localhost,13001 Documentation

QueensClassSchedule

Server   localhost,13001

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Table of Contents

▤ *localhost,13001*

Databases (1)

- ▤ QueensClassSchedule

Server Properties

Property	Value
Product	Microsoft SQL Server
Version	15.0.4390.2
Language	English
Platform	NT x64
Edition	Developer Edition (64-bit)
Engine Edition	3 (Enterprise)
Processors	32
OS Version	6.2 (9200)
Physical Memory	25574
Is Clustered	False
Root Directory	C:\
Collation	SQL_Latin1_General_CP1_CI_AS

Server Settings

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

Advanced Server Settings

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

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

🗀 User databases

Databases (1)

- 🗄 QueensClassSchedule

▤ QueensClassSchedule Database

Database Properties

Property	Value
SQL Server Version	SqlServer2019
Compatibility Level	SQL Server 2016
Last backup time	12/08/2024
Last log backup time	12/06/2024
Creation date	Dec 3 2024
Users	7
Database Encryption Enabled	False
Database Encryption Algorithm	None
Database size	208.00 MB
Unallocated space	62.98 MB

Database Options

Property	Value
Compatibility Level	130
Database collation	SQL_Latin1_General_CP1_CI_AS
Restrict access	MULTI_USER
Is read-only	False
Auto close	False
Auto shrink	False
Database status	ONLINE
In standby	False
Cleanly shutdown	False
Supplemental logging enabled	False
Snapshot isolation state	OFF
Read committed snapshot on	False
Recovery model	FULL
Page verify option	CHECKSUM
Auto create statistics	True
Auto update statistics	True
Auto update statistics asynchronously	False
ANSI NULL default	False
ANSI NULL enabled	False
ANSI padding enabled	False

ANSI warnings enabled	False
Arithmetic abort enabled	False
Concatenating NULL yields NULL	False
Numeric roundabort enabled	False
Quoted Identifier On	False
Recursive triggers enabled	False
Close cursors on commit	False
Local cursors by default	False
Fulltext enabled	True
Trustworthy	False
Database chaining	False
Forced parameterization	False
Master key encrypted by server	False
Published	False
Subscribed	False
Merge published	False
Is distribution database	False
Sync with backup	False
Service broker GUID	9f5d9c27-bc5c-4d67-9b27-e7ae78bc354f
Service broker enabled	False
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
QC2019	Data	72.00 MB	unlimited	64.00 MB	/var/opt/mssql/data/QueensClassScheduleCurrent-Semester.mdf
QC2019_log	Log	136.00 MB	2048.00 GB	64.00 MB	/var/opt/mssql/log/QueensClassScheduleCurrent-Semester_0.ldf

▦ *Tables*

Objects

Name
Course.Class
Course.ClassRoom
Course.Course
Course.CourseInstructor
Course.ModeOfInstruction
DbSecurity.UserAuthorization
Department.Department
Department.Instructor
Location.BuildingLocation
Location.RoomLocation
Process.WorkFlowSteps
Uploadfile.CurrentSemesterCourseOfferings

🖽 [Course].[Class]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	4522
Created	11:30:16 PM Sunday, December 8, 2024
Last Modified	11:36:30 PM Sunday, December 8, 2024

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity	Default
PK C	ClassID	[Udt].[SurrogateKeyInt]	4	NOT NULL	1 - 1	
	Enrollment	[Udt].[SurrogateKeyInt]	4	NULL allowed		
	Limit	[Udt].[SurrogateKeyInt]	4	NULL allowed		
	Section	[Udt].[String30]	60	NULL allowed		
	Department	[Udt].[String30]	60	NULL allowed		
	Hours	[Udt].[FloatField]	8	NULL allowed		
	Credits	[Udt].[SurrogateKeyInt]	4	NULL allowed		
	Days	[Udt].[String30]	60	NULL allowed		
	ClassStart	[Udt].[String20]	40	NULL allowed		
	ClassEnd	[Udt].[String20]	40	NULL allowed		
FK	UserAuthorizationKey	[Udt].[SurrogateKeyInt]	4	NULL allowed		
	DateAdded	[Udt].[DateAdded]	8	NULL allowed		(sysdatetime())
	DateOfLastUpdate	[Udt].[DateAdded]	8	NULL allowed		(sysdatetime())

Indexes

Key	Name	Key Columns	Unique
PK C	PK__Class__CB1927A06BC828DF	ClassID	True

Foreign Keys

Name	Columns
FK_Class_UserAuthorization	UserAuthorizationKey->[DbSecurity].[UserAuthorization].[UserAuthorizationKey]

SQL Script

```
CREATE TABLE [Course].[Class]
(
[ClassID] [Udt].[SurrogateKeyInt] NOT NULL IDENTITY(1, 1),
[Enrollment] [Udt].[SurrogateKeyInt] NULL,
[Limit] [Udt].[SurrogateKeyInt] NULL,
[Section] [Udt].[String30] NULL,
[Department] [Udt].[String30] NULL,
[Hours] [Udt].[FloatField] NULL,
[Credits] [Udt].[SurrogateKeyInt] NULL,
[Days] [Udt].[String30] NULL,
[ClassStart] [Udt].[String20] NULL,
[ClassEnd] [Udt].[String20] NULL,
[UserAuthorizationKey] [Udt].[SurrogateKeyInt] NULL,
[DateAdded] [Udt].[DateAdded] NULL CONSTRAINT [DF__Class__DateAdded__02C769E9] DEFAULT
(sysdatetime()),
[DateOfLastUpdate] [Udt].[DateAdded] NULL CONSTRAINT [DF__Class__DateOfLas__03BB8E22] DEFAULT
(sysdatetime())
) ON [PRIMARY]
GO
ALTER TABLE [Course].[Class] ADD CONSTRAINT [PK__Class__CB1927A06BC828DF] PRIMARY KEY CLUSTERED
([ClassID]) ON [PRIMARY]
GO
ALTER TABLE [Course].[Class] ADD CONSTRAINT [FK_Class_UserAuthorization] FOREIGN KEY ([User-
AuthorizationKey]) REFERENCES [DbSecurity].[UserAuthorization] ([UserAuthorizationKey])
GO
```

Uses

[DbSecurity].[UserAuthorization]
[Udt].[DateAdded]
[Udt].[FloatField]
[Udt].[String20]
[Udt].[String30]
[Udt].[SurrogateKeyInt]
Course

Used By

[Course].[ClassRoom]
[Course].[usp_LoadClassRoomTable]
[Course].[usp_LoadClassTable]

🖾 [Course].[ClassRoom]

Properties

Property	Value
Row Count (~)	25378
Created	11:36:25 PM Sunday, December 8, 2024
Last Modified	11:36:30 PM Sunday, December 8, 2024

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity	Default
PK/C	ClassRoomID	[Udt].[SurrogateKeyInt]	4	NOT NULL	1 - 1	
FK	ClassID	[Udt].[SurrogateKeyInt]	4	NOT NULL		
FK	RoomLocationID	[Udt].[SurrogateKeyInt]	4	NOT NULL		
FK	UserAuthorizationKey	[Udt].[SurrogateKeyInt]	4	NULL allowed		
	DateAdded	[Udt].[DateAdded]	8	NULL allowed		(sysdatetime())
	DateOfLastUpdate	[Udt].[DateAdded]	8	NULL allowed		(sysdatetime())

Indexes

Key	Name	Key Columns	Unique
PK/C	PK_ClassRoom	ClassRoomID	True

Foreign Keys

Name	Columns
FK_ClassRoom_Class	ClassID->[Course].[Class].[ClassID]
FK_ClassRoom_RoomLocation	RoomLocationID->[Location].[RoomLocation].[RoomLocationID]
FK_ClassRoom_UserAuthorization	UserAuthorizationKey->[DbSecurity].[UserAuthorization].[UserAuthorizationKey]

SQL Script

```
CREATE TABLE [Course].[ClassRoom]
(
[ClassRoomID] [Udt].[SurrogateKeyInt] NOT NULL IDENTITY(1, 1),
[ClassID] [Udt].[SurrogateKeyInt] NOT NULL,
[RoomLocationID] [Udt].[SurrogateKeyInt] NOT NULL,
```

```
[UserAuthorizationKey] [Udt].[SurrogateKeyInt] NULL,
[DateAdded] [Udt].[DateAdded] NULL CONSTRAINT [DF_ClassRoom_DateAdded] DEFAULT (sysdatetime()),
[DateOfLastUpdate] [Udt].[DateAdded] NULL CONSTRAINT [DF_ClassRoom_DateOfLastUpdate] DEFAULT
(sysdatetime())
) ON [PRIMARY]
GO
ALTER TABLE [Course].[ClassRoom] ADD CONSTRAINT [PK_ClassRoom] PRIMARY KEY CLUSTERED ([ClassRoom-
ID]) ON [PRIMARY]
GO
ALTER TABLE [Course].[ClassRoom] ADD CONSTRAINT [FK_ClassRoom_Class] FOREIGN KEY ([ClassID])
REFERENCES [Course].[Class] ([ClassID])
GO
ALTER TABLE [Course].[ClassRoom] ADD CONSTRAINT [FK_ClassRoom_RoomLocation] FOREIGN KEY ([Room-
LocationID]) REFERENCES [Location].[RoomLocation] ([RoomLocationID])
GO
ALTER TABLE [Course].[ClassRoom] ADD CONSTRAINT [FK_ClassRoom_UserAuthorization] FOREIGN KEY
([UserAuthorizationKey]) REFERENCES [DbSecurity].[UserAuthorization] ([UserAuthorizationKey])
GO
```

Uses

[Course].[Class]
[DbSecurity].[UserAuthorization]
[Location].[RoomLocation]
[Udt].[DateAdded]
[Udt].[SurrogateKeyInt]
Course

Used By

[Course].[usp_LoadClassRoomTable]

