               , EmployeeId
                 , EmployeeFullName
                 , Department
                , Salary
                , Notes
                 , IsDeleted
                 , TransactionNumber
                 , UserAuthenticatedKey
                 , SysStartTime
                 , SysEndTime
                 , TimestampRowChanged
           from [Triggered].[Employee]
           where EmployeeId = @EmployeeId
           union all
            select case
                      when IsDeleted = 'N' then
                          'History row'
                       else
                          'Deleted Row'
                  end as TransactionRow
                 , EmployeeId
                 , EmployeeFullName
                 , Department
                 , Salary
```

```
, Notes
, IsDeleted
, TransactionNumber
, UserAuthenticatedKey
, SysStartTime
, SysEndTime
, TimestampRowChanged
from [Triggered].[AuditTriggeredEmployeeHistory]
where EmployeeId = @EmployeeId
);
```

Uses

[Triggered].[AuditTriggeredEmployeeHistory]
[Triggered].[Employee]
[Udt].[udtFlagChar]
[Udt].[udtNote]
[Udt].[udtSequenceNo]
[Udt].[udtSurrogateKeyInt]
Triggered

[Triggered].[utvf_EmployeeCurrentAndHistoryCTE]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

Name	Data Type	Max Length (Bytes)
@EmployeeId	int	4

```
CREATE FUNCTION [Triggered].[utvf_EmployeeCurrentAndHistoryCTE] (@EmployeeId int )
 RETURNS TABLE
as RETURN
       with AllTransactions
        as (select 'Current row' as TransactionRow
                , EmployeeId
                 , EmployeeFullName
                 , Department
                 , Salary
                 , Notes
                 , IsDeleted
                 , TransactionNumber
                 , UserAuthenticatedKey
                 , SysStartTime
                 , SysEndTime
                 , {\tt TimestampRowChanged}
            from [Triggered].[Employee]
            where EmployeeId = @EmployeeId
            union
            select case
                       when IsDeleted = 'N' then
                          'History row'
                       else
                          'Deleted row'
                   end as TransactionRow
                 , EmployeeId
                 , EmployeeFullName
                 , Department
```

```
, Salary
                 , Notes
                 , IsDeleted
                 , TransactionNumber
                 , UserAuthenticatedKey
                 , SysStartTime
                 , SysEndTime
                 , TimestampRowChanged
            from [Triggered].[AuditTriggeredEmployeeHistory]
            where EmployeeId = @EmployeeId)
        select AllTransactions.TransactionRow
             , AllTransactions.EmployeeId
             , AllTransactions.EmployeeFullName
             , AllTransactions.Department
             , AllTransactions.Salary
             , AllTransactions.Notes
             , AllTransactions.IsDeleted
             , AllTransactions.TransactionNumber
             , AllTransactions.UserAuthenticatedKey
             , AllTransactions.SysStartTime
             , AllTransactions.SysEndTime
             , AllTransactions.TimestampRowChanged
        from AllTransactions
   );
GO
```

Uses

[Triggered].[AuditTriggeredEmployeeHistory]
[Triggered].[Employee]
[Udt].[udtFlagChar]
[Udt].[udtNote]
[Udt].[udtSequenceNo]
[Udt].[udtSurrogateKeyInt]
Triggered



Scalar-valued Functions

Objects

Name

dbo.fn_diagramobjects

Hashing.CreateRowSha2_256HashKey

Hashing.CreateVarbinaryRowSha2_256HashKey

Hashing.CreateVarbinarySha2_256HashKey

Hashing.CreateVarcharHashKeySha2_256

Utils.CreateHashKeyMD5

```
[dbo].[fn_diagramobjects]
```

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

