localhost,13001 Documentation

Group2-MidtermDataModelingCSCI381-20221116

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Author	StudentCSCI381Erwin
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localhost,13001

Databases (1)

- Group2-MidtermDataModelingCSCI381-20221116

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

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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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User databases

Databases (1)

- Group2-MidtermDataModelingCSCI381-20221116

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Group2-MidtermDataModelingCSCI381-20221116 Database

Database Properties

Property	Value
SQL Server Version	Max
Compatibility Level	Max
Last backup time	-
Last log backup time	-
Creation date	Nov 17 2022
Users	4
Database Encryption Enabled	False
Database Encryption Algorithm	None
Database size	16.00 MB
Unallocated space	4.74 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

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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	39c995cd-b89f-47a9-a307-7795787ddc08
Service broker enabled	False
Log reuse wait	OLDEST_PAGE
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	Type	Size	Maxsize	Autogrowth	File Name
Group2-MidtermDataModeling-CSCI381-20221116	Data	8.00 MB	unlimited	64.00 MB	/var/opt/mssql/data/Group2-MidtermData-ModelingCSCI381-20221116.mdf
Group2-MidtermDataModeling-	Log	8.00 MB	2048.00 GB	64.00 MB	/var/opt/mssql/log/Group2-MidtermData-

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CSCI381-20221116_log					ModelingCSCI381-20221116_log.ldf

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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

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[Data].[Membership]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	2:39:37 AM Thursday, November 17, 2022
Last Modified	2:39:38 AM Thursday, November 17, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity	Default
PK C	MemberID	[sdKeyIntegerNumber_-JG].[surrogateKeyIdentity_JG]	4	NOT NULL	1 - 1	
	FirstName	[sdNameString_AG].[firstName_-AG]	50	NULL allowed		
	LastName	[sdNameString_AG].[lastName_-AG]	50	NULL allowed		
	Phone	[sdContactNumber_AG].[phone-Number_AN]	14	NULL allowed		('(000)-000-0000')
	Email	[dbo].[email_WL]	40	NULL allowed		
	DiscountCode	[sdIntegerNumber_JG].[sequence-Number_JG]	4	NULL allowed		
	BirthDay	[sdYearMonthDay_AG].[birth-Date_AG]	3	NULL allowed		('19000101')

Indexes

Key	Name	Key Columns	Unique
PK C	PK__Membersh__0CF04B38AF0D3873	MemberID	True

Check Constraints

Name	On Column	Constraint
CHK_IntegerIsGreaterThanZero_JG_1301638409	MemberID	([MemberID]>(0))
CHK_PhoneNumber_AN_1496371262	Phone	([Phone] like '%[0-9\-]')
CHK_StartwithCapitalLetter_AG_1277830824	FirstName	([FirstName] like '[A-Z]%')
CHK_StartwithCapitalLetter_AG_1370094161	LastName	([LastName] like '[A-Z]%')

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CK_Email_WL_1145602502	Email	([Email] like '([a-zA-Z0-9_\-\.]+)@([a-zA-Z0-9_\-\.]+)\.([a-zA-Z]{2,5})')

SQL Script

```
CREATE TABLE [Data].[Membership]
(
[MemberID] [sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG] NOT NULL IDENTITY(1, 1),
[FirstName] [sdNameString_AG].[firstName_AG] MASKED WITH (FUNCTION = 'partial(1, "xxxxx", 1)') NULL,
[LastName] [sdNameString_AG].[lastName_AG] MASKED WITH (FUNCTION = 'default()') NULL,
[Phone] [sdContactNumber_AG].[phoneNumber_AN] MASKED WITH (FUNCTION = 'default()') NULL CONSTRAINT [DFT_MobileNumber_AG_1191070312] DEFAULT ('(000)-000-0000'),
[Email] [dbo].[email_WL] MASKED WITH (FUNCTION = 'email()') NULL,
[DiscountCode] [sdIntegerNumber_JG].[sequenceNumber_JG] MASKED WITH (FUNCTION = 'random(1, 100)') NULL,
[BirthDay] [sdYearMonthDay_AG].[birthDate_AG] MASKED WITH (FUNCTION = 'default()') NULL CONSTRAINT [DFT_StartOfTime_AG_1908097591] DEFAULT ('19000101')
) ON [PRIMARY]
GO
ALTER TABLE [Data].[Membership] ADD CONSTRAINT [CHK_IntegerIsGreaterThanZero_-JG_1301638409] CHECK (([MemberID]>(0)))
GO
ALTER TABLE [Data].[Membership] ADD CONSTRAINT [CHK_PhoneNumber_AN_1496371262] CHECK (([Phone] like '%[0-9\-]'))
GO
ALTER TABLE [Data].[Membership] ADD CONSTRAINT [CHK_StartwithCapitalLetter_-AG_1277830824] CHECK (([FirstName] like '[A-Z]%'))
GO
ALTER TABLE [Data].[Membership] ADD CONSTRAINT [CHK_StartwithCapitalLetter_-AG_1370094161] CHECK (([LastName] like '[A-Z]%'))
GO
ALTER TABLE [Data].[Membership] ADD CONSTRAINT [CK_Email_WL_1145602502] CHECK (([Email] like '([a-zA-Z0-9_\-\.]+)@([a-zA-Z0-9_\-\.]+)\.([a-zA-Z]{2,5})'))
GO
ALTER TABLE [Data].[Membership] ADD CONSTRAINT [PK__Membersh__0CF04B38AF0D3873] PRIMARY KEY CLUSTERED  ([MemberID]) ON [PRIMARY]
GO
```

Uses

[dbo].[email_WL]
[sdContactNumber_AG].[phoneNumber_AN]
[sdIntegerNumber_JG].[sequenceNumber_JG]
[sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG]
[sdNameString_AG].[firstName_AG]
[sdNameString_AG].[lastName_AG]
[sdYearMonthDay_AG].[birthDate_AG]
Data

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[dbo].[Nums]

Properties

Property	Value
Row Count (~)	0
Created	2:39:37 AM Thursday, November 17, 2022
Last Modified	2:39:38 AM Thursday, November 17, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity
PK C	N	[sdKeyIntegerNumber_JG].[surrogateKey-Identity_JG]	4	NOT NULL	1 - 1

Indexes

Key	Name	Key Columns	Unique
PK C	PK_Nums	N	True

Check Constraints

Name	On Column	Constraint
CHK_IntegerIsGreaterThanZero_JG_1615617432	N	([N]>(0))

SQL Script

```
CREATE TABLE [dbo].[Nums]
(
[N] [sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG] NOT NULL IDENTITY(1, 1)
) ON [PRIMARY]
GO
ALTER TABLE [dbo].[Nums] ADD CONSTRAINT [CHK_IntegerIsGreaterThanZero_JG_1615617432]
CHECK (([N]>(0)))
GO
ALTER TABLE [dbo].[Nums] ADD CONSTRAINT [PK_Nums] PRIMARY KEY CLUSTERED  ([N]) ON
[PRIMARY]
GO
```

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Uses

[sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG]

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[DbSecurity].[UserAuthorization]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	2:39:38 AM Thursday, November 17, 2022
Last Modified	2:39:40 AM Thursday, November 17, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity	Default
PK C	UserAuthorizationId	[dGroupMidterm].[dNumber]	4	NOT NULL	1 - 1	
	ClassTime	[sdMiscellanousStrings_-AG].[classTime_AN]	5	NULL allowed		
	IndividualProject	[sdNameString_AG].[full-Name_AG]	104	NULL allowed		
	GroupMemberLastName	[sdNameString_AG].[last-Name_AG]	50	NULL allowed		
	GroupMemberFirstName	[sdNameString_AG].[first-Name_AG]	50	NULL allowed		
	GroupName	[sdNameString_AG].[full-Name_AG]	104	NULL allowed		
	DateAdded	[sdNanosecondPrecise-Datetime_JG].[timeStamp_-AN]	8	NULL allowed		(sysdatetime())
	DateOfLastUpdate	[sdNanosecondPrecise-Datetime_JG].[timeStamp_-AN]	8	NULL allowed		(sysdatetime())

Indexes

Key	Name	Key Columns	Unique
PK C	XPKUserAuthorization	UserAuthorizationId	True

Triggers

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

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tU_UserAuthorization	True	True	After Update

Check Constraints

Name	On Column	Constraint
CHK_StartwithCapitalLetter_AG_1771680119	GroupMemberFirstName	([GroupMemberFirstName] like '[A-Z]%')
CHK_StartwithCapitalLetter_AG_1885322793	GroupMemberLastName	([GroupMemberLastName] like '[A-Z]%')

SQL Script

```
CREATE TABLE [DbSecurity].[UserAuthorization]
(
[UserAuthorizationId] [dGroupMidterm].[dNumber] NOT NULL IDENTITY(1, 1),
[ClassTime] [sdMiscellanousStrings_AG].[classTime_AN] NULL,
[IndividualProject] [sdNameString_AG].[fullName_AG] NULL,
[GroupMemberLastName] [sdNameString_AG].[lastName_AG] NULL,
[GroupMemberFirstName] [sdNameString_AG].[firstName_AG] NULL,
[GroupName] [sdNameString_AG].[fullName_AG] NULL,
[DateAdded] [sdNanosecondPreciseDatetime_JG].[timeStamp_AN] NULL CONSTRAINT [DFT_-
CurrentSysTime_810043040] DEFAULT (sysdatetime()),
[DateOfLastUpdate] [sdNanosecondPreciseDatetime_JG].[timeStamp_AN] NULL CONSTRAINT
[DFT_CurrentSysTime_553578676] DEFAULT (sysdatetime())
) ON [PRIMARY]
GO




CREATE TRIGGER [DbSecurity].[tD_UserAuthorization] ON [DbSecurity].[UserAuthorization]
FOR DELETE AS
/* erwin Builtin Trigger */
/* DELETE trigger on UserAuthorization */
BEGIN
  DECLARE  @errno   int,
           @severity int,
           @state    int,
           @errmsg  varchar(255)
    /* erwin Builtin Trigger */
    /* DbSecurity.UserAuthorization authorizes Sales.OrderDetail on parent delete no
action */
    /* ERWIN_RELATION:CHECKSUM="000a84c1", PARENT_OWNER="DbSecurity", PARENT_-
TABLE="UserAuthorization"
    CHILD_OWNER="Sales", CHILD_TABLE="OrderDetail"
    P2C_VERB_PHRASE="authorizes", C2P_VERB_PHRASE="authorized by",
    FK_CONSTRAINT="FK_OrderDetail_UserAuthorization", FK_COLUMNS="UserAuthorizationId"
*/
    IF EXISTS (
      SELECT * FROM deleted,Sales.OrderDetail
      WHERE
```

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```
        /*  %JoinFKPK(Sales.OrderDetail,deleted," = "," AND") */
        Sales.OrderDetail.UserAuthorizationId = deleted.UserAuthorizationId
    )
    BEGIN
      SELECT @errno  = 30001,
             @errmsg = 'Cannot delete DbSecurity.UserAuthorization because Sales.Order-
Detail exists.'
      GOTO error
    END

    /* erwin Builtin Trigger */
    /* DbSecurity.UserAuthorization authorizes Production.Category on parent delete no
action */
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_-
TABLE="UserAuthorization"
    CHILD_OWNER="Production", CHILD_TABLE="Category"
    P2C_VERB_PHRASE="authorizes", C2P_VERB_PHRASE="authorized by",
    FK_CONSTRAINT="FK_Category_UserAuthorization", FK_COLUMNS="UserAuthorizationId" */
    IF EXISTS (
      SELECT * FROM deleted,Production.Category
      WHERE
        /*  %JoinFKPK(Production.Category,deleted," = "," AND") */
        Production.Category.UserAuthorizationId = deleted.UserAuthorizationId
    )
    BEGIN
      SELECT @errno  = 30001,
             @errmsg = 'Cannot delete DbSecurity.UserAuthorization because
Production.Category exists.'
      GOTO error
    END

    /* erwin Builtin Trigger */
    /* DbSecurity.UserAuthorization authorizes Sales.Orders on parent delete no action
*/
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_-
TABLE="UserAuthorization"
    CHILD_OWNER="Sales", CHILD_TABLE="Orders"
    P2C_VERB_PHRASE="authorizes", C2P_VERB_PHRASE="authorized by",
    FK_CONSTRAINT="FK_Order_UserAuthorization", FK_COLUMNS="UserAuthorizationId" */
    IF EXISTS (
      SELECT * FROM deleted,Sales.Orders
      WHERE
        /*  %JoinFKPK(Sales.Orders,deleted," = "," AND") */
        Sales.Orders.UserAuthorizationId = deleted.UserAuthorizationId
    )
    BEGIN
      SELECT @errno  = 30001,
             @errmsg = 'Cannot delete DbSecurity.UserAuthorization because Sales.Orders
exists.'
      GOTO error
    END

    /* erwin Builtin Trigger */
    /* DbSecurity.UserAuthorization authorizes Sales.Customer on parent delete no
action */
```

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```
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_-
TABLE="UserAuthorization"
    CHILD_OWNER="Sales", CHILD_TABLE="Customer"
    P2C_VERB_PHRASE="authorizes", C2P_VERB_PHRASE="authorized by",
    FK_CONSTRAINT="FK_Customer_UserAuthorization", FK_COLUMNS="UserAuthorizationId" */
    IF EXISTS (
      SELECT * FROM deleted,Sales.Customer
      WHERE
        /*  %JoinFKPK(Sales.Customer,deleted," = "," AND") */
        Sales.Customer.UserAuthorizationId = deleted.UserAuthorizationId
    )
    BEGIN
      SELECT @errno  = 30001,
             @errmsg = 'Cannot delete DbSecurity.UserAuthorization because
Sales.Customer exists.'
      GOTO error
    END

    /* erwin Builtin Trigger */
    /* DbSecurity.UserAuthorization authorizes HumanResources.Employee on parent delete
no action */
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_-
TABLE="UserAuthorization"
    CHILD_OWNER="HumanResources", CHILD_TABLE="Employee"
    P2C_VERB_PHRASE="authorizes", C2P_VERB_PHRASE="authorized by",
    FK_CONSTRAINT="FK_Employee_UserAuthorization", FK_COLUMNS="UserAuthorizationId" */
    IF EXISTS (
      SELECT * FROM deleted,HumanResources.Employee
      WHERE
        /*  %JoinFKPK(HumanResources.Employee,deleted," = "," AND") */
        HumanResources.Employee.UserAuthorizationId = deleted.UserAuthorizationId
    )
    BEGIN
      SELECT @errno  = 30001,
             @errmsg = 'Cannot delete DbSecurity.UserAuthorization because Human-
Resources.Employee exists.'
      GOTO error
    END

    /* erwin Builtin Trigger */
    /* DbSecurity.UserAuthorization authorizes Production.Supplier on parent delete no
action */
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_-
TABLE="UserAuthorization"
    CHILD_OWNER="Production", CHILD_TABLE="Supplier"
    P2C_VERB_PHRASE="authorizes", C2P_VERB_PHRASE="authorized by",
    FK_CONSTRAINT="FK_Supplier_UserAuthorization", FK_COLUMNS="UserAuthorizationId" */
    IF EXISTS (
      SELECT * FROM deleted,Production.Supplier
      WHERE
        /*  %JoinFKPK(Production.Supplier,deleted," = "," AND") */
        Production.Supplier.UserAuthorizationId = deleted.UserAuthorizationId
    )
    BEGIN
      SELECT @errno  = 30001,
```

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```
            @errmsg = 'Cannot delete DbSecurity.UserAuthorization because
Production.Supplier exists.'
      GOTO error
    END

    /* erwin Builtin Trigger */
    /* DbSecurity.UserAuthorization authorizes Production.Product on parent delete no
action */
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_-
TABLE="UserAuthorization"
    CHILD_OWNER="Production", CHILD_TABLE="Product"
    P2C_VERB_PHRASE="authorizes", C2P_VERB_PHRASE="authorized by",
    FK_CONSTRAINT="FK_Product_UserAuthorization", FK_COLUMNS="UserAuthorizationId" */
    IF EXISTS (
      SELECT * FROM deleted,Production.Product
      WHERE
        /*  %JoinFKPK(Production.Product,deleted," = "," AND") */
        Production.Product.UserAuthorizationId = deleted.UserAuthorizationId
    )
    BEGIN
      SELECT @errno  = 30001,
            @errmsg = 'Cannot delete DbSecurity.UserAuthorization because
Production.Product exists.'
      GOTO error
    END

    /* erwin Builtin Trigger */
    /* DbSecurity.UserAuthorization authorizes Sales.Shipper on parent delete no action
*/
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_-
TABLE="UserAuthorization"
    CHILD_OWNER="Sales", CHILD_TABLE="Shipper"
    P2C_VERB_PHRASE="authorizes", C2P_VERB_PHRASE="authorized by",
    FK_CONSTRAINT="FK_Shipper_UserAuthorization", FK_COLUMNS="UserAuthorizationId" */
    IF EXISTS (
      SELECT * FROM deleted,Sales.Shipper
      WHERE
        /*  %JoinFKPK(Sales.Shipper,deleted," = "," AND") */
        Sales.Shipper.UserAuthorizationId = deleted.UserAuthorizationId
    )
    BEGIN
      SELECT @errno  = 30001,
            @errmsg = 'Cannot delete DbSecurity.UserAuthorization because
Sales.Shipper exists.'
      GOTO error
    END


    /* erwin Builtin Trigger */
    RETURN
error:
   RAISERROR (@errmsg, -- Message text.
              @severity, -- Severity (0~25).
              @state) -- State (0~255).
    rollback transaction
```

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```
END

GO



CREATE TRIGGER [DbSecurity].[tU_UserAuthorization] ON [DbSecurity].[UserAuthorization]
FOR UPDATE AS
/* erwin Builtin Trigger */
/* UPDATE trigger on UserAuthorization */
BEGIN
  DECLARE  @numrows int,
           @nullcnt int,
           @validcnt int,
           @insUserAuthorizationId dGroupMidterm.dNumber,
           @errno   int,
           @severity int,
           @state    int,
           @errmsg  varchar(255)

  SELECT @numrows = @@rowcount
  /* erwin Builtin Trigger */
  /* DbSecurity.UserAuthorization authorizes Sales.OrderDetail on parent update no
action */
  /* ERWIN_RELATION:CHECKSUM="000b606e", PARENT_OWNER="DbSecurity", PARENT_TABLE="User-
Authorization"
    CHILD_OWNER="Sales", CHILD_TABLE="OrderDetail"
    P2C_VERB_PHRASE="authorizes", C2P_VERB_PHRASE="authorized by",
    FK_CONSTRAINT="FK_OrderDetail_UserAuthorization", FK_COLUMNS="UserAuthorizationId"
*/
  IF
    /* %ParentPK(" OR",UPDATE) */
    UPDATE(UserAuthorizationId)
  BEGIN
    IF EXISTS (
      SELECT * FROM deleted,Sales.OrderDetail
      WHERE
        /*  %JoinFKPK(Sales.OrderDetail,deleted," = "," AND") */
        Sales.OrderDetail.UserAuthorizationId = deleted.UserAuthorizationId
    )
    BEGIN
      SELECT @errno  = 30005,
             @errmsg = 'Cannot update DbSecurity.UserAuthorization because Sales.Order-
Detail exists.'
      GOTO error
    END
  END

  /* erwin Builtin Trigger */
  /* DbSecurity.UserAuthorization authorizes Production.Category on parent update no
action */
  /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_TABLE="User-
Authorization"
    CHILD_OWNER="Production", CHILD_TABLE="Category"
    P2C_VERB_PHRASE="authorizes", C2P_VERB_PHRASE="authorized by",
    FK_CONSTRAINT="FK_Category_UserAuthorization", FK_COLUMNS="UserAuthorizationId" */
```

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```
  IF
    /* %ParentPK(" OR",UPDATE) */
    UPDATE(UserAuthorizationId)
  BEGIN
    IF EXISTS (
      SELECT * FROM deleted,Production.Category
      WHERE
        /*  %JoinFKPK(Production.Category,deleted," = "," AND") */
        Production.Category.UserAuthorizationId = deleted.UserAuthorizationId
    )
    BEGIN
      SELECT @errno  = 30005,
            @errmsg = 'Cannot update DbSecurity.UserAuthorization because
Production.Category exists.'
      GOTO error
    END
  END

  /* erwin Builtin Trigger */
  /* DbSecurity.UserAuthorization authorizes Sales.Orders on parent update no action */
  /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_TABLE="User-
Authorization"
    CHILD_OWNER="Sales", CHILD_TABLE="Orders"
    P2C_VERB_PHRASE="authorizes", C2P_VERB_PHRASE="authorized by",
    FK_CONSTRAINT="FK_Order_UserAuthorization", FK_COLUMNS="UserAuthorizationId" */
  IF
    /* %ParentPK(" OR",UPDATE) */
    UPDATE(UserAuthorizationId)
  BEGIN
    IF EXISTS (
      SELECT * FROM deleted,Sales.Orders
      WHERE
        /*  %JoinFKPK(Sales.Orders,deleted," = "," AND") */
        Sales.Orders.UserAuthorizationId = deleted.UserAuthorizationId
    )
    BEGIN
      SELECT @errno  = 30005,
            @errmsg = 'Cannot update DbSecurity.UserAuthorization because Sales.Orders
exists.'
      GOTO error
    END
  END

  /* erwin Builtin Trigger */
  /* DbSecurity.UserAuthorization authorizes Sales.Customer on parent update no action
*/
  /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_TABLE="User-
Authorization"
    CHILD_OWNER="Sales", CHILD_TABLE="Customer"
    P2C_VERB_PHRASE="authorizes", C2P_VERB_PHRASE="authorized by",
    FK_CONSTRAINT="FK_Customer_UserAuthorization", FK_COLUMNS="UserAuthorizationId" */
  IF
    /* %ParentPK(" OR",UPDATE) */
    UPDATE(UserAuthorizationId)
```

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```
  BEGIN
    IF EXISTS (
      SELECT * FROM deleted,Sales.Customer
      WHERE
        /*  %JoinFKPK(Sales.Customer,deleted," = "," AND") */
        Sales.Customer.UserAuthorizationId = deleted.UserAuthorizationId
    )
    BEGIN
      SELECT @errno  = 30005,
             @errmsg = 'Cannot update DbSecurity.UserAuthorization because
Sales.Customer exists.'
      GOTO error
    END
  END

  /* erwin Builtin Trigger */
  /* DbSecurity.UserAuthorization authorizes HumanResources.Employee on parent update
no action */
  /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_TABLE="User-
Authorization"
    CHILD_OWNER="HumanResources", CHILD_TABLE="Employee"
    P2C_VERB_PHRASE="authorizes", C2P_VERB_PHRASE="authorized by",
    FK_CONSTRAINT="FK_Employee_UserAuthorization", FK_COLUMNS="UserAuthorizationId" */
  IF
    /* %ParentPK(" OR",UPDATE) */
    UPDATE(UserAuthorizationId)
  BEGIN
    IF EXISTS (
      SELECT * FROM deleted,HumanResources.Employee
      WHERE
        /*  %JoinFKPK(HumanResources.Employee,deleted," = "," AND") */
        HumanResources.Employee.UserAuthorizationId = deleted.UserAuthorizationId
    )
    BEGIN
      SELECT @errno  = 30005,
             @errmsg = 'Cannot update DbSecurity.UserAuthorization because Human-
Resources.Employee exists.'
      GOTO error
    END
  END

  /* erwin Builtin Trigger */
  /* DbSecurity.UserAuthorization authorizes Production.Supplier on parent update no
action */
  /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_TABLE="User-
Authorization"
    CHILD_OWNER="Production", CHILD_TABLE="Supplier"
    P2C_VERB_PHRASE="authorizes", C2P_VERB_PHRASE="authorized by",
    FK_CONSTRAINT="FK_Supplier_UserAuthorization", FK_COLUMNS="UserAuthorizationId" */
  IF
    /* %ParentPK(" OR",UPDATE) */
    UPDATE(UserAuthorizationId)
  BEGIN
    IF EXISTS (
```

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```
      SELECT * FROM deleted,Production.Supplier
      WHERE
        /*  %JoinFKPK(Production.Supplier,deleted," = "," AND") */
        Production.Supplier.UserAuthorizationId = deleted.UserAuthorizationId
    )
    BEGIN
      SELECT @errno  = 30005,
             @errmsg = 'Cannot update DbSecurity.UserAuthorization because
Production.Supplier exists.'
      GOTO error
    END
  END