📇 [Course].[Course]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	4187
Created	11:30:16 PM Sunday, December 8, 2024
Last Modified	11:36:30 PM Sunday, December 8, 2024

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity
PK C	CourseID	[Udt].[SurrogateKeyInt]	4	NOT NULL	1 - 1
	Section	[Udt].[String4]	8	NULL allowed	
	Course	[Udt].[String30]	60	NULL allowed	
	Semester	[Udt].[String20]	40	NULL allowed	
	Description	[Udt].[String100]	200	NULL allowed	
FK	UserAuthorizationKey	[Udt].[SurrogateKeyInt]	4	NULL allowed	
	DateAdded	[Udt].[DateAdded]	8	NULL allowed	
	DateOfLastUpdate	[Udt].[DateAdded]	8	NULL allowed	

Indexes

Key	Name	Key Columns	Unique
PK C	PK__Course__C92D71874090F34A	CourseID	True

Foreign Keys

Name	Columns
FK_Course_UserAuthorization	UserAuthorizationKey->[DbSecurity].[UserAuthorization].[UserAuthorizationKey]

SQL Script

```
CREATE TABLE [Course].[Course]
(
[CourseID] [Udt].[SurrogateKeyInt] NOT NULL IDENTITY(1, 1),
[Section] [Udt].[String4] NULL,
```

```
[Course] [Udt].[String30] NULL,
[Semester] [Udt].[String20] NULL,
[Description] [Udt].[String100] NULL,
[UserAuthorizationKey] [Udt].[SurrogateKeyInt] NULL,
[DateAdded] [Udt].[DateAdded] NULL,
[DateOfLastUpdate] [Udt].[DateAdded] NULL
) ON [PRIMARY]
GO
ALTER TABLE [Course].[Course] ADD CONSTRAINT [PK__Course__C92D71874090F34A] PRIMARY KEY CLUSTERED
([CourseID]) ON [PRIMARY]
GO
ALTER TABLE [Course].[Course] ADD CONSTRAINT [FK_Course_UserAuthorization] FOREIGN KEY ([User-
AuthorizationKey]) REFERENCES [DbSecurity].[UserAuthorization] ([UserAuthorizationKey])
GO
```

Uses

[DbSecurity].[UserAuthorization]
[Udt].[DateAdded]
[Udt].[String100]
[Udt].[String20]
[Udt].[String30]
[Udt].[String4]
[Udt].[SurrogateKeyInt]
Course

Used By

[Course].[CourseInstructor]
[Course].[usp_LoadCourseInstructorTable]
[Course].[usp_LoadCourseTable]

🖼 [Course].[CourseInstructor]

Properties

Property	Value
Row Count (~)	4424
Created	11:36:23 PM Sunday, December 8, 2024
Last Modified	11:36:30 PM Sunday, December 8, 2024

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity
PK/C	CourseInstructorID	[Udt].[SurrogateKeyInt]	4	NOT NULL	1 - 1
FK	CourseID	[Udt].[SurrogateKeyInt]	4	NOT NULL	
FK	InstructorID	[Udt].[SurrogateKeyInt]	4	NOT NULL	
FK	UserAuthorizationKey	[Udt].[SurrogateKeyInt]	4	NULL allowed	
	DateAdded	[Udt].[DateAdded]	8	NULL allowed	
	DateOfLastUpdate	[Udt].[DateAdded]	8	NULL allowed	

Indexes

Key	Name	Key Columns	Unique
PK/C	PK__CourseIn__B31798EA76DC6A18	CourseInstructorID	True

Foreign Keys

Name	Columns
FK_CourseInstructor_Course	CourseID->[Course].[Course].[CourseID]
FK_CourseInstructor_Instructor	InstructorID->[Department].[Instructor].[InstructorID]
FK_CourseInstructor_UserAuthorization	UserAuthorizationKey->[DbSecurity].[UserAuthorization].[UserAuthorizationKey]

SQL Script

```
CREATE TABLE [Course].[CourseInstructor]
(
[CourseInstructorID] [Udt].[SurrogateKeyInt] NOT NULL IDENTITY(1, 1),
[CourseID] [Udt].[SurrogateKeyInt] NOT NULL,
[InstructorID] [Udt].[SurrogateKeyInt] NOT NULL,
```

```
[UserAuthorizationKey] [Udt].[SurrogateKeyInt] NULL,
[DateAdded] [Udt].[DateAdded] NULL,
[DateOfLastUpdate] [Udt].[DateAdded] NULL
) ON [PRIMARY]
GO
ALTER TABLE [Course].[CourseInstructor] ADD CONSTRAINT [PK__CourseIn__B31798EA76DC6A18] PRIMARY
KEY CLUSTERED ([CourseInstructorID]) ON [PRIMARY]
GO
ALTER TABLE [Course].[CourseInstructor] ADD CONSTRAINT [FK_CourseInstructor_Course] FOREIGN KEY
([CourseID]) REFERENCES [Course].[Course] ([CourseID])
GO
ALTER TABLE [Course].[CourseInstructor] ADD CONSTRAINT [FK_CourseInstructor_Instructor] FOREIGN
KEY ([InstructorID]) REFERENCES [Department].[Instructor] ([InstructorID])
GO
ALTER TABLE [Course].[CourseInstructor] ADD CONSTRAINT [FK_CourseInstructor_UserAuthorization]
FOREIGN KEY ([UserAuthorizationKey]) REFERENCES [DbSecurity].[UserAuthorization] ([User-
AuthorizationKey])
GO
```

Uses

[Course].[Course]
[DbSecurity].[UserAuthorization]
[Department].[Instructor]
[Udt].[DateAdded]
[Udt].[SurrogateKeyInt]
Course

Used By

[Course].[usp_LoadCourseInstructorTable]

🖽 [Course].[ModeOfInstruction]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	4522
Created	11:30:16 PM Sunday, December 8, 2024
Last Modified	11:36:30 PM Sunday, December 8, 2024

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity
PK C	ModeID	[Udt].[SurrogateKeyInt]	4	NOT NULL	1 - 1
	ModeName	[Udt].[String100]	200	NOT NULL	
FK	UserAuthorizationKey	[Udt].[SurrogateKeyInt]	4	NULL allowed	
	DateAdded	[Udt].[DateAdded]	8	NULL allowed	
	DateOfLastUpdate	[Udt].[DateAdded]	8	NULL allowed	

Indexes

Key	Name	Key Columns	Unique
PK C	PK__ModeOfIn__D83F75E4EAD275C6	ModeID	True

Foreign Keys

Name	Columns
FK_ModeOfInstruction_UserAuthorization	UserAuthorizationKey->[DbSecurity].[UserAuthorization].[UserAuthorizationKey]

SQL Script

```
CREATE TABLE [Course].[ModeOfInstruction]
(
[ModeID] [Udt].[SurrogateKeyInt] NOT NULL IDENTITY(1, 1),
[ModeName] [Udt].[String100] NOT NULL,
[UserAuthorizationKey] [Udt].[SurrogateKeyInt] NULL,
[DateAdded] [Udt].[DateAdded] NULL,
[DateOfLastUpdate] [Udt].[DateAdded] NULL
) ON [PRIMARY]
```

```
GO
ALTER TABLE [Course].[ModeOfInstruction] ADD CONSTRAINT [PK__ModeOfIn__D83F75E4EAD275C6] PRIMARY
KEY CLUSTERED ([ModeID]) ON [PRIMARY]
GO
ALTER TABLE [Course].[ModeOfInstruction] ADD CONSTRAINT [FK_ModeOfInstruction_UserAuthorization]
FOREIGN KEY ([UserAuthorizationKey]) REFERENCES [DbSecurity].[UserAuthorization] ([User-
AuthorizationKey])
GO
```

Uses

[DbSecurity].[UserAuthorization]

[Udt].[DateAdded]

[Udt].[String100]

[Udt].[SurrogateKeyInt]

Course

Used By

[Course].[usp_LoadModeOfInstructionTable]

⊞ [DbSecurity].[UserAuthorization]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	6
Created	11:28:35 PM Sunday, December 8, 2024
Last Modified	11:36:30 PM Sunday, December 8, 2024

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity	Default
PK C	UserAuthorizationKey	[Udt].[SurrogateKeyInt]	4	NOT NULL	1 - 1	
	ClassTime	[Udt].[ClassTime]	10	NULL allowed		('10:45')
	IndividualProject	[Udt].[IndividualProject]	120	NULL allowed		('Project 3')
	GroupMemberLastName	[Udt].[LastName]	70	NOT NULL		
	GroupMemberFirstName	[Udt].[FirstName]	40	NOT NULL		
	GroupName	[Udt].[GroupName]	40	NOT NULL		('Group 2')
	DateAdded	[Udt].[DateAdded]	8	NULL allowed		(sysdatetime())

Indexes

Key	Name	Key Columns	Unique
PK C	PK__UserAuth__0FEC36CB61E7629A	UserAuthorizationKey	True

SQL Script

```
CREATE TABLE [DbSecurity].[UserAuthorization]
(
[UserAuthorizationKey] [Udt].[SurrogateKeyInt] NOT NULL IDENTITY(1, 1),
[ClassTime] [Udt].[ClassTime] NULL CONSTRAINT [DF__UserAutho__Class__756D6ECB] DEFAULT ('10:45'),
[IndividualProject] [Udt].[IndividualProject] NULL CONSTRAINT [DF__UserAutho__Indiv__76619304]
DEFAULT ('Project 3'),
[GroupMemberLastName] [Udt].[LastName] NOT NULL,
[GroupMemberFirstName] [Udt].[FirstName] NOT NULL,
[GroupName] [Udt].[GroupName] NOT NULL CONSTRAINT [DF__UserAutho__Group__7755B73D] DEFAULT
('Group 2'),
[DateAdded] [Udt].[DateAdded] NULL CONSTRAINT [DF__UserAutho__DateA__7849DB76] DEFAULT
```

```
(sysdatetime())
) ON [PRIMARY]
GO
ALTER TABLE [DbSecurity].[UserAuthorization] ADD CONSTRAINT [PK__UserAuth__0FEC36CB61E7629A]
PRIMARY KEY CLUSTERED ([UserAuthorizationKey]) ON [PRIMARY]
GO
```