```
CREATE FUNCTION [dbo].[fn diagramobjects] ()
 RETURNS int
AS BEGIN
       declare @id upgraddiagrams
                                      int
       declare @id sysdiagrams
       declare @id_helpdiagrams int
       declare @id helpdiagramdefinition int
       declare @id creatediagram
                                  int
       declare @id renamediagram int
       declare @id alterdiagram
                                  int
       declare @id dropdiagram
                                    int
       declare @InstalledObjects int
       select @InstalledObjects = 0
                  @id upgraddiagrams = object id(N'dbo.sp upgraddiagrams'),
           @id sysdiagrams = object id(N'dbo.sysdiagrams'),
           @id_helpdiagrams = object_id(N'dbo.sp_helpdiagrams'),
           @id helpdiagramdefinition = object id(N'dbo.sp helpdiagramdefinition'),
           @id_creatediagram = object_id(N'dbo.sp_creatediagram'),
           @id renamediagram = object id(N'dbo.sp renamediagram'),
           @id alterdiagram = object id(N'dbo.sp alterdiagram'),
           @id dropdiagram = object id(N'dbo.sp dropdiagram')
       if @id upgraddiagrams is not null
           select @InstalledObjects = @InstalledObjects + 1
       if @id sysdiagrams is not null
           select @InstalledObjects = @InstalledObjects + 2
       if @id helpdiagrams is not null
           select @InstalledObjects = @InstalledObjects + 4
       if @id helpdiagramdefinition is not null
           select @InstalledObjects = @InstalledObjects + 8
       if @id creatediagram is not null
           select @InstalledObjects = @InstalledObjects + 16
       if @id renamediagram is not null
           select @InstalledObjects = @InstalledObjects + 32
```

$\label{local-project} Project > 127.0.0.1,13001 > User \ databases > MidtermDatabase > Programmability > Functions > Scalar-valued Functions > dbo.fn_diagramobjects$

[Hashing].[CreateRowSha2_256HashKey]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

Name	Data Type	Max Length (Bytes)
@ConcatenatedRowColumns	varchar(4096)	4096

SQL Script

```
CREATE FUNCTION [Hashing].[CreateRowSha2_256HashKey] (@ConcatenatedRowColumns varchar(4096))

RETURNS varbinary(32)

AS BEGIN

RETURN HASHBYTES('SHA2_256', @ConcatenatedRowColumns)

END;

GO
```

Uses

[Hashing].[CreateVarbinaryRowSha2_256HashKey]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

Name	Data Type	Max Length (Bytes)
@ConcatenatedRowColumns	varchar(4096)	4096

SQL Script

```
CREATE FUNCTION [Hashing].[CreateVarbinaryRowSha2_256HashKey] (@ConcatenatedRowColumns varchar(4096))

RETURNS varbinary(32)

as BEGIN

RETURN HASHBYTES('SHA2_256', @ConcatenatedRowColumns)

END;

GO
```

Uses

[Hashing].[CreateVarbinarySha2_256HashKey]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

Name	Data Type	Max Length (Bytes)
@ConcatenatedColumns	varchar(4096)	4096

SQL Script

```
CREATE FUNCTION [Hashing].[CreateVarbinarySha2_256HashKey] (@ConcatenatedColumns varchar(4096) )

RETURNS varbinary(32)

as BEGIN

return hashbytes('SHA2_256', @ConcatenatedColumns)

END;
GO
```

Uses

[Hashing].[CreateVarcharHashKeySha2_256]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

Name	Data Type	Max Length (Bytes)
@DisplayNumberOfBytes	int	4
@ConcatenatedColumns	varchar(4096)	4096

SQL Script

Uses

[Utils].[CreateHashKeyMD5]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

Name	Data Type	Max Length (Bytes)
@AccountOrMeterNumber	varchar(15)	15

SQL Script

```
CREATE FUNCTION [Utils].[CreateHashKeyMD5] (@AccountOrMeterNumber varchar(15) )

RETURNS varchar(32)

as BEGIN

return convert(varchar(32), hashbytes('md5', @AccountOrMeterNumber), 2);

