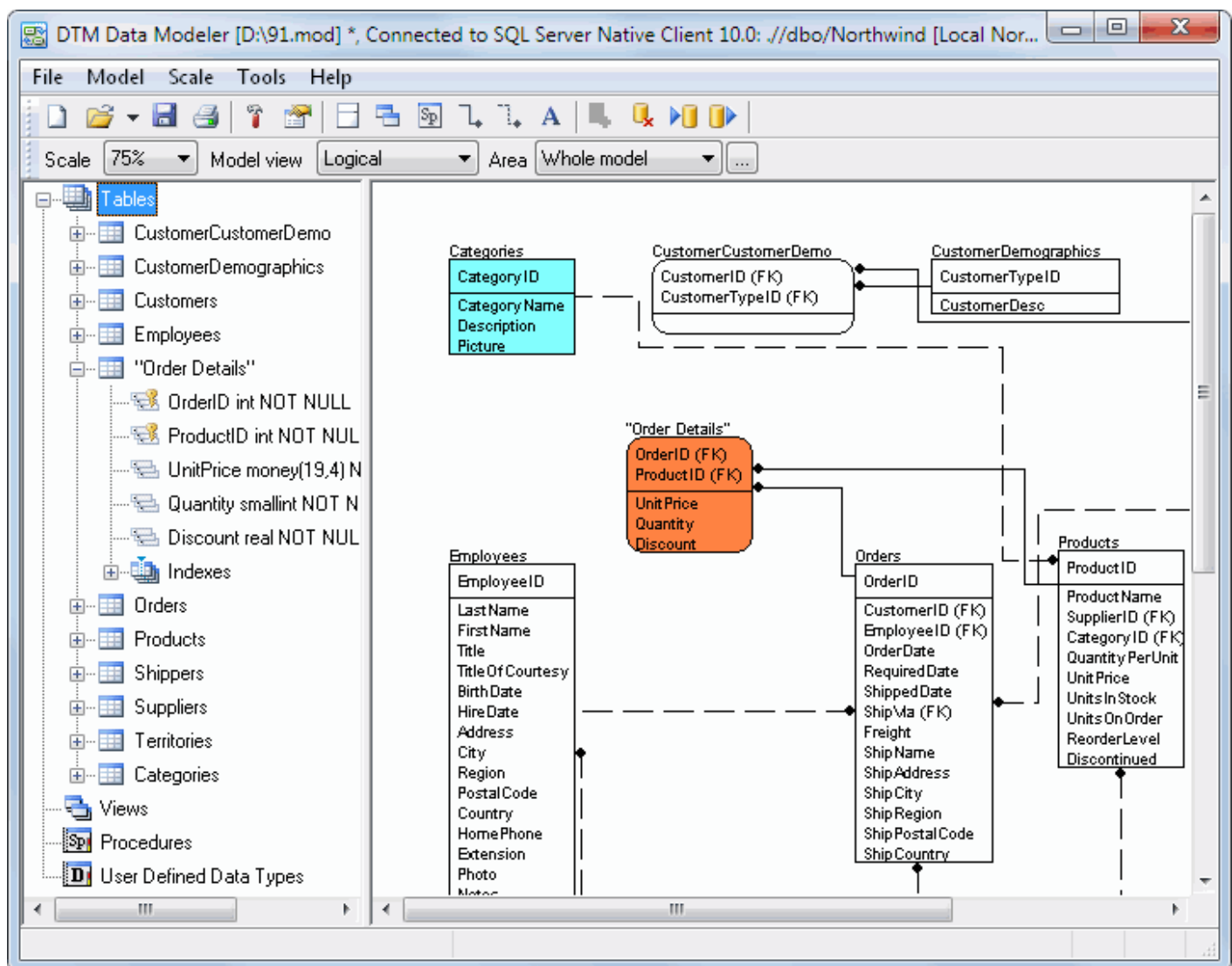


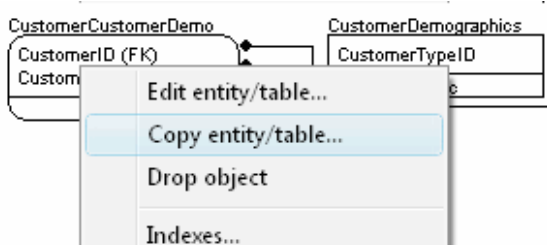
About the CASE tool for database designers

DTM Data Modeler is a CASE tool for database developers that supports both forward and reverse engineering. It is an easy-to-use tool allowing you to work both with [logical](#) and [physical](#) data models in the form of an entity-relationship diagram. The product is intended for database architects and developers and works with data sources via the ODBC interface, which means compatibility with all modern DBMS. Along with basic model properties (sets of [entities](#) and [relationships](#) between them), the program allows you to create [indexes](#) and [triggers](#) on the physical level corresponding to the tables of the database that is modeled. The foreign key [migration](#) feature makes schema development easier and more visual and also reduces the probability of errors in the integrity of the model. Also, you can create [views](#) and [stored procedures](#) as well as basic database model elements.

The program can create database schema objects directly in the database as well as to create [SQL scripts](#) corresponding to the model and taking into account the settings specified by the user.



There is a picture of context menu accessed by the right click on the entity. See the picture below:

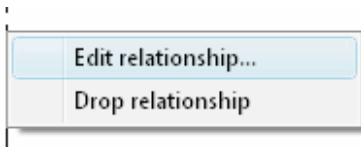


Using this menu you can to:

- Open "[entity editor](#)" dialog
- Drop table/entity
- Open "[Indexes](#)" editor
- Open "[Triggers](#)" editor

Also, using local Relationship menu you can to:

- Open "[relationship properties](#)" dialog
- Drop relationship



The object browser tree is located at the left side of the main program window and has context menu too. It allows you to create new database object, to drop an existing object or to edit selected item.