Uses

[Udt].[ClassTime]

[Udt].[DateAdded]

[Udt].[FirstName]

[Udt].[GroupName]

[Udt].[IndividualProject]

[Udt].[LastName]

[Udt].[SurrogateKeyInt]

DbSecurity

Used By

[Course].[Class]

[Course].[ClassRoom]

[Course].[Course]

[Course].[CourseInstructor]

[Course].[ModeOfInstruction]

[Department].[Department]

[Department].[Instructor]

[Location].[BuildingLocation]

[Location].[RoomLocation]

[Process].[WorkFlowSteps]

🖾 [Department].[Department]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	1755
Created	11:30:16 PM Sunday, December 8, 2024
Last Modified	11:36:30 PM Sunday, December 8, 2024

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity
PK C	DepartmentID	[Udt].[SurrogateKeyInt]	4	NOT NULL	1 - 1
	Department	[Udt].[String8]	16	NOT NULL	
	InstructorID	[Udt].[SurrogateKeyInt]	4	NOT NULL	
	FirstName	[Udt].[String30]	60	NOT NULL	
	LastName	[Udt].[String30]	60	NOT NULL	
FK	UserAuthorizationKey	[Udt].[SurrogateKeyInt]	4	NULL allowed	
	DateAdded	[Udt].[DateAdded]	8	NULL allowed	
	DateOfLastUpdate	[Udt].[DateAdded]	8	NULL allowed	

Indexes

Key	Name	Key Columns	Unique
PK C	PK__Departme__B2079BCDE4924455	DepartmentID	True

Foreign Keys

Name	Columns
FK_Department_UserAuthorization	UserAuthorizationKey->[DbSecurity].[UserAuthorization].[UserAuthorizationKey]

SQL Script

```
CREATE TABLE [Department].[Department]
(
[DepartmentID] [Udt].[SurrogateKeyInt] NOT NULL IDENTITY(1, 1),
[Department] [Udt].[String8] NOT NULL,
```

```
[InstructorID] [Udt].[SurrogateKeyInt] NOT NULL,
[FirstName] [Udt].[String30] NOT NULL,
[LastName] [Udt].[String30] NOT NULL,
[UserAuthorizationKey] [Udt].[SurrogateKeyInt] NULL,
[DateAdded] [Udt].[DateAdded] NULL,
[DateOfLastUpdate] [Udt].[DateAdded] NULL
) ON [PRIMARY]
GO
ALTER TABLE [Department].[Department] ADD CONSTRAINT [PK__Departme__B2079BCDE4924455] PRIMARY KEY
CLUSTERED ([DepartmentID]) ON [PRIMARY]
GO
ALTER TABLE [Department].[Department] ADD CONSTRAINT [FK_Department_UserAuthorization] FOREIGN
KEY ([UserAuthorizationKey]) REFERENCES [DbSecurity].[UserAuthorization] ([UserAuthorizationKey])
GO
```

Uses

[DbSecurity].[UserAuthorization]
[Udt].[DateAdded]
[Udt].[String30]
[Udt].[String8]
[Udt].[SurrogateKeyInt]
Department

Used By

[Department].[Instructor]
[Department].[usp_LoadDepartmentTable]

🖾 [Department].[Instructor]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	1597
Created	11:30:16 PM Sunday, December 8, 2024
Last Modified	11:36:30 PM Sunday, December 8, 2024

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity
PK/C	InstructorID	[Udt].[SurrogateKeyInt]	4	NOT NULL	1 - 1
FK	DepartmentID	[Udt].[SurrogateKeyInt]	4	NOT NULL	
	FirstName	[Udt].[String30]	60	NOT NULL	
	LastName	[Udt].[String30]	60	NOT NULL	
FK	UserAuthorizationKey	[Udt].[SurrogateKeyInt]	4	NULL allowed	
	DateAdded	[Udt].[DateAdded]	8	NULL allowed	
	DateOfLastUpdate	[Udt].[DateAdded]	8	NULL allowed	

Indexes

Key	Name	Key Columns	Unique
PK/C	PK__Instruct__9D010B7B6A967F08	InstructorID	True

Foreign Keys

Name	Columns
FK_Instructor_Department	DepartmentID->[Department].[Department].[DepartmentID]
FK_Instructor_UserAuthorization	UserAuthorizationKey->[DbSecurity].[UserAuthorization].[UserAuthorizationKey]

SQL Script

```
CREATE TABLE [Department].[Instructor]
(
[InstructorID] [Udt].[SurrogateKeyInt] NOT NULL IDENTITY(1, 1),
[DepartmentID] [Udt].[SurrogateKeyInt] NOT NULL,
```

```
[FirstName] [Udt].[String30] NOT NULL,
[LastName] [Udt].[String30] NOT NULL,
[UserAuthorizationKey] [Udt].[SurrogateKeyInt] NULL,
[DateAdded] [Udt].[DateAdded] NULL,
[DateOfLastUpdate] [Udt].[DateAdded] NULL
) ON [PRIMARY]
GO
ALTER TABLE [Department].[Instructor] ADD CONSTRAINT [PK__Instruct__9D010B7B6A967F08] PRIMARY KEY
CLUSTERED ([InstructorID]) ON [PRIMARY]
GO
ALTER TABLE [Department].[Instructor] ADD CONSTRAINT [FK_Instructor_Department] FOREIGN KEY
([DepartmentID]) REFERENCES [Department].[Department] ([DepartmentID])
GO
ALTER TABLE [Department].[Instructor] ADD CONSTRAINT [FK_Instructor_UserAuthorization] FOREIGN
KEY ([UserAuthorizationKey]) REFERENCES [DbSecurity].[UserAuthorization] ([UserAuthorizationKey])
GO
```

Uses

[DbSecurity].[UserAuthorization]
[Department].[Department]
[Udt].[DateAdded]
[Udt].[String30]
[Udt].[SurrogateKeyInt]
Department

Used By

[Course].[CourseInstructor]
[Course].[usp_LoadCourseInstructorTable]
[Department].[usp_LoadDepartmentTable]
[Department].[usp_LoadInstructorTable]

📇 [Location].[BuildingLocation]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	3207
Created	11:30:16 PM Sunday, December 8, 2024
Last Modified	11:36:30 PM Sunday, December 8, 2024

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity
PK	BuildingLocationID	[Udt].[SurrogateKeyInt]	4	NOT NULL	1 - 1
	CourseCode	[Udt].[String30]	60	NOT NULL	
	Description	[Udt].[String100]	200	NULL allowed	
	Building	[Udt].[String30]	60	NOT NULL	
	Day	[Udt].[String30]	60	NULL allowed	
FK	UserAuthorizationKey	[Udt].[SurrogateKeyInt]	4	NULL allowed	
	DateAdded	[Udt].[DateAdded]	8	NULL allowed	
	DateOfLastUpdate	[Udt].[DateAdded]	8	NULL allowed	

Indexes

Key	Name	Key Columns	Unique
PK	PK__Building__F5F37FBF54EBA1E3	BuildingLocationID	True

Foreign Keys

Name	Columns
FK_BuildingLocation_UserAuthorization	UserAuthorizationKey->[DbSecurity].[UserAuthorization].[UserAuthorizationKey]

SQL Script

```
CREATE TABLE [Location].[BuildingLocation]
(
[BuildingLocationID] [Udt].[SurrogateKeyInt] NOT NULL IDENTITY(1, 1),
[CourseCode] [Udt].[String30] NOT NULL,
```

```
[Description] [Udt].[String100] NULL,
[Building] [Udt].[String30] NOT NULL,
[Day] [Udt].[String30] NULL,
[UserAuthorizationKey] [Udt].[SurrogateKeyInt] NULL,
[DateAdded] [Udt].[DateAdded] NULL,
[DateOfLastUpdate] [Udt].[DateAdded] NULL
) ON [PRIMARY]
GO
ALTER TABLE [Location].[BuildingLocation] ADD CONSTRAINT [PK__Building__F5F37FBF54EBA1E3] PRIMARY
KEY CLUSTERED ([BuildingLocationID]) ON [PRIMARY]
GO
ALTER TABLE [Location].[BuildingLocation] ADD CONSTRAINT [FK_BuildingLocation_UserAuthorization]
FOREIGN KEY ([UserAuthorizationKey]) REFERENCES [DbSecurity].[UserAuthorization] ([User-
AuthorizationKey])
GO
```

Uses

[DbSecurity].[UserAuthorization]
[Udt].[DateAdded]
[Udt].[String100]
[Udt].[String30]
[Udt].[SurrogateKeyInt]
Location

Used By

[Location].[RoomLocation]
[Location].[usp_LoadBuildingLocationTable]
[Location].[usp_LoadRoomLocationTable]

🗔 [Location].[RoomLocation]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	3889
Created	11:30:16 PM Sunday, December 8, 2024
Last Modified	11:36:30 PM Sunday, December 8, 2024

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity
PK C	RoomLocationID	[Udt].[SurrogateKeyInt]	4	NOT NULL	1 - 1
	Room	[Udt].[String30]	60	NOT NULL	
	Time	[Udt].[String20]	40	NOT NULL	
	Day	[Udt].[String20]	40	NOT NULL	
FK	BuildingLocationID	[Udt].[SurrogateKeyInt]	4	NOT NULL	
FK	UserAuthorizationKey	[Udt].[SurrogateKeyInt]	4	NULL allowed	
	DateAdded	[Udt].[DateAdded]	8	NULL allowed	
	DateOfLastUpdate	[Udt].[DateAdded]	8	NULL allowed	