  /* erwin Builtin Trigger */
  /* DbSecurity.UserAuthorization authorizes Production.Product on parent update no
action */
  /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_TABLE="User-
Authorization"
    CHILD_OWNER="Production", CHILD_TABLE="Product"
    P2C_VERB_PHRASE="authorizes", C2P_VERB_PHRASE="authorized by",
    FK_CONSTRAINT="FK_Product_UserAuthorization", FK_COLUMNS="UserAuthorizationId" */
  IF
    /* %ParentPK(" OR",UPDATE) */
    UPDATE(UserAuthorizationId)
  BEGIN
    IF EXISTS (
      SELECT * FROM deleted,Production.Product
      WHERE
        /*  %JoinFKPK(Production.Product,deleted," = "," AND") */
        Production.Product.UserAuthorizationId = deleted.UserAuthorizationId
    )
    BEGIN
      SELECT @errno  = 30005,
             @errmsg = 'Cannot update DbSecurity.UserAuthorization because
Production.Product exists.'
      GOTO error
    END
  END

  /* erwin Builtin Trigger */
  /* DbSecurity.UserAuthorization authorizes Sales.Shipper on parent update no action
*/
  /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_TABLE="User-
Authorization"
    CHILD_OWNER="Sales", CHILD_TABLE="Shipper"
    P2C_VERB_PHRASE="authorizes", C2P_VERB_PHRASE="authorized by",
    FK_CONSTRAINT="FK_Shipper_UserAuthorization", FK_COLUMNS="UserAuthorizationId" */
  IF
    /* %ParentPK(" OR",UPDATE) */
    UPDATE(UserAuthorizationId)
  BEGIN
    IF EXISTS (
      SELECT * FROM deleted,Sales.Shipper
      WHERE
```

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```
        /*  %JoinFKPK(Sales.Shipper,deleted," = "," AND") */
        Sales.Shipper.UserAuthorizationId = deleted.UserAuthorizationId
    )
    BEGIN
      SELECT @errno  = 30005,
            @errmsg = 'Cannot update DbSecurity.UserAuthorization because
Sales.Shipper 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 [DbSecurity].[UserAuthorization] ADD CONSTRAINT [CHK_StartwithCapital-
Letter_AG_1771680119] CHECK (([GroupMemberFirstName] like '[A-Z]%'))
GO
ALTER TABLE [DbSecurity].[UserAuthorization] ADD CONSTRAINT [CHK_StartwithCapital-
Letter_AG_1885322793] CHECK (([GroupMemberLastName] like '[A-Z]%'))
GO
ALTER TABLE [DbSecurity].[UserAuthorization] ADD CONSTRAINT [XPKUserAuthorization]
PRIMARY KEY CLUSTERED  ([UserAuthorizationId]) ON [PRIMARY]
GO
```

Uses

[dGroupMidterm].[dNumber]
[sdMiscellanousStrings_AG].[classTime_AN]
[sdNameString_AG].[firstName_AG]
[sdNameString_AG].[fullName_AG]
[sdNameString_AG].[lastName_AG]
[sdNanosecondPreciseDatetime_JG].[timeStamp_AN]
DbSecurity

Used By

[HumanResources].[Employee]
[Production].[Category]
[Production].[Product]
[Production].[Supplier]
[Sales].[Customer]
[Sales].[OrderDetail]
[Sales].[Orders]
[Sales].[Shipper]

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[HumanResources].[Employee]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	2:39:37 AM Thursday, November 17, 2022
Last Modified	2:39:40 AM Thursday, November 17, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity	Default
PK C	EmployeeId	[sdKeyIntegerNumber_-JG].[surrogateKeyIdentity_-JG]	4	NOT NULL	1 - 1	
	EmployeeLastName	[sdNameString_AG].[first-Name_AG]	50	NULL allowed		
	EmployeeFirstName	[sdNameString_AG].[last-Name_AG]	50	NULL allowed		
	EmployeeTitle	[sdTitleString_JG].[contact-Title_JG]	120	NULL allowed		
	EmployeeTitleOfCourtesy	[sdTitleString_JG].[titleOf-Courtesy_AG]	4	NULL allowed		
	EmployeeBirthDate	[sdYearMonthDay_AG].[birth-Date_AG]	3	NULL allowed		('19000101')
	EmployeeHireDate	[sdYearMonthDay_AG].[hire-Date_AG]	3	NULL allowed		(CONVERT([date],sysdatetime()))
	EmployeeDepartment	[dbo].[departmentName_AN]	50	NULL allowed		
	EmployeeSalary	[dbo].[salary_AN]	4	NULL allowed		
	EmployeeAddress	[sdAddressString_-AN].[addressline_AN]	35	NULL allowed		
	EmployeeCity	[sdAddressString_AN].[city_-WL]	40	NULL allowed		
	EmployeeRegion	[sdAddressString_-AN].[region_AG]	80	NULL allowed		
	EmployeePostalCode	[sdAddressString_-AN].[postalCode_AN]	5	NULL allowed		
	EmployeeCountry	[sdAddressString_-AN].[country_AG]	3	NULL allowed		('N/A')

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	EmployeePhoneNumber	[sdContactNumber_-AG].[phoneNumber_AN]	14	NULL allowed		
FK	EmployeeManagerId	[dbo].[surrogateKey_AN]	4	NULL allowed		
FK	UserAuthorizationId	[dbo].[surrogateKey_AN]	4	NULL allowed		
	DateAdded	[dbo].[YearMonthDay]	3	NULL allowed		(sysdatetime())
	DateOfLastUpdate	[sdNanosecondPrecise-Datetime_JG].[timeStamp_-AN]	8	NULL allowed		(sysdatetime())

Indexes

Key	Name	Key Columns	Unique
PK C	PK_Employees	EmployeeId	True

Triggers

Name	ANSI Nulls On	Quoted Identifier On	On
t_InsertTriggeredEmployee	True	True	After Insert
t_UpdateDeleteTriggeredEmployee	True	True	After Delete Update
tD_Employee	True	True	After Delete
tU_Employee	True	True	After Update

Check Constraints

Name	On Column	Constraint
CHK_IntegerIsGreaterThanZero_JG_1181449331	EmployeeManagerId	([EmployeeManagerId]>(0))
CHK_IntegerIsGreaterThanZero_JG_1435665628	UserAuthorizationId	([UserAuthorizationId]>(0))
CHK_IntegerIsGreaterThanZero_JG_175991849	EmployeeId	([EmployeeId]>(0))
CHK_PhoneNumber_AN_1935860684	EmployeePhoneNumber	([EmployeePhoneNumber] like '%[0-9\-]')
CHK_PostalCode_AN_283218698	EmployeePostalCode	([EmployeePostalCode] like '[0-9][0-9][0-9][0-9][0-9]')
CHK_StartwithCapitalLetter_AG_1127309915	EmployeeFirstName	([EmployeeFirstName] like '[A-Z]%')
CHK_StartwithCapitalLetter_AG_1413043674	EmployeeLastName	([EmployeeLastName] like '[A-Z]%')
CHK_StartwithCapitalLetter_AG_775681119	EmployeeDepartment	([EmployeeDepartment] like '[A-Z]%')
CHK_StringIsNotEmpty_JG_509046343	EmployeeTitle	([EmployeeTitle]<>'')
CHK_TitleOfCourtesy_AG_2125145303	EmployeeTitleOfCourtesy	([EmployeeTitleOf-Courtesy]='Mr.' OR [EmployeeTitleOf-

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		Courtesy]='Ms.' OR [EmployeeTitleOf-Courtesy]='Mrs.' OR [EmployeeTitleOf-Courtesy]='Dr.' OR [EmployeeTitleOf-Courtesy]='Jr.')
CHK_ValidString_AN_958250698	EmployeeAddress	([EmployeeAddress] like '%[A-Z0-9a-z\-]')

Foreign Keys

Name	Columns
FK_Employee_UserAuthorization	UserAuthorizationId->[DbSecurity].[UserAuthorization].[UserAuthorizationId]
FK_Employees_Employee	EmployeeManagerId->[HumanResources].[Employee].[EmployeeId]

SQL Script

```
CREATE TABLE [HumanResources].[Employee]
(
[EmployeeId] [sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG] NOT NULL IDENTITY(1, 1),
[EmployeeLastName] [sdNameString_AG].[firstName_AG] NULL,
[EmployeeFirstName] [sdNameString_AG].[lastName_AG] NULL,
[EmployeeTitle] [sdTitleString_JG].[contactTitle_JG] NULL,
[EmployeeTitleOfCourtesy] [sdTitleString_JG].[titleOfCourtesy_AG] NULL,
[EmployeeBirthDate] [sdYearMonthDay_AG].[birthDate_AG] NULL CONSTRAINT [DFT_StartOf-
Time_AG_234828350] DEFAULT ('19000101'),
[EmployeeHireDate] [sdYearMonthDay_AG].[hireDate_AG] NULL CONSTRAINT [DFT_CurrentDate_-
AG_853771902] DEFAULT (CONVERT([date],sysdatetime())),
[EmployeeDepartment] [dbo].[departmentName_AN] NULL,
[EmployeeSalary] [dbo].[salary_AN] NULL,
[EmployeeAddress] [sdAddressString_AN].[addressline_AN] NULL,
[EmployeeCity] [sdAddressString_AN].[city_WL] NULL,
[EmployeeRegion] [sdAddressString_AN].[region_AG] NULL,
[EmployeePostalCode] [sdAddressString_AN].[postalCode_AN] NULL,
[EmployeeCountry] [sdAddressString_AN].[country_AG] NULL CONSTRAINT [DFT_NotSlash-
Applicable_AG_1914488175] DEFAULT ('N/A'),
[EmployeePhoneNumber] [sdContactNumber_AG].[phoneNumber_AN] NULL,
[EmployeeManagerId] [dbo].[surrogateKey_AN] NULL,
[UserAuthorizationId] [dbo].[surrogateKey_AN] NULL,
[DateAdded] [dbo].[YearMonthDay] NULL CONSTRAINT [DFT_CurrentSysTime_741179569] DEFAULT
(sysdatetime()),
[DateOfLastUpdate] [sdNanosecondPreciseDatetime_JG].[timeStamp_AN] NULL CONSTRAINT
[DFT_CurrentSysTime_268635002] DEFAULT (sysdatetime())
) ON [PRIMARY]
GO



CREATE   TRIGGER [HumanResources].[t_InsertTriggeredEmployee] ON [Human-
Resources].[Employee]
 AFTER INSERT
```

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```
AS
/* Customized Erwin Builtin Trigger */
/* INSERT trigger on HumanResources.Employee */
/* default body fox HumanResources.[t_InsertTriggeredEmployee] */

BEGIN
/*
    Update Trigger with upfront intialization for the variables to be inserted into
    the trigger history table
*/
--
--  https://stackoverflow.com/questions/884334/tsql-try-catch-transaction-in-trigger
--

set xact_abort OFF;

BEGIN TRY


    DECLARE I_HumanResources_Employee_Cursor CURSOR FOR

    SELECT EmployeeId FROM Inserted

    DECLARE @cursorID int

    OPEN I_HumanResources_Employee_Cursor;

    FETCH NEXT FROM I_HumanResources_Employee_Cursor INTO @cursorID

    WHILE @@FETCH_STATUS = 0

    BEGIN

        IF (EXISTS (SELECT * FROM Inserted))

                ----------------------------------
                -------- Trigger code ------------
                ----------------------------------

                UPDATE
                    [HumanResources].[Employee]
                SET
                    DateOfLastUpdate = SYSDATETIME()
                FROM
                    [HumanResources].[Employee] as c
                INNER JOIN
                    Inserted i
                ON c.EmployeeId = i.EmployeeId

                ----------------------------------
                ------- End Last Updated ---------
                ----------------------------------
```

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```
                insert into Triggered.Employee
                (
                    EmployeeId,
                    FullName,
                    Department,
                    Salary,
                    BirthDate,
                    HireDate,
                    PhoneNumber,
                    FullAddress,
                    DateAdded,
                    DateOfLastUpdate
                )
                select
                    EmployeeId,
                    CONCAT(EmployeeLastName, ', ', EmployeeFirstName),
                    EmployeeDepartment,
                    EmployeeSalary,
                    EmployeeBirthDate,
                    EmployeeHireDate,
                    EmployeePhoneNumber,
                    CONCAT(EmployeeAddress, ', ', EmployeeCity, ', ', EmployeePostal-
Code),
                    DateAdded,
                    DateOfLastUpdate

                from Inserted where EmployeeId = @cursorId


                PRINT 'Row Inserted. TableId: ' + CONVERT(varchar(10), @cursorID)

                -----------------------------------
                -------- Trigger  End ------------
                -----------------------------------

        FETCH NEXT FROM I_HumanResources_Employee_Cursor INTO @cursorID


    END;

    CLOSE I_HumanResources_Employee_Cursor;

    DEALLOCATE I_HumanResources_Employee_Cursor;


END TRY
BEGIN CATCH
   SELECT ERROR_MESSAGE() AS [Error Message]
         ,ERROR_LINE() AS ErrorLine
         ,ERROR_NUMBER() AS [Error Number]
         ,ERROR_SEVERITY() AS [Error Severity]
         ,ERROR_STATE() AS [Error State]
END CATCH
```

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```
END;


GO




CREATE   TRIGGER [HumanResources].[t_UpdateDeleteTriggeredEmployee] ON [Human-
Resources].[Employee]
 AFTER DELETE,UPDATE

AS

BEGIN

set xact_abort OFF;

BEGIN TRY




    DECLARE UD_HumanResources_Employee_Cursor CURSOR FOR

    SELECT EmployeeId FROM Deleted

    DECLARE @cursorID int

    OPEN UD_HumanResources_Employee_Cursor;

    FETCH NEXT FROM UD_HumanResources_Employee_Cursor INTO @cursorID

    WHILE @@FETCH_STATUS = 0

    BEGIN

        ----------------------------------
        ----- Variable Declaration -------
        ----------------------------------

        IF (EXISTS (SELECT * FROM Inserted) AND EXISTS (SELECT * FROM Deleted))
        BEGIN
            UPDATE Triggered.Employee SET
            Employee.FullName = CONCAT(i.EmployeeLastName, ', ', i.EmployeeFirstName),
            Employee.Department = i.EmployeeDepartment,
            Employee.Salary = i.EmployeeSalary,
            Employee.BirthDate = i.EmployeeBirthDate,
            Employee.HireDate = i.EmployeeHireDate,
            Employee.PhoneNumber = i.EmployeePhoneNumber,
            Employee.FullAddress = CONCAT(i.EmployeeAddress, ', ', i.EmployeeCity, ',
', i.EmployeePostalCode),
```

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```
            Employee.DateAdded = i.DateAdded,
            Employee.DateOfLastUpdate = i.DateOfLastUpdate
            FROM INSERTED as i
            WHERE i.EmployeeId = @cursorID
        END;


        ELSE IF (EXISTS (SELECT * FROM Deleted))
        BEGIN

            DELETE FROM Triggered.Employee WHERE EmployeeId = @cursorID


        END;

        ----------------------------------
        -------- Trigger  End ------------
        ----------------------------------



        FETCH NEXT FROM UD_HumanResources_Employee_Cursor INTO @cursorID


    END;

    CLOSE UD_HumanResources_Employee_Cursor;

    DEALLOCATE UD_HumanResources_Employee_Cursor;









END TRY
BEGIN CATCH
   SELECT ERROR_MESSAGE() AS [Error Message]
         ,ERROR_LINE() AS ErrorLine
         ,ERROR_NUMBER() AS [Error Number]
         ,ERROR_SEVERITY() AS [Error Severity]
         ,ERROR_STATE() AS [Error State]
END CATCH

END;


GO
```

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```
CREATE TRIGGER [HumanResources].[tD_Employee] ON [HumanResources].[Employee] FOR DELETE
AS
/* erwin Builtin Trigger */
/* DELETE trigger on Employee */
BEGIN
  DECLARE  @errno   int,
           @severity int,
           @state    int,
           @errmsg  varchar(255)
    /* erwin Builtin Trigger */
    /* HumanResources.Employee manages a HumanResources.Employee on parent delete no
action */
    /* ERWIN_RELATION:CHECKSUM="00060d39", PARENT_OWNER="HumanResources", PARENT_-
TABLE="Employee"
    CHILD_OWNER="HumanResources", CHILD_TABLE="Employee"
    P2C_VERB_PHRASE="manages a", C2P_VERB_PHRASE="is managed by a",
    FK_CONSTRAINT="FK_Employees_Employee", 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 processes an 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="processes an", C2P_VERB_PHRASE="is processed by an",
    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
```

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```
    /* erwin Builtin Trigger */
    /* DbSecurity.UserAuthorization authorizes HumanResources.Employee on child delete
no action */
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_-
TABLE="UserAuthorization"
    CHILD_OWNER="HumanResources", CHILD_TABLE="Employee"
    P2C_VERB_PHRASE="authorizes", C2P_VERB_PHRASE="authorized by",
    FK_CONSTRAINT="FK_Employee_UserAuthorization", FK_COLUMNS="UserAuthorizationId" */
    IF EXISTS (SELECT * FROM deleted,DbSecurity.UserAuthorization
      WHERE
        /* %JoinFKPK(deleted,DbSecurity.UserAuthorization," = "," AND") */
        deleted.UserAuthorizationId = DbSecurity.UserAuthorization.UserAuthorizationId
AND
        NOT EXISTS (
          SELECT * FROM HumanResources.Employee
          WHERE
            /* %JoinFKPK(HumanResources.Employee,DbSecurity.UserAuthorization," = ","
AND") */
            HumanResources.Employee.UserAuthorizationId = DbSecurity.User-
Authorization.UserAuthorizationId
        )
    )
    BEGIN
      SELECT @errno  = 30010,
             @errmsg = 'Cannot delete last HumanResources.Employee because Db-
Security.UserAuthorization exists.'
      GOTO error
    END


    /* erwin Builtin Trigger */
    /* HumanResources.Employee manages a 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="manages a", C2P_VERB_PHRASE="is managed by a",
    FK_CONSTRAINT="FK_Employees_Employee", FK_COLUMNS="EmployeeManagerId" */
    IF EXISTS (SELECT * FROM deleted,HumanResources.Employee
      WHERE
        /* %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
```

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```
    /* erwin Builtin Trigger */
    RETURN
error:
   RAISERROR (@errmsg, -- Message text.
              @severity, -- Severity (0~25).
              @state) -- State (0~255).
    rollback transaction
END

GO


CREATE TRIGGER [HumanResources].[tU_Employee] ON [HumanResources].[Employee] FOR UPDATE
AS
/* erwin Builtin Trigger */
/* UPDATE trigger on Employee */
BEGIN
  DECLARE  @numrows int,
           @nullcnt int,
           @validcnt int,
           @insEmployeeId sdKeyIntegerNumber_JG.surrogateKeyIdentity_JG,
           @errno   int,
           @severity int,
           @state    int,
           @errmsg  varchar(255)

  SELECT @numrows = @@rowcount
  /* erwin Builtin Trigger */
  /* HumanResources.Employee manages a HumanResources.Employee on parent update no
action */
  /* ERWIN_RELATION:CHECKSUM="00068a6c", PARENT_OWNER="HumanResources", PARENT_-
TABLE="Employee"
    CHILD_OWNER="HumanResources", CHILD_TABLE="Employee"
    P2C_VERB_PHRASE="manages a", C2P_VERB_PHRASE="is managed by a",
    FK_CONSTRAINT="FK_Employees_Employee", FK_COLUMNS="EmployeeManagerId" */
  IF
    /* %ParentPK(" OR",UPDATE) */
    UPDATE(EmployeeId)
  BEGIN
    IF EXISTS (
      SELECT * FROM deleted,HumanResources.Employee
      WHERE
        /*  %JoinFKPK(HumanResources.Employee,deleted," = "," AND") */
        HumanResources.Employee.EmployeeManagerId = deleted.EmployeeId
    )
    BEGIN
      SELECT @errno  = 30005,
             @errmsg = 'Cannot update HumanResources.Employee because Human-
Resources.Employee exists.'
      GOTO error
    END
  END
```

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```
  /* erwin Builtin Trigger */
  /* HumanResources.Employee processes an Sales.Orders on parent update no action */
  /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="HumanResources", PARENT_-
TABLE="Employee"
    CHILD_OWNER="Sales", CHILD_TABLE="Orders"
    P2C_VERB_PHRASE="processes an", C2P_VERB_PHRASE="is processed by an",
    FK_CONSTRAINT="FK_Order_Employee", FK_COLUMNS="EmployeeId" */
  IF
    /* %ParentPK(" OR",UPDATE) */
    UPDATE(EmployeeId)
  BEGIN
    IF EXISTS (
      SELECT * FROM deleted,Sales.Orders
      WHERE
        /*  %JoinFKPK(Sales.Orders,deleted," = "," AND") */
        Sales.Orders.EmployeeId = deleted.EmployeeId
    )
    BEGIN
      SELECT @errno  = 30005,
            @errmsg = 'Cannot update HumanResources.Employee because Sales.Orders
exists.'
      GOTO error
    END
  END

  /* erwin Builtin Trigger */
  /* DbSecurity.UserAuthorization authorizes HumanResources.Employee on child update no
action */
  /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_TABLE="User-
Authorization"
    CHILD_OWNER="HumanResources", CHILD_TABLE="Employee"
    P2C_VERB_PHRASE="authorizes", C2P_VERB_PHRASE="authorized by",
    FK_CONSTRAINT="FK_Employee_UserAuthorization", FK_COLUMNS="UserAuthorizationId" */
  IF
    /* %ChildFK(" OR",UPDATE) */
    UPDATE(UserAuthorizationId)
  BEGIN
    SELECT @nullcnt = 0
    SELECT @validcnt = count(*)
      FROM inserted,DbSecurity.UserAuthorization
        WHERE
          /* %JoinFKPK(inserted,DbSecurity.UserAuthorization) */
          inserted.UserAuthorizationId = DbSecurity.UserAuthorization.UserAuthorization-
Id
    /* %NotnullFK(inserted," IS NULL","select @nullcnt = count(*) from inserted
where"," AND") */
    select @nullcnt = count(*) from inserted where
      inserted.UserAuthorizationId IS NULL
    IF @validcnt + @nullcnt != @numrows
    BEGIN
      SELECT @errno  = 30007,
            @errmsg = 'Cannot update HumanResources.Employee because DbSecurity.User-
Authorization does not exist.'
      GOTO error
```