end;
GO
```

Uses

Utils

iii User-Defined Data Types

Objects

Name
dbo.dMyApp
dbo.sdDatesAndTime
dbo.sdFlagsAndLetters
dbo.sdNumerics
dbo.sdStrings
dbo.udtBirthDate
dbo.udtDateTime
dbo.udtDepartment
dbo.udtEmail
dbo.udtHHMM
dbo.udtProjectName
dbo.udtSalary
dbo.udtTimeStampNow4
dbo.udtYYYYMMDDHHMM
dbo.udtYYYYMMDDHHMMSS
Udt.udtAddress
Udt.udtCategoryName
Udt.udtCity
Udt.udtCompanyName
Udt.udtContactTitle
Udt.udtCountry
Udt.udtCurrency
Udt.udtDescription
Udt.udtFirstName
Udt.udtFlagBit
Udt.udtFlagChar
Udt.udtFullName
Udt.udtGrade
Udt.udtIsDeletion
Udt.udtLastName
Udt.udtName
Udt.udtNote
Udt.udtPercentage
Udt.udtPostalCode

Udt.udtProductName
Udt.udtQuantitySmall
Udt.udtRegion
Udt.udtScore
Udt.udtSequenceNo
Udt.udtShortDescription
Udt.udtStateName
Udt.udtStudentIdentification
Udt.udtSurrogateKeyInt
Udt.udtTelephoneNumber
Udt.udtTextKeyVarchar10
Udt.udtTimeStampNow
Udt.udtTitle
Udt.udtTitleOfCourtesy
Udt.udtTriggerOption
Udt.udtVersion
Udt.udtYYYY
Udt.udtYYYYMMDD



Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	18

SQL Script

CREATE TYPE [dbo].[dMyApp] FROM char (18) NULL GO

[dbo].[sdDatesAndTime]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	18

SQL Script

CREATE TYPE [dbo].[sdDatesAndTime] FROM char (18) NULL
GO

[dbo].[sdFlagsAndLetters]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	18

SQL Script

CREATE TYPE [dbo].[sdFlagsAndLetters] FROM char (18) NULL
GO



Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	18

SQL Script

CREATE TYPE [dbo].[sdNumerics] FROM char (18) NULL
GO

[dbo].[sdStrings]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	18

```
CREATE TYPE [dbo].[sdStrings] FROM char (18) NULL
GO
```

[dbo].[udtBirthDate]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	datetime
Length	8

SQL Script

CREATE TYPE [dbo].[udtBirthDate] FROM datetime NOT NULL
GO

Used By

[Data].[Membership]
[HumanResources].[Employee]
[JsonOutput].[uvw_HumanResourcesEmployee]

[dbo].[udtDateTime]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	smalldatetime
Length	4

SQL Script

CREATE TYPE [dbo].[udtDateTime] FROM smalldatetime NULL
GO

Used By

[Service].[Feedback]

[dbo].[udtDepartment]

Properties

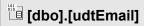
Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	50

SQL Script

CREATE TYPE [dbo].[udtDepartment] FROM nvarchar (50) NULL
GO

Used By

[SystemVersioned].[Employee] [Triggered].[AuditTriggeredEmployeeHistory]



Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	50

SQL Script

CREATE TYPE [dbo].[udtEmail] FROM nvarchar (50) NULL
GO

Used By

[Data].[Membership]

[dbo].[udtHHMM]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	5

SQL Script

CREATE TYPE [dbo].[udtHHMM] FROM char (5) NULL
GO

Used By

[DbSecurity].[UserAuthorization]

[dbo].[udtProjectName]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	60

SQL Script

CREATE TYPE [dbo].[udtProjectName] FROM nvarchar (60) NULL
GO

Used By

[DbSecurity].[UserAuthorization]



Properties

Property	Value
Nullability	NULL allowed
Base Type Name	int
Length	4

SQL Script

CREATE TYPE [dbo].[udtSalary] FROM int NULL
GO

Used By

[SystemVersioned].[Employee] [Triggered].[AuditTriggeredEmployeeHistory]

[dbo].[udtTimeStampNow4]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	datetime2
Length	7

SQL Script

CREATE TYPE [dbo].[udtTimeStampNow4] FROM datetime2 (4) NULL
GO

Used By

[SystemVersioned].[Employee]
[Triggered].[AuditTriggeredEmployeeHistory]
[Triggered].[Employee]

[dbo].[udtYYYYMMDDHHMM]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	smalldatetime
Length	4

SQL Script

CREATE TYPE [dbo].[udtYYYYMMDDHHMM] FROM smalldatetime NULL GO

illi [dbo].[udtYYYYMMDDHHMMSS]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	datetime2
Length	8

SQL Script

CREATE TYPE [dbo].[udtYYYYMMDDHHMMSS] FROM datetime2 NULL GO

[Udt].[udtAddress]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	25

SQL Script

CREATE TYPE [Udt].[udtAddress] FROM nvarchar (25) NULL
GO

Uses

Udt

Used By

[HumanResources].[Employee]

[Production].[Supplier]

[Sales].[Customer]

[Sales].[Orders]

[JsonOutput].[uvw_HumanResourcesEmployee]

[JsonOutput].[uvw_Order]

[JsonOutput].[uvw_ProductionSupplier]

[JsonOutput].[uvw_SalesCustomer]

[JsonOutput].[MongoOrder]

[Udt].[udtCategoryName]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	30

SQL Script

CREATE TYPE [Udt].[udtCategoryName] FROM char (30) NULL
GO

Uses

Udt

Used By

[Production].[Category]
[JsonOutput].[uvw_ProductionCategory]
[JsonOutput].[uvw_ProductionProduct]

[Udt].[udtCity]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	28

SQL Script