Indexes

Key	Name	Key Columns	Unique
PK C	PK__RoomLoca__874C55B963B6FCB7	RoomLocationID	True

Foreign Keys

Name	Columns
FK_RoomLocation_BuildingLocation	BuildingLocationID->[Location].[BuildingLocation].[BuildingLocationID]
FK_RoomLocation_UserAuthorization	UserAuthorizationKey->[DbSecurity].[UserAuthorization].[UserAuthorizationKey]

SQL Script

```
CREATE TABLE [Location].[RoomLocation]
(
[RoomLocationID] [Udt].[SurrogateKeyInt] NOT NULL IDENTITY(1, 1),
```

```
[Room] [Udt].[String30] NOT NULL,
[Time] [Udt].[String20] NOT NULL,
[Day] [Udt].[String20] NOT NULL,
[BuildingLocationID] [Udt].[SurrogateKeyInt] NOT NULL,
[UserAuthorizationKey] [Udt].[SurrogateKeyInt] NULL,
[DateAdded] [Udt].[DateAdded] NULL,
[DateOfLastUpdate] [Udt].[DateAdded] NULL
) ON [PRIMARY]
GO
ALTER TABLE [Location].[RoomLocation] ADD CONSTRAINT [PK__RoomLoca__874C55B963B6FCB7] PRIMARY KEY
CLUSTERED ([RoomLocationID]) ON [PRIMARY]
GO
ALTER TABLE [Location].[RoomLocation] ADD CONSTRAINT [FK_RoomLocation_BuildingLocation] FOREIGN
KEY ([BuildingLocationID]) REFERENCES [Location].[BuildingLocation] ([BuildingLocationID])
GO
ALTER TABLE [Location].[RoomLocation] ADD CONSTRAINT [FK_RoomLocation_UserAuthorization] FOREIGN
KEY ([UserAuthorizationKey]) REFERENCES [DbSecurity].[UserAuthorization] ([UserAuthorizationKey])
GO
```

Uses

[DbSecurity].[UserAuthorization]
[Location].[BuildingLocation]
[Udt].[DateAdded]
[Udt].[String20]
[Udt].[String30]
[Udt].[SurrogateKeyInt]
Location

Used By

[Course].[ClassRoom]
[Course].[usp_LoadClassRoomTable]
[Location].[usp_LoadRoomLocationTable]

🖾 [Process].[WorkFlowSteps]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Row Count (~)	10
Created	11:30:16 PM Sunday, December 8, 2024
Last Modified	11:36:30 PM Sunday, December 8, 2024

Columns

Key	Name	Data Type	Max Length (Bytes)	Nullability	Identity	Default
PK C	WorkFlowStepsKey	[Udt].[SurrogateKeyInt]	4	NOT NULL	1 - 1	
	WorkFlowStepsDescription	[Udt].[String100]	200	NOT NULL		
	WorkFlowStepsTableRowCount	[Udt].[Rows]	4	NULL allowed		((0))
	StartingDateTime	[Udt].[DateAdded]	8	NULL allowed		(sysdatetime())
	EndDateTime	[Udt].[DateAdded]	8	NULL allowed		(sysdatetime())
	ClassTime	[Udt].[ClassTime]	10	NULL allowed		('10:45')
FK	UserAuthorizationKey	[Udt].[SurrogateKeyInt]	4	NOT NULL		

Indexes

Key	Name	Key Columns	Unique
PK C	PK__WorkFlow__C2683F98D9FE55B3	WorkFlowStepsKey	True

Foreign Keys

Name	Columns
FK_WorkFlowSteps_UserAuthorization	UserAuthorizationKey->[DbSecurity].[UserAuthorization].[UserAuthorizationKey]

SQL Script

```
CREATE TABLE [Process].[WorkFlowSteps]
(
```

```
[WorkFlowStepsKey] [Udt].[SurrogateKeyInt] NOT NULL IDENTITY(1, 1),
[WorkFlowStepsDescription] [Udt].[String100] NOT NULL,
[WorkFlowStepsTableRowCount] [Udt].[Rows] NULL CONSTRAINT [DF__WorkFlowS__WorkF__7B264821]
DEFAULT ((0)),
[StartingDateTime] [Udt].[DateAdded] NULL CONSTRAINT [DF__WorkFlowS__Start__7C1A6C5A] DEFAULT
(sysdatetime()),
[EndDateTime] [Udt].[DateAdded] NULL CONSTRAINT [DF__WorkFlowS__EndDa__7D0E9093] DEFAULT
(sysdatetime()),
[ClassTime] [Udt].[ClassTime] NULL CONSTRAINT [DF__WorkFlowS__Class__7E02B4CC] DEFAULT ('10:45'),
[UserAuthorizationKey] [Udt].[SurrogateKeyInt] NOT NULL
) ON [PRIMARY]
GO
ALTER TABLE [Process].[WorkFlowSteps] ADD CONSTRAINT [PK__WorkFlow__C2683F98D9FE55B3] PRIMARY KEY
CLUSTERED ([WorkFlowStepsKey]) ON [PRIMARY]
GO
ALTER TABLE [Process].[WorkFlowSteps] ADD CONSTRAINT [FK_WorkFlowSteps_UserAuthorization] FOREIGN
KEY ([UserAuthorizationKey]) REFERENCES [DbSecurity].[UserAuthorization] ([UserAuthorizationKey])
GO
```

Uses

[DbSecurity].[UserAuthorization]
[Udt].[ClassTime]
[Udt].[DateAdded]
[Udt].[Rows]
[Udt].[String100]
[Udt].[SurrogateKeyInt]
Process

Used By

[Process].[usp_ShowWorkFlowSteps]
[Process].[usp_TrackWorkFlow]

🗐 [Uploadfile].[CurrentSemesterCourseOfferings]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
Heap	True
Row Count (~)	4522
Created	4:31:20 PM Monday, April 12, 2021
Last Modified	4:33:21 PM Monday, April 12, 2021

Columns

Name	Data Type	Max Length (Bytes)	Nullability	Default
Semester	varchar(50)	50	NULL allowed	('Current Semester')
Sec	varchar(50)	50	NULL allowed	
Code	varchar(50)	50	NULL allowed	
Course (hr, crd)	varchar(50)	50	NULL allowed	
Description	varchar(50)	50	NULL allowed	
Day	varchar(50)	50	NULL allowed	
Time	varchar(50)	50	NULL allowed	
Instructor	varchar(50)	50	NULL allowed	
Location	varchar(50)	50	NULL allowed	
Enrolled	varchar(50)	50	NULL allowed	
Limit	varchar(50)	50	NULL allowed	
Mode of Instruction	varchar(50)	50	NULL allowed	

SQL Script

```
CREATE TABLE [Uploadfile].[CurrentSemesterCourseOfferings]
(
[Semester] [varchar] (50) COLLATE SQL_Latin1_General_CP1_CI_AS NULL CONSTRAINT [DF_Current-
SemesterCourseOfferings_Semester] DEFAULT ('Current Semester'),
[Sec] [varchar] (50) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
[Code] [varchar] (50) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
[Course (hr, crd)] [varchar] (50) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
[Description] [varchar] (50) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
[Day] [varchar] (50) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
[Time] [varchar] (50) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
[Instructor] [varchar] (50) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
[Location] [varchar] (50) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
[Enrolled] [varchar] (50) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
```

```
[Limit] [varchar] (50) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
[Mode of Instruction] [varchar] (50) COLLATE SQL_Latin1_General_CP1_CI_AS NULL
) ON [PRIMARY]
GO
```

Uses

Uploadfile

Used By

[Course].[usp_LoadClassTable]

[Course].[usp_LoadCourseInstructorTable]

[Course].[usp_LoadCourseTable]

[Course].[usp_LoadModeOfInstructionTable]

[Department].[usp_LoadDepartmentTable]

[Department].[usp_LoadInstructorTable]

[Location].[usp_LoadBuildingLocationTable]

[Location].[usp_LoadRoomLocationTable]

🖼 *Views*

Objects

Name
Utils.uvw_FindColumnDefinitionPlusDefaultAndCheckConstraint

⊞ [Utils].[uvw_FindColumnDefinitionPlusDefaultAndCheckConstraint]

Properties

Property	Value
Collation	SQL_Latin1_General_CP1_CI_AS
ANSI Nulls On	True
Quoted Identifier On	True
Created	9:19:15 AM Sunday, October 27, 2019
Last Modified	9:19:15 AM Sunday, October 27, 2019

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 ColumnName ,
        col.ORDINAL_POSITION AS OrdinalPosition,
        CONCAT(col.DOMAIN_SCHEMA, '.', col.DOMAIN_NAME) AS FullyQualifiedDomainName ,
        col.DOMAIN_NAME AS DomainName ,
```

```sql
        CASE
            WHEN col.DATA_TYPE = 'varchar'
            THEN CONCAT('varchar(', 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 CheckConstraintRuleName,
        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
```

```sql
                                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

🖹 *Stored Procedures*

Objects

Name
Course.usp_LoadClassRoomTable
Course.usp_LoadClassTable
Course.usp_LoadCourseInstructorTable
Course.usp_LoadCourseTable
Course.usp_LoadModeOfInstructionTable
Department.usp_LoadDepartmentTable
Department.usp_LoadInstructorTable
Location.usp_LoadBuildingLocationTable
Location.usp_LoadRoomLocationTable
Process.usp_AddForeignKeys
Process.usp_ShowWorkFlowSteps
Process.usp_TrackWorkFlow

📄 [Course].[usp_LoadClassRoomTable]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