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```
    END
  END

  /* erwin Builtin Trigger */
  /* HumanResources.Employee manages a HumanResources.Employee on child update no
action */
  /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="HumanResources", PARENT_-
TABLE="Employee"
    CHILD_OWNER="HumanResources", CHILD_TABLE="Employee"
    P2C_VERB_PHRASE="manages a", C2P_VERB_PHRASE="is managed by a",
    FK_CONSTRAINT="FK_Employees_Employee", FK_COLUMNS="EmployeeManagerId" */
  IF
    /* %ChildFK(" OR",UPDATE) */
    UPDATE(EmployeeManagerId)
  BEGIN
    SELECT @nullcnt = 0
    SELECT @validcnt = count(*)
      FROM inserted,HumanResources.Employee
        WHERE
          /* %JoinFKPK(inserted,HumanResources.Employee) */
          inserted.EmployeeManagerId = HumanResources.Employee.EmployeeId
    /* %NotnullFK(inserted," IS NULL","select @nullcnt = count(*) from inserted
where"," AND") */
    select @nullcnt = count(*) from inserted where
      inserted.EmployeeManagerId IS NULL
    IF @validcnt + @nullcnt != @numrows
    BEGIN
      SELECT @errno  = 30007,
            @errmsg = 'Cannot update HumanResources.Employee because Human-
Resources.Employee does not exist.'
      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 [HumanResources].[Employee] ADD CONSTRAINT [CHK_IntegerIsGreaterThanZero_-
JG_1181449331] CHECK (([EmployeeManagerId]>(0)))
GO
ALTER TABLE [HumanResources].[Employee] ADD CONSTRAINT [CHK_IntegerIsGreaterThanZero_-
JG_1435665628] CHECK (([UserAuthorizationId]>(0)))
GO
ALTER TABLE [HumanResources].[Employee] ADD CONSTRAINT [CHK_IntegerIsGreaterThanZero_-
JG_175991849] CHECK (([EmployeeId]>(0)))
GO
ALTER TABLE [HumanResources].[Employee] ADD CONSTRAINT [CHK_PhoneNumber_AN_1935860684]
```

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```
CHECK (([EmployeePhoneNumber] like '%[0-9\-]'))
GO
ALTER TABLE [HumanResources].[Employee] ADD CONSTRAINT [CHK_PostalCode_AN_283218698]
CHECK (([EmployeePostalCode] like '[0-9][0-9][0-9][0-9][0-9]'))
GO
ALTER TABLE [HumanResources].[Employee] ADD CONSTRAINT [CHK_StartwithCapitalLetter_-
AG_1127309915] CHECK (([EmployeeFirstName] like '[A-Z]%'))
GO
ALTER TABLE [HumanResources].[Employee] ADD CONSTRAINT [CHK_StartwithCapitalLetter_-
AG_1413043674] CHECK (([EmployeeLastName] like '[A-Z]%'))
GO
ALTER TABLE [HumanResources].[Employee] ADD CONSTRAINT [CHK_StartwithCapitalLetter_-
AG_775681119] CHECK (([EmployeeDepartment] like '[A-Z]%'))
GO
ALTER TABLE [HumanResources].[Employee] ADD CONSTRAINT [CHK_StringIsNotEmpty_-
JG_509046343] CHECK (([EmployeeTitle]<>''))
GO
ALTER TABLE [HumanResources].[Employee] ADD CONSTRAINT [CHK_TitleOfCourtesy_-
AG_2125145303] CHECK (([EmployeeTitleOfCourtesy]='Mr.' OR [EmployeeTitleOf-
Courtesy]='Ms.' OR [EmployeeTitleOfCourtesy]='Mrs.' OR [EmployeeTitleOfCourtesy]='Dr.'
OR [EmployeeTitleOfCourtesy]='Jr.'))
GO
ALTER TABLE [HumanResources].[Employee] ADD CONSTRAINT [CHK_ValidString_AN_958250698]
CHECK (([EmployeeAddress] like '%[A-Z0-9a-z\-]'))
GO
ALTER TABLE [HumanResources].[Employee] ADD CONSTRAINT [PK_Employees] PRIMARY KEY
CLUSTERED  ([EmployeeId]) ON [PRIMARY]
GO
ALTER TABLE [HumanResources].[Employee] ADD CONSTRAINT [FK_Employee_UserAuthorization]
FOREIGN KEY ([UserAuthorizationId]) REFERENCES [DbSecurity].[UserAuthorization] ([User-
AuthorizationId])
GO
ALTER TABLE [HumanResources].[Employee] ADD CONSTRAINT [FK_Employees_Employee] FOREIGN
KEY ([EmployeeManagerId]) REFERENCES [HumanResources].[Employee] ([EmployeeId])
GO
```

Uses

[DbSecurity].[UserAuthorization]
[dbo].[departmentName_AN]
[dbo].[salary_AN]
[dbo].[surrogateKey_AN]
[dbo].[YearMonthDay]
[sdAddressString_AN].[addressline_AN]
[sdAddressString_AN].[city_WL]
[sdAddressString_AN].[country_AG]
[sdAddressString_AN].[postalCode_AN]
[sdAddressString_AN].[region_AG]
[sdContactNumber_AG].[phoneNumber_AN]
[sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG]
[sdNameString_AG].[firstName_AG]
[sdNameString_AG].[lastName_AG]
[sdNanosecondPreciseDatetime_JG].[timeStamp_AN]
[sdTitleString_JG].[contactTitle_JG]

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[sdTitleString_JG].[titleOfCourtesy_AG]
[sdYearMonthDay_AG].[birthDate_AG]
[sdYearMonthDay_AG].[hireDate_AG]
HumanResources

Used By

[Sales].[Orders]
[JsonOutput].[uvw_HumanResourcesEmployee]
[JsonOutput].[MongoOrder]

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[Production].[Category]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	2:39:37 AM Thursday, November 17, 2022
Last Modified	2:39:40 AM Thursday, November 17, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity	Default
PK C	CategoryId	[sdKeyIntegerNumber_-JG].[surrogateKeyIdentity_JG]	4	NOT NULL	1 - 1	
	CategoryName	[sdNameString_AG].[fullName_-AG]	104	NULL allowed		
	Description	[sdMiscellanousStrings_-AG].[notes_WL]	600	NULL allowed		
FK	UserAuthorizationId	[dbo].[surrogateKey_AN]	4	NULL allowed		
	DateAdded	[sdNanosecondPrecise-Datetime_JG].[timeStamp_AN]	8	NULL allowed		(sysdatetime())
	DateOfLastUpdate	[sdNanosecondPrecise-Datetime_JG].[timeStamp_AN]	8	NULL allowed		(sysdatetime())

Indexes

Key	Name	Key Columns	Unique
PK C	PK_Categories	CategoryId	True

Triggers

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

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Check Constraints

Name	On Column	Constraint
CHK_IntegerIsGreaterThanZero_JG_1149603570	UserAuthorizationId	([UserAuthorizationId]>(0))
CHK_IntegerIsGreaterThanZero_JG_911954493	CategoryId	([CategoryId]>(0))

Foreign Keys

Name	Columns
FK_Category_UserAuthorization	UserAuthorizationId->[DbSecurity].[UserAuthorization].[UserAuthorizationId]

SQL Script

```
CREATE TABLE [Production].[Category]
(
[CategoryId] [sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG] NOT NULL IDENTITY(1, 1),
[CategoryName] [sdNameString_AG].[fullName_AG] NULL,
[Description] [sdMiscellanousStrings_AG].[notes_WL] NULL,
[UserAuthorizationId] [dbo].[surrogateKey_AN] NULL,
[DateAdded] [sdNanosecondPreciseDatetime_JG].[timeStamp_AN] NULL CONSTRAINT [DFT_-
CurrentSysTime_958622402] DEFAULT (sysdatetime()),
[DateOfLastUpdate] [sdNanosecondPreciseDatetime_JG].[timeStamp_AN] NULL CONSTRAINT
[DFT_CurrentSysTime_17427057] DEFAULT (sysdatetime())
) 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,
           @errmsg  varchar(255)
    /* erwin Builtin Trigger */
    /* Production.Category is of a Production.Product on parent delete no action */
    /* ERWIN_RELATION:CHECKSUM="00030743", PARENT_OWNER="Production", PARENT_-
TABLE="Category"
    CHILD_OWNER="Production", CHILD_TABLE="Product"
    P2C_VERB_PHRASE="is of a", C2P_VERB_PHRASE="belongs to a",
    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
```

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```
      SELECT @errno  = 30001,
             @errmsg = 'Cannot delete Production.Category because Production.Product
exists.'
      GOTO error
    END

    /* erwin Builtin Trigger */
    /* DbSecurity.UserAuthorization authorizes Production.Category on child delete no
action */
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_-
TABLE="UserAuthorization"
    CHILD_OWNER="Production", CHILD_TABLE="Category"
    P2C_VERB_PHRASE="authorizes", C2P_VERB_PHRASE="authorized by",
    FK_CONSTRAINT="FK_Category_UserAuthorization", FK_COLUMNS="UserAuthorizationId" */
    IF EXISTS (SELECT * FROM deleted,DbSecurity.UserAuthorization
      WHERE
        /* %JoinFKPK(deleted,DbSecurity.UserAuthorization," = "," AND") */
        deleted.UserAuthorizationId = DbSecurity.UserAuthorization.UserAuthorizationId
AND
        NOT EXISTS (
          SELECT * FROM Production.Category
          WHERE
            /* %JoinFKPK(Production.Category,DbSecurity.UserAuthorization," = "," AND")
*/
            Production.Category.UserAuthorizationId = DbSecurity.UserAuthorization.User-
AuthorizationId
        )
    )
    BEGIN
      SELECT @errno  = 30010,
             @errmsg = 'Cannot delete last Production.Category because DbSecurity.User-
Authorization 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 [Production].[TI_Production_Category_LastUpdated] ON
[Production].[Category]
    AFTER UPDATE

  AS

  UPDATE
```

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```
      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 [CHK_IntegerIsGreaterThanZero_-
JG_1149603570] CHECK (([UserAuthorizationId]>(0)))
GO
ALTER TABLE [Production].[Category] ADD CONSTRAINT [CHK_IntegerIsGreaterThanZero_-
JG_911954493] CHECK (([CategoryId]>(0)))
GO
ALTER TABLE [Production].[Category] ADD CONSTRAINT [PK_Categories] PRIMARY KEY
CLUSTERED  ([CategoryId]) ON [PRIMARY]
GO
ALTER TABLE [Production].[Category] ADD CONSTRAINT [FK_Category_UserAuthorization]
FOREIGN KEY ([UserAuthorizationId]) REFERENCES [DbSecurity].[UserAuthorization] ([User-
AuthorizationId])
GO
```

Uses

[DbSecurity].[UserAuthorization]
[dbo].[surrogateKey_AN]
[sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG]
[sdMiscellanousStrings_AG].[notes_WL]
[sdNameString_AG].[fullName_AG]
[sdNanosecondPreciseDatetime_JG].[timeStamp_AN]
Production

Used By

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

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[Production].[Product]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	2:39:38 AM Thursday, November 17, 2022
Last Modified	2:39:40 AM Thursday, November 17, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity	Default
PK C	ProductId	[sdKeyIntegerNumber_-JG].[surrogateKeyIdentity_JG]	4	NOT NULL	1 - 1	
	ProductName	[sdNameString_AG].[fullName_-AG]	104	NULL allowed		
FK	SupplierId	[dbo].[surrogateKey_AN]	4	NULL allowed		
FK	CategoryId	[sdKeyIntegerNumber_-JG].[surrogateKeyIdentity_JG]	4	NULL allowed		
	UnitPrice	[sdMoneyNumber_JG].[unit-Price_WL]	4	NULL allowed		
	Discontinued	[sdFlagCharacter_JG].[flag_-WL]	1	NULL allowed		
FK	UserAuthorizationId	[dbo].[surrogateKey_AN]	4	NULL allowed		
	DateAdded	[sdNanosecondPrecise-Datetime_JG].[timeStamp_AN]	8	NULL allowed		(sysdatetime())
	DateOfLastUpdate	[sdNanosecondPrecise-Datetime_JG].[timeStamp_AN]	8	NULL allowed		(sysdatetime())

Indexes

Key	Name	Key Columns	Unique
PK C	PK_Products	ProductId	True

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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_IntegerIsGreaterThanZero_JG_1097616771	CategoryId	([CategoryId]>(0))
CHK_IntegerIsGreaterThanZero_JG_1383246262	ProductId	([ProductId]>(0))
CHK_IntegerIsGreaterThanZero_JG_1434506493	UserAuthorizationId	([UserAuthorizationId]>(0))
CHK_IntegerIsGreaterThanZero_JG_863848814	SupplierId	([SupplierId]>(0))

Foreign Keys

Name	Columns
FK_Product_Category	CategoryId->[Production].[Category].[CategoryId]
FK_Product_Supplier	SupplierId->[Production].[Supplier].[SupplierId]
FK_Product_UserAuthorization	UserAuthorizationId->[DbSecurity].[UserAuthorization].[UserAuthorizationId]

SQL Script

```
CREATE TABLE [Production].[Product]
(
[ProductId] [sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG] NOT NULL IDENTITY(1, 1),
[ProductName] [sdNameString_AG].[fullName_AG] NULL,
[SupplierId] [dbo].[surrogateKey_AN] NULL,
[CategoryId] [sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG] NULL,
[UnitPrice] [sdMoneyNumber_JG].[unitPrice_WL] NULL,
[Discontinued] [sdFlagCharacter_JG].[flag_WL] NULL,
[UserAuthorizationId] [dbo].[surrogateKey_AN] NULL,
[DateAdded] [sdNanosecondPreciseDatetime_JG].[timeStamp_AN] NULL CONSTRAINT [DFT_-
CurrentSysTime_1037918129] DEFAULT (sysdatetime()),
[DateOfLastUpdate] [sdNanosecondPreciseDatetime_JG].[timeStamp_AN] NULL CONSTRAINT
[DFT_CurrentSysTime_267475867] DEFAULT (sysdatetime())
) ON [PRIMARY]
GO




CREATE TRIGGER [Production].[tD_Product] ON [Production].[Product] FOR DELETE AS
/* erwin Builtin Trigger */
/* DELETE trigger on Product */
BEGIN
```

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```
  DECLARE  @errno   int,
           @severity int,
           @state    int,
           @errmsg  varchar(255)
    /* erwin Builtin Trigger */
    /* Production.Product has an Sales.OrderDetail on parent delete no action */
    /* ERWIN_RELATION:CHECKSUM="0005f120", PARENT_OWNER="Production", PARENT_-
TABLE="Product"
    CHILD_OWNER="Sales", CHILD_TABLE="OrderDetail"
    P2C_VERB_PHRASE="has an", C2P_VERB_PHRASE="belongs to a",
    FK_CONSTRAINT="FK_OrderDetail_Product", 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 */
    /* DbSecurity.UserAuthorization authorizes Production.Product on child delete no
action */
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_-
TABLE="UserAuthorization"
    CHILD_OWNER="Production", CHILD_TABLE="Product"
    P2C_VERB_PHRASE="authorizes", C2P_VERB_PHRASE="authorized by",
    FK_CONSTRAINT="FK_Product_UserAuthorization", FK_COLUMNS="UserAuthorizationId" */
    IF EXISTS (SELECT * FROM deleted,DbSecurity.UserAuthorization
      WHERE
        /* %JoinFKPK(deleted,DbSecurity.UserAuthorization," = "," AND") */
        deleted.UserAuthorizationId = DbSecurity.UserAuthorization.UserAuthorizationId
AND
        NOT EXISTS (
          SELECT * FROM Production.Product
          WHERE
            /* %JoinFKPK(Production.Product,DbSecurity.UserAuthorization," = "," AND")
*/
            Production.Product.UserAuthorizationId = DbSecurity.UserAuthorization.User-
AuthorizationId
        )
    )
    BEGIN
      SELECT @errno  = 30010,
             @errmsg = 'Cannot delete last Production.Product because DbSecurity.User-
Authorization exists.'
      GOTO error
    END

    /* erwin Builtin Trigger */
    /* Production.Supplier supplies a Production.Product on child delete no action */
```

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```
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="Production", PARENT_-
TABLE="Supplier"
    CHILD_OWNER="Production", CHILD_TABLE="Product"
    P2C_VERB_PHRASE="supplies a", C2P_VERB_PHRASE="is supplied by a",
    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 is of a 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="is of a", C2P_VERB_PHRASE="belongs to a",
    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).
```

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```
                @state) -- State (0~255).
    rollback transaction
END

GO



CREATE TRIGGER [Production].[TI_Production_Product_LastUpdated] ON
[Production].[Product]
    AFTER UPDATE

  AS

  UPDATE
      Production.[Product]
  SET
      DateOfLastUpdate = GETDATE()
  FROM
      Production.[Product] as c
  INNER JOIN
      Inserted i
  ON c.ProductId = i.ProductId



GO
ALTER TABLE [Production].[Product] ADD CONSTRAINT [CHK_IntegerIsGreaterThanZero_-
JG_1097616771] CHECK (([CategoryId]>(0)))
GO
ALTER TABLE [Production].[Product] ADD CONSTRAINT [CHK_IntegerIsGreaterThanZero_-
JG_1383246262] CHECK (([ProductId]>(0)))
GO
ALTER TABLE [Production].[Product] ADD CONSTRAINT [CHK_IntegerIsGreaterThanZero_-
JG_1434506493] CHECK (([UserAuthorizationId]>(0)))
GO
ALTER TABLE [Production].[Product] ADD CONSTRAINT [CHK_IntegerIsGreaterThanZero_-
JG_863848814] CHECK (([SupplierId]>(0)))
GO
ALTER TABLE [Production].[Product] ADD CONSTRAINT [PK_Products] PRIMARY KEY CLUSTERED
([ProductId]) ON [PRIMARY]
GO
ALTER TABLE [Production].[Product] ADD CONSTRAINT [FK_Product_Category] FOREIGN KEY
([CategoryId]) REFERENCES [Production].[Category] ([CategoryId])
GO
ALTER TABLE [Production].[Product] ADD CONSTRAINT [FK_Product_Supplier] FOREIGN KEY
([SupplierId]) REFERENCES [Production].[Supplier] ([SupplierId])
GO
ALTER TABLE [Production].[Product] ADD CONSTRAINT [FK_Product_UserAuthorization]
FOREIGN KEY ([UserAuthorizationId]) REFERENCES [DbSecurity].[UserAuthorization] ([User-
AuthorizationId])
GO
```

Uses

[DbSecurity].[UserAuthorization]

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[Production].[Category]
[Production].[Supplier]
[dbo].[surrogateKey_AN]
[sdFlagCharacter_JG].[flag_WL]
[sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG]
[sdMoneyNumber_JG].[unitPrice_WL]
[sdNameString_AG].[fullName_AG]
[sdNanosecondPreciseDatetime_JG].[timeStamp_AN]
Production

Used By

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

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[Production].[Supplier]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	2:39:38 AM Thursday, November 17, 2022
Last Modified	2:39:40 AM Thursday, November 17, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity	Default
PK C	SupplierId	[sdKeyIntegerNumber_-JG].[surrogateKeyIdentity_-JG]	4	NOT NULL	1 - 1	
	SupplierCompanyName	[sdNameString_-AG].[companyName_AG]	120	NULL allowed		
	SupplierContactName	[sdNameString_AG].[full-Name_AG]	104	NULL allowed		
	SupplierContactTitle	[sdTitleString_JG].[contact-Title_JG]	120	NULL allowed		
	SupplierAddress	[sdAddressString_-AN].[addressline_AN]	35	NULL allowed		
	SupplierCity	[sdAddressString_AN].[city_-WL]	40	NULL allowed		
	SupplierRegion	[sdAddressString_-AN].[region_AG]	80	NULL allowed		
	SupplierPostalCode	[sdAddressString_AN].[postal-Code_AN]	5	NULL allowed		
	SupplierCountry	[sdAddressString_-AN].[country_AG]	3	NULL allowed		('N/A')
	SupplierPhoneNumber	[sdContactNumber_-AG].[phoneNumber_AN]	14	NULL allowed		('(000)-000-0000')
	SupplierFaxNumber	[sdContactNumber_AG].[fax-Number_AG]	14	NULL allowed		('(000)-000-0000')
FK	UserAuthorizationId	[dbo].[surrogateKey_AN]	4	NULL allowed		
	DateAdded	[sdNanosecondPrecise-Datetime_JG].[timeStamp_-AN]	8	NULL allowed		(sysdatetime())
	DateOfLastUpdate	[sdNanosecondPrecise-Datetime_JG].[timeStamp_-	8	NULL allowed		(sysdatetime())

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		AN]				

Indexes

Key	Name	Key Columns	Unique
PK 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_CountryCodes_AG_519964550	SupplierCountry	([SupplierCountry] like '[A-Z][A-Z][A-Z]')
CHK_FullName_AG_616556138	SupplierContactName	([SupplierContactName] like '[A-Z]% [A-Z]%')
CHK_IntegerIsGreaterThanZero_JG_1434548708	UserAuthorizationId	([UserAuthorizationId]>(0))
CHK_IntegerIsGreaterThanZero_JG_444418579	SupplierId	([SupplierId]>(0))
CHK_PhoneNumber_AN_2090679882	SupplierPhoneNumber	([SupplierPhoneNumber] like '%[0-9\-]')
CHK_PostalCode_AN_855081738	SupplierPostalCode	([SupplierPostalCode] like '[0-9][0-9][0-9][0-9][0-9]')
CHK_StartwithCapitalLetter_AG_1236652122	SupplierCompanyName	([SupplierCompanyName] like '[A-Z]%')
CHK_StringIsNotEmpty_JG_290565327	SupplierContactTitle	([SupplierContactTitle]<>'')
CHK_TimeStamp_AN_2029929473	DateOfLastUpdate	([DateOfLastUpdate]>='1900-01-01' AND [DateOfLast-Update]<=sysdatetime())
CHK_TimeStamp_AN_3410218	DateAdded	([DateAdded]>='1900-01-01' AND [Date-Added]<=sysdatetime())
CHK_ValidString_AN_689823968	SupplierAddress	([SupplierAddress] like '%[A-Z0-9a-z\-]')

Foreign Keys

Name	Columns
FK_Supplier_UserAuthorization	UserAuthorizationId->[DbSecurity].[UserAuthorization].[UserAuthorizationId]

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SQL Script

```
CREATE TABLE [Production].[Supplier]
(
[SupplierId] [sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG] NOT NULL IDENTITY(1, 1),
[SupplierCompanyName] [sdNameString_AG].[companyName_AG] NULL,
[SupplierContactName] [sdNameString_AG].[fullName_AG] NULL,
[SupplierContactTitle] [sdTitleString_JG].[contactTitle_JG] NULL,
[SupplierAddress] [sdAddressString_AN].[addressline_AN] NULL,
[SupplierCity] [sdAddressString_AN].[city_WL] NULL,
[SupplierRegion] [sdAddressString_AN].[region_AG] NULL,
[SupplierPostalCode] [sdAddressString_AN].[postalCode_AN] NULL,
[SupplierCountry] [sdAddressString_AN].[country_AG] NULL CONSTRAINT [DFT_NotSlash-
Applicable_AG_2012428911] DEFAULT ('N/A'),
[SupplierPhoneNumber] [sdContactNumber_AG].[phoneNumber_AN] NULL CONSTRAINT [DFT_Mobile-
Number_AG_1284745589] DEFAULT ('(000)-000-0000'),
[SupplierFaxNumber] [sdContactNumber_AG].[faxNumber_AG] NULL CONSTRAINT [DFT_Mobile-
Number_AG_1582777643] DEFAULT ('(000)-000-0000'),
[UserAuthorizationId] [dbo].[surrogateKey_AN] NULL,
[DateAdded] [sdNanosecondPreciseDatetime_JG].[timeStamp_AN] NULL CONSTRAINT [DFT_-
CurrentSysTime_1027111089] DEFAULT (sysdatetime()),
[DateOfLastUpdate] [sdNanosecondPreciseDatetime_JG].[timeStamp_AN] NULL CONSTRAINT
[DFT_CurrentSysTime_267518082] DEFAULT (sysdatetime())
) 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 supplies a Production.Product on parent delete no action */
    /* ERWIN_RELATION:CHECKSUM="0002ff7d", PARENT_OWNER="Production", PARENT_-
TABLE="Supplier"
    CHILD_OWNER="Production", CHILD_TABLE="Product"
    P2C_VERB_PHRASE="supplies a", C2P_VERB_PHRASE="is supplied by a",
    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.'
```

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```
      GOTO error
    END

    /* erwin Builtin Trigger */
    /* DbSecurity.UserAuthorization authorizes Production.Supplier on child delete no
action */
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_-
TABLE="UserAuthorization"
    CHILD_OWNER="Production", CHILD_TABLE="Supplier"
    P2C_VERB_PHRASE="authorizes", C2P_VERB_PHRASE="authorized by",
    FK_CONSTRAINT="FK_Supplier_UserAuthorization", FK_COLUMNS="UserAuthorizationId" */
    IF EXISTS (SELECT * FROM deleted,DbSecurity.UserAuthorization
      WHERE
        /* %JoinFKPK(deleted,DbSecurity.UserAuthorization," = "," AND") */
        deleted.UserAuthorizationId = DbSecurity.UserAuthorization.UserAuthorizationId
AND
        NOT EXISTS (
          SELECT * FROM Production.Supplier
          WHERE
            /* %JoinFKPK(Production.Supplier,DbSecurity.UserAuthorization," = "," AND")
*/
            Production.Supplier.UserAuthorizationId = DbSecurity.UserAuthorization.User-
AuthorizationId
        )
    )
    BEGIN
      SELECT @errno  = 30010,
             @errmsg = 'Cannot delete last Production.Supplier because DbSecurity.User-
Authorization 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 [Production].[TI_Production_Supplier_LastUpdated] ON
[Production].[Supplier]
    AFTER UPDATE

  AS

  UPDATE
      Production.[Supplier]
  SET
      DateOfLastUpdate = GETDATE()
```

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```
  FROM
      Production.[Supplier] as c
  INNER JOIN
      Inserted i
  ON c.SupplierId = i.SupplierId