```
CREATE TYPE [Udt].[udtCity] FROM char (28) NULL
GO
```

Uses

Udt

Used By

[HumanResources].[Employee]

[Production].[Supplier]

[Sales].[Customer]

[Sales].[Orders]

[JsonOutput].[uvw_HumanResourcesEmployee]

[JsonOutput].[uvw_Order]

[JsonOutput].[uvw_ProductionSupplier]

[JsonOutput].[uvw_SalesCustomer]

[JsonOutput].[MongoOrder]

[Udt].[udtCompanyName]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	30

SQL Script

CREATE TYPE [Udt].[udtCompanyName] FROM nvarchar (30) NULL
GO

Uses

Udt

Used By

[Production].[Supplier]

[Sales].[Customer]

[Sales].[Shipper]

[JsonOutput].[uvw_ProductionProduct]

[JsonOutput].[uvw_ProductionSupplier]

[JsonOutput].[uvw_SalesCustomer]

[JsonOutput].[uvw_SalesShipper]

[Sales].[utvf_FindAllCustomerOrder]

[Udt].[udtContactTitle]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nchar
Length	10

SQL Script

CREATE TYPE [Udt].[udtContactTitle] FROM nchar (10) NULL
GO

Uses

Udt

Used By

[Production].[Supplier]
[JsonOutput].[uvw_ProductionSupplier]

🛅 [Udt].[udtCountry]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	56

SQL Script

CREATE TYPE [Udt].[udtCountry] FROM nvarchar (56) NULL
GO

Uses

Udt

Used By

[HumanResources].[Employee]

[Production].[Supplier]

[Sales].[Customer]

[Sales].[Orders]

[JsonOutput].[uvw_HumanResourcesEmployee]

[JsonOutput].[uvw_Order]

[JsonOutput].[uvw_ProductionSupplier]

[JsonOutput].[uvw_SalesCustomer]

[JsonOutput].[MongoOrder]

[Sales].[utvf_FindAllCustomerOrder]

iii [Udt].[udtCurrency]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	float
Length	8

SQL Script

CREATE TYPE [Udt].[udtCurrency] FROM float NULL
GO

Uses

Udt

Used By

[Production].[Product]

[Sales].[OrderDetail]

[Sales].[Orders]

[Triggered].[Employee]

[JsonOutput].[uvw_Order]

[JsonOutput].[uvw_ProductionProduct]

[JsonOutput].[MongoOrder]

[JsonOutput].[MongoOrderDetail]

[Sales].[utvf_FindAllCustomerOrder]

[Udt].[udtDescription]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	250

SQL Script

CREATE TYPE [Udt].[udtDescription] FROM nvarchar (250) NULL
GO

Uses

Udt

Used By

[Production].[Category]
[Service].[Feedback]
[JsonOutput].[uvw_ProductionCategory]
[JsonOutput].[uvw_ProductionProduct]

[Udt].[udtFirstName]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	25

SQL Script

CREATE TYPE [Udt].[udtFirstName] FROM nvarchar (25) NULL
GO

Uses

Udt

Used By

[Data].[Membership]
[DbSecurity].[UserAuthorization]
[HumanResources].[Employee]
[JsonOutput].[uvw_HumanResourcesEmployee]

[Udt].[udtFlagBit]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	bit
Length	1

SQL Script

CREATE TYPE [Udt].[udtFlagBit] FROM bit NULL
GO

Uses

Udt

Used By

[Production].[Product]
[JsonOutput].[uvw_ProductionProduct]

[Udt].[udtFlagChar]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	char
Length	1

SQL Script

CREATE TYPE [Udt].[udtFlagChar] FROM char (1) NOT NULL
GO

Uses

Udt

Used By

[Triggered].[AuditTriggeredEmployeeHistory]

[Triggered].[Employee]

 $[Triggered]. [utvf_EmployeeCurrentAndHistory] \\$

[Triggered].[utvf_EmployeeCurrentAndHistoryCTE]

[Udt].[udtFullName]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	62

SQL Script