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

SQL Script

```sql
-- Create a stored procedure to populate the ClassRoom table
CREATE PROCEDURE [Course].[usp_LoadClassRoomTable]
    @UserAuthorizationKey INT
AS
BEGIN
    -- Insert the bridging records by matching Classes and RoomLocations based on Day and Time
    -- Class time = ClassStart + '-' + ClassEnd
    INSERT INTO [Course].[ClassRoom]
    (
        [ClassID],
        [RoomLocationID],
        [UserAuthorizationKey],
        [DateAdded],
        [DateOfLastUpdate]
    )
    SELECT
        cls.ClassID,
        rl.RoomLocationID,
        @UserAuthorizationKey,
        SYSDATETIME(),
        SYSDATETIME()
    FROM [Course].[Class] cls
    INNER JOIN [Location].[RoomLocation] rl
        ON cls.Days = rl.Day
        AND (cls.ClassStart + '-' + cls.ClassEnd) = rl.Time;

    -- Log the workflow step
    EXEC [Process].[usp_TrackWorkFlow]
        @UserAuthorizationKey = @UserAuthorizationKey,
```

```
        @WorkFlowStepsDescription = 'Loading data into ClassRoom bridge table',
        @WorkFlowStepsTableRowCount = @@ROWCOUNT;
END;
GO
```

Uses

[Course].[Class]
[Course].[ClassRoom]
[Location].[RoomLocation]
[Process].[usp_TrackWorkFlow]
Course

🖼 [Course].[usp_LoadClassTable]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

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

SQL Script

```sql
CREATE PROCEDURE [Course].[usp_LoadClassTable]
    @UserAuthorizationKey INT
AS
BEGIN
    INSERT INTO [Course].[Class] (
        Section,
        Department,
        Hours,
        Credits,
        Days,
        ClassStart,
        ClassEnd,
        Enrollment,
        [Limit],
        UserAuthorizationKey,
        DateAdded,
        DateOfLastUpdate
    )
    SELECT
        [Sec] AS Section,
        LEFT([Course (hr, crd)], CHARINDEX(' ', [Course (hr, crd)]) - 1) AS Department,
        TRY_CAST(
            TRIM(
                SUBSTRING(
                    [Course (hr, crd)],
                    CHARINDEX('(', [Course (hr, crd)]) + 1,
                    CHARINDEX(',', [Course (hr, crd)]) - CHARINDEX('(', [Course (hr, crd)]) - 1
                )
            ) AS FLOAT
```

```sql
            ) AS Hours,
        TRY_CAST(
            TRIM(
                SUBSTRING(
                    [Course (hr, crd)],
                    CHARINDEX(',', [Course (hr, crd)]) + 1,
                    CHARINDEX(')', [Course (hr, crd)]) - CHARINDEX(',', [Course (hr, crd)]) - 1
                )
            ) AS INT
        ) AS Credits,
        [Day] AS Days,
        TRIM(LEFT([Time], CHARINDEX('-', [Time]) - 1)) AS ClassStart,
        TRIM(SUBSTRING([Time], CHARINDEX('-', [Time]) + 1, LEN([Time]))) AS ClassEnd,
        TRY_CAST([Enrolled] AS INT) AS Enrollment,
        TRY_CAST([Limit] AS INT) AS [Limit],
        @UserAuthorizationKey,
        SYSDATETIME() AS DateAdded,
        SYSDATETIME() AS DateOfLastUpdate
    FROM [Uploadfile].[CurrentSemesterCourseOfferings] c
    WHERE
        [Course (hr, crd)] IS NOT NULL
        AND CHARINDEX(' ', [Course (hr, crd)]) > 0
        AND CHARINDEX('-', [Time]) > 0;
    EXEC [Process].[usp_TrackWorkFlow]
        @UserAuthorizationKey = @UserAuthorizationKey,
        @WorkFlowStepsDescription = 'Loading data into Class table',
        @WorkFlowStepsTableRowCount = @@ROWCOUNT;
END;

GO
```

Uses

[Course].[Class]
[Uploadfile].[CurrentSemesterCourseOfferings]
[Process].[usp_TrackWorkFlow]
Course

🗔 [Course].[usp_LoadCourseInstructorTable]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

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

SQL Script

```
CREATE PROCEDURE [Course].[usp_LoadCourseInstructorTable]
    @UserAuthorizationKey INT
AS
BEGIN

    INSERT INTO [Course].[CourseInstructor]
    (
        CourseID,
        InstructorID,
        UserAuthorizationKey,
        DateAdded,
        DateOfLastUpdate
    )
    SELECT DISTINCT
        crs.CourseID,
        inst.InstructorID,
        @UserAuthorizationKey,
        SYSUTCDATETIME() AS DateAdded,
        SYSUTCDATETIME() AS DateOfLastUpdate
    FROM [Uploadfile].[CurrentSemesterCourseOfferings] cso
    INNER JOIN [Course].[Course] crs
        ON crs.[Course] = LTRIM(RTRIM(SUBSTRING(cso.[Course (hr, crd)], 1, CHARINDEX('(',
cso.[Course (hr, crd)]) - 1)))
        AND crs.[Section] = cso.[Sec]
        AND crs.[Semester] = cso.[Semester]
    INNER JOIN [Department].[Instructor] inst
        ON inst.LastName = SUBSTRING(cso.[Instructor], 1, CHARINDEX(',', cso.[Instructor]) - 1)
        AND inst.FirstName = LTRIM(SUBSTRING(cso.[Instructor], CHARINDEX(',', cso.[Instructor]) +
1, LEN(cso.[Instructor]) - CHARINDEX(',', cso.[Instructor]))));
```

```
    EXEC [Process].[usp_TrackWorkFlow]
        @UserAuthorizationKey = @UserAuthorizationKey,
        @WorkFlowStepsDescription = 'Loading data into CourseInstructor bridge table',
        @WorkFlowStepsTableRowCount = @@ROWCOUNT;
END;
GO
```

Uses

[Course].[Course]

[Course].[CourseInstructor]

[Department].[Instructor]

[Uploadfile].[CurrentSemesterCourseOfferings]

[Process].[usp_TrackWorkFlow]

Course

🖼 [Course].[usp_LoadCourseTable]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

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

SQL Script

```sql
CREATE PROCEDURE [Course].[usp_LoadCourseTable]
    @UserAuthorizationKey INT
AS
BEGIN
    INSERT INTO Course.Course
    (
        Section,
        Course,
        [Semester],
        [Description],
        UserAuthorizationKey,
        DateAdded,
        DateOfLastUpdate
    )
    SELECT DISTINCT
        [Sec] AS Section,
        SUBSTRING([Course (hr, crd)], 1, CHARINDEX('(', [Course (hr, crd)]) - 1) AS Course,
        [Semester],
        [Description],
        @UserAuthorizationKey,
        SYSDATETIME() AS DateAdded,
        SYSDATETIME() AS DateOfLastUpdate
    FROM Uploadfile.CurrentSemesterCourseOfferings;
    EXEC [Process].[usp_TrackWorkFlow]
        @UserAuthorizationKey = @UserAuthorizationKey,
        @WorkFlowStepsDescription = 'Loading data into Course table',
        @WorkFlowStepsTableRowCount = @@ROWCOUNT;
END;
```

```
GO
```

Uses

[Course].[Course]
[Uploadfile].[CurrentSemesterCourseOfferings]
[Process].[usp_TrackWorkFlow]
Course

🖹 [Course].[usp_LoadModeOfInstructionTable]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

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

SQL Script

```sql
CREATE PROCEDURE [Course].[usp_LoadModeOfInstructionTable]
    @UserAuthorizationKey INT
AS
BEGIN
    INSERT INTO [Course].[ModeOfInstruction]
    (
        ModeName,
        UserAuthorizationKey,
        DateAdded,
        DateOfLastUpdate
    )
    SELECT [Mode of Instruction] AS ModeName, @UserAuthorizationKey, SYSDATETIME() AS DateAdded,
SYSDATETIME() AS DateOfLastUpdate
    FROM [Uploadfile].[CurrentSemesterCourseOfferings]
    --  Insert the user into the Process.WorkFlowTable
    EXEC [Process].[usp_TrackWorkFlow]
        @UserAuthorizationKey = @UserAuthorizationKey,
        @WorkFlowStepsDescription =  'Loading data into MOI table',
        @WorkFlowStepsTableRowCount = @@ROWCOUNT;
END;

GO
```

Uses

[Course].[ModeOfInstruction]

[Uploadfile].[CurrentSemesterCourseOfferings]

[Process].[usp_TrackWorkFlow]

Course

🗔 [Department].[usp_LoadDepartmentTable]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

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

SQL Script

```sql
CREATE PROCEDURE [Department].[usp_LoadDepartmentTable]
    @UserAuthorizationKey INT
AS
BEGIN
    INSERT INTO [Department].[Department]
    (
        Department,
        InstructorID,
        FirstName,
        LastName,
        UserAuthorizationKey,
        DateAdded,
        DateOfLastUpdate
    )
    SELECT DISTINCT
        -- Extract department code (e.g., ACCT from ACCT 100)
        LEFT([Course (hr, crd)], CHARINDEX(' ', [Course (hr, crd)]) - 1) AS Department,
        -- InstructorID from the Instructor table
        inst.InstructorID,
        -- Extract LastName from Instructor column
        SUBSTRING(cso.[Instructor], 1, CHARINDEX(',', cso.[Instructor]) - 1) AS LastName,
        -- Extract FirstName from Instructor column
        LTRIM(SUBSTRING(cso.[Instructor], CHARINDEX(',', cso.[Instructor]) + 1,
LEN(cso.[Instructor]) - CHARINDEX(',', cso.[Instructor]))) AS FirstName,
        @UserAuthorizationKey,
        SYSDATETIME() AS DateAdded,
        SYSDATETIME() AS DateOfLastUpdate
    FROM [Uploadfile].[CurrentSemesterCourseOfferings] cso
    INNER JOIN [Department].[Instructor] inst
```

```
        ON inst.LastName = SUBSTRING(cso.[Instructor], 1, CHARINDEX(',', cso.[Instructor]) - 1)
        AND inst.FirstName = LTRIM(SUBSTRING(cso.[Instructor], CHARINDEX(',', cso.[Instructor]) +
1, LEN(cso.[Instructor]) - CHARINDEX(',', cso.[Instructor])))
    WHERE [Course (hr, crd)] IS NOT NULL
        AND CHARINDEX(' ', [Course (hr, crd)]) > 0
        AND cso.[Instructor] IS NOT NULL
        AND CHARINDEX(',', cso.[Instructor]) > 0;
    EXEC [Process].[usp_TrackWorkFlow]
        @UserAuthorizationKey = @UserAuthorizationKey,
        @WorkflowStepsDescription = 'Loading data into Department table',
        @WorkflowStepsTableRowCount = @@ROWCOUNT;
END;


GO
```