GO
ALTER TABLE [Production].[Supplier] ADD CONSTRAINT [CHK_CountryCodes_AG_519964550]
CHECK (([SupplierCountry] like '[A-Z][A-Z][A-Z]'))
GO
ALTER TABLE [Production].[Supplier] ADD CONSTRAINT [CHK_FullName_AG_616556138] CHECK
(([SupplierContactName] like '[A-Z]% [A-Z]%'))
GO
ALTER TABLE [Production].[Supplier] ADD CONSTRAINT [CHK_IntegerIsGreaterThanZero_-
JG_1434548708] CHECK (([UserAuthorizationId]>(0)))
GO
ALTER TABLE [Production].[Supplier] ADD CONSTRAINT [CHK_IntegerIsGreaterThanZero_-
JG_444418579] CHECK (([SupplierId]>(0)))
GO
ALTER TABLE [Production].[Supplier] ADD CONSTRAINT [CHK_PhoneNumber_AN_2090679882]
CHECK (([SupplierPhoneNumber] like '%[0-9\-]'))
GO
ALTER TABLE [Production].[Supplier] ADD CONSTRAINT [CHK_PostalCode_AN_855081738] CHECK
(([SupplierPostalCode] like '[0-9][0-9][0-9][0-9][0-9]'))
GO
ALTER TABLE [Production].[Supplier] ADD CONSTRAINT [CHK_StartwithCapitalLetter_-
AG_1236652122] CHECK (([SupplierCompanyName] like '[A-Z]%'))
GO
ALTER TABLE [Production].[Supplier] ADD CONSTRAINT [CHK_StringIsNotEmpty_JG_290565327]
CHECK (([SupplierContactTitle]<>''))
GO
ALTER TABLE [Production].[Supplier] ADD CONSTRAINT [CHK_TimeStamp_AN_2029929473] CHECK
(([DateOfLastUpdate]>='1900-01-01' AND [DateOfLastUpdate]<=sysdatetime()))
GO
ALTER TABLE [Production].[Supplier] ADD CONSTRAINT [CHK_TimeStamp_AN_3410218] CHECK
(([DateAdded]>='1900-01-01' AND [DateAdded]<=sysdatetime()))
GO
ALTER TABLE [Production].[Supplier] ADD CONSTRAINT [CHK_ValidString_AN_689823968] CHECK
(([SupplierAddress] like '%[A-Z0-9a-z\-]'))
GO
ALTER TABLE [Production].[Supplier] ADD CONSTRAINT [PK_Suppliers] PRIMARY KEY CLUSTERED
([SupplierId]) ON [PRIMARY]
GO
ALTER TABLE [Production].[Supplier] ADD CONSTRAINT [FK_Supplier_UserAuthorization]
FOREIGN KEY ([UserAuthorizationId]) REFERENCES [DbSecurity].[UserAuthorization] ([User-
AuthorizationId])
GO
```

Uses

[DbSecurity].[UserAuthorization]
[dbo].[surrogateKey_AN]
[sdAddressString_AN].[addressline_AN]
[sdAddressString_AN].[city_WL]

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[sdAddressString_AN].[country_AG]
[sdAddressString_AN].[postalCode_AN]
[sdAddressString_AN].[region_AG]
[sdContactNumber_AG].[faxNumber_AG]
[sdContactNumber_AG].[phoneNumber_AN]
[sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG]
[sdNameString_AG].[companyName_AG]
[sdNameString_AG].[fullName_AG]
[sdNanosecondPreciseDatetime_JG].[timeStamp_AN]
[sdTitleString_JG].[contactTitle_JG]
Production

Used By

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

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[Sales].[Customer]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	2:39:37 AM Thursday, November 17, 2022
Last Modified	2:39:40 AM Thursday, November 17, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity	Default
PK C	CustomerId	[sdKeyIntegerNumber_-JG].[surrogateKeyIdentity_-JG]	4	NOT NULL	1 - 1	
	CustomerCompanyName	[sdNameString_-AG].[companyName_AG]	120	NULL allowed		
	CustomerContactName	[sdNameString_AG].[full-Name_AG]	104	NULL allowed		
	CustomerContactTitle	[sdTitleString_JG].[contact-Title_JG]	120	NULL allowed		
	CustomerAddress	[sdAddressString_-AN].[addressline_AN]	35	NULL allowed		
	CustomerCity	[sdAddressString_AN].[city_-WL]	40	NULL allowed		
	CustomerRegion	[sdAddressString_-AN].[region_AG]	80	NULL allowed		
	CustomerPostalCode	[sdAddressString_-AN].[postalCode_AN]	5	NULL allowed		
	CustomerCountry	[sdAddressString_-AN].[country_AG]	3	NULL allowed		('N/A')
	CustomerPhoneNumber	[sdContactNumber_-AG].[phoneNumber_AN]	14	NULL allowed		('(000)-000-0000')
	CustomerFaxNumber	[sdContactNumber_AG].[fax-Number_AG]	14	NULL allowed		('(000)-000-0000')
FK	UserAuthorizationId	[dbo].[surrogateKey_AN]	4	NULL allowed		
	DateAdded	[sdNanosecondPrecise-Datetime_JG].[timeStamp_-AN]	8	NULL allowed		(sysdatetime())
	DateOfLastUpdate	[sdNanosecondPrecise-Datetime_JG].[timeStamp_-	8	NULL allowed		(sysdatetime())

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		AN]				

Indexes

Key	Name	Key Columns	Unique
	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

Check Constraints

Name	On Column	Constraint
CHK_CountryCodes_AG_621145486	CustomerCountry	([CustomerCountry] like '[A-Z][A-Z][A-Z]')
CHK_FullName_AG_717737074	CustomerContactName	([CustomerContactName] like '[A-Z]% [A-Z]%')
CHK_IntegerIsGreaterThanZero_JG_1383958240	UserAuthorizationId	([UserAuthorizationId]>(0))
CHK_IntegerIsGreaterThanZero_JG_309805613	CustomerId	([CustomerId]>(0))
CHK_PhoneNumber_AN_2069674448	CustomerPhoneNumber	([CustomerPhoneNumber] like '%[0-9\-]')
CHK_PostalCode_AN_987597584	CustomerPostalCode	([CustomerPostalCode] like '[0-9][0-9][0-9][0-9][0-9]')
CHK_StartwithCapitalLetter_AG_800970338	CustomerCompanyName	([CustomerCompanyName] like '[A-Z]%')
CHK_StringIsNotEmpty_JG_158049481	CustomerContactTitle	([CustomerContactTitle]<>'')
CHK_ValidString_AN_824436934	CustomerAddress	([CustomerAddress] like '%[A-Z0-9a-z\-]')

Foreign Keys

Name	Columns
FK_Customer_UserAuthorization	UserAuthorizationId->[DbSecurity].[UserAuthorization].[UserAuthorizationId]

SQL Script

```
CREATE TABLE [Sales].[Customer]
(
[CustomerId] [sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG] NOT NULL IDENTITY(1, 1),
[CustomerCompanyName] [sdNameString_AG].[companyName_AG] NULL,
[CustomerContactName] [sdNameString_AG].[fullName_AG] NULL,
```

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```
[CustomerContactTitle] [sdTitleString_JG].[contactTitle_JG] NULL,
[CustomerAddress] [sdAddressString_AN].[addressline_AN] NULL,
[CustomerCity] [sdAddressString_AN].[city_WL] NULL,
[CustomerRegion] [sdAddressString_AN].[region_AG] NULL,
[CustomerPostalCode] [sdAddressString_AN].[postalCode_AN] NULL,
[CustomerCountry] [sdAddressString_AN].[country_AG] NULL CONSTRAINT [DFT_NotSlash-
Applicable_AG_1846856601] DEFAULT ('N/A'),
[CustomerPhoneNumber] [sdContactNumber_AG].[phoneNumber_AN] NULL CONSTRAINT [DFT_Mobile-
Number_AG_1183564653] DEFAULT ('(000)-000-0000'),
[CustomerFaxNumber] [sdContactNumber_AG].[faxNumber_AG] NULL CONSTRAINT [DFT_Mobile-
Number_AG_1147095859] DEFAULT ('(000)-000-0000'),
[UserAuthorizationId] [dbo].[surrogateKey_AN] NULL,
[DateAdded] [sdNanosecondPreciseDatetime_JG].[timeStamp_AN] NULL CONSTRAINT [DFT_-
CurrentSysTime_1093369012] DEFAULT (sysdatetime()),
[DateOfLastUpdate] [sdNanosecondPreciseDatetime_JG].[timeStamp_AN] NULL CONSTRAINT
[DFT_CurrentSysTime_216927614] DEFAULT (sysdatetime())
) 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 makes an Sales.Orders on parent delete no action */
    /* ERWIN_RELATION:CHECKSUM="0002f2b1", PARENT_OWNER="Sales", PARENT_-
TABLE="Customer"
    CHILD_OWNER="Sales", CHILD_TABLE="Orders"
    P2C_VERB_PHRASE="makes an", C2P_VERB_PHRASE="is made by a",
    FK_CONSTRAINT="FK_Order_Customer", 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 */
    /* DbSecurity.UserAuthorization authorizes Sales.Customer on child delete no action
*/
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_-
TABLE="UserAuthorization"
    CHILD_OWNER="Sales", CHILD_TABLE="Customer"
```

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```
    P2C_VERB_PHRASE="authorizes", C2P_VERB_PHRASE="authorized by",
    FK_CONSTRAINT="FK_Customer_UserAuthorization", FK_COLUMNS="UserAuthorizationId" */
    IF EXISTS (SELECT * FROM deleted,DbSecurity.UserAuthorization
      WHERE
        /* %JoinFKPK(deleted,DbSecurity.UserAuthorization," = "," AND") */
        deleted.UserAuthorizationId = DbSecurity.UserAuthorization.UserAuthorizationId
AND
        NOT EXISTS (
          SELECT * FROM Sales.Customer
          WHERE
            /* %JoinFKPK(Sales.Customer,DbSecurity.UserAuthorization," = "," AND") */
            Sales.Customer.UserAuthorizationId = DbSecurity.UserAuthorization.User-
AuthorizationId
        )
    )
    BEGIN
      SELECT @errno  = 30010,
             @errmsg = 'Cannot delete last Sales.Customer because DbSecurity.User-
Authorization 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_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


GO
ALTER TABLE [Sales].[Customer] ADD CONSTRAINT [CHK_CountryCodes_AG_621145486] CHECK
(([CustomerCountry] like '[A-Z][A-Z][A-Z]'))
```

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```
GO
ALTER TABLE [Sales].[Customer] ADD CONSTRAINT [CHK_FullName_AG_717737074] CHECK
(([CustomerContactName] like '[A-Z]% [A-Z]%'))
GO
ALTER TABLE [Sales].[Customer] ADD CONSTRAINT [CHK_IntegerIsGreaterThanZero_-
JG_1383958240] CHECK (([UserAuthorizationId]>(0)))
GO
ALTER TABLE [Sales].[Customer] ADD CONSTRAINT [CHK_IntegerIsGreaterThanZero_-
JG_309805613] CHECK (([CustomerId]>(0)))
GO
ALTER TABLE [Sales].[Customer] ADD CONSTRAINT [CHK_PhoneNumber_AN_2069674448] CHECK
(([CustomerPhoneNumber] like '%[0-9\-]'))
GO
ALTER TABLE [Sales].[Customer] ADD CONSTRAINT [CHK_PostalCode_AN_987597584] CHECK
(([CustomerPostalCode] like '[0-9][0-9][0-9][0-9][0-9]'))
GO
ALTER TABLE [Sales].[Customer] ADD CONSTRAINT [CHK_StartwithCapitalLetter_AG_800970338]
CHECK (([CustomerCompanyName] like '[A-Z]%'))
GO
ALTER TABLE [Sales].[Customer] ADD CONSTRAINT [CHK_StringIsNotEmpty_JG_158049481] CHECK
(([CustomerContactTitle]<>''))
GO
ALTER TABLE [Sales].[Customer] ADD CONSTRAINT [CHK_ValidString_AN_824436934] CHECK
(([CustomerAddress] like '%[A-Z0-9a-z\-]'))
GO
ALTER TABLE [Sales].[Customer] ADD CONSTRAINT [PK_Customers] PRIMARY KEY CLUSTERED
([CustomerId]) ON [PRIMARY]
GO
ALTER TABLE [Sales].[Customer] ADD CONSTRAINT [FK_Customer_UserAuthorization] FOREIGN
KEY ([UserAuthorizationId]) REFERENCES [DbSecurity].[UserAuthorization] ([User-
AuthorizationId])
GO
```

Uses

[DbSecurity].[UserAuthorization]
[dbo].[surrogateKey_AN]
[sdAddressString_AN].[addressline_AN]
[sdAddressString_AN].[city_WL]
[sdAddressString_AN].[country_AG]
[sdAddressString_AN].[postalCode_AN]
[sdAddressString_AN].[region_AG]
[sdContactNumber_AG].[faxNumber_AG]
[sdContactNumber_AG].[phoneNumber_AN]
[sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG]
[sdNameString_AG].[companyName_AG]
[sdNameString_AG].[fullName_AG]
[sdNanosecondPreciseDatetime_JG].[timeStamp_AN]
[sdTitleString_JG].[contactTitle_JG]
Sales

Used By

[Sales].[Orders]

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[JsonOutput].[uvw_SalesCustomer]
[JsonOutput].[MongoOrder]

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[Sales].[OrderDetail]

Properties

Property	Value
Row Count (~)	0
Created	2:39:37 AM Thursday, November 17, 2022
Last Modified	2:39:40 AM Thursday, November 17, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Default
	UnitPrice	[sdMoneyNumber_JG].[unitPrice_WL]	4	NULL allowed	
	Quantity	[sdPositiveIntegerNumber_-JG].[quantity_WL]	4	NULL allowed	
	DiscountPercentage	[dbo].[percentage]	5	NULL allowed	
FK	UserAuthorizationId	[dbo].[surrogateKey_AN]	4	NULL allowed	
	DateAdded	[sdNanosecondPreciseDatetime_-JG].[timeStamp_AN]	8	NULL allowed	(sysdatetime())
	DateOfLastUpdate	[sdNanosecondPreciseDatetime_-JG].[timeStamp_AN]	8	NULL allowed	(sysdatetime())
PK FK C	OrderId	[dbo].[surrogateKey_AN]	4	NOT NULL	((0.000))
PK FK C	ProductId	[dbo].[surrogateKey_AN]	4	NOT NULL	

Indexes

Key	Name	Key Columns	Unique
PK C	PK_OrderDetails	OrderId, ProductId	True

Triggers

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

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Check Constraints

Name	On Column	Constraint
CHK_DecimalIsGreaterThanZero_JG_46183865	DiscountPercentage	([DiscountPercentage]>(0.000))
CHK_IntegerIsGreaterThanZero_JG_1401779197	OrderId	([OrderId]>(0))
CHK_IntegerIsGreaterThanZero_JG_187588512	UserAuthorizationId	([UserAuthorizationId]>(0))
CHK_IntegerIsGreaterThanZero_JG_942672888	ProductId	([ProductId]>(0))
CHK_TimeStamp_AN_1149131844	DateAdded	([DateAdded]>='1900-01-01' AND [DateAdded]<=sysdatetime())
CHK_TimeStamp_AN_1589246382	DateOfLastUpdate	([DateOfLastUpdate]>='1900-01-01' AND [DateOfLast-Update]<=sysdatetime())

Foreign Keys

Name	Columns
FK_OrderDetail_Order	OrderId->[Sales].[Orders].[OrderId]
FK_OrderDetail_Product	ProductId->[Production].[Product].[ProductId]
FK_OrderDetail_UserAuthorization	UserAuthorizationId->[DbSecurity].[UserAuthorization].[UserAuthorizationId]

SQL Script

```
CREATE TABLE [Sales].[OrderDetail]
(
[UnitPrice] [sdMoneyNumber_JG].[unitPrice_WL] NULL,
[Quantity] [sdPositiveIntegerNumber_JG].[quantity_WL] NULL,
[DiscountPercentage] [dbo].[percentage] NULL,
[UserAuthorizationId] [dbo].[surrogateKey_AN] NULL,
[DateAdded] [sdNanosecondPreciseDatetime_JG].[timeStamp_AN] NULL CONSTRAINT [DFT_-
CurrentSysTime_1873625861] DEFAULT (sysdatetime()),
[DateOfLastUpdate] [sdNanosecondPreciseDatetime_JG].[timeStamp_AN] NULL CONSTRAINT
[DFT_CurrentSysTime_979442115] DEFAULT (sysdatetime()),
[OrderId] [dbo].[surrogateKey_AN] NOT NULL CONSTRAINT [DFT_DecimalZero_JG_1919631714]
DEFAULT ((0.000)),
[ProductId] [dbo].[surrogateKey_AN] NOT NULL
) ON [PRIMARY]
GO




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)
```

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```
    /* erwin Builtin Trigger */
    /* DbSecurity.UserAuthorization authorizes Sales.OrderDetail on child delete no
action */
    /* ERWIN_RELATION:CHECKSUM="0004a9fe", PARENT_OWNER="DbSecurity", PARENT_-
TABLE="UserAuthorization"
    CHILD_OWNER="Sales", CHILD_TABLE="OrderDetail"
    P2C_VERB_PHRASE="authorizes", C2P_VERB_PHRASE="authorized by",
    FK_CONSTRAINT="FK_OrderDetail_UserAuthorization", FK_COLUMNS="UserAuthorizationId"
*/
    IF EXISTS (SELECT * FROM deleted,DbSecurity.UserAuthorization
      WHERE
        /* %JoinFKPK(deleted,DbSecurity.UserAuthorization," = "," AND") */
        deleted.UserAuthorizationId = DbSecurity.UserAuthorization.UserAuthorizationId
AND
        NOT EXISTS (
          SELECT * FROM Sales.OrderDetail
          WHERE
            /* %JoinFKPK(Sales.OrderDetail,DbSecurity.UserAuthorization," = "," AND")
*/
            Sales.OrderDetail.UserAuthorizationId = DbSecurity.UserAuthorization.User-
AuthorizationId
        )
    )
    BEGIN
      SELECT @errno  = 30010,
             @errmsg = 'Cannot delete last Sales.OrderDetail because DbSecurity.User-
Authorization exists.'
      GOTO error
    END

    /* erwin Builtin Trigger */
    /* Production.Product has an Sales.OrderDetail on child delete no action */
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="Production", PARENT_-
TABLE="Product"
    CHILD_OWNER="Sales", CHILD_TABLE="OrderDetail"
    P2C_VERB_PHRASE="has an", C2P_VERB_PHRASE="belongs to a",
    FK_CONSTRAINT="FK_OrderDetail_Product", 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
```

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```
    /* erwin Builtin Trigger */
    /* Sales.Orders has an 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="has an", C2P_VERB_PHRASE="belongs to an",
    FK_CONSTRAINT="FK_OrderDetail_Order", 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
          WHERE
            /* %JoinFKPK(Sales.OrderDetail,Sales.Orders," = "," AND") */
            Sales.OrderDetail.OrderId = Sales.Orders.OrderId
        )
    )
    BEGIN
      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

GO


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
```

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```
GO
ALTER TABLE [Sales].[OrderDetail] ADD CONSTRAINT [CHK_DecimalIsGreaterThanZero_-
JG_46183865] CHECK (([DiscountPercentage]>(0.000)))
GO
ALTER TABLE [Sales].[OrderDetail] ADD CONSTRAINT [CHK_IntegerIsGreaterThanZero_-
JG_1401779197] CHECK (([OrderId]>(0)))
GO
ALTER TABLE [Sales].[OrderDetail] ADD CONSTRAINT [CHK_IntegerIsGreaterThanZero_-
JG_187588512] CHECK (([UserAuthorizationId]>(0)))
GO
ALTER TABLE [Sales].[OrderDetail] ADD CONSTRAINT [CHK_IntegerIsGreaterThanZero_-
JG_942672888] CHECK (([ProductId]>(0)))
GO
ALTER TABLE [Sales].[OrderDetail] ADD CONSTRAINT [CHK_TimeStamp_AN_1149131844] CHECK
(([DateAdded]>='1900-01-01' AND [DateAdded]<=sysdatetime()))
GO
ALTER TABLE [Sales].[OrderDetail] ADD CONSTRAINT [CHK_TimeStamp_AN_1589246382] CHECK
(([DateOfLastUpdate]>='1900-01-01' AND [DateOfLastUpdate]<=sysdatetime()))
GO
ALTER TABLE [Sales].[OrderDetail] ADD CONSTRAINT [PK_OrderDetails] PRIMARY KEY
CLUSTERED  ([OrderId], [ProductId]) ON [PRIMARY]
GO
ALTER TABLE [Sales].[OrderDetail] ADD CONSTRAINT [FK_OrderDetail_Order] FOREIGN KEY
([OrderId]) REFERENCES [Sales].[Orders] ([OrderId])
GO
ALTER TABLE [Sales].[OrderDetail] ADD CONSTRAINT [FK_OrderDetail_Product] FOREIGN KEY
([ProductId]) REFERENCES [Production].[Product] ([ProductId])
GO
ALTER TABLE [Sales].[OrderDetail] ADD CONSTRAINT [FK_OrderDetail_UserAuthorization]
FOREIGN KEY ([UserAuthorizationId]) REFERENCES [DbSecurity].[UserAuthorization] ([User-
AuthorizationId])
GO
```

Uses

[DbSecurity].[UserAuthorization]
[Production].[Product]
[Sales].[Orders]
[dbo].[percentage]
[dbo].[surrogateKey_AN]
[sdMoneyNumber_JG].[unitPrice_WL]
[sdNanosecondPreciseDatetime_JG].[timeStamp_AN]
[sdPositiveIntegerNumber_JG].[quantity_WL]
Sales

Used By

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

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[Sales].[Orders]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	2:39:38 AM Thursday, November 17, 2022
Last Modified	2:39:40 AM Thursday, November 17, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity	Default
PK C	OrderId	[sdKeyIntegerNumber_-JG].[surrogateKeyIdentity_JG]	4	NOT NULL	1 - 1	
FK	CustomerId	[dbo].[surrogateKey_AN]	4	NULL allowed		
FK	EmployeeId	[dbo].[surrogateKey_AN]	4	NULL allowed		
FK	ShipperId	[dbo].[surrogateKey_AN]	4	NULL allowed		
	OrderDate	[sdNanosecondPrecise-Datetime_JG].[timeStamp_AN]	8	NULL allowed		(sysdatetime())
	RequiredDate	[sdNanosecondPrecise-Datetime_JG].[timeStamp_AN]	8	NULL allowed		(sysdatetime())
	ShipToDate	[sdNanosecondPrecise-Datetime_JG].[timeStamp_AN]	8	NULL allowed		(sysdatetime())
	Freight	[dbo].[freight]	4	NULL allowed		((0))
	ShipToName	[sdNameString_AG].[fullName_-AG]	104	NULL allowed		
	ShipToAddress	[sdAddressString_-AN].[addressline_AN]	35	NULL allowed		
	ShipToCity	[sdAddressString_AN].[city_-WL]	40	NULL allowed		
	ShipToRegion	[sdAddressString_AN].[region_-AG]	80	NULL allowed		
	ShipToPostalCode	[sdAddressString_AN].[postal-Code_AN]	5	NULL allowed		
	ShipToCountry	[sdAddressString_-AN].[country_AG]	3	NULL allowed		('N/A')
FK	UserAuthorizationId	[dbo].[surrogateKey_AN]	4	NULL		

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				allowed		
	DateAdded	[sdNanosecondPrecise-Datetime_JG].[timeStamp_AN]	8	NULL allowed		(sysdateti me())
	DateOfLastUpdate	[sdNanosecondPrecise-Datetime_JG].[timeStamp_AN]	8	NULL allowed		(sysdateti me())

Indexes

Key	Name	Key Columns	Unique
PK C	PK_Orders	OrderId	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_CountryCodes_AG_2138419998	ShipToCountry	([ShipToCountry] like '[A-Z][A-Z][A-Z]')
CHK_FullName_AG_743368731	ShipToName	([ShipToName] like '[A-Z]% [A-Z]%')
CHK_IntegerIsGreaterThanZero_JG_1310856774	OrderId	([OrderId]>(0))
CHK_IntegerIsGreaterThanZero_JG_1342868932	ShipperId	([ShipperId]>(0))
CHK_IntegerIsGreaterThanZero_JG_1596326501	Freight	([Freight]>(0))
CHK_IntegerIsGreaterThanZero_JG_1769919837	UserAuthorizationId	([UserAuthorizationId]>(0))
CHK_IntegerIsGreaterThanZero_JG_1886502021	CustomerId	([CustomerId]>(0))
CHK_IntegerIsGreaterThanZero_JG_1953408903	EmployeeId	([EmployeeId]>(0))
CHK_PostalCode_AN_1432151190	ShipToPostalCode	([ShipToPostalCode] like '[0-9][0-9][0-9][0-9][0-9]')
CHK_TimeStamp_AN_2027942962	DateAdded	([DateAdded]>='1900-01-01' AND [DateAdded]<=sysdatetime())
CHK_TimeStamp_AN_730376194	DateOfLastUpdate	([DateOfLastUpdate]>='1900-01-01' AND [DateOfLast-Update]<=sysdatetime())
CHK_ValidString_AN_1048684405	ShipToAddress	([ShipToAddress] like '%[A-Z0-9a-z\-]')

Foreign Keys

Name	Columns
FK_Order_Customer	CustomerId->[Sales].[Customer].[CustomerId]

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FK_Order_Employee	EmployeeId->[HumanResources].[Employee].[EmployeeId]
FK_Order_Shipper	ShipperId->[Sales].[Shipper].[ShipperId]
FK_Order_UserAuthorization	UserAuthorizationId->[DbSecurity].[UserAuthorization].[UserAuthorizationId]

SQL Script