```
CREATE TYPE [Udt].[udtFullName] FROM nvarchar (62) NULL
GO
```

Uses

Used By

Udt

[Production].[Supplier]

[Sales].[Customer]

[Sales].[Orders]

[SystemVersioned].[Employee]

[Triggered].[AuditTriggeredEmployeeHistory]

[JsonOutput].[uvw_Order]

 $[JsonOutput].[uvw_ProductionProduct]$

[JsonOutput].[uvw_ProductionSupplier]

[JsonOutput].[uvw_SalesCustomer]

[JsonOutput].[MongoOrder]



Properties

Property	Value
Nullability	NULL allowed
Base Type Name	tinyint
Length	1

SQL Script

CREATE TYPE [Udt].[udtGrade] FROM tinyint NULL
GO

Uses

Udt

[Udt].[udtlsDeletion]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	char
Length	1

SQL Script

CREATE TYPE [Udt].[udtIsDeletion] FROM char (1) NOT NULL
GO

Uses

Udt

[Udt].[udtLastName]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	35

SQL Script

CREATE TYPE [Udt].[udtLastName] FROM nvarchar (35) NULL
GO

Uses

Udt

Used By

[Data].[Membership]
[DbSecurity].[UserAuthorization]
[HumanResources].[Employee]
[JsonOutput].[uvw_HumanResourcesEmployee]

" [Udt].[udtName]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	20

SQL Script

CREATE TYPE [Udt].[udtName] FROM nvarchar (20) NULL
GO

Uses

Udt

Used By

[DbSecurity].[UserAuthorization] [Triggered].[Employee]

[Udt].[udtNote]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	60

SQL Script

CREATE TYPE [Udt].[udtNote] FROM nvarchar (60) NULL
GO

Uses

Udt

Used By

[SystemVersioned].[Employee]

[Triggered].[AuditTriggeredEmployeeHistory]

[Triggered].[Employee]

[Triggered].[utvf_EmployeeCurrentAndHistory]

[Triggered].[utvf_EmployeeCurrentAndHistoryCTE]

[Udt].[udtPercentage]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	float
Length	8

SQL Script

CREATE TYPE [Udt].[udtPercentage] FROM float NULL
GO

Uses

Udt

Used By

[Data].[Membership]
[Sales].[OrderDetail]
[JsonOutput].[MongoOrderDetail]
[Sales].[utvf_FindAllCustomerOrder]

[Udt].[udtPostalCode]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	varchar
Length	10

SQL Script

CREATE TYPE [Udt].[udtPostalCode] FROM varchar (10) NULL
GO

Uses

Udt

Used By

[HumanResources].[Employee]

[Production].[Supplier]

[Sales].[Customer]

[Sales].[Orders]

[JsonOutput].[uvw_HumanResourcesEmployee]

[JsonOutput].[uvw_Order]

[JsonOutput].[uvw_ProductionSupplier]

[JsonOutput].[uvw_SalesCustomer]

[JsonOutput].[MongoOrder]

[Udt].[udtProductName]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	30

SQL Script

CREATE TYPE [Udt].[udtProductName] FROM nvarchar (30) NULL
GO

Uses

Udt

Used By

[Production].[Product]
[JsonOutput].[uvw_ProductionProduct]
[Sales].[utvf_FindAllCustomerOrder]

[Udt].[udtQuantitySmall]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	18

SQL Script

CREATE TYPE [Udt].[udtQuantitySmall] FROM char (18) NULL
GO

Uses

Udt

Used By

[Sales].[OrderDetail] [JsonOutput].[MongoOrderDetail] [Sales].[utvf_FindAllCustomerOrder]

[Udt].[udtRegion]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	30

SQL Script