Uses

[Department].[Department]

[Department].[Instructor]

[Uploadfile].[CurrentSemesterCourseOfferings]

[Process].[usp_TrackWorkFlow]

Department

🗔 [Department].[usp_LoadInstructorTable]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

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

SQL Script

```sql
-- usp_LoadInstructorTable Procedure by Jascharan Singh
CREATE  PROCEDURE [Department].[usp_LoadInstructorTable]
    @UserAuthorizationKey INT
AS
BEGIN
    INSERT INTO [Department].[Instructor]
    (
        LastName,
        FirstName,
        DepartmentID,
        UserAuthorizationKey,
        DateAdded,
        DateOfLastUpdate
    )
    SELECT DISTINCT
        SUBSTRING([Instructor], 1, CHARINDEX(',', [Instructor]) - 1) AS LastName,
        LTRIM(SUBSTRING([Instructor], CHARINDEX(',', [Instructor]) + 1, LEN([Instructor]) -
CHARINDEX(',', [Instructor]))) AS FirstName,
        1 AS DepartmentID,
        @UserAuthorizationKey,
        SYSDATETIME() AS DateAdded,
        SYSDATETIME() AS DateOfLastUpdate
    FROM [Uploadfile].[CurrentSemesterCourseOfferings]
    WHERE [Instructor] IS NOT NULL
        AND CHARINDEX(',', [Instructor]) > 0;
    EXEC [Process].[usp_TrackWorkFlow]
        @UserAuthorizationKey = @UserAuthorizationKey,
        @WorkFlowStepsDescription = 'Loading data into Instructor table',
        @WorkFlowStepsTableRowCount = @@ROWCOUNT;
```

```
END;

GO
```

Uses

[Department].[Instructor]

[Uploadfile].[CurrentSemesterCourseOfferings]

[Process].[usp_TrackWorkFlow]

Department

🖼 [Location].[usp_LoadBuildingLocationTable]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

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

SQL Script

```sql
CREATE PROCEDURE [Location].[usp_LoadBuildingLocationTable]
    @UserAuthorizationKey INT
AS
BEGIN
    INSERT INTO [Location].[BuildingLocation]
    (
        CourseCode,
        Description,
        Building,
        Day,
        UserAuthorizationKey,
        DateAdded,
        DateOfLastUpdate
    )
    SELECT
        [Code] AS CourseCode,
        [Description],
        TRIM(LEFT([Location], CHARINDEX(' ', [Location]) - 1)) AS Building,
        [Day],
        @UserAuthorizationKey AS UserAuthorizationKey,
        SYSDATETIME() AS DateAdded,
        SYSDATETIME() AS DateOfLastUpdate
    FROM [Uploadfile].[CurrentSemesterCourseOfferings]
    WHERE
        [Location] IS NOT NULL
        AND CHARINDEX(' ', [Location]) > 0;
    EXEC [Process].[usp_TrackWorkFlow]
        @UserAuthorizationKey = @UserAuthorizationKey,
        @WorkFlowStepsDescription = 'Loading data into BuildingLocation table',
```

```
        @WorkFlowStepsTableRowCount = @@ROWCOUNT;
END;


GO
```

Uses

[Location].[BuildingLocation]

[Uploadfile].[CurrentSemesterCourseOfferings]

[Process].[usp_TrackWorkFlow]

Location

🖹 [Location].[usp_LoadRoomLocationTable]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

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

SQL Script

```sql
CREATE PROCEDURE [Location].[usp_LoadRoomLocationTable]
    @UserAuthorizationKey INT
AS
BEGIN
    INSERT INTO [Location].[RoomLocation]
    (
        Room,
        Time,
        Day,
        BuildingLocationID,
        UserAuthorizationKey,
        DateAdded,
        DateOfLastUpdate
    )
    SELECT
        TRIM(SUBSTRING(c.[Location], CHARINDEX(' ', c.[Location]) + 1, LEN(c.[Location]))) AS
Room,
        c.[Time],
        c.[Day], -- Explicitly use table alias
        bl.BuildingLocationID,
        @UserAuthorizationKey AS UserAuthorizationKey,
        SYSDATETIME() AS DateAdded,
        SYSDATETIME() AS DateOfLastUpdate
    FROM [Uploadfile].[CurrentSemesterCourseOfferings] c
    INNER JOIN [Location].[BuildingLocation] bl
        ON bl.CourseCode = c.[Code]
    WHERE
        c.[Location] IS NOT NULL
        AND CHARINDEX(' ', c.[Location]) > 0;
```

```
    EXEC [Process].[usp_TrackWorkFlow]
        @UserAuthorizationKey = @UserAuthorizationKey,
        @WorkFlowStepsDescription = 'Loading data into RoomLocation table',
        @WorkFlowStepsTableRowCount = @@ROWCOUNT;
END;


GO
```

Uses

[Location].[BuildingLocation]

[Location].[RoomLocation]

[Uploadfile].[CurrentSemesterCourseOfferings]

[Process].[usp_TrackWorkFlow]

Location

📄 [Process].[usp_AddForeignKeys]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

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

SQL Script

```
CREATE PROCEDURE [Process].[usp_AddForeignKeys]

    @UserAuthorizationKey INT
AS
BEGIN

 -- Add foreign key [Course].[Class]
ALTER TABLE [Course].[Class]
ADD CONSTRAINT FK_Class_UserAuthorization FOREIGN KEY (UserAuthorizationKey)
REFERENCES [DbSecurity].[UserAuthorization](UserAuthorizationKey);

-- Add foreign key [Course].[Course]
ALTER TABLE [Course].[Course]
ADD CONSTRAINT FK_Course_UserAuthorization FOREIGN KEY (UserAuthorizationKey)
REFERENCES [DbSecurity].[UserAuthorization](UserAuthorizationKey);

-- Add foreign key [Course].[CourseInstructor]
ALTER TABLE [Course].[CourseInstructor]
ADD CONSTRAINT FK_CourseInstructor_Course FOREIGN KEY (CourseID)
    REFERENCES [Course].[Course](CourseID);

ALTER TABLE [Course].[CourseInstructor]
ADD CONSTRAINT FK_CourseInstructor_Instructor FOREIGN KEY (InstructorID)
    REFERENCES [Department].[Instructor](InstructorID);

ALTER TABLE [Course].[CourseInstructor]
ADD CONSTRAINT FK_CourseInstructor_UserAuthorization FOREIGN KEY (UserAuthorizationKey)
    REFERENCES [DbSecurity].[UserAuthorization](UserAuthorizationKey);
```

```sql
-- Add foreign key [Course].[ModeOfInstruction]
ALTER TABLE [Course].[ModeOfInstruction]
ADD CONSTRAINT FK_ModeOfInstruction_UserAuthorization FOREIGN KEY (UserAuthorizationKey)
REFERENCES [DbSecurity].[UserAuthorization](UserAuthorizationKey);

-- Add foreign key [Department].[Department]
ALTER TABLE [Department].[Department]
ADD CONSTRAINT FK_Department_UserAuthorization FOREIGN KEY (UserAuthorizationKey)
REFERENCES [DbSecurity].[UserAuthorization](UserAuthorizationKey);

-- Add foreign key [Department].[Instructor]
ALTER TABLE [Department].[Instructor]
ADD CONSTRAINT FK_Instructor_UserAuthorization FOREIGN KEY (UserAuthorizationKey)
REFERENCES [DbSecurity].[UserAuthorization](UserAuthorizationKey);

ALTER TABLE [Department].[Instructor]
ADD CONSTRAINT FK_Instructor_Department FOREIGN KEY (DepartmentID)
REFERENCES [Department].[Department](DepartmentID);

-- Add foreign key [Location].[BuildingLocation]
ALTER TABLE [Location].[BuildingLocation]
ADD CONSTRAINT FK_BuildingLocation_UserAuthorization FOREIGN KEY (UserAuthorizationKey)
REFERENCES [DbSecurity].[UserAuthorization](UserAuthorizationKey);

-- Add foreign key [Location].[RoomLocation]
ALTER TABLE [Location].[RoomLocation]
ADD CONSTRAINT FK_RoomLocation_UserAuthorization FOREIGN KEY (UserAuthorizationKey)
REFERENCES [DbSecurity].[UserAuthorization](UserAuthorizationKey);

ALTER TABLE [Location].[RoomLocation]
ADD CONSTRAINT FK_RoomLocation_BuildingLocation FOREIGN KEY (BuildingLocationID)
REFERENCES [Location].[BuildingLocation](BuildingLocationID);

-- Add foreign key [Process].[WorkFlowSteps]
ALTER TABLE [Process].[WorkFlowSteps]
ADD CONSTRAINT FK_WorkFlowSteps_UserAuthorization FOREIGN KEY (UserAuthorizationKey)
REFERENCES [DbSecurity].[UserAuthorization](UserAuthorizationKey);

-- Add foreign key [Course].[ClassRoom]
ALTER TABLE [Course].[ClassRoom] WITH CHECK
ADD CONSTRAINT [FK_ClassRoom_Class]
FOREIGN KEY([ClassID])
REFERENCES [Course].[Class]([ClassID]);
ALTER TABLE [Course].[ClassRoom] CHECK CONSTRAINT [FK_ClassRoom_Class];

ALTER TABLE [Course].[ClassRoom] WITH CHECK
ADD CONSTRAINT [FK_ClassRoom_RoomLocation]
FOREIGN KEY([RoomLocationID])
REFERENCES [Location].[RoomLocation]([RoomLocationID]);
ALTER TABLE [Course].[ClassRoom] CHECK CONSTRAINT [FK_ClassRoom_RoomLocation];

-- Tie UserAuthorizationKey to UserAuthorization table
```

```
ALTER TABLE [Course].[ClassRoom] WITH CHECK
ADD CONSTRAINT [FK_ClassRoom_UserAuthorization]
FOREIGN KEY([UserAuthorizationKey])
REFERENCES [DbSecurity].[UserAuthorization]([UserAuthorizationKey]);
ALTER TABLE [Course].[ClassRoom] CHECK CONSTRAINT [FK_ClassRoom_UserAuthorization];

EXEC [Process].[usp_TrackWorkFlow]
@UserAuthorizationKey = @UserAuthorizationKey,
@WorkFlowStepsDescription = 'Add Foreign Keys to DB',
@WorkFlowStepsTableRowCount = @@ROWCOUNT;

END

GO
```