```
CREATE TABLE [Sales].[Orders]
(
[OrderId] [sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG] NOT NULL IDENTITY(1, 1),
[CustomerId] [dbo].[surrogateKey_AN] NULL,
[EmployeeId] [dbo].[surrogateKey_AN] NULL,
[ShipperId] [dbo].[surrogateKey_AN] NULL,
[OrderDate] [sdNanosecondPreciseDatetime_JG].[timeStamp_AN] NULL CONSTRAINT [DFT_-
CurrentSysTime_1327100042] DEFAULT (sysdatetime()),
[RequiredDate] [sdNanosecondPreciseDatetime_JG].[timeStamp_AN] NULL CONSTRAINT [DFT_-
CurrentSysTime_1665976159] DEFAULT (sysdatetime()),
[ShipToDate] [sdNanosecondPreciseDatetime_JG].[timeStamp_AN] NULL CONSTRAINT [DFT_-
CurrentSysTime_271664058] DEFAULT (sysdatetime()),
[Freight] [dbo].[freight] NULL CONSTRAINT [DFT_IntegerZero_JG_350620699] DEFAULT ((0)),
[ShipToName] [sdNameString_AG].[fullName_AG] NULL,
[ShipToAddress] [sdAddressString_AN].[addressline_AN] NULL,
[ShipToCity] [sdAddressString_AN].[city_WL] NULL,
[ShipToRegion] [sdAddressString_AN].[region_AG] NULL,
[ShipToPostalCode] [sdAddressString_AN].[postalCode_AN] NULL,
[ShipToCountry] [sdAddressString_AN].[country_AG] NULL CONSTRAINT [DFT_NotSlash-
Applicable_AG_866461193] DEFAULT ('N/A'),
[UserAuthorizationId] [dbo].[surrogateKey_AN] NULL,
[DateAdded] [sdNanosecondPreciseDatetime_JG].[timeStamp_AN] NULL CONSTRAINT [DFT_-
CurrentSysTime_1071447965] DEFAULT (sysdatetime()),
[DateOfLastUpdate] [sdNanosecondPreciseDatetime_JG].[timeStamp_AN] NULL CONSTRAINT
[DFT_CurrentSysTime_602889211] DEFAULT (sysdatetime())
) ON [PRIMARY]
GO




CREATE TRIGGER [Sales].[tD_Orders] ON [Sales].[Orders] FOR DELETE AS
/* erwin Builtin Trigger */
/* DELETE trigger on Orders */
BEGIN
  DECLARE  @errno   int,
           @severity int,
           @state    int,
           @errmsg  varchar(255)
    /* erwin Builtin Trigger */
    /* Sales.Orders has an Sales.OrderDetail on parent delete no action */
    /* ERWIN_RELATION:CHECKSUM="00072337", PARENT_OWNER="Sales", PARENT_TABLE="Orders"
    CHILD_OWNER="Sales", CHILD_TABLE="OrderDetail"
    P2C_VERB_PHRASE="has an", C2P_VERB_PHRASE="belongs to an",
    FK_CONSTRAINT="FK_OrderDetail_Order", FK_COLUMNS="OrderId" */
    IF EXISTS (
```

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```
      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 */
    /* DbSecurity.UserAuthorization authorizes Sales.Orders on child delete no action
*/
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_-
TABLE="UserAuthorization"
    CHILD_OWNER="Sales", CHILD_TABLE="Orders"
    P2C_VERB_PHRASE="authorizes", C2P_VERB_PHRASE="authorized by",
    FK_CONSTRAINT="FK_Order_UserAuthorization", FK_COLUMNS="UserAuthorizationId" */
    IF EXISTS (SELECT * FROM deleted,DbSecurity.UserAuthorization
      WHERE
        /* %JoinFKPK(deleted,DbSecurity.UserAuthorization," = "," AND") */
        deleted.UserAuthorizationId = DbSecurity.UserAuthorization.UserAuthorizationId
AND
        NOT EXISTS (
          SELECT * FROM Sales.Orders
          WHERE
            /* %JoinFKPK(Sales.Orders,DbSecurity.UserAuthorization," = "," AND") */
            Sales.Orders.UserAuthorizationId = DbSecurity.UserAuthorization.User-
AuthorizationId
        )
    )
    BEGIN
      SELECT @errno  = 30010,
             @errmsg = 'Cannot delete last Sales.Orders because DbSecurity.User-
Authorization exists.'
      GOTO error
    END

    /* erwin Builtin Trigger */
    /* Sales.Shipper ships an 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="ships an", C2P_VERB_PHRASE="is shipped by a",
    FK_CONSTRAINT="FK_Order_Shipper", FK_COLUMNS="ShipperId" */
    IF EXISTS (SELECT * FROM deleted,Sales.Shipper
      WHERE
        /* %JoinFKPK(deleted,Sales.Shipper," = "," AND") */
        deleted.ShipperId = Sales.Shipper.ShipperId AND
        NOT EXISTS (
          SELECT * FROM Sales.Orders
          WHERE
            /* %JoinFKPK(Sales.Orders,Sales.Shipper," = "," AND") */
            Sales.Orders.ShipperId = Sales.Shipper.ShipperId
```

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```
        )
    )
    BEGIN
      SELECT @errno  = 30010,
             @errmsg = 'Cannot delete last Sales.Orders because Sales.Shipper exists.'
      GOTO error
    END

    /* erwin Builtin Trigger */
    /* HumanResources.Employee processes an 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="processes an", C2P_VERB_PHRASE="is processed by an",
    FK_CONSTRAINT="FK_Order_Employee", FK_COLUMNS="EmployeeId" */
    IF EXISTS (SELECT * FROM deleted,HumanResources.Employee
      WHERE
        /* %JoinFKPK(deleted,HumanResources.Employee," = "," AND") */
        deleted.EmployeeId = HumanResources.Employee.EmployeeId AND
        NOT EXISTS (
          SELECT * FROM Sales.Orders
          WHERE
            /* %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 makes an 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="makes an", C2P_VERB_PHRASE="is made by a",
    FK_CONSTRAINT="FK_Order_Customer", FK_COLUMNS="CustomerId" */
    IF EXISTS (SELECT * FROM deleted,Sales.Customer
      WHERE
        /* %JoinFKPK(deleted,Sales.Customer," = "," AND") */
        deleted.CustomerId = Sales.Customer.CustomerId AND
        NOT EXISTS (
          SELECT * FROM Sales.Orders
          WHERE
            /* %JoinFKPK(Sales.Orders,Sales.Customer," = "," AND") */
            Sales.Orders.CustomerId = Sales.Customer.CustomerId
        )
    )
    BEGIN
      SELECT @errno  = 30010,
             @errmsg = 'Cannot delete last Sales.Orders because Sales.Customer exists.'
```

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```
      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_Orders_LastUpdated] ON [Sales].[Orders]
    AFTER UPDATE

  AS

  UPDATE
      Sales.[Orders]
  SET
      DateOfLastUpdate = GETDATE()
  FROM
      Sales.[Orders] as c
  INNER JOIN
      Inserted i
  ON c.OrderId = i.OrderId


GO
ALTER TABLE [Sales].[Orders] ADD CONSTRAINT [CHK_CountryCodes_AG_2138419998] CHECK
(([ShipToCountry] like '[A-Z][A-Z][A-Z]'))
GO
ALTER TABLE [Sales].[Orders] ADD CONSTRAINT [CHK_FullName_AG_743368731] CHECK (([ShipTo-
Name] like '[A-Z]% [A-Z]%'))
GO
ALTER TABLE [Sales].[Orders] ADD CONSTRAINT [CHK_IntegerIsGreaterThanZero_-
JG_1310856774] CHECK (([OrderId]>(0)))
GO
ALTER TABLE [Sales].[Orders] ADD CONSTRAINT [CHK_IntegerIsGreaterThanZero_-
JG_1342868932] CHECK (([ShipperId]>(0)))
GO
ALTER TABLE [Sales].[Orders] ADD CONSTRAINT [CHK_IntegerIsGreaterThanZero_-
JG_1596326501] CHECK (([Freight]>(0)))
GO
ALTER TABLE [Sales].[Orders] ADD CONSTRAINT [CHK_IntegerIsGreaterThanZero_-
JG_1769919837] CHECK (([UserAuthorizationId]>(0)))
GO
ALTER TABLE [Sales].[Orders] ADD CONSTRAINT [CHK_IntegerIsGreaterThanZero_-
JG_1886502021] CHECK (([CustomerId]>(0)))
GO
ALTER TABLE [Sales].[Orders] ADD CONSTRAINT [CHK_IntegerIsGreaterThanZero_-
```

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```
JG_1953408903] CHECK (([EmployeeId]>(0)))
GO
ALTER TABLE [Sales].[Orders] ADD CONSTRAINT [CHK_PostalCode_AN_1432151190] CHECK
(([ShipToPostalCode] like '[0-9][0-9][0-9][0-9][0-9]'))
GO
ALTER TABLE [Sales].[Orders] ADD CONSTRAINT [CHK_TimeStamp_AN_2027942962] CHECK (([Date-
Added]>='1900-01-01' AND [DateAdded]<=sysdatetime()))
GO
ALTER TABLE [Sales].[Orders] ADD CONSTRAINT [CHK_TimeStamp_AN_730376194] CHECK (([Date-
OfLastUpdate]>='1900-01-01' AND [DateOfLastUpdate]<=sysdatetime()))
GO
ALTER TABLE [Sales].[Orders] ADD CONSTRAINT [CHK_ValidString_AN_1048684405] CHECK
(([ShipToAddress] like '%[A-Z0-9a-z\-]'))
GO
ALTER TABLE [Sales].[Orders] ADD CONSTRAINT [PK_Orders] PRIMARY KEY CLUSTERED  ([Order-
Id]) ON [PRIMARY]
GO
ALTER TABLE [Sales].[Orders] ADD CONSTRAINT [FK_Order_Customer] FOREIGN KEY ([Customer-
Id]) REFERENCES [Sales].[Customer] ([CustomerId])
GO
ALTER TABLE [Sales].[Orders] ADD CONSTRAINT [FK_Order_Employee] FOREIGN KEY ([Employee-
Id]) REFERENCES [HumanResources].[Employee] ([EmployeeId])
GO
ALTER TABLE [Sales].[Orders] ADD CONSTRAINT [FK_Order_Shipper] FOREIGN KEY ([Shipper-
Id]) REFERENCES [Sales].[Shipper] ([ShipperId])
GO
ALTER TABLE [Sales].[Orders] ADD CONSTRAINT [FK_Order_UserAuthorization] FOREIGN KEY
([UserAuthorizationId]) REFERENCES [DbSecurity].[UserAuthorization] ([UserAuthorization-
Id])
GO
```

Uses

[DbSecurity].[UserAuthorization]
[HumanResources].[Employee]
[Sales].[Customer]
[Sales].[Shipper]
[dbo].[freight]
[dbo].[surrogateKey_AN]
[sdAddressString_AN].[addressline_AN]
[sdAddressString_AN].[city_WL]
[sdAddressString_AN].[country_AG]
[sdAddressString_AN].[postalCode_AN]
[sdAddressString_AN].[region_AG]
[sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG]
[sdNameString_AG].[fullName_AG]
[sdNanosecondPreciseDatetime_JG].[timeStamp_AN]
Sales

Used By

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

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[Sales].[utvf_FindAllCustomerOrder]

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[Sales].[Shipper]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	2:39:38 AM Thursday, November 17, 2022
Last Modified	2:39:40 AM Thursday, November 17, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity	Default
PK C	ShipperId	[sdKeyIntegerNumber_-JG].[surrogateKeyIdentity_-JG]	4	NOT NULL	1 - 1	
	ShipperCompanyName	[sdNameString_-AG].[companyName_AG]	120	NULL allowed		
	PhoneNumber	[sdContactNumber_-AG].[phoneNumber_AN]	14	NULL allowed		('(000)-000-0000')
FK	UserAuthorizationId	[dbo].[surrogateKey_AN]	4	NULL allowed		
	DateAdded	[sdNanosecondPrecise-Datetime_JG].[timeStamp_-AN]	8	NULL allowed		(sysdatetime())
	DateOfLastUpdate	[sdNanosecondPrecise-Datetime_JG].[timeStamp_-AN]	8	NULL allowed		(sysdatetime())

Indexes

Key	Name	Key Columns	Unique
PK 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

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Check Constraints

Name	On Column	Constraint
CHK_IntegerIsGreaterThanZero_JG_1550358970	ShipperId	([ShipperId]>(0))
CHK_IntegerIsGreaterThanZero_JG_1569245439	UserAuthorizationId	([UserAuthorizationId]>(0))
CHK_PhoneNumber_AN_2101390277	PhoneNumber	([PhoneNumber] like '%[0-9\-]')
CHK_StartwithCapitalLetter_AG_372028990	ShipperCompanyName	([ShipperCompanyName] like '[A-Z]%')
CHK_TimeStamp_AN_450100774	DateAdded	([DateAdded]>='1900-01-01' AND [DateAdded]<=sysdatetime())
CHK_TimeStamp_AN_937866232	DateOfLastUpdate	([DateOfLastUpdate]>='1900-01-01' AND [DateOfLastUpdate]<=sysdatetime())

Foreign Keys

Name	Columns
FK_Shipper_UserAuthorization	UserAuthorizationId->[DbSecurity].[UserAuthorization].[UserAuthorizationId]

SQL Script

```
CREATE TABLE [Sales].[Shipper]
(
[ShipperId] [sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG] NOT NULL IDENTITY(1, 1),
[ShipperCompanyName] [sdNameString_AG].[companyName_AG] NULL,
[PhoneNumber] [sdContactNumber_AG].[phoneNumber_AN] NULL CONSTRAINT [DFT_MobileNumber_-
AG_712882287] DEFAULT ('(000)-000-0000'),
[UserAuthorizationId] [dbo].[surrogateKey_AN] NULL,
[DateAdded] [sdNanosecondPreciseDatetime_JG].[timeStamp_AN] NULL CONSTRAINT [DFT_-
CurrentSysTime_904486313] DEFAULT (sysdatetime()),
[DateOfLastUpdate] [sdNanosecondPreciseDatetime_JG].[timeStamp_AN] NULL CONSTRAINT
[DFT_CurrentSysTime_402214813] DEFAULT (sysdatetime())
) ON [PRIMARY]
GO




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,
           @errmsg  varchar(255)
```

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```
    /* erwin Builtin Trigger */
    /* Sales.Shipper ships an Sales.Orders on parent delete no action */
    /* ERWIN_RELATION:CHECKSUM="0002c764", PARENT_OWNER="Sales", PARENT_TABLE="Shipper"
    CHILD_OWNER="Sales", CHILD_TABLE="Orders"
    P2C_VERB_PHRASE="ships an", C2P_VERB_PHRASE="is shipped by a",
    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
    )
    BEGIN
      SELECT @errno  = 30001,
             @errmsg = 'Cannot delete Sales.Shipper because Sales.Orders exists.'
      GOTO error
    END

    /* erwin Builtin Trigger */
    /* DbSecurity.UserAuthorization authorizes Sales.Shipper on child delete no action
*/
    /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_-
TABLE="UserAuthorization"
    CHILD_OWNER="Sales", CHILD_TABLE="Shipper"
    P2C_VERB_PHRASE="authorizes", C2P_VERB_PHRASE="authorized by",
    FK_CONSTRAINT="FK_Shipper_UserAuthorization", FK_COLUMNS="UserAuthorizationId" */
    IF EXISTS (SELECT * FROM deleted,DbSecurity.UserAuthorization
      WHERE
        /* %JoinFKPK(deleted,DbSecurity.UserAuthorization," = "," AND") */
        deleted.UserAuthorizationId = DbSecurity.UserAuthorization.UserAuthorizationId
AND
        NOT EXISTS (
          SELECT * FROM Sales.Shipper
          WHERE
            /* %JoinFKPK(Sales.Shipper,DbSecurity.UserAuthorization," = "," AND") */
            Sales.Shipper.UserAuthorizationId = DbSecurity.UserAuthorization.User-
AuthorizationId
        )
    )
    BEGIN
      SELECT @errno  = 30010,
             @errmsg = 'Cannot delete last Sales.Shipper because DbSecurity.User-
Authorization exists.'
      GOTO error
    END


    /* erwin Builtin Trigger */
    RETURN
error:
   RAISERROR (@errmsg, -- Message text.
              @severity, -- Severity (0~25).
              @state) -- State (0~255).
    rollback transaction
```

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```
END

GO


CREATE TRIGGER [Sales].[TI_Sales_Shipper_LastUpdated] ON [Sales].[Shipper]
    AFTER INSERT,UPDATE

  AS

  UPDATE
      Sales.[Shipper]
  SET
      DateOfLastUpdate = GETDATE()

  FROM
      Sales.[Shipper] as c
  INNER JOIN
      Inserted i
  ON c.ShipperId = i.ShipperId


GO


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 sdKeyIntegerNumber_JG.surrogateKeyIdentity_JG,
           @errno   int,
           @severity int,
           @state    int,
           @errmsg  varchar(255)

  SELECT @numrows = @@rowcount
  /* erwin Builtin Trigger */
  /* Sales.Shipper ships an Sales.Orders on parent update no action */
  /* ERWIN_RELATION:CHECKSUM="000323d4", PARENT_OWNER="Sales", PARENT_TABLE="Shipper"
    CHILD_OWNER="Sales", CHILD_TABLE="Orders"
    P2C_VERB_PHRASE="ships an", C2P_VERB_PHRASE="is shipped by a",
    FK_CONSTRAINT="FK_Order_Shipper", FK_COLUMNS="ShipperId" */
  IF
    /* %ParentPK(" OR",UPDATE) */
    UPDATE(ShipperId)
  BEGIN
    IF EXISTS (
      SELECT * FROM deleted,Sales.Orders
      WHERE
        /*  %JoinFKPK(Sales.Orders,deleted," = "," AND") */
```

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```
        Sales.Orders.ShipperId = deleted.ShipperId
    )
    BEGIN
      SELECT @errno  = 30005,
             @errmsg = 'Cannot update Sales.Shipper because Sales.Orders exists.'
      GOTO error
    END
  END

  /* erwin Builtin Trigger */
  /* DbSecurity.UserAuthorization authorizes Sales.Shipper on child update no action */
  /* ERWIN_RELATION:CHECKSUM="00000000", PARENT_OWNER="DbSecurity", PARENT_TABLE="User-
Authorization"
    CHILD_OWNER="Sales", CHILD_TABLE="Shipper"
    P2C_VERB_PHRASE="authorizes", C2P_VERB_PHRASE="authorized by",
    FK_CONSTRAINT="FK_Shipper_UserAuthorization", FK_COLUMNS="UserAuthorizationId" */
  IF
    /* %ChildFK(" OR",UPDATE) */
    UPDATE(UserAuthorizationId)
  BEGIN
    SELECT @nullcnt = 0
    SELECT @validcnt = count(*)
      FROM inserted,DbSecurity.UserAuthorization
        WHERE
          /* %JoinFKPK(inserted,DbSecurity.UserAuthorization) */
          inserted.UserAuthorizationId = DbSecurity.UserAuthorization.UserAuthorization-
Id
    /* %NotnullFK(inserted," IS NULL","select @nullcnt = count(*) from inserted
where"," AND") */
    select @nullcnt = count(*) from inserted where
      inserted.UserAuthorizationId IS NULL
    IF @validcnt + @nullcnt != @numrows
    BEGIN
      SELECT @errno  = 30007,
             @errmsg = 'Cannot update Sales.Shipper because DbSecurity.User-
Authorization does not exist.'
      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 [CHK_IntegerIsGreaterThanZero_-
JG_1550358970] CHECK (([ShipperId]>(0)))
GO
```

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```
ALTER TABLE [Sales].[Shipper] ADD CONSTRAINT [CHK_IntegerIsGreaterThanZero_-
JG_1569245439] CHECK (([UserAuthorizationId]>(0)))
GO
ALTER TABLE [Sales].[Shipper] ADD CONSTRAINT [CHK_PhoneNumber_AN_2101390277] CHECK
(([PhoneNumber] like '%[0-9\-]'))
GO
ALTER TABLE [Sales].[Shipper] ADD CONSTRAINT [CHK_StartwithCapitalLetter_AG_372028990]
CHECK (([ShipperCompanyName] like '[A-Z]%'))
GO
ALTER TABLE [Sales].[Shipper] ADD CONSTRAINT [CHK_TimeStamp_AN_450100774] CHECK (([Date-
Added]>='1900-01-01' AND [DateAdded]<=sysdatetime()))
GO
ALTER TABLE [Sales].[Shipper] ADD CONSTRAINT [CHK_TimeStamp_AN_937866232] CHECK (([Date-
OfLastUpdate]>='1900-01-01' AND [DateOfLastUpdate]<=sysdatetime()))
GO
ALTER TABLE [Sales].[Shipper] ADD CONSTRAINT [PK_Shippers] PRIMARY KEY CLUSTERED
([ShipperId]) ON [PRIMARY]
GO
ALTER TABLE [Sales].[Shipper] ADD CONSTRAINT [FK_Shipper_UserAuthorization] FOREIGN KEY
([UserAuthorizationId]) REFERENCES [DbSecurity].[UserAuthorization] ([UserAuthorization-
Id])
GO
```

Uses

[DbSecurity].[UserAuthorization]
[dbo].[surrogateKey_AN]
[sdContactNumber_AG].[phoneNumber_AN]
[sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG]
[sdNameString_AG].[companyName_AG]
[sdNanosecondPreciseDatetime_JG].[timeStamp_AN]
Sales

Used By

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

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[Service].[Feedback]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	2:39:37 AM Thursday, November 17, 2022
Last Modified	2:39:38 AM Thursday, November 17, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity	Default
PK C	MemberID	[sdKeyIntegerNumber_-JG].[surrogateKeyIdentity_JG]	4	NOT NULL	1 - 1	
	Feedback	[sdMiscellanousStrings_-AG].[notes_WL]	600	NULL allowed		
	Rating	[sdPositiveIntegerNumber_-JG].[grade_JG]	4	NULL allowed		
	Received_On	[sdNanosecondPreciseDatetime_-JG].[timeStamp_AN]	8	NULL allowed		(sysdatetime())

Indexes

Key	Name	Key Columns	Unique
PK C	PK__Feedback__0CF04B38E2275530	MemberID	True

Check Constraints

Name	On Column	Constraint
CHK_IntegerBetweenZeroAndOneHundred_JG_268904424	Rating	([Rating]>=(0) AND [Rating]<=(100))
CHK_IntegerIsGreaterThanZero_JG_976391844	MemberID	([MemberID]>(0))
CHK_TimeStamp_AN_179745409	Received_On	([Received_On]>='1900-01-01' AND [Received_-On]<=sysdatetime())

SQL Script

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

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```
(
[MemberID] [sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG] NOT NULL IDENTITY(1, 1),
[Feedback] [sdMiscellanousStrings_AG].[notes_WL] MASKED WITH (FUNCTION = 'default()')
NULL,
[Rating] [sdPositiveIntegerNumber_JG].[grade_JG] MASKED WITH (FUNCTION = 'default()')
NULL,
[Received_On] [sdNanosecondPreciseDatetime_JG].[timeStamp_AN] NULL CONSTRAINT [DFT_-
CurrentSysTime_2121372218] DEFAULT (sysdatetime())
) ON [PRIMARY]
GO
ALTER TABLE [Service].[Feedback] ADD CONSTRAINT [CHK_IntegerBetweenZeroAndOneHundred_-
JG_268904424] CHECK (([Rating]>=(0) AND [Rating]<=(100)))
GO
ALTER TABLE [Service].[Feedback] ADD CONSTRAINT [CHK_IntegerIsGreaterThanZero_-
JG_976391844] CHECK (([MemberID]>(0)))
GO
ALTER TABLE [Service].[Feedback] ADD CONSTRAINT [CHK_TimeStamp_AN_179745409] CHECK
(([Received_On]>='1900-01-01' AND [Received_On]<=sysdatetime()))
GO
ALTER TABLE [Service].[Feedback] ADD CONSTRAINT [PK__Feedback__0CF04B38E2275530]
PRIMARY KEY CLUSTERED  ([MemberID]) ON [PRIMARY]
GO
```