```
CREATE TYPE [Udt].[udtRegion] FROM nvarchar (30) NULL
GO
```

Uses

Udt

Used By

[HumanResources].[Employee]

[Production].[Supplier]

[Sales].[Customer]

[Sales].[Orders]

[JsonOutput].[uvw_HumanResourcesEmployee]

[JsonOutput].[uvw_Order]

[JsonOutput].[uvw_ProductionSupplier]

[JsonOutput].[uvw_SalesCustomer]

[JsonOutput].[MongoOrder]

[Udt].[udtScore]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	int
Length	4

SQL Script

CREATE TYPE [Udt].[udtScore] FROM int NOT NULL
GO

Uses

Udt

Used By

[Service].[Feedback]

[Udt].[udtSequenceNo]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	int
Length	4

SQL Script

CREATE TYPE [Udt].[udtSequenceNo] FROM int NULL
GO

Uses

Udt

Used By

[Triggered].[AuditTriggeredEmployeeHistory]

[Triggered].[Employee]

 $[Triggered]. [utvf_EmployeeCurrentAndHistory] \\$

[Triggered].[utvf_EmployeeCurrentAndHistoryCTE]

[Udt].[udtShortDescription]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	100

SQL Script

CREATE TYPE [Udt].[udtShortDescription] FROM nvarchar (100) NULL GO

Uses

Udt

[Udt].[udtStateName]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	nvarchar
Length	14

SQL Script

CREATE TYPE [Udt].[udtStateName] FROM nvarchar (14) NOT NULL
GO

Uses

Udt

[Udt].[udtStudentIdentification]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	8

SQL Script

CREATE TYPE [Udt].[udtStudentIdentification] FROM char (8) NULL
GO

Uses

Udt

[Udt].[udtSurrogateKeyInt]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	int
Length	4

SQL Script

```
CREATE TYPE [Udt].[udtSurrogateKeyInt] FROM int NULL
GO
```

Uses

Udt

Used By

[Data].[Membership]

[dbo].[Nums]

[DbSecurity].[UserAuthorization]

[HumanResources].[Employee]

[Production].[Category]

[Production].[Product]

[Production].[Supplier]

[Sales].[Customer]

[Sales].[OrderDetail]

[Sales].[Orders]

[Sales].[Shipper]

[Service].[Feedback]

[SystemVersioned].[Employee]

[Triggered].[AuditTriggeredEmployeeHistory]

[Triggered].[Employee]

[JsonOutput].[uvw_HumanResourcesEmployee]

[JsonOutput].[uvw_Order]

[JsonOutput].[uvw_ProductionCategory]

[JsonOutput].[uvw_ProductionProduct]

[JsonOutput].[uvw_ProductionSupplier]

 $[JsonOutput].[uvw_SalesCustomer]$

[JsonOutput].[uvw_SalesShipper]

[JsonOutput].[MongoOrder]

[JsonOutput].[MongoOrderDetail]

[Sales].[utvf_FindAllCustomerOrder]

 $\label{thm:project} Project > 127.0.0.1, 13001 > User \ databases > MidtermDatabase > Programmability > Types > User-Defined \ Data \ Types > Udt. udtSurrogateKeyInt$

[Triggered].[utvf_EmployeeCurrentAndHistory] [Triggered].[utvf_EmployeeCurrentAndHistoryCTE]

[Udt].[udtTelephoneNumber]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	18

SQL Script

CREATE TYPE [Udt].[udtTelephoneNumber] FROM nvarchar (18) NULL
GO

Uses

Udt

Used By

[Data].[Membership]

[HumanResources].[Employee]

[Production].[Supplier]

[Sales].[Customer]

[Sales].[Shipper]

[JsonOutput].[uvw_HumanResourcesEmployee]

[JsonOutput].[uvw_ProductionProduct]

[JsonOutput].[uvw_ProductionSupplier]

[JsonOutput].[uvw_SalesCustomer]

[JsonOutput].[uvw_SalesShipper]

[Udt].[udtTextKeyVarchar10]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	char
Length	18

SQL Script

CREATE TYPE [Udt].[udtTextKeyVarchar10] FROM char (18) NOT NULL
GO

Uses

Udt