Uses

[Process].[usp_TrackWorkFlow]
Process

🗒 [Process].[usp_ShowWorkFlowSteps]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

SQL Script

```
CREATE PROCEDURE [Process].[usp_ShowWorkFlowSteps]
AS
BEGIN
    SELECT *
    FROM [Process].[WorkFlowSteps];
END;


GO
```

Uses

[Process].[WorkFlowSteps]
Process

📄 [Process].[usp_TrackWorkFlow]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

Name	Data Type	Max Length (Bytes)
@UserAuthorizationKey	int	4
@WorkFlowStepsTableRowCount	int	4
@WorkFlowStepsDescription	nvarchar(100)	200

SQL Script

```
CREATE PROCEDURE [Process].[usp_TrackWorkFlow]
    @UserAuthorizationKey INT,
    @WorkFlowStepsTableRowCount INT,
    @WorkFlowStepsDescription NVARCHAR(100)
AS
BEGIN
    INSERT INTO [Process].[WorkFlowSteps]
        (UserAuthorizationKey, WorkFlowStepsTableRowCount, WorkFlowStepsDescription)
    VALUES(@UserAuthorizationKey, @WorkFlowStepsTableRowCount, @WorkFlowStepsDescription);
END;

GO
```

Uses

[Process].[WorkFlowSteps]
Process

Used By

[Course].[usp_LoadClassRoomTable]
[Course].[usp_LoadClassTable]
[Course].[usp_LoadCourseInstructorTable]
[Course].[usp_LoadCourseTable]
[Course].[usp_LoadModeOfInstructionTable]

[Department].[usp_LoadDepartmentTable]

[Department].[usp_LoadInstructorTable]

[Location].[usp_LoadBuildingLocationTable]

[Location].[usp_LoadRoomLocationTable]

[Process].[usp_AddForeignKeys]

📄 *Table-valued Functions*

Objects

Name
dbo.DatabaseObjects
dbo.JSONHierarchy

▣ [dbo].[DatabaseObjects]

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

Name	Data Type	Max Length (Bytes)
@ListOfObjectIDs	varchar(max)	max

SQL Script

```sql
create function [dbo].[DatabaseObjects]
/**
    Summary: >
      lists out the full names, schemas and (where appropriate)
      the owner of the object.
    Author: PhilFactor
    Date: 10/9/2017
    Examples:
       - Select * from dbo.DatabaseObjects('2123154609,960722475,1024722703')
    Returns: >
      A table with the id, name of object and so on.
         **/
(
    @ListOfObjectIDs varchar(max)
)
returns table
--WITH ENCRYPTION|SCHEMABINDING, ..
as
return
(
    select object_id
        , schema_name(schema_id) + '.' + coalesce(object_name(parent_object_id) + '.', '') +
name as name
    from sys.objects as ob
        inner join openjson(N'[' + @ListOfObjectIDs + N']')
          on convert(int, Value) = ob.object_id
);
GO
```

▣ₓ **[dbo].[JSONHierarchy]**

Properties

Property	Value
ANSI Nulls On	True
Quoted Identifier On	True

Parameters

Name	Data Type	Max Length (Bytes)
@JSONData	varchar(max)	max
@Parent_object_ID	int	4
@MaxObject_id	int	4
@type	int	4

SQL Script

```
create function [dbo].[JSONHierarchy]
(
    @JSONData varchar(max)
  , @Parent_object_ID int = null
  , @MaxObject_id int = 0
  , @type int = null
)
returns @ReturnTable table
(
    -- https://www.red-gate.com/simple-talk/blogs/consuming-hierarchical-json-documents-sql-
server-using-openjson/?utm_source=simpletalk&utm_medium=pubemail&utm_content=20171010-
slota1&utm_term=simpletalkmain

    --
    Element_ID int identity(1, 1) primary key /* internal surrogate primary key gives the order
of parsing and the list order */
  , SequenceNo int null                        /* the sequence number in a list */
  , Parent_ID int                              /* if the element has a parent then it is in this
column. The document is the ultimate parent, so you can get the structure from recursing from the
document */
  , Object_ID int                              /* each list or object has an object id. This ties
all elements to a parent. Lists are treated as objects here */
  , Name nvarchar(2000)                        /* the name of the object */
  , StringValue nvarchar(max) not null         /*the string representation of the value of the
element. */
  , ValueType varchar(10) not null             /* the declared type of the value represented as a
string in StringValue*/
)
as
```

```sql
begin
    --the types of JSON
    declare @null    int = 0
          , @string  int = 1
          , @int     int = 2
          , @boolean int = 3
          , @array   int = 4
          , @object  int = 5;

    declare @OpenJSONData table
    (
        sequence int identity(1, 1)
      , [key] varchar(200)
      , Value varchar(max)
      , type int
    );

    declare @key       varchar(200)
          , @Value     varchar(max)
          , @Thetype   int
          , @ii        int
          , @iiMax     int
          , @NewObject int
          , @firstchar char(1);

    insert into @OpenJSONData
    (
        [key]
      , Value
      , type
    )
    select [Key]
         , Value
         , Type
    from openjson(@JSONData);
    select @ii    = 1
         , @iiMax = scope_identity();
    select @firstchar
        = --the first character to see if it is an object or an array
        substring(
                    @JSONData
                  , patindex(
                             '%[^' + char(0) + '- ' + char(160) + ']%'
                           , ' ' + @JSONData + '!' collate SQL_Latin1_General_CP850_BIN
                            ) - 1
                  , 1
                 );
    if @type is null
        and @firstchar in ( '[', '{' )
    begin
        insert into @ReturnTable
        (
```

```sql
            SequenceNo
        , Parent_ID
        , Object_ID
        , Name
        , StringValue
        , ValueType
    )
    select 1
            , null
            , 1
            , '-'
            , ''
            , case @firstchar
                    when '[' then
                        'array'
                    else
                        'object'
                end;
    select @type            = case @firstchar
                                    when '[' then
                                            @array
                                    else
                                            @object
                                end
        , @Parent_object_ID = 1
        , @MaxObject_id     = coalesce(@MaxObject_id, 1) + 1;
end;
while (@ii <= @iiMax)
begin
    --OpenJSON renames list items with 0-nn which confuses the consumers of the table
    select @key     = case
                        when [key] like '[0-9]%' then
                            null
                        else
                            [key]
                    end
        , @Value    = Value
        , @Thetype  = type
    from @OpenJSONData
    where sequence = @ii;

    if @Thetype in ( @array, @object ) --if we have been returned an array or object
    begin
        select @MaxObject_id = coalesce(@MaxObject_id, 1) + 1;
        --just in case we have an object or array returned
        insert into @ReturnTable --record the object itself
        (
            SequenceNo
        , Parent_ID
        , Object_ID
        , Name
        , StringValue
```

```sql
                , ValueType
            )
        select @ii
              , @Parent_object_ID
              , @MaxObject_id
              , @key
              , ''
              , case @Thetype
                    when @array then
                        'array'
                    else
                        'object'
                end;

        insert into @ReturnTable --and return all its children
        (
            SequenceNo
          , Parent_ID
          , Object_ID
          , [Name]
          , StringValue
          , ValueType
        )
        select SequenceNo
              , Parent_ID
              , Object_ID
              , [Name]
              , StringValue
              , ValueType
        from dbo.JSONHierarchy(@Value, @MaxObject_id, @MaxObject_id, @type);
        select @MaxObject_id = max(Object_ID) + 1
        from @ReturnTable;
    end;
    else
        insert into @ReturnTable
        (
            SequenceNo
          , Parent_ID
          , Object_ID
          , Name
          , StringValue
          , ValueType
        )
        select @ii
              , @Parent_object_ID
              , null
              , @key
              , @Value
              , case @Thetype
                    when @string then
                        'string'
                    when @null then
```

```
                            'null'
                    when @int then
                            'int'
                    when @boolean then
                            'boolean'
                    else
                            'int'
                end;

        select @ii = @ii + 1;
    end;

    return;
end;
GO
```

⬚ *User-Defined Data Types*

Objects

Name
Udt.ClassLength
Udt.ClassTime
Udt.DateAdded
Udt.FirstName
Udt.FloatField
Udt.GroupName
Udt.IndividualProject
Udt.LastName
Udt.Rows
Udt.String100
Udt.String20
Udt.String30
Udt.String4
Udt.String8
Udt.SurrogateKeyInt

[Udt].[ClassLength]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	nvarchar
Length	30

SQL Script

```
CREATE TYPE [Udt].[ClassLength] FROM nvarchar (30) NOT NULL
GO
```

Uses

Udt

[Udt].[ClassTime]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	nchar
Length	5