Uses

[sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG]
[sdMiscellanousStrings_AG].[notes_WL]
[sdNanosecondPreciseDatetime_JG].[timeStamp_AN]
[sdPositiveIntegerNumber_JG].[grade_JG]
Service

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[SystemVersioned].[Employee]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Heap	True
Row Count (~)	0
Created	2:39:38 AM Thursday, November 17, 2022
Last Modified	2:39:38 AM Thursday, November 17, 2022
System Versioned	True
Remote Data Archive	Disabled
History Table	[Audit].[VersionedEmployeeHistory]
History Table Row Count (~)	0
History Table Created	2:39:38 AM Thursday, November 17, 2022
History Table Last Modified	2:39:38 AM Thursday, November 17, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability
PK	EmployeeId	[dbo].[surrogateKey_AN]	4	NOT NULL
	FullName	[sdNameString_AG].[fullName_AG]	104	NULL allowed
	Department	[dbo].[departmentName_AN]	50	NULL allowed
	Salary	[dbo].[salary_AN]	4	NULL allowed
	Notes	[sdMiscellanousStrings_AG].[notes_WL]	600	NULL allowed

Indexes

Key	Name	Key Columns	Unique
PK	PK_EmployeeVersioned	EmployeeId	True

SQL Script

```
CREATE TABLE [Audit].[VersionedEmployeeHistory]
(
[EmployeeId] [dbo].[surrogateKey_AN] NOT NULL,
[FullName] [sdNameString_AG].[fullName_AG] NULL,
[Department] [dbo].[departmentName_AN] NULL,
[Salary] [dbo].[salary_AN] NULL,
[Notes] [sdMiscellanousStrings_AG].[notes_WL] NULL,
```

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```
[SysStart] [sdAuditSysTime_AG].[sysStart_WL] NOT NULL,
[SysEnd] [sdAuditSysTime_AG].[sysEnd_WL] NOT NULL
) ON [PRIMARY]
GO
CREATE TABLE [SystemVersioned].[Employee]
(
[EmployeeId] [dbo].[surrogateKey_AN] NOT NULL,
[FullName] [sdNameString_AG].[fullName_AG] NULL,
[Department] [dbo].[departmentName_AN] NULL,
[Salary] [dbo].[salary_AN] NULL,
[Notes] [sdMiscellanousStrings_AG].[notes_WL] NULL,
[SysStart] [sdAuditSysTime_AG].[sysStart_WL] GENERATED ALWAYS AS ROW START HIDDEN NOT
NULL,
[SysEnd] [sdAuditSysTime_AG].[sysEnd_WL] 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
```

Uses

[dbo].[departmentName_AN]
[dbo].[salary_AN]
[dbo].[surrogateKey_AN]
[sdAuditSysTime_AG].[sysEnd_WL]
[sdAuditSysTime_AG].[sysStart_WL]
[sdMiscellanousStrings_AG].[notes_WL]
[sdNameString_AG].[fullName_AG]
SystemVersioned

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[Triggered].[AuditTriggeredEmployeeHistory]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	2:39:37 AM Thursday, November 17, 2022
Last Modified	2:39:38 AM Thursday, November 17, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity	Default
PK	TriggeredEmployeeHistoryId	[sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG]	4	NOT NULL	1 - 1	
	AuditDate	[sdNanosecondPreciseDatetime_JG].[timeStamp_AN]	8	NULL allowed		(sysdatetime())
	TransactionNumber	[sdIntegerNumber_JG].[sequenceNumber_JG]	4	NULL allowed		
	IsDeleted	[sdFlagCharacter_JG].[flag_WL]	1	NULL allowed		
	DBAction	[sdFlagCharacter_JG].[triggerOption_JG]	1	NULL allowed		
	SysStartTime	[sdAuditSysTime_AG].[sysStart_WL]	8	NULL allowed		
	SysEndTime	[sdAuditSysTime_AG].[sysEnd_WL]	8	NULL allowed		
	TimestampRowChanged	[sdNanosecondPreciseDatetime_JG].[timeStamp_AN]	8	NULL allowed		(sysdatetime())
	Notes	[sdMiscellanousStrings_AG].[notes_WL]	600	NULL allowed		
	UserAuthenticatedKey	[dbo].[surrogateKey_AN]	4	NULL allowed		
	EmployeeId	[dbo].[surrogateKey_AN]	4	NULL allowed		
	FullName	[sdNameString_AG].[fullName_AG]	104	NULL allowed		
	Department	[dbo].[departmentName_AN]	50	NULL allowed		
	Salary	[dbo].[salary_AN]	4	NULL allowed		

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	BirthDate	[sdYearMonthDay_-AG].[birthDate_AG]	3	NULL allowed		('19000101')
	HireDate	[sdYearMonthDay_-AG].[hireDate_AG]	3	NULL allowed		(CONVERT([date],sysdatetime()))
	PhoneNumber	[sdContactNumber_-AG].[phoneNumber_AN]	14	NULL allowed		
	FullAddress	[dbo].[fullAddress_AN]	200	NULL allowed		
	DateAdded	[dbo].[YearMonthDay]	3	NULL allowed		(sysdatetime())
	DateOfLastUpdate	[sdNanosecondPrecise-Datetime_JG].[time-Stamp_AN]	8	NULL allowed		(sysdatetime())

Indexes

Key	Name	Key Columns	Unique
	PK_TriggeredEmployeeHistoryId	TriggeredEmployeeHistoryId	True
	ix_Employees	EmployeeId, TriggeredEmployee-HistoryId	True

Check Constraints

Name	On Column	Constraint
CHK_IntegerIsGreaterThanZero_JG_1212872962	EmployeeId	([EmployeeId]>(0))
CHK_IntegerIsGreaterThanZero_JG_360563888	TriggeredEmployeeHistory-Id	([TriggeredEmployee-HistoryId]>(0))
CHK_IntegerIsGreaterThanZero_JG_729193813	UserAuthenticatedKey	([UserAuthenticated-Key]>(0))
CHK_PhoneNumber_AN_1744420262	PhoneNumber	([PhoneNumber] like '%[0-9\-]')
CHK_StartwithCapitalLetter_AG_810692677	Department	([Department] like '[A-Z]%')
CHK_SysEnd_WL_438888481	SysEndTime	([SysEndTime]>'0001-01-01')
CHK_SysStart_WL_1721604136	SysStartTime	([SysStartTime]<'9999-12-31')
CHK_TimeStamp_AN_1497629324	TimestampRowChanged	([TimestampRow-Changed]>='1900-01-01' AND [TimestampRow-Changed]<=sysdatetime())
CHK_TriggerOptionUpdateDelete_JG_1635856640	DBAction	([DBAction]='U' OR [DBAction]='D' OR [DBAction]='I')
CHK_YesNoFlag_WL_183201200	IsDeleted	([IsDeleted]='Y' OR [Is-Deleted]='N')

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SQL Script

```
CREATE TABLE [Triggered].[AuditTriggeredEmployeeHistory]
(
[TriggeredEmployeeHistoryId] [sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG] NOT NULL
IDENTITY(1, 1),
[AuditDate] [sdNanosecondPreciseDatetime_JG].[timeStamp_AN] NULL CONSTRAINT [DFT_-
CurrentSysTime_1299892528] DEFAULT (sysdatetime()),
[TransactionNumber] [sdIntegerNumber_JG].[sequenceNumber_JG] NULL,
[IsDeleted] [sdFlagCharacter_JG].[flag_WL] NULL,
[DBAction] [sdFlagCharacter_JG].[triggerOption_JG] NULL,
[SysStartTime] [sdAuditSysTime_AG].[sysStart_WL] NULL,
[SysEndTime] [sdAuditSysTime_AG].[sysEnd_WL] NULL,
[TimestampRowChanged] [sdNanosecondPreciseDatetime_JG].[timeStamp_AN] NULL CONSTRAINT
[DFT_CurrentSysTime_916115905] DEFAULT (sysdatetime()),
[Notes] [sdMiscellanousStrings_AG].[notes_WL] NULL,
[UserAuthenticatedKey] [dbo].[surrogateKey_AN] NULL,
[EmployeeId] [dbo].[surrogateKey_AN] NULL,
[FullName] [sdNameString_AG].[fullName_AG] NULL,
[Department] [dbo].[departmentName_AN] NULL,
[Salary] [dbo].[salary_AN] NULL,
[BirthDate] [sdYearMonthDay_AG].[birthDate_AG] NULL CONSTRAINT [DFT_StartOfTime_-
AG_1351545446] DEFAULT ('19000101'),
[HireDate] [sdYearMonthDay_AG].[hireDate_AG] NULL CONSTRAINT [DFT_CurrentDate_-
AG_1887111079] DEFAULT (CONVERT([date],sysdatetime())),
[PhoneNumber] [sdContactNumber_AG].[phoneNumber_AN] NULL,
[FullAddress] [dbo].[fullAddress_AN] NULL,
[DateAdded] [dbo].[YearMonthDay] NULL CONSTRAINT [DFT_CurrentSysTime_1621867805]
DEFAULT (sysdatetime()),
[DateOfLastUpdate] [sdNanosecondPreciseDatetime_JG].[timeStamp_AN] NULL CONSTRAINT
[DFT_CurrentSysTime_577772361] DEFAULT (sysdatetime())
) ON [PRIMARY]
GO
ALTER TABLE [Triggered].[AuditTriggeredEmployeeHistory] ADD CONSTRAINT [CHK_IntegerIs-
GreaterThanZero_JG_1212872962] CHECK (([EmployeeId]>(0)))
GO
ALTER TABLE [Triggered].[AuditTriggeredEmployeeHistory] ADD CONSTRAINT [CHK_IntegerIs-
GreaterThanZero_JG_360563888] CHECK (([TriggeredEmployeeHistoryId]>(0)))
GO
ALTER TABLE [Triggered].[AuditTriggeredEmployeeHistory] ADD CONSTRAINT [CHK_IntegerIs-
GreaterThanZero_JG_729193813] CHECK (([UserAuthenticatedKey]>(0)))
GO
ALTER TABLE [Triggered].[AuditTriggeredEmployeeHistory] ADD CONSTRAINT [CHK_Phone-
Number_AN_1744420262] CHECK (([PhoneNumber] like '%[0-9\-]'))
GO
ALTER TABLE [Triggered].[AuditTriggeredEmployeeHistory] ADD CONSTRAINT [CHK_Startwith-
CapitalLetter_AG_810692677] CHECK (([Department] like '[A-Z]%'))
GO
ALTER TABLE [Triggered].[AuditTriggeredEmployeeHistory] ADD CONSTRAINT [CHK_SysEnd_-
WL_438888481] CHECK (([SysEndTime]>'0001-01-01'))
GO
ALTER TABLE [Triggered].[AuditTriggeredEmployeeHistory] ADD CONSTRAINT [CHK_SysStart_-
WL_1721604136] CHECK (([SysStartTime]<'9999-12-31'))
GO
ALTER TABLE [Triggered].[AuditTriggeredEmployeeHistory] ADD CONSTRAINT [CHK_TimeStamp_-
AN_1497629324] CHECK (([TimestampRowChanged]>='1900-01-01' AND [TimestampRow-
Changed]<=sysdatetime()))
```

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```
GO
ALTER TABLE [Triggered].[AuditTriggeredEmployeeHistory] ADD CONSTRAINT [CHK_Trigger-
OptionUpdateDelete_JG_1635856640] CHECK (([DBAction]='U' OR [DBAction]='D' OR
[DBAction]='I'))
GO
ALTER TABLE [Triggered].[AuditTriggeredEmployeeHistory] ADD CONSTRAINT [CHK_YesNoFlag_-
WL_183201200] CHECK (([IsDeleted]='Y' OR [IsDeleted]='N'))
GO
ALTER TABLE [Triggered].[AuditTriggeredEmployeeHistory] ADD CONSTRAINT [PK_Triggered-
EmployeeHistoryId] PRIMARY KEY NONCLUSTERED  ([TriggeredEmployeeHistoryId]) ON
[PRIMARY]
GO
CREATE UNIQUE CLUSTERED INDEX [ix_Employees] ON [Triggered].[AuditTriggeredEmployee-
History] ([EmployeeId], [TriggeredEmployeeHistoryId]) ON [PRIMARY]
GO
```

Uses

[dbo].[departmentName_AN]
[dbo].[fullAddress_AN]
[dbo].[salary_AN]
[dbo].[surrogateKey_AN]
[dbo].[YearMonthDay]
[sdAuditSysTime_AG].[sysEnd_WL]
[sdAuditSysTime_AG].[sysStart_WL]
[sdContactNumber_AG].[phoneNumber_AN]
[sdFlagCharacter_JG].[flag_WL]
[sdFlagCharacter_JG].[triggerOption_JG]
[sdIntegerNumber_JG].[sequenceNumber_JG]
[sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG]
[sdMiscellanousStrings_AG].[notes_WL]
[sdNameString_AG].[fullName_AG]
[sdNanosecondPreciseDatetime_JG].[timeStamp_AN]
[sdYearMonthDay_AG].[birthDate_AG]
[sdYearMonthDay_AG].[hireDate_AG]
Triggered

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[Triggered].[Employee]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	0
Created	2:39:37 AM Thursday, November 17, 2022
Last Modified	2:39:39 AM Thursday, November 17, 2022

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Default
PK	EmployeeId	[dbo].[surrogateKey_AN]	4	NOT NULL	
	FullName	[sdNameString_AG].[fullName_AG]	104	NULL allowed	
	Department	[dbo].[departmentName_AN]	50	NULL allowed	
	Salary	[dbo].[salary_AN]	4	NULL allowed	
	BirthDate	[sdYearMonthDay_AG].[birthDate_AG]	3	NULL allowed	('19000101')
	HireDate	[sdYearMonthDay_AG].[hireDate_AG]	3	NULL allowed	(CONVERT([date],sysdatetime()))
	PhoneNumber	[sdContactNumber_AG].[phoneNumber_AN]	14	NULL allowed	
	FullAddress	[dbo].[fullAddress_AN]	200	NULL allowed	
	DateAdded	[dbo].[YearMonthDay]	3	NULL allowed	(sysdatetime())
	DateOfLastUpdate	[sdNanosecondPreciseDatetime_JG].[timeStamp_AN]	8	NULL allowed	(sysdatetime())

Indexes

Key	Name	Key Columns	Unique
PK	PK_TriggeredEmployee	EmployeeId	True
	ix_Employees	EmployeeId	

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Triggers

Name	ANSI Nulls On	Quoted Identifier On	On
tInsert_AuditTriggeredEmployeeHistory	True	True	After Insert
tUpdateDelete_AuditTriggeredEmployeeHistory	True	True	After Delete Update

Check Constraints

Name	On Column	Constraint
CHK_IntegerIsGreaterThanZero_JG_175991849	EmployeeId	([EmployeeId]>(0))
CHK_PhoneNumber_AN_1513665921	PhoneNumber	([PhoneNumber] like '%[0-9\-]')
CHK_StartwithCapitalLetter_AG_1552354697	Department	([Department] like '[A-Z]%')

SQL Script

```
CREATE TABLE [Triggered].[Employee]
(
[EmployeeId] [dbo].[surrogateKey_AN] NOT NULL,
[FullName] [sdNameString_AG].[fullName_AG] NULL,
[Department] [dbo].[departmentName_AN] NULL,
[Salary] [dbo].[salary_AN] NULL,
[BirthDate] [sdYearMonthDay_AG].[birthDate_AG] NULL CONSTRAINT [DFT_StartOfTime_-
AG_1011501928] DEFAULT ('19000101'),
[HireDate] [sdYearMonthDay_AG].[hireDate_AG] NULL CONSTRAINT [DFT_CurrentDate_-
AG_1561448855] DEFAULT (CONVERT([date],sysdatetime())),
[PhoneNumber] [sdContactNumber_AG].[phoneNumber_AN] NULL,
[FullAddress] [dbo].[fullAddress_AN] NULL,
[DateAdded] [dbo].[YearMonthDay] NULL CONSTRAINT [DFT_CurrentSysTime_741179569] DEFAULT
(sysdatetime()),
[DateOfLastUpdate] [sdNanosecondPreciseDatetime_JG].[timeStamp_AN] NULL CONSTRAINT
[DFT_CurrentSysTime_268635002] DEFAULT (sysdatetime())
) ON [PRIMARY]
GO


CREATE   TRIGGER [Triggered].[tInsert_AuditTriggeredEmployeeHistory] ON
[Triggered].[Employee]
 AFTER INSERT


AS
/* Customized Erwin Builtin Trigger */
/* INSERT trigger on Triggered.Employee */
/* default body fox Triggered.[tInsert_AuditTriggeredEmployeeHistory] */

BEGIN
/*
    Update Trigger with upfront intialization for the variables to be inserted into
    the trigger history table
*/
--
```

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```
--  https://stackoverflow.com/questions/884334/tsql-try-catch-transaction-in-trigger
--

set xact_abort OFF;

BEGIN TRY

    BEGIN

        ----------------------------------
        ----- Variable Declaration -------
        ----------------------------------

        DECLARE @DateTime2Now DATETIME2 =  SYSDATETIME();

        DECLARE
        @DBAction CHAR(1)
        ,@IsDeleted CHAR(1)
        ,@Note CHAR(200)
        ,@NumberOfRows INT
        -- ,@nullcnt INT
        -- ,@validcnt INT
        -- ,@errno INT
        -- ,@severity INT
        -- ,@state INT
        -- ,@errmsg VARCHAR(255);

        IF (EXISTS (SELECT * FROM Inserted))

        BEGIN
            SET @Note = 'Database Row Added. transaction number: 1'
            SET @DBAction = 'I'
            SET @IsDeleted = 'N'
        END;

        SELECT @NumberOfRows = @@rowcount

        print ' trying to insert here'

                ----------------------------------
                -------- Trigger code ------------
                ----------------------------------

                insert into Triggered.AuditTriggeredEmployeeHistory
                (
                    EmployeeId , FullName , Department , Salary , BirthDate , HireDate
, PhoneNumber , FullAddress , DateAdded , DateOfLastUpdate

                    ,Notes
                    ,IsDeleted
                    ,TransactionNumber
                    -- ,UserAuthenticatedKey
                    ,SysStartTime
```

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```
                    ,SysEndTime
                    ,TimestampRowChanged
                    ,DBAction
                    ,AuditDate
                )
                select
                    EmployeeId ,  FullName ,  Department ,  Salary ,  BirthDate ,  Hire-
Date ,  PhoneNumber ,  FullAddress ,  DateAdded ,  DateOfLastUpdate

                    ,@Note
                    ,@IsDeleted
                    ,1
                    -- ,1
                    ,@DateTime2Now
                    ,@DateTime2Now
                    ,@DateTime2Now
                    ,@DBAction
                    ,@DateTime2Now

                from Inserted


                insert into SystemVersioned.Employee
                (
                    EmployeeId,
                    FullName,
                    Department,
                    Salary,
                    Notes
                )
                select
                    EmployeeId,
                    FullName,
                    Department,
                    Salary,
                    @Note

                from Inserted


                PRINT 'Row Inserted. '

                -----------------------------------
                -------- Trigger  End ------------
                -----------------------------------


    END;




END TRY
```

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```
BEGIN CATCH
   SELECT ERROR_MESSAGE() AS [Error Message]
         ,ERROR_LINE() AS ErrorLine
         ,ERROR_NUMBER() AS [Error Number]
         ,ERROR_SEVERITY() AS [Error Severity]
         ,ERROR_STATE() AS [Error State]
END CATCH

END;


GO




CREATE   TRIGGER [Triggered].[tUpdateDelete_AuditTriggeredEmployeeHistory] ON
[Triggered].[Employee]
 AFTER DELETE,UPDATE

AS
/* Customized Erwin Builtin Trigger */
/* DELETE,UPDATE trigger on Triggered.Employee */
/* default body fox Triggered.[tUpdateDelete_AuditTriggeredEmployeeHistory] */

BEGIN
/*
    Update Trigger with upfront intialization for the variables to be inserted into
    the trigger history table
*/
--
--  https://stackoverflow.com/questions/884334/tsql-try-catch-transaction-in-trigger
--

set xact_abort OFF;

BEGIN TRY




    DECLARE UD_Audit_Employee_Cursor CURSOR FOR

    SELECT EmployeeId FROM Deleted

    DECLARE @cursorID int

    OPEN UD_Audit_Employee_Cursor;

    FETCH NEXT FROM UD_Audit_Employee_Cursor INTO @cursorID

    WHILE @@FETCH_STATUS = 0
```

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```
    BEGIN

        ---------------------------------
        ----- Variable Declaration -------
        ---------------------------------

        DECLARE
        @DBAction CHAR(1)
        ,@IsDeleted CHAR(1)
        ,@Note CHAR(200)
        -- ,@AuditDateTimeStamp DATETIME2 = @DateTime2Now
        -- ,@TimestampRowChanged DATETIME2 = @DateTime2Now
        ,@SysEnd_as_StartTime DATETIME2
        ,@NumberOfRows INT
        -- ,@nullcnt INT
        -- ,@validcnt INT
        -- ,@errno INT
        -- ,@severity INT
        -- ,@state INT
        -- ,@errmsg VARCHAR(255);

        --    The Trigger determines DBAction
        --  The only actions that we will deal with are Update and Delete.  Inserts are
ignored

        DECLARE @tnum integer

        DECLARE @DateTime2Now DATETIME2;
        SET @DateTime2Now = SYSDATETIME();







        IF (EXISTS (SELECT * FROM Inserted) AND EXISTS (SELECT * FROM Deleted))
        BEGIN
            SELECT TOP(1)
                @tnum = TransactionNumber + 1
                ,@SysEnd_as_StartTime = SysEndTime

            FROM Triggered.AuditTriggeredEmployeeHistory WHERE EmployeeId = @cursorID
ORDER BY TransactionNumber DESC

            SET @Note = CONCAT('Row Updated. Transaction number: ', @tnum)
            SET @DBAction = 'U'
            SET @IsDeleted = 'N'




            UPDATE SystemVersioned.Employee SET
                Employee.FullName = i.FullName,
```

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```
                Employee.Department = i.Department,
                Employee.Salary = i.Salary,
                Employee.Notes = @Note

            from Inserted as i where Employee.EmployeeId = @cursorID




        END;


        ELSE IF (EXISTS (SELECT * FROM Deleted))
        BEGIN
            SELECT TOP(1)
                @tnum = TransactionNumber + 1
                ,@SysEnd_as_StartTime = SysEndTime

            FROM Triggered.AuditTriggeredEmployeeHistory WHERE EmployeeId = @cursorID
ORDER BY TransactionNumber DESC

            SET @Note = CONCAT('Record Deleted from database. Transaction number: ',
@tnum)
            SET @DBAction = 'D'
            SET @IsDeleted = 'Y'

            DELETE FROM SystemVersioned.Employee where Employee.EmployeeId = @cursorID



        END;

        SELECT @NumberOfRows = @@rowcount

                ----------------------------------
                -------- Trigger code ------------
                ----------------------------------
                    PRINT 'Processing ID: ' + CONVERT(varchar(10), @cursorID)
                    PRINT ' some mesage here'


                    insert into Triggered.AuditTriggeredEmployeeHistory
                (
                    EmployeeId , FullName , Department , Salary , BirthDate , HireDate
, PhoneNumber , FullAddress , DateAdded , DateOfLastUpdate

                    ,Notes
                    ,IsDeleted
                    ,TransactionNumber
                    -- ,UserAuthenticatedKey
                    ,SysStartTime
                    ,SysEndTime
                    ,TimestampRowChanged
                    ,DBAction
```

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```
                    ,AuditDate
                )
                select
                    EmployeeId ,  FullName ,  Department ,  Salary ,  BirthDate ,  Hire-
Date ,  PhoneNumber ,  FullAddress ,  DateAdded ,  DateOfLastUpdate

                    ,@Note
                    ,@IsDeleted
                    ,@tnum
                    -- ,1
                    ,@SysEnd_as_StartTime
                    ,@DateTime2Now
                    ,@DateTime2Now
                    ,@DBAction
                    ,@DateTime2Now

                    from Deleted where EmployeeId = @cursorID

                ----------------------------------
                -------- Trigger  End ------------
                ----------------------------------


        FETCH NEXT FROM UD_Audit_Employee_Cursor INTO @cursorID


    END;

    CLOSE UD_Audit_Employee_Cursor;

    DEALLOCATE UD_Audit_Employee_Cursor;









END TRY
BEGIN CATCH
   SELECT ERROR_MESSAGE() AS [Error Message]
         ,ERROR_LINE() AS ErrorLine
         ,ERROR_NUMBER() AS [Error Number]
         ,ERROR_SEVERITY() AS [Error Severity]
         ,ERROR_STATE() AS [Error State]
END CATCH

END;
```