If there is no active database connection when the program is started, it will open the "[connection window](#)". To disable this mode, you can use the corresponding option in the settings dialog box.

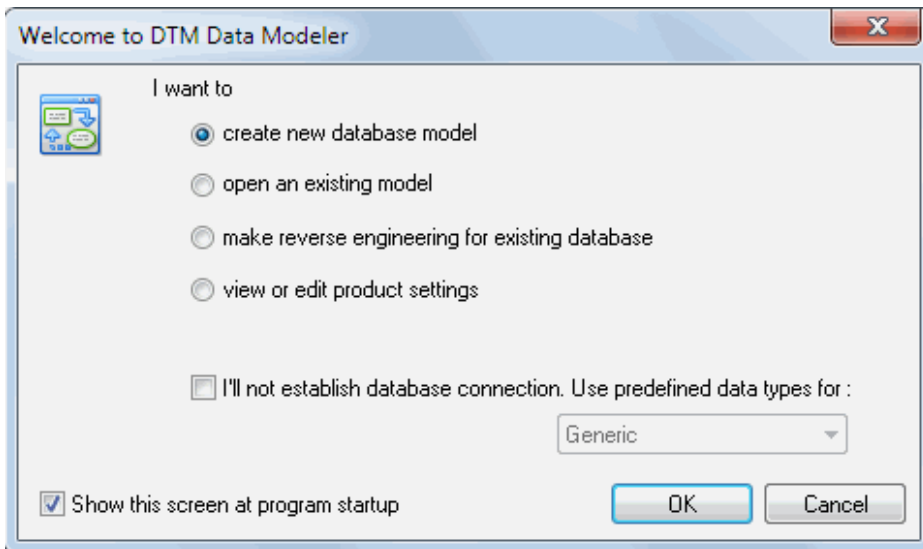
Note: '*' in the window title means the current project is not saved.

DTM Data Modeler is a Windows application, known to be compatible with the following operating systems: Windows XP, Windows 2003 and newer Server family and Windows Vista, 7, 8/10 (desktop). The 64-bit edition is also available.

Welcome screen and operation selection

The welcome screen helps you to switch to one of the most useful product features. It allows you to:

- Create new data model.
- Open an existing data model (.mod file).
- Make reverse engineering.
- View or edit product [settings](#).
- Select data type set for offline (without connection) modeling.



Quick Start: [how to connect?](#)

There are five ways to connect to a database:

1. [Direct connection](#)
2. Connection to [desktop files](#)
3. [Data source](#) with ODBC, IDAPI or Oracle Call Interface (OCI)
4. [DSN File](#) connection
5. [OLE DB](#) connection

In all modes the "Test" and "Information" buttons, as well as tools for working with connection [profiles](#) are available. "Test" button allows you to check information you entered and/or data source (or alias) configuration.

See also:

- Troubleshooting [guide](#)
- Connection [information](#)
- Connection [profiles](#)

Connection Quick Start Guide

| Database | How to connect |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MS SQL Server | Enter or select server name at the direct connection panel |
| Local SQL Server Express | Enter .\SQLEXPRESS as server name at the direct connection panel |
| Oracle | 1) Switch to data sources mode 2) select OCI as "Interface" 3) select your service name from data source drop-down menu |
| DB2 | Use direct connection panel or Use predefined ODBC DSN for custom connection settings |
| MySQL | Install ODBC driver for MySQL from www.mysql.org Use direct connection panel or Use predefined ODBC DSN for custom connection settings |
| PostgreSQL | Use direct connection panel or Use predefined ODBC DSN for custom connection settings |
| Interbase/Firebird | Install ODBC driver Use direct connection panel or Use predefined ODBC DSN for custom connection settings |
| Microsoft Access | 1) Switch to " Desktop File " panel 2) Select "Access" as file type, enter or select file name |
| Microsoft Excel | 1) Switch to " Desktop File " panel 2) Select "Excel" as file type, enter or select file name |
| <i>Another database</i> | 1) Install ODBC driver for your database system 2) Create ODBC data source name using Windows ODBC Administrator 3) Switch to data sources mode 4) select your data source from drop down menu |

Direct Connection

The direct connection method allows you to connect to most popular databases ([MS SQL Server](#), [Oracle](#), [Interbase/Firebird](#), [MySQL](#), [PostgreSQL](#) and [DB2](#)).

Enter the server name and the database name, if required. The user name and password are optional. Their necessity depends on the settings of your database. The owner name (schema) is optional too. The list of visible database objects depends on the choice of the owner. If the owner is empty, you will access all objects. There is important that schema/owner name is case sensitive.

If you do not find the required database type in the list or cannot connect directly, use a connection through the predefined data source. If DBMS is in the list, but unavailable, it means that either the required ODBC driver is not installed or it is not configured properly. During its use, the program stores the entered values of server names, users and owners. You can select a value from the stored list using the corresponding combo box. For some DBMS types (MS SQL, for example), the program can fill the list of available databases. Use the button with two arrows for this purpose.

Direct Database Connections to most popular databases

Microsoft SQL Server

Oracle Database

MySQL

Interbase/Firebird

IBM DB2

PostgreSQL

Note: If you do not find the required database type in the list or cannot connect directly, use a connection through the predefined Data Source.

Server: DTM-XP\SQLEXPRESS

Windows Authentication (trusted connection)

User (login): Admin

Password:

Database: Northwind

Owner/schema: dbo

Note: Express @XP

DBMS-specific connection options

Microsoft SQL Server

- "(local)", empty or "." server name means local server
- use <server name>\<instance name> syntax to identify instance