[Udt].[udtTimeStampNow]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	datetime2
Length	6

SQL Script

CREATE TYPE [Udt].[udtTimeStampNow] FROM datetime2 (2) NOT NULL
GO

Uses

Udt

Used By

[DbSecurity].[UserAuthorization]

[HumanResources].[Employee]

[Production].[Category]

[Production].[Product]

[Production].[Supplier]

[Sales].[Customer]

[Sales].[OrderDetail]

[Sales].[Orders]

[Sales].[Shipper]

[Triggered].[AuditTriggeredEmployeeHistory]

" [Udt].[udtTitle]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	char
Length	18

SQL Script

CREATE TYPE [Udt].[udtTitle] FROM char (18) NOT NULL
GO

Uses

Udt

Used By

[HumanResources].[Employee]
[Sales].[Customer]
[JsonOutput].[uvw_HumanResourcesEmployee]
[JsonOutput].[uvw_SalesCustomer]

[Udt].[udtTitleOfCourtesy]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	char
Length	18

SQL Script

CREATE TYPE [Udt].[udtTitleOfCourtesy] FROM char (18) NOT NULL
GO

Uses

Udt

Used By

[HumanResources].[Employee]
[JsonOutput].[uvw_HumanResourcesEmployee]

[Udt].[udtTriggerOption]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	char
Length	1

SQL Script

CREATE TYPE [Udt].[udtTriggerOption] FROM char (1) NOT NULL
GO

Uses

Udt

Used By

[Triggered].[AuditTriggeredEmployeeHistory]



Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	18

SQL Script

CREATE TYPE [Udt].[udtVersion] FROM char (18) NULL
GO

Uses

Udt



Property	Value
Nullability	NOT NULL
Base Type Name	char
Length	18

SQL Script

CREATE TYPE [Udt].[udtYYYY] FROM char (18) NOT NULL
GO

Uses

Udt

[Udt].[udtYYYYMMDD]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	datetime
Length	8

SQL Script

CREATE TYPE [Udt].[udtYYYYMMDD] FROM datetime NOT NULL
GO

Uses

Udt

Used By

[HumanResources].[Employee]
[Sales].[Orders]
[JsonOutput].[uvw_HumanResourcesEmployee]
[JsonOutput].[uvw_Order]
[JsonOutput].[MongoOrder]
[Sales].[utvf_FindAllCustomerOrder]



Objects

Name	
dbo	
guest	



Property	Value
Туре	SqlUser
Login Name	sa
Default Schema	dbo

Database Level Permissions

Туре	Action
CONNECT	Grant

SQL Script

GO



Property	Value
Туре	SqlUser
Default Schema	guest

SQL Script

GO			

La Database Roles

Objects

Name
db_accessadmin
db_backupoperator
db_datareader
db_datawriter
db_ddladmin
db_denydatareader
db_denydatawriter
db_owner
db_securityadmin
public

♣ db_accessadmin

Properties

Property	Value
Owner	dbo

db_backupoperator

Properties

Property	Value
Owner	dbo

♣ db_datareader

Properties

Property	Value
Owner	dbo

db_datawriter

Properties

Property	Value
Owner	dbo

db_ddladmin

Properties

Property	Value
Owner	dbo

db_denydatareader

Properties

Property	Value
Owner	dbo

db_denydatawriter

Properties

Property	Value
Owner	dbo

db_owner

Properties

Property	Value
Owner	dbo

db_securityadmin

Property	Value
Owner	dbo

♣•• public

Properties

Property	Value
Owner	dbo

△ Schemas

Objects

Name
Audit
Data
DbSecurity
Example
Hashing
HumanResources
JsonOutput
Production
RelationalCalculii
RelationalCrossJoin
Sales
Service
SystemVersioned
Temporal
Triggered
Udt
Utils



Property	Value
Owner	dbo

SQL Script

CREATE SCHEMA [Audit]
AUTHORIZATION [dbo]
GO



Property	Value
Owner	dbo

SQL Script

CREATE SCHEMA [Data]
AUTHORIZATION [dbo]
GO

Used By

[Data].[Membership]

♣ DbSecurity

Properties

Property	Value
Owner	dbo

SQL Script