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```
GO
ALTER TABLE [Triggered].[Employee] ADD CONSTRAINT [CHK_IntegerIsGreaterThanZero_-
JG_175991849] CHECK (([EmployeeId]>(0)))
GO
ALTER TABLE [Triggered].[Employee] ADD CONSTRAINT [CHK_PhoneNumber_AN_1513665921] CHECK
(([PhoneNumber] like '%[0-9\-]'))
GO
ALTER TABLE [Triggered].[Employee] ADD CONSTRAINT [CHK_StartwithCapitalLetter_-
AG_1552354697] CHECK (([Department] like '[A-Z]%'))
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]) ON
[PRIMARY]
GO
```

Uses

[dbo].[departmentName_AN]
[dbo].[fullAddress_AN]
[dbo].[salary_AN]
[dbo].[surrogateKey_AN]
[dbo].[YearMonthDay]
[sdContactNumber_AG].[phoneNumber_AN]
[sdNameString_AG].[fullName_AG]
[sdNanosecondPreciseDatetime_JG].[timeStamp_AN]
[sdYearMonthDay_AG].[birthDate_AG]
[sdYearMonthDay_AG].[hireDate_AG]
Triggered

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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

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[JsonOutput].[uvw_HumanResourcesEmployee]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
ANSI Nulls On	True
Quoted Identifier On	True
Created	2:39:38 AM Thursday, November 17, 2022
Last Modified	2:39:38 AM Thursday, November 17, 2022

Columns

Name	Data Type	Max Length (Bytes)	Identity
EmployeeObjectId	[sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG]	4	0 - 0
EmployeeLastName	[sdNameString_AG].[firstName_AG]	50	
EmployeeFirstName	[sdNameString_AG].[lastName_AG]	50	
EmployeeTitle	[sdTitleString_JG].[contactTitle_JG]	120	
EmployeeTitleOfCourtesy	[sdTitleString_JG].[titleOfCourtesy_AG]	4	
EmployeeBirthDate	[sdYearMonthDay_AG].[birthDate_AG]	3	
HireDate	[sdYearMonthDay_AG].[hireDate_AG]	3	
EmployeeAddress	[sdAddressString_AN].[addressline_AN]	35	
EmployeeCity	[sdAddressString_AN].[city_WL]	40	
EmployeeRegion	[sdAddressString_AN].[region_AG]	80	
EmployeePostalCode	[sdAddressString_AN].[postalCode_AN]	5	
EmployeeCountry	[sdAddressString_AN].[country_AG]	3	
EmployeePhoneNumber	[sdContactNumber_AG].[phoneNumber_AN]	14	
EmployeeManagerId	[dbo].[surrogateKey_AN]	4	

SQL Script

```
CREATE VIEW [JsonOutput].[uvw_HumanResourcesEmployee]([EmployeeObjectId],[EmployeeLast-
Name],[EmployeeFirstName],[EmployeeTitle],[EmployeeTitleOfCourtesy],[EmployeeBirth-
Date],[HireDate],[EmployeeAddress],[EmployeeCity],[EmployeeRegion],[EmployeePostal-
Code],[EmployeeCountry],[EmployeePhoneNumber],[EmployeeManagerId])
AS
SELECT E.[EmployeeId],E.[EmployeeLastName],E.[EmployeeFirstName],E.[Employee-
Title],E.[EmployeeTitleOfCourtesy],E.[EmployeeBirthDate],E.[EmployeeHire-
Date],E.[EmployeeAddress],E.[EmployeeCity],E.[EmployeeRegion],E.[EmployeePostal-
Code],E.[EmployeeCountry],E.[EmployeePhoneNumber],E.[EmployeeManagerId]
```

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```
    FROM [HumanResources].[Employee] E
GO
```

Uses

[HumanResources].[Employee]
[dbo].[surrogateKey_AN]
[sdAddressString_AN].[addressline_AN]
[sdAddressString_AN].[city_WL]
[sdAddressString_AN].[country_AG]
[sdAddressString_AN].[postalCode_AN]
[sdAddressString_AN].[region_AG]
[sdContactNumber_AG].[phoneNumber_AN]
[sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG]
[sdNameString_AG].[firstName_AG]
[sdNameString_AG].[lastName_AG]
[sdTitleString_JG].[contactTitle_JG]
[sdTitleString_JG].[titleOfCourtesy_AG]
[sdYearMonthDay_AG].[birthDate_AG]
[sdYearMonthDay_AG].[hireDate_AG]
JsonOutput

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[JsonOutput].[uvw_Order]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
ANSI Nulls On	True
Quoted Identifier On	True
Created	2:39:38 AM Thursday, November 17, 2022
Last Modified	2:39:38 AM Thursday, November 17, 2022

Columns

Name	Data Type	Max Length (Bytes)	Identity
OrderId	[sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG]	4	0 - 0
CustomerId	[dbo].[surrogateKey_AN]	4	
EmployeeId	[dbo].[surrogateKey_AN]	4	
ShipperId	[dbo].[surrogateKey_AN]	4	
OrderDate	[sdNanosecondPreciseDatetime_JG].[timeStamp_AN]	8	
RequiredDate	[sdNanosecondPreciseDatetime_JG].[timeStamp_AN]	8	
ShipToDate	[sdNanosecondPreciseDatetime_JG].[timeStamp_AN]	8	
Freight	[dbo].[freight]	4	
ShipToName	[sdNameString_AG].[fullName_AG]	104	
ShipToAddress	[sdAddressString_AN].[addressline_AN]	35	
ShipToCity	[sdAddressString_AN].[city_WL]	40	
ShipToRegion	[sdAddressString_AN].[region_AG]	80	
ShipToPostalCode	[sdAddressString_AN].[postalCode_AN]	5	
ShipToCountry	[sdAddressString_AN].[country_AG]	3	

SQL Script

```
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
```

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Uses

[Sales].[Orders]
[dbo].[freight]
[dbo].[surrogateKey_AN]
[sdAddressString_AN].[addressline_AN]
[sdAddressString_AN].[city_WL]
[sdAddressString_AN].[country_AG]
[sdAddressString_AN].[postalCode_AN]
[sdAddressString_AN].[region_AG]
[sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG]
[sdNameString_AG].[fullName_AG]
[sdNanosecondPreciseDatetime_JG].[timeStamp_AN]
JsonOutput

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[JsonOutput].[uvw_ProductionCategory]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
ANSI Nulls On	True
Quoted Identifier On	True
Created	2:39:38 AM Thursday, November 17, 2022
Last Modified	2:39:38 AM Thursday, November 17, 2022

Columns

Name	Data Type	Max Length (Bytes)	Identity
CategoryObjectId	[sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG]	4	0 - 0
CategoryName	[sdNameString_AG].[fullName_AG]	104	
Description	[sdMiscellanousStrings_AG].[notes_WL]	600	

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]
[sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG]
[sdMiscellanousStrings_AG].[notes_WL]
[sdNameString_AG].[fullName_AG]
JsonOutput

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[JsonOutput].[uvw_ProductionProduct]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
ANSI Nulls On	True
Quoted Identifier On	True
Created	2:39:38 AM Thursday, November 17, 2022
Last Modified	2:39:38 AM Thursday, November 17, 2022

Columns

Name	Data Type	Max Length (Bytes)
ProductObjectId	[sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG]	4
ProductName	[sdNameString_AG].[fullName_AG]	104
SupplierId	[sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG]	4
CategoryId	[sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG]	4
UnitPrice	[sdMoneyNumber_JG].[unitPrice_WL]	4
Discontinued	[sdFlagCharacter_JG].[flag_WL]	1
CategoryObjectId	[sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG]	4
CategoryName	[sdNameString_AG].[fullName_AG]	104
Description	[sdMiscellanousStrings_AG].[notes_WL]	600
SupplierCompanyName	[sdNameString_AG].[companyName_AG]	120
SupplierContactName	[sdNameString_AG].[fullName_AG]	104
SupplierPhoneNumber	[sdContactNumber_AG].[phoneNumber_AN]	14
SupplierFaxNumber	[sdContactNumber_AG].[faxNumber_AG]	14

SQL Script

```
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
```

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Uses

[Production].[Category]
[Production].[Product]
[Production].[Supplier]
[sdContactNumber_AG].[faxNumber_AG]
[sdContactNumber_AG].[phoneNumber_AN]
[sdFlagCharacter_JG].[flag_WL]
[sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG]
[sdMiscellanousStrings_AG].[notes_WL]
[sdMoneyNumber_JG].[unitPrice_WL]
[sdNameString_AG].[companyName_AG]
[sdNameString_AG].[fullName_AG]
JsonOutput

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[JsonOutput].[uvw_ProductionSupplier]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
ANSI Nulls On	True
Quoted Identifier On	True
Created	2:39:38 AM Thursday, November 17, 2022
Last Modified	2:39:38 AM Thursday, November 17, 2022

Columns

Name	Data Type	Max Length (Bytes)	Identity
SupplierObjectId	[sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG]	4	0 - 0
SupplierCompanyName	[sdNameString_AG].[companyName_AG]	120	
SupplierContactName	[sdNameString_AG].[fullName_AG]	104	
SupplierContactTitle	[sdTitleString_JG].[contactTitle_JG]	120	
SupplierAddress	[sdAddressString_AN].[addressline_AN]	35	
SupplierCity	[sdAddressString_AN].[city_WL]	40	
SupplierRegion	[sdAddressString_AN].[region_AG]	80	
SupplierPostalCode	[sdAddressString_AN].[postalCode_AN]	5	
SupplierCountry	[sdAddressString_AN].[country_AG]	3	
SupplierPhoneNumber	[sdContactNumber_AG].[phoneNumber_AN]	14	
SupplierFaxNumber	[sdContactNumber_AG].[faxNumber_AG]	14	

SQL Script

```
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
GO
```

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Uses

[Production].[Supplier]
[sdAddressString_AN].[addressline_AN]
[sdAddressString_AN].[city_WL]
[sdAddressString_AN].[country_AG]
[sdAddressString_AN].[postalCode_AN]
[sdAddressString_AN].[region_AG]
[sdContactNumber_AG].[faxNumber_AG]
[sdContactNumber_AG].[phoneNumber_AN]
[sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG]
[sdNameString_AG].[companyName_AG]
[sdNameString_AG].[fullName_AG]
[sdTitleString_JG].[contactTitle_JG]
JsonOutput

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[JsonOutput].[uvw_SalesCustomer]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
ANSI Nulls On	True
Quoted Identifier On	True
Created	2:39:38 AM Thursday, November 17, 2022
Last Modified	2:39:38 AM Thursday, November 17, 2022

Columns

Name	Data Type	Max Length (Bytes)	Identity
CustomerObjectId	[sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG]	4	0 - 0
CustomerCompanyName	[sdNameString_AG].[companyName_AG]	120	
CustomerContactName	[sdNameString_AG].[fullName_AG]	104	
CustomerContactTitle	[sdTitleString_JG].[contactTitle_JG]	120	
CustomerAddress	[sdAddressString_AN].[addressline_AN]	35	
CustomerCity	[sdAddressString_AN].[city_WL]	40	
CustomerRegion	[sdAddressString_AN].[region_AG]	80	
CustomerPostalCode	[sdAddressString_AN].[postalCode_AN]	5	
CustomerCountry	[sdAddressString_AN].[country_AG]	3	
CustomerPhoneNumber	[sdContactNumber_AG].[phoneNumber_AN]	14	
CustomerFaxNumber	[sdContactNumber_AG].[faxNumber_AG]	14	

SQL Script

```
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
```

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Uses

[Sales].[Customer]
[sdAddressString_AN].[addressline_AN]
[sdAddressString_AN].[city_WL]
[sdAddressString_AN].[country_AG]
[sdAddressString_AN].[postalCode_AN]
[sdAddressString_AN].[region_AG]
[sdContactNumber_AG].[faxNumber_AG]
[sdContactNumber_AG].[phoneNumber_AN]
[sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG]
[sdNameString_AG].[companyName_AG]
[sdNameString_AG].[fullName_AG]
[sdTitleString_JG].[contactTitle_JG]
JsonOutput

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[JsonOutput].[uvw_SalesShipper]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
ANSI Nulls On	True
Quoted Identifier On	True
Created	2:39:38 AM Thursday, November 17, 2022
Last Modified	2:39:38 AM Thursday, November 17, 2022

Columns

Name	Data Type	Max Length (Bytes)	Identity
ShipperObjectId	[sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG]	4	0 - 0
ShipperCompanyName	[sdNameString_AG].[companyName_AG]	120	
PhoneNumber	[sdContactNumber_AG].[phoneNumber_AN]	14	

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]
[sdContactNumber_AG].[phoneNumber_AN]
[sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG]
[sdNameString_AG].[companyName_AG]
JsonOutput

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[Utils].[uvw_FindColumnDefinitionPlusDefaultAndCheckConstraint]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
ANSI Nulls On	True
Quoted Identifier On	True
Created	2:39:38 AM Thursday, November 17, 2022
Last Modified	2:39:38 AM Thursday, November 17, 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 = '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-
```

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```
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  ON
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_NAME
GO
```

Uses

Utils

Used By

[Utils].[uw_FindAllDatabaseColumnsOnTheServer]

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[Utils].[uw_FindAllDatabaseColumnsOnTheServer]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
ANSI Nulls On	True
Quoted Identifier On	True
Created	2:39:38 AM Thursday, November 17, 2022
Last Modified	2:39:38 AM Thursday, November 17, 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

SQL Script

```
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])
AS
SELECT vw.FullyQualifiedTableName,vw.SchemaName,vw.ColumnName,vw.Ordinal-
Position,vw.FullyQualifiedDomainName,vw.DataType,vw.IsNullable,vw.Default-
```

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```
Name,vw.DefaultNameDefinition,vw.CheckConstraintRuleName,vw.CheckConstraintRuleName-
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

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Stored Procedures

Objects

Name
Sales.usp_getorders

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[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

```
CREATE PROCEDURE [Sales].[usp_getorders] @country nvarchar(40)

 AS begin
    select o.OrderId
         , o.CustomerId
         , o.EmployeeId
         , o.OrderDate
         ,@country as Country
    from Sales.[Order] as o
    where o.ShipToCountry = @country;
end;
GO
```

Uses

Sales

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Table-valued Functions

Objects

Name
JsonOutput.MongoOrder
JsonOutput.MongoOrderDetail
Sales.utvf_FindAllCustomerOrder

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[JsonOutput].[MongoOrder]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

SQL Script

```
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
         , (
              select SalesCustomer.CustomerId          as 'CustomerObjectId'
                   , 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'
```

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```
                from Sales.[Orders]                      as o2
                    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 SalesShipper
                        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]
[dbo].[freight]
[sdAddressString_AN].[addressline_AN]
[sdAddressString_AN].[city_WL]
[sdAddressString_AN].[country_AG]
[sdAddressString_AN].[postalCode_AN]
[sdAddressString_AN].[region_AG]
[sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG]
[sdNameString_AG].[fullName_AG]
[sdNanosecondPreciseDatetime_JG].[timeStamp_AN]
JsonOutput

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[JsonOutput].[MongoOrderDetail]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

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

SQL Script

```
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
```

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```
                    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 ProductionCategory
                        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 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 ProductionSupplier
    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 OrderDetail
            on OrderDetail.ProductId = ProductionProduct.ProductId
    where OrderDetail.OrderId = @OrderId
);
```

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```
GO
```

Uses

[Production].[Category]
[Production].[Product]
[Production].[Supplier]
[Sales].[OrderDetail]
[dbo].[percentage]
[dbo].[surrogateKey_AN]
[sdMoneyNumber_JG].[unitPrice_WL]
[sdPositiveIntegerNumber_JG].[quantity_WL]
JsonOutput

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[Sales].[utvf_FindAllCustomerOrder]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

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

SQL Script

```
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
```

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```
        inner join Sales.Shipper       as sh
            on sh.ShipperId = o.ShipperId
    where o.CustomerId = @CustomerId
);




GO
```

Uses

[Production].[Product]
[Production].[Supplier]
[Sales].[OrderDetail]
[Sales].[Orders]
[Sales].[Shipper]
[dbo].[freight]
[dbo].[percentage]
[dbo].[surrogateKey_AN]
[sdAddressString_AN].[country_AG]
[sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG]
[sdMoneyNumber_JG].[unitPrice_WL]
[sdNameString_AG].[companyName_AG]
[sdNameString_AG].[fullName_AG]
[sdNanosecondPreciseDatetime_JG].[timeStamp_AN]
[sdPositiveIntegerNumber_JG].[quantity_WL]
Sales

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Scalar-valued Functions

Objects

Name
dbo.fn_diagramobjects
Hashing.CreateRowSha2_256HashKey
Hashing.CreateVarbinaryRowSha2_256HashKey
Hashing.CreateVarbinarySha2_256HashKey
Hashing.CreateVarcharHashKeySha2_256
Utils.CreateHashKeyMD5

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[dbo].[fn_diagramobjects]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

SQL Script

```
CREATE FUNCTION [dbo].[fn_diagramobjects] ()
  RETURNS int

AS BEGIN
        declare @id_upgraddiagrams        int
        declare @id_sysdiagrams            int
        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

        select     @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
```

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```
            select @InstalledObjects = @InstalledObjects + 32
        if @id_alterdiagram  is not null
            select @InstalledObjects = @InstalledObjects + 64
        if @id_dropdiagram is not null
            select @InstalledObjects = @InstalledObjects + 128

        return @InstalledObjects
    END
GO
```

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[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

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[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

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[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

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[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

```
CREATE FUNCTION [Hashing].[CreateVarcharHashKeySha2_256] (@DisplayNumberOfBytes int ,
@ConcatenatedColumns varchar(4096) )
  RETURNS varchar(32)

as BEGIN
    return case when @DisplayNumberOfBytes between 5 and 31 then
substring(convert(varchar(32), hashbytes('SHA2_256', @ConcatenatedColumns),
2),1,@DisplayNumberOfBytes)
    else convert(varchar(32), hashbytes('SHA2_256', @ConcatenatedColumns), 2)
    end;

end;
GO
```

Uses

Hashing

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[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

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User-Defined Data Types

Objects

Name
dbo.departmentName_AN
dbo.dGroupMidtermProject
dbo.email_WL
dbo.freight
dbo.fullAddress_AN
dbo.percentage
dbo.salary_AN
dbo.sdDateFormat
dbo.sdDecimalNumber
dbo.surrogateKey_AN
dbo.YearMonthDay
dDatetime.sdAuditSysTime
dDatetime.sdNanosecondPreciseDatetime_JG
dDatetime.sdYearMonthDay_AG
dGroupMidterm.dBlob
dGroupMidterm.dDateTime
dGroupMidterm.dNumber
dGroupMidterm.dString
dNumber.sdIntegerNumber_JG
dNumber.sdMoneyNumber_JG
dString.sdAddressString_AN
dString.sdContactInformation_AG
dString.sdFlagCharacterString
dString.sdMiscellanousStrings
dString.sdNameString_AG
dString.sdTitleString_JG
sdAddressString_AN.addressline_AN
sdAddressString_AN.city_WL
sdAddressString_AN.country_AG
sdAddressString_AN.postalCode_AN
sdAddressString_AN.region_AG
sdAddressString_AN.state_AN
sdAuditSysTime_AG.auditTriggeredTimestamp_WL
sdAuditSysTime_AG.sysEnd_WL

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sdAuditSysTime_AG.sysStart_WL
sdContactNumber_AG.faxNumber_AG
sdContactNumber_AG.phoneNumber_AN
sdFlagCharacter_JG.flag_WL
sdFlagCharacter_JG.triggerOption_JG
sdIntegerNumber_JG.sdPositiveIntegerNumber_JG
sdIntegerNumber_JG.sequenceNumber_JG
sdKeyIntegerNumber_JG.surrogateKeyIdentity_JG
sdMiscellanousStrings_AG.classTime_AN
sdMiscellanousStrings_AG.notes_WL
sdMoneyNumber_JG.currency_JG
sdMoneyNumber_JG.unitPrice_WL
sdNameString_AG.companyName_AG
sdNameString_AG.firstName_AG
sdNameString_AG.fullName_AG
sdNameString_AG.lastName_AG
sdNanosecondPreciseDatetime_JG.timeStamp_AN
sdPositiveIntegerNumber_JG.grade_JG
sdPositiveIntegerNumber_JG.quantity_WL
sdPositiveIntegerNumber_JG.sdKeyIntegerNumber_JG
sdTitleString_JG.contactTitle_JG
sdTitleString_JG.titleOfCourtesy_AG
sdYearMonthDay_AG.birthDate_AG
sdYearMonthDay_AG.day_AG
sdYearMonthDay_AG.hireDate_AG
sdYearMonthDay_AG.month_AG
sdYearMonthDay_AG.year_AG

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[dbo].[departmentName_AN]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	25

SQL Script

```
CREATE TYPE [dbo].[departmentName_AN] FROM nvarchar (25) NULL
GO
```

Used By

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

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[dbo].[dGroupMidtermProject]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	1

SQL Script

```
CREATE TYPE [dbo].[dGroupMidtermProject] FROM char (1) NULL
GO
```

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[dbo].[email_WL]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	varchar
Length	40

SQL Script

```
CREATE TYPE [dbo].[email_WL] FROM varchar (40) NULL
GO
```

Used By

[Data].[Membership]

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[dbo].[freight]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	int
Length	4

SQL Script

```
CREATE TYPE [dbo].[freight] FROM int NULL
GO
```

Used By

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

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[dbo].[fullAddress_AN]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	100

SQL Script

```
CREATE TYPE [dbo].[fullAddress_AN] FROM nvarchar (100) NULL
GO
```

Used By

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

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[dbo].[percentage]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	decimal
Length	5

SQL Script

```
CREATE TYPE [dbo].[percentage] FROM decimal (4, 3) NULL
GO
```

Used By

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

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[dbo].[salary_AN]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	int
Length	4

SQL Script

```
CREATE TYPE [dbo].[salary_AN] FROM int NULL
GO
```

Used By

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

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[dbo].[sdDateFormat]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	datetime
Length	8

SQL Script

```
CREATE TYPE [dbo].[sdDateFormat] FROM datetime NULL
GO
```

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[dbo].[sdDecimalNumber]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	int
Length	4

SQL Script

```
CREATE TYPE [dbo].[sdDecimalNumber] FROM int NULL
GO
```

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[dbo].[surrogateKey_AN]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	int
Length	4

SQL Script

```
CREATE TYPE [dbo].[surrogateKey_AN] FROM int NULL
GO
```

Used By

[HumanResources].[Employee]
[Production].[Category]
[Production].[Product]
[Production].[Supplier]
[Sales].[Customer]
[Sales].[OrderDetail]
[Sales].[Orders]
[Sales].[Shipper]
[SystemVersioned].[Employee]
[Triggered].[AuditTriggeredEmployeeHistory]
[Triggered].[Employee]
[JsonOutput].[uvw_HumanResourcesEmployee]
[JsonOutput].[uvw_Order]
[JsonOutput].[MongoOrderDetail]
[Sales].[utvf_FindAllCustomerOrder]

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[dbo].[YearMonthDay]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	date
Length	3

SQL Script

```
CREATE TYPE [dbo].[YearMonthDay] FROM date NULL
GO
```

Used By

[HumanResources].[Employee]
[Triggered].[AuditTriggeredEmployeeHistory]
[Triggered].[Employee]

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[dDatetime].[sdAuditSysTime]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	datetime2
Length	8

SQL Script

```
CREATE TYPE [dDatetime].[sdAuditSysTime] FROM datetime2 NULL
GO
```

Uses

dDatetime

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[dDatetime].[sdNanosecondPreciseDatetime_JG]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	datetime
Length	8

SQL Script

```
CREATE TYPE [dDatetime].[sdNanosecondPreciseDatetime_JG] FROM datetime NULL
GO
```

Uses

dDatetime

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[dDatetime].[sdYearMonthDay_AG]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	date
Length	3