SQL Script

```
CREATE TYPE [Udt].[ClassTime] FROM nchar (5) NOT NULL
GO
```

Uses

Udt

Used By

[DbSecurity].[UserAuthorization]
[Process].[WorkFlowSteps]

[Udt].[DateAdded]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	datetime2
Length	8

SQL Script

```
CREATE TYPE [Udt].[DateAdded] FROM datetime2 NOT NULL
GO
```

Uses

Udt

Used By

[Course].[Class]
[Course].[ClassRoom]
[Course].[Course]
[Course].[CourseInstructor]
[Course].[ModeOfInstruction]
[DbSecurity].[UserAuthorization]
[Department].[Department]
[Department].[Instructor]
[Location].[BuildingLocation]
[Location].[RoomLocation]
[Process].[WorkFlowSteps]

🔲 [Udt].[FirstName]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	nvarchar
Length	20

SQL Script

```
CREATE TYPE [Udt].[FirstName] FROM nvarchar (20) NOT NULL
GO
```

Uses

Udt

Used By

[DbSecurity].[UserAuthorization]

[Udt].[FloatField]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	float
Length	8

SQL Script

```sql
CREATE TYPE [Udt].[FloatField] FROM float NOT NULL
GO
```

Uses

Udt

Used By

[Course].[Class]

[Udt].[GroupName]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	nvarchar
Length	20

SQL Script

```
CREATE TYPE [Udt].[GroupName] FROM nvarchar (20) NOT NULL
GO
```

Uses

Udt

Used By

[DbSecurity].[UserAuthorization]

[Udt].[IndividualProject]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	nvarchar
Length	60

SQL Script

```
CREATE TYPE [Udt].[IndividualProject] FROM nvarchar (60) NOT NULL
GO
```

Uses

Udt

Used By

[DbSecurity].[UserAuthorization]

[Udt].[LastName]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	nvarchar
Length	35

SQL Script

```
CREATE TYPE [Udt].[LastName] FROM nvarchar (35) NOT NULL
GO
```

Uses

Udt

Used By

[DbSecurity].[UserAuthorization]

[Udt].[Rows]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	int
Length	4

SQL Script

```
CREATE TYPE [Udt].[Rows] FROM int NOT NULL
GO
```

Uses

Udt

Used By

[Process].[WorkFlowSteps]

[Udt].[String100]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	nvarchar
Length	100

SQL Script

```sql
CREATE TYPE [Udt].[String100] FROM nvarchar (100) NOT NULL
GO
```

Uses

Udt

Used By

[Course].[Course]
[Course].[ModeOfInstruction]
[Location].[BuildingLocation]
[Process].[WorkFlowSteps]

[Udt].[String20]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	20

SQL Script

```
CREATE TYPE [Udt].[String20] FROM nvarchar (20) NULL
GO
```

Uses

Udt

Used By

[Course].[Class]
[Course].[Course]
[Location].[RoomLocation]

🔢 [Udt].[String30]

Properties

Property	Value
Nullability	NOT NULL
Base Type Name	nvarchar
Length	30

SQL Script

```
CREATE TYPE [Udt].[String30] FROM nvarchar (30) NOT NULL
GO
```

Uses

Udt

Used By

[Course].[Class]
[Course].[Course]
[Department].[Department]
[Department].[Instructor]
[Location].[BuildingLocation]
[Location].[RoomLocation]

[Udt].[String4]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	4

SQL Script

```
CREATE TYPE [Udt].[String4] FROM nvarchar (4) NULL
GO
```

Uses

Udt

Used By

[Course].[Course]

[Udt].[String8]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	nvarchar
Length	8

SQL Script

```
CREATE TYPE [Udt].[String8] FROM nvarchar (8) NULL
GO
```

Uses

Udt

Used By

[Department].[Department]

🔢 [Udt].[SurrogateKeyInt]

Properties

Property	Value
Nullability	NULL allowed
Base Type Name	int
Length	4

SQL Script

```sql
CREATE TYPE [Udt].[SurrogateKeyInt] FROM int NULL
GO
```

Uses

Udt

Used By

[Course].[Class]
[Course].[ClassRoom]
[Course].[Course]
[Course].[CourseInstructor]
[Course].[ModeOfInstruction]
[DbSecurity].[UserAuthorization]
[Department].[Department]
[Department].[Instructor]
[Location].[BuildingLocation]
[Location].[RoomLocation]
[Process].[WorkFlowSteps]

👤 *Users*

Objects

Name
BiStudent
dbo
EC3\thehitman
guest
student

👤 BiStudent

Properties

Property	Value
Type	SqlUser
Default Schema	dbo

Database Level Permissions

Type	Action
CONNECT	Grant

SQL Script

```
CREATE USER [BiStudent] WITHOUT LOGIN
GO
```

👤 dbo

Properties

Property	Value
Type	SqlUser
Login Name	sa
Default Schema	dbo

Database Level Permissions

Type	Action
CONNECT	Grant

SQL Script

```
GO
```

👤 EC3\thehitman

Properties

Property	Value
Type	WindowsUser
Login Name	EC3\thehitman
Default Schema	dbo

Database Level Permissions

Type	Action
CONNECT	Grant

SQL Script

```sql
IF NOT EXISTS (SELECT * FROM master.dbo.syslogins WHERE loginname = N'EC3\thehitman')
CREATE LOGIN [EC3\thehitman] FROM WINDOWS
GO
CREATE USER [EC3\thehitman] FOR LOGIN [EC3\thehitman]
GO
```

👤 guest

Properties

Property	Value
Type	SqlUser
Default Schema	guest

SQL Script

```
GO
```

👤 student

Properties

Property	Value
Type	SqlUser
Default Schema	dbo

Database Level Permissions

Type	Action
CONNECT	Grant

SQL Script

```sql
CREATE USER [student] WITHOUT LOGIN
GO
```

👥 *Database Roles*

Objects

Name
db_accessadmin
db_backupoperator
db_datareader
db_datawriter
db_ddladmin
db_denydatareader
db_denydatawriter
db_owner
db_securityadmin
public

👥 db_accessadmin

Properties

Property	Value
Owner	dbo

👥 db_backupoperator

Properties

Property	Value
Owner	dbo

👥 db_datareader

Properties

Property	Value
Owner	dbo

Members

- BiStudent
- student

SQL Script

```
ALTER ROLE [db_datareader] ADD MEMBER [BiStudent]
GO
ALTER ROLE [db_datareader] ADD MEMBER [student]
GO
```

Uses

BiStudent
student

👥 db_datawriter

Properties

Property	Value
Owner	dbo

👥 db_ddladmin

Properties

Property	Value
Owner	dbo

👥 db_denydatareader

Properties

Property	Value
Owner	dbo

👥 db_denydatawriter

Properties

Property	Value
Owner	dbo

👥 db_owner

Properties

Property	Value
Owner	dbo

Members

- EC3\thehitman

SQL Script

```
ALTER ROLE [db_owner] ADD MEMBER [EC3\thehitman]
GO
```

Uses

EC3\thehitman

👥 db_securityadmin

Properties

Property	Value
Owner	dbo

👥 public

Properties

Property	Value
Owner	dbo

⋏ *Schemas*

Objects

Name
Course
DbSecurity
Department
GroupNameProject3
Location
Process
Udt
Uploadfile
Utils
YourLastName

⋀ Course

Properties

Property	Value
Owner	dbo

SQL Script

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

Used By

[Course].[Class]
[Course].[ClassRoom]
[Course].[Course]
[Course].[CourseInstructor]
[Course].[ModeOfInstruction]
[Course].[usp_LoadClassRoomTable]
[Course].[usp_LoadClassTable]
[Course].[usp_LoadCourseInstructorTable]
[Course].[usp_LoadCourseTable]
[Course].[usp_LoadModeOfInstructionTable]

⋀ DbSecurity

Properties

Property	Value
Owner	dbo

SQL Script

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

Used By

[DbSecurity].[UserAuthorization]

⅄ Department

Properties

Property	Value
Owner	dbo

SQL Script

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

Used By

[Department].[Department]

[Department].[Instructor]

[Department].[usp_LoadDepartmentTable]

[Department].[usp_LoadInstructorTable]

⋀ GroupNameProject3

Properties

Property	Value
Owner	dbo

SQL Script

```
CREATE SCHEMA [GroupNameProject3]
AUTHORIZATION [dbo]
GO
```

⋀ Location

Properties

Property	Value
Owner	dbo

SQL Script

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

Used By

[Location].[BuildingLocation]

[Location].[RoomLocation]

[Location].[usp_LoadBuildingLocationTable]

[Location].[usp_LoadRoomLocationTable]

⋀ Process

Properties

Property	Value
Owner	dbo

SQL Script

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

Used By

[Process].[WorkFlowSteps]
[Process].[usp_AddForeignKeys]
[Process].[usp_ShowWorkFlowSteps]
[Process].[usp_TrackWorkFlow]

⋀ Udt

Properties

Property	Value
Owner	dbo

SQL Script

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

Used By

[Udt].[ClassLength]
[Udt].[ClassTime]
[Udt].[DateAdded]
[Udt].[FirstName]
[Udt].[FloatField]
[Udt].[GroupName]
[Udt].[IndividualProject]
[Udt].[LastName]
[Udt].[Rows]
[Udt].[String100]
[Udt].[String20]
[Udt].[String30]
[Udt].[String4]
[Udt].[String8]
[Udt].[SurrogateKeyInt]

Λ Uploadfile

Properties

Property	Value
Owner	dbo

SQL Script

```sql
CREATE SCHEMA [Uploadfile]
AUTHORIZATION [dbo]
GO
```

Used By

[Uploadfile].[CurrentSemesterCourseOfferings]

⋀ Utils

Properties

Property	Value
Owner	dbo

SQL Script

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

Used By

[Utils].[uvw_FindColumnDefinitionPlusDefaultAndCheckConstraint]

⋀ YourLastName

Properties

Property	Value
Owner	dbo

SQL Script

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