```
CREATE SCHEMA [DbSecurity]
AUTHORIZATION [dbo]
GO
```

Used By

[DbSecurity].[UserAuthorization]

△ Example

Properties

Property	Value
Owner	dbo

SQL Script

CREATE SCHEMA [Example]
AUTHORIZATION [dbo]
GO

⚠ Hashing

Properties

Property	Value
Owner	dbo

SQL Script

```
CREATE SCHEMA [Hashing]
AUTHORIZATION [dbo]
GO
```

Used By

[Hashing].[CreateRowSha2_256HashKey] [Hashing].[CreateVarbinaryRowSha2_256HashKey] [Hashing].[CreateVarbinarySha2_256HashKey] [Hashing].[CreateVarcharHashKeySha2_256]

△ HumanResources

Properties

Property	Value
Owner	dbo

SQL Script

```
CREATE SCHEMA [HumanResources]
AUTHORIZATION [dbo]
GO
```

Used By

[HumanResources].[Employee]

♣ JsonOutput

Properties

Property	Value
Owner	dbo

SQL Script

```
CREATE SCHEMA [JsonOutput]
AUTHORIZATION [dbo]
GO
```

Used By

[JsonOutput].[uvw_HumanResourcesEmployee]

[JsonOutput].[uvw_Order]

[JsonOutput].[uvw_ProductionCategory]

[JsonOutput].[uvw_ProductionProduct]

[JsonOutput].[uvw_ProductionSupplier]

[JsonOutput].[uvw_SalesCustomer]

[JsonOutput].[uvw_SalesShipper]

[JsonOutput].[MongoOrder]

[JsonOutput].[MongoOrderDetail]

⚠ Production

Properties

Property	Value
Owner	dbo

SQL Script

```
CREATE SCHEMA [Production]
AUTHORIZATION [dbo]
GO
```

Used By

[Production].[Category] [Production].[Product]

[Production].[Supplier]

⚠ RelationalCalculii

Properties

Property	Value
Owner	dbo

SQL Script

```
CREATE SCHEMA [RelationalCalculii]
AUTHORIZATION [dbo]
GO
```

▲ RelationalCrossJoin

Properties

Property	Value
Owner	dbo

SQL Script

CREATE SCHEMA [RelationalCrossJoin]
AUTHORIZATION [dbo]
GO

♦ Sales

Properties

Property	Value
Owner	dbo

SQL Script

```
CREATE SCHEMA [Sales]
AUTHORIZATION [dbo]
GO
```

Used By

[Sales].[Customer]
[Sales].[OrderDetail]
[Sales].[Orders]
[Sales].[Shipper]
[Sales].[usp_getorders]
[Sales].[utvf_FindAllCustomerOrder]



Property	Value
Owner	dbo

SQL Script

CREATE SCHEMA [Service]
AUTHORIZATION [dbo]
GO

Used By

[Service].[Feedback]

▲ SystemVersioned

Properties

Property	Value
Owner	dbo

SQL Script

```
CREATE SCHEMA [SystemVersioned]
AUTHORIZATION [dbo]
GO
```

Used By

[SystemVersioned].[Employee]

Properties

Property	Value
Owner	dbo

SQL Script

```
CREATE SCHEMA [Temporal]
AUTHORIZATION [dbo]
GO
```

⚠ Triggered

Properties

Property	Value
Owner	dbo

SQL Script

```
CREATE SCHEMA [Triggered]
AUTHORIZATION [dbo]
GO
```

Used By

[Triggered].[AuditTriggeredEmployeeHistory]

[Triggered].[Employee]

[Triggered].[utvf_EmployeeCurrentAndHistory]

 $[Triggered]. [utvf_EmployeeCurrentAndHistoryCTE] \\$

Properties

Property	Value
Owner	dbo

SQL Script

```
CREATE SCHEMA [Udt]
AUTHORIZATION [dbo]
GO
```

Used By

[Udt].[udtAddress]

[Udt].[udtCategoryName]

[Udt].[udtCity]

[Udt].[udtCompanyName]

[Udt].[udtContactTitle]

[Udt].[udtCountry]

[Udt].[udtCurrency]

[Udt].[udtDescription]

[Udt].[udtFirstName]

[Udt].[udtFlagBit]

[Udt].[udtFlagChar]

[Udt].[udtFullName]

[Udt].[udtGrade]

[Udt].[udtIsDeletion]

[Udt].[udtLastName]

[Udt].[udtName]

[Udt].[udtNote]

[Udt].[udtPercentage]

[Udt].[udtPostalCode]

[Udt].[udtProductName]

[Udt].[udtQuantitySmall]

[Udt].[udtRegion]

[Udt].[udtScore]

[Udt].[udtSequenceNo]

[Udt].[udtShortDescription]

[Udt].[udtStateName]

[Udt].[udtStudentIdentification]

[Udt].[udtSurrogateKeyInt]

[Udt].[udtTelephoneNumber]

[Udt].[udtTextKeyVarchar10]

[Udt].[udtTimeStampNow]

[Udt].[udtTitle]
[Udt].[udtTitleOfCourtesy]
[Udt].[udtTriggerOption]
[Udt].[udtVersion]
[Udt].[udtYYYY]
[Udt].[udtYYYYYMMDD]

△ Utils

Properties

Property	Value
Owner	dbo

SQL Script

```
CREATE SCHEMA [Utils]
AUTHORIZATION [dbo]
GO
```

Used By

[Utils].[uvw_FindColumnDefinitionPlusDefaultAndCheckConstraint]
[Utils].[uw_FindAllDatabaseColumnsOnTheServer]
[Utils].[CreateHashKeyMD5]