SQL Script

```
CREATE TYPE [dDatetime].[sdYearMonthDay_AG] FROM date NULL
GO
```

Uses

dDatetime

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[dGroupMidterm].[dBlob]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	varbinary
Length	max

SQL Script

```
CREATE TYPE [dGroupMidterm].[dBlob] FROM varbinary (max) NULL
GO
```

Uses

dGroupMidterm

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[dGroupMidterm].[dDateTime]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	datetime
Length	8

SQL Script

```
CREATE TYPE [dGroupMidterm].[dDateTime] FROM datetime NULL
GO
```

Uses

dGroupMidterm

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[dGroupMidterm].[dNumber]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	int
Length	4

SQL Script

```
CREATE TYPE [dGroupMidterm].[dNumber] FROM int NULL
GO
```

Uses

dGroupMidterm

Used By

[DbSecurity].[UserAuthorization]

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[dGroupMidterm].[dString]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	1

SQL Script

```
CREATE TYPE [dGroupMidterm].[dString] FROM char (1) NULL
GO
```

Uses

dGroupMidterm

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[dNumber].[sdIntegerNumber_JG]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	int
Length	4

SQL Script

```
CREATE TYPE [dNumber].[sdIntegerNumber_JG] FROM int NULL
GO
```

Uses

dNumber

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[dNumber].[sdMoneyNumber_JG]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	int
Length	4

SQL Script

```
CREATE TYPE [dNumber].[sdMoneyNumber_JG] FROM int NULL
GO
```

Uses

dNumber

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[dString].[sdAddressString_AN]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	1

SQL Script

```
CREATE TYPE [dString].[sdAddressString_AN] FROM char (1) NULL
GO
```

Uses

dString

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[dString].[sdContactInformation_AG]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	14

SQL Script

```
CREATE TYPE [dString].[sdContactInformation_AG] FROM char (14) NULL
GO
```

Uses

dString

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[dString].[sdFlagCharacterString]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	1

SQL Script

```
CREATE TYPE [dString].[sdFlagCharacterString] FROM char (1) NULL
GO
```

Uses

dString

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[dString].[sdMiscellanousStrings]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	1

SQL Script

```
CREATE TYPE [dString].[sdMiscellanousStrings] FROM char (1) NULL
GO
```

Uses

dString

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[dString].[sdNameString_AG]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	1

SQL Script

```
CREATE TYPE [dString].[sdNameString_AG] FROM char (1) NULL
GO
```

Uses

dString

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[dString].[sdTitleString_JG]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	1

SQL Script

```
CREATE TYPE [dString].[sdTitleString_JG] FROM char (1) NULL
GO
```

Uses

dString

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[sdAddressString_AN].[addressline_AN]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	varchar
Length	35

SQL Script

```
CREATE TYPE [sdAddressString_AN].[addressline_AN] FROM varchar (35) NULL
GO
```

Uses

sdAddressString_AN

Used By

[HumanResources].[Employee]
[Production].[Supplier]
[Sales].[Customer]
[Sales].[Orders]
[JsonOutput].[uvw_HumanResourcesEmployee]
[JsonOutput].[uvw_Order]
[JsonOutput].[uvw_ProductionSupplier]
[JsonOutput].[uvw_SalesCustomer]
[JsonOutput].[MongoOrder]

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[sdAddressString_AN].[city_WL]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	20

SQL Script

```
CREATE TYPE [sdAddressString_AN].[city_WL] FROM nvarchar (20) NULL
GO
```

Uses

sdAddressString_AN

Used By

[HumanResources].[Employee]
[Production].[Supplier]
[Sales].[Customer]
[Sales].[Orders]
[JsonOutput].[uvw_HumanResourcesEmployee]
[JsonOutput].[uvw_Order]
[JsonOutput].[uvw_ProductionSupplier]
[JsonOutput].[uvw_SalesCustomer]
[JsonOutput].[MongoOrder]

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[sdAddressString_AN].[country_AG]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	3

SQL Script

```
CREATE TYPE [sdAddressString_AN].[country_AG] FROM char (3) NULL
GO
```

Uses

sdAddressString_AN

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]

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[sdAddressString_AN].[postalCode_AN]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	5

SQL Script

```
CREATE TYPE [sdAddressString_AN].[postalCode_AN] FROM char (5) NULL
GO
```

Uses

sdAddressString_AN

Used By

[HumanResources].[Employee]
[Production].[Supplier]
[Sales].[Customer]
[Sales].[Orders]
[JsonOutput].[uvw_HumanResourcesEmployee]
[JsonOutput].[uvw_Order]
[JsonOutput].[uvw_ProductionSupplier]
[JsonOutput].[uvw_SalesCustomer]
[JsonOutput].[MongoOrder]

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[sdAddressString_AN].[region_AG]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	40

SQL Script

```
CREATE TYPE [sdAddressString_AN].[region_AG] FROM nvarchar (40) NULL
GO
```

Uses

sdAddressString_AN

Used By

[HumanResources].[Employee]
[Production].[Supplier]
[Sales].[Customer]
[Sales].[Orders]
[JsonOutput].[uvw_HumanResourcesEmployee]
[JsonOutput].[uvw_Order]
[JsonOutput].[uvw_ProductionSupplier]
[JsonOutput].[uvw_SalesCustomer]
[JsonOutput].[MongoOrder]

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[sdAddressString_AN].[state_AN]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	2

SQL Script

```
CREATE TYPE [sdAddressString_AN].[state_AN] FROM char (2) NULL
GO
```

Uses

sdAddressString_AN

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[sdAuditSysTime_AG].[auditTriggeredTimestamp_WL]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	datetime2
Length	8

SQL Script

```
CREATE TYPE [sdAuditSysTime_AG].[auditTriggeredTimestamp_WL] FROM datetime2 NOT NULL
GO
```

Uses

sdAuditSysTime_AG

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[sdAuditSysTime_AG].[sysEnd_WL]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	datetime2
Length	8

SQL Script

```
CREATE TYPE [sdAuditSysTime_AG].[sysEnd_WL] FROM datetime2 NOT NULL
GO
```

Uses

sdAuditSysTime_AG

Used By

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

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[sdAuditSysTime_AG].[sysStart_WL]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	datetime2
Length	8

SQL Script

```
CREATE TYPE [sdAuditSysTime_AG].[sysStart_WL] FROM datetime2 NOT NULL
GO
```

Uses

sdAuditSysTime_AG

Used By

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

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[sdContactNumber_AG].[faxNumber_AG]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	14

SQL Script

```
CREATE TYPE [sdContactNumber_AG].[faxNumber_AG] FROM char (14) NULL
GO
```

Uses

sdContactNumber_AG

Used By

[Production].[Supplier]
[Sales].[Customer]
[JsonOutput].[uvw_ProductionProduct]
[JsonOutput].[uvw_ProductionSupplier]
[JsonOutput].[uvw_SalesCustomer]

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[sdContactNumber_AG].[phoneNumber_AN]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	14

SQL Script

```
CREATE TYPE [sdContactNumber_AG].[phoneNumber_AN] FROM char (14) NULL
GO
```

Uses

sdContactNumber_AG

Used By

[Data].[Membership]
[HumanResources].[Employee]
[Production].[Supplier]
[Sales].[Customer]
[Sales].[Shipper]
[Triggered].[AuditTriggeredEmployeeHistory]
[Triggered].[Employee]
[JsonOutput].[uvw_HumanResourcesEmployee]
[JsonOutput].[uvw_ProductionProduct]
[JsonOutput].[uvw_ProductionSupplier]
[JsonOutput].[uvw_SalesCustomer]
[JsonOutput].[uvw_SalesShipper]

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[sdFlagCharacter_JG].[flag_WL]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	char
Length	1

SQL Script

```
CREATE TYPE [sdFlagCharacter_JG].[flag_WL] FROM char (1) NOT NULL
GO
```

Uses

sdFlagCharacter_JG

Used By

[Production].[Product]
[Triggered].[AuditTriggeredEmployeeHistory]
[JsonOutput].[uvw_ProductionProduct]

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[sdFlagCharacter_JG].[triggerOption_JG]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	1

SQL Script

```
CREATE TYPE [sdFlagCharacter_JG].[triggerOption_JG] FROM char (1) NULL
GO
```

Uses

sdFlagCharacter_JG

Used By

[Triggered].[AuditTriggeredEmployeeHistory]

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[sdIntegerNumber_JG].[sdPositiveIntegerNumber_JG]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	int
Length	4

SQL Script

```
CREATE TYPE [sdIntegerNumber_JG].[sdPositiveIntegerNumber_JG] FROM int NULL
GO
```

Uses

sdIntegerNumber_JG

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[sdIntegerNumber_JG].[sequenceNumber_JG]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	int
Length	4

SQL Script

```
CREATE TYPE [sdIntegerNumber_JG].[sequenceNumber_JG] FROM int NOT NULL
GO
```

Uses

sdIntegerNumber_JG

Used By

[Data].[Membership]
[Triggered].[AuditTriggeredEmployeeHistory]

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[sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	int
Length	4

SQL Script

```
CREATE TYPE [sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG] FROM int NOT NULL
GO
```

Uses

sdKeyIntegerNumber_JG

Used By

[Data].[Membership]
[dbo].[Nums]
[HumanResources].[Employee]
[Production].[Category]
[Production].[Product]
[Production].[Supplier]
[Sales].[Customer]
[Sales].[Orders]
[Sales].[Shipper]
[Service].[Feedback]
[Triggered].[AuditTriggeredEmployeeHistory]
[JsonOutput].[uvw_HumanResourcesEmployee]
[JsonOutput].[uvw_Order]
[JsonOutput].[uvw_ProductionCategory]
[JsonOutput].[uvw_ProductionProduct]
[JsonOutput].[uvw_ProductionSupplier]
[JsonOutput].[uvw_SalesCustomer]
[JsonOutput].[uvw_SalesShipper]
[JsonOutput].[MongoOrder]
[Sales].[utvf_FindAllCustomerOrder]

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[sdMiscellanousStrings_AG].[classTime_AN]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	5

SQL Script

```
CREATE TYPE [sdMiscellanousStrings_AG].[classTime_AN] FROM char (5) NULL
GO
```

Uses

sdMiscellanousStrings_AG

Used By

[DbSecurity].[UserAuthorization]

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[sdMiscellanousStrings_AG].[notes_WL]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	300

SQL Script

```
CREATE TYPE [sdMiscellanousStrings_AG].[notes_WL] FROM nvarchar (300) NULL
GO
```

Uses

sdMiscellanousStrings_AG

Used By

[Production].[Category]
[Service].[Feedback]
[SystemVersioned].[Employee]
[Triggered].[AuditTriggeredEmployeeHistory]
[JsonOutput].[uvw_ProductionCategory]
[JsonOutput].[uvw_ProductionProduct]

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[sdMoneyNumber_JG].[currency_JG]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	int
Length	4

SQL Script

```
CREATE TYPE [sdMoneyNumber_JG].[currency_JG] FROM int NULL
GO
```

Uses

sdMoneyNumber_JG

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[sdMoneyNumber_JG].[unitPrice_WL]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	int
Length	4

SQL Script

```
CREATE TYPE [sdMoneyNumber_JG].[unitPrice_WL] FROM int NOT NULL
GO
```

Uses

sdMoneyNumber_JG

Used By

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

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[sdNameString_AG].[companyName_AG]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	60

SQL Script

```
CREATE TYPE [sdNameString_AG].[companyName_AG] FROM nvarchar (60) NULL
GO
```

Uses

sdNameString_AG

Used By

[Production].[Supplier]
[Sales].[Customer]
[Sales].[Shipper]
[JsonOutput].[uvw_ProductionProduct]
[JsonOutput].[uvw_ProductionSupplier]
[JsonOutput].[uvw_SalesCustomer]
[JsonOutput].[uvw_SalesShipper]
[Sales].[utvf_FindAllCustomerOrder]

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[sdNameString_AG].[firstName_AG]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	25

SQL Script

```
CREATE TYPE [sdNameString_AG].[firstName_AG] FROM nvarchar (25) NULL
GO
```

Uses

sdNameString_AG

Used By

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

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[sdNameString_AG].[fullName_AG]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	52

SQL Script

```
CREATE TYPE [sdNameString_AG].[fullName_AG] FROM nvarchar (52) NULL
GO
```

Uses

sdNameString_AG

Used By

[DbSecurity].[UserAuthorization]
[Production].[Category]
[Production].[Product]
[Production].[Supplier]
[Sales].[Customer]
[Sales].[Orders]
[SystemVersioned].[Employee]
[Triggered].[AuditTriggeredEmployeeHistory]
[Triggered].[Employee]
[JsonOutput].[uvw_Order]
[JsonOutput].[uvw_ProductionCategory]
[JsonOutput].[uvw_ProductionProduct]
[JsonOutput].[uvw_ProductionSupplier]
[JsonOutput].[uvw_SalesCustomer]
[JsonOutput].[MongoOrder]
[Sales].[utvf_FindAllCustomerOrder]

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[sdNameString_AG].[lastName_AG]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	25

SQL Script

```
CREATE TYPE [sdNameString_AG].[lastName_AG] FROM nvarchar (25) NULL
GO
```

Uses

sdNameString_AG

Used By

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

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[sdNanosecondPreciseDatetime_JG].[timeStamp_AN]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	datetime2
Length	8

SQL Script

```
CREATE TYPE [sdNanosecondPreciseDatetime_JG].[timeStamp_AN] FROM datetime2 NULL
GO
```

Uses

sdNanosecondPreciseDatetime_JG

Used By

[DbSecurity].[UserAuthorization]
[HumanResources].[Employee]
[Production].[Category]
[Production].[Product]
[Production].[Supplier]
[Sales].[Customer]
[Sales].[OrderDetail]
[Sales].[Orders]
[Sales].[Shipper]
[Service].[Feedback]
[Triggered].[AuditTriggeredEmployeeHistory]
[Triggered].[Employee]
[JsonOutput].[uvw_Order]
[JsonOutput].[MongoOrder]
[Sales].[utvf_FindAllCustomerOrder]

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[sdPositiveIntegerNumber_JG].[grade_JG]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	int
Length	4

SQL Script

```
CREATE TYPE [sdPositiveIntegerNumber_JG].[grade_JG] FROM int NULL
GO
```

Uses

sdPositiveIntegerNumber_JG

Used By

[Service].[Feedback]

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[sdPositiveIntegerNumber_JG].[quantity_WL]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	int
Length	4

SQL Script

```
CREATE TYPE [sdPositiveIntegerNumber_JG].[quantity_WL] FROM int NOT NULL
GO
```

Uses

sdPositiveIntegerNumber_JG

Used By

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

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[sdPositiveIntegerNumber_JG].[sdKeyIntegerNumber_JG]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	int
Length	4

SQL Script

```
CREATE TYPE [sdPositiveIntegerNumber_JG].[sdKeyIntegerNumber_JG] FROM int NULL
GO
```

Uses

sdPositiveIntegerNumber_JG

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[sdTitleString_JG].[contactTitle_JG]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	60

SQL Script

```
CREATE TYPE [sdTitleString_JG].[contactTitle_JG] FROM nvarchar (60) NULL
GO
```

Uses

sdTitleString_JG

Used By

[HumanResources].[Employee]
[Production].[Supplier]
[Sales].[Customer]
[JsonOutput].[uvw_HumanResourcesEmployee]
[JsonOutput].[uvw_ProductionSupplier]
[JsonOutput].[uvw_SalesCustomer]

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[sdTitleString_JG].[titleOfCourtesy_AG]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	4

SQL Script

```
CREATE TYPE [sdTitleString_JG].[titleOfCourtesy_AG] FROM char (4) NULL
GO
```

Uses

sdTitleString_JG

Used By

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

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[sdYearMonthDay_AG].[birthDate_AG]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	date
Length	3

SQL Script

```
CREATE TYPE [sdYearMonthDay_AG].[birthDate_AG] FROM date NULL
GO
```

Uses

sdYearMonthDay_AG

Used By

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

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[sdYearMonthDay_AG].[day_AG]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	2

SQL Script

```
CREATE TYPE [sdYearMonthDay_AG].[day_AG] FROM char (2) NULL
GO
```

Uses

sdYearMonthDay_AG

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[sdYearMonthDay_AG].[hireDate_AG]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	date
Length	3

SQL Script

```
CREATE TYPE [sdYearMonthDay_AG].[hireDate_AG] FROM date NULL
GO
```

Uses

sdYearMonthDay_AG

Used By

[HumanResources].[Employee]
[Triggered].[AuditTriggeredEmployeeHistory]
[Triggered].[Employee]
[JsonOutput].[uvw_HumanResourcesEmployee]

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[sdYearMonthDay_AG].[month_AG]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	2

SQL Script

```
CREATE TYPE [sdYearMonthDay_AG].[month_AG] FROM char (2) NULL
GO
```

Uses

sdYearMonthDay_AG

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[sdYearMonthDay_AG].[year_AG]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	char
Length	4

SQL Script

```
CREATE TYPE [sdYearMonthDay_AG].[year_AG] FROM char (4) NULL
GO
```

Uses

sdYearMonthDay_AG

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Users

Objects

Name
dbo
guest

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dbo

Properties

Property	Value
Type	SqlUser
Login Name	sa
Default Schema	dbo

Database Level Permissions

Type	Action
CONNECT	Grant

SQL Script

```
GO
```

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guest

Properties

Property	Value
Type	SqlUser
Default Schema	guest

SQL Script

```
GO
```

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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

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db_datareader

Properties

Property	Value
Owner	dbo

db_datawriter

Properties

Property	Value
Owner	dbo

db_ddladmin

Properties

Property	Value
Owner	dbo

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db_denydatareader

Properties

Property	Value
Owner	dbo

db_denydatawriter

Properties

Property	Value
Owner	dbo

db_owner

Properties

Property	Value
Owner	dbo

db_securityadmin

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Properties

Property	Value
Owner	dbo

public

Properties

Property	Value
Owner	dbo

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Schemas

Objects

Name
Audit
Data
dBlob
DbSecurity
dDatetime
dGroupMidterm
dNumber
dString
Example
Hashing
HumanResources
JsonOutput
Production
RelationalCalculii
RelationalCrossJoin
Sales
sdAddressString_AN
sdAuditSysTime_AG
sdContactNumber_AG
sdFlagCharacter_JG
sdIntegerNumber_JG
sdKeyIntegerNumber_JG
sdMiscellanousStrings_AG
sdMoneyNumber_JG
sdNameString_AG
sdNanosecondPreciseDatetime_JG
sdPositiveIntegerNumber_JG
sdTitleString_JG
sdYearMonthDay_AG
Service
SystemVersioned
Temporal
Triggered
Udt

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Utils

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Audit

Properties

Property	Value
Owner	dbo

SQL Script

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

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Data

Properties

Property	Value
Owner	dbo

SQL Script

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

Used By

[Data].[Membership]

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dBlob

Properties

Property	Value
Owner	dbo

SQL Script

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

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DbSecurity

Properties

Property	Value
Owner	dbo

SQL Script

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

Used By

[DbSecurity].[UserAuthorization]

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dDatetime

Properties

Property	Value
Owner	dbo

SQL Script

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

Used By

[dDatetime].[sdAuditSysTime]
[dDatetime].[sdNanosecondPreciseDatetime_JG]
[dDatetime].[sdYearMonthDay_AG]

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dGroupMidterm

Properties

Property	Value
Owner	dbo

SQL Script

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

Used By

[dGroupMidterm].[dBlob]
[dGroupMidterm].[dDateTime]
[dGroupMidterm].[dNumber]
[dGroupMidterm].[dString]

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dNumber

Properties

Property	Value
Owner	dbo

SQL Script

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

Used By

[dNumber].[sdIntegerNumber_JG]
[dNumber].[sdMoneyNumber_JG]

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dString

Properties

Property	Value
Owner	dbo

SQL Script

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

Used By

[dString].[sdAddressString_AN]
[dString].[sdContactInformation_AG]
[dString].[sdFlagCharacterString]
[dString].[sdMiscellanousStrings]
[dString].[sdNameString_AG]
[dString].[sdTitleString_JG]

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Example

Properties

Property	Value
Owner	dbo

SQL Script

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

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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]

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HumanResources

Properties

Property	Value
Owner	dbo

SQL Script

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

Used By

[HumanResources].[Employee]

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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]

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Production

Properties

Property	Value
Owner	dbo

SQL Script

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

Used By

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

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RelationalCalculii

Properties

Property	Value
Owner	dbo

SQL Script

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

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RelationalCrossJoin

Properties

Property	Value
Owner	dbo

SQL Script

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

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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]

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sdAddressString_AN

Properties

Property	Value
Owner	dbo

SQL Script

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

Used By

[sdAddressString_AN].[addressline_AN]
[sdAddressString_AN].[city_WL]
[sdAddressString_AN].[country_AG]
[sdAddressString_AN].[postalCode_AN]
[sdAddressString_AN].[region_AG]
[sdAddressString_AN].[state_AN]

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sdAuditSysTime_AG

Properties

Property	Value
Owner	dbo

SQL Script

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

Used By

[sdAuditSysTime_AG].[auditTriggeredTimestamp_WL]
[sdAuditSysTime_AG].[sysEnd_WL]
[sdAuditSysTime_AG].[sysStart_WL]

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sdContactNumber_AG

Properties

Property	Value
Owner	dbo

SQL Script

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

Used By

[sdContactNumber_AG].[faxNumber_AG]
[sdContactNumber_AG].[phoneNumber_AN]

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sdFlagCharacter_JG

Properties

Property	Value
Owner	dbo

SQL Script

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

Used By

[sdFlagCharacter_JG].[flag_WL]
[sdFlagCharacter_JG].[triggerOption_JG]

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sdIntegerNumber_JG

Properties

Property	Value
Owner	dbo

SQL Script

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

Used By

[sdIntegerNumber_JG].[sdPositiveIntegerNumber_JG]
[sdIntegerNumber_JG].[sequenceNumber_JG]

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sdKeyIntegerNumber_JG

Properties

Property	Value
Owner	dbo

SQL Script

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

Used By

[sdKeyIntegerNumber_JG].[surrogateKeyIdentity_JG]

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sdMiscellanousStrings_AG

Properties

Property	Value
Owner	dbo

SQL Script

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

Used By

[sdMiscellanousStrings_AG].[classTime_AN]
[sdMiscellanousStrings_AG].[notes_WL]

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sdMoneyNumber_JG

Properties

Property	Value
Owner	dbo

SQL Script

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

Used By

[sdMoneyNumber_JG].[currency_JG]
[sdMoneyNumber_JG].[unitPrice_WL]

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sdNameString_AG

Properties

Property	Value
Owner	dbo

SQL Script

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

Used By

[sdNameString_AG].[companyName_AG]
[sdNameString_AG].[firstName_AG]
[sdNameString_AG].[fullName_AG]
[sdNameString_AG].[lastName_AG]

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sdNanosecondPreciseDatetime_JG

Properties

Property	Value
Owner	dbo

SQL Script

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

Used By

[sdNanosecondPreciseDatetime_JG].[timeStamp_AN]

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sdPositiveIntegerNumber_JG

Properties

Property	Value
Owner	dbo

SQL Script

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

Used By

[sdPositiveIntegerNumber_JG].[grade_JG]
[sdPositiveIntegerNumber_JG].[quantity_WL]
[sdPositiveIntegerNumber_JG].[sdKeyIntegerNumber_JG]

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sdTitleString_JG

Properties

Property	Value
Owner	dbo

SQL Script

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

Used By

[sdTitleString_JG].[contactTitle_JG]
[sdTitleString_JG].[titleOfCourtesy_AG]

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sdYearMonthDay_AG

Properties

Property	Value
Owner	dbo

SQL Script

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

Used By

[sdYearMonthDay_AG].[birthDate_AG]
[sdYearMonthDay_AG].[day_AG]
[sdYearMonthDay_AG].[hireDate_AG]
[sdYearMonthDay_AG].[month_AG]
[sdYearMonthDay_AG].[year_AG]

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Service

Properties

Property	Value
Owner	dbo

SQL Script

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

Used By

[Service].[Feedback]

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SystemVersioned

Properties

Property	Value
Owner	dbo

SQL Script

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

Used By

[SystemVersioned].[Employee]

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Temporal

Properties

Property	Value
Owner	dbo

SQL Script

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

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Triggered

Properties

Property	Value
Owner	dbo

SQL Script

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

Used By

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

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Udt

Properties

Property	Value
Owner	dbo

SQL Script

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

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Utils

Properties

Property	Value
Owner	dbo

SQL Script

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

Used By

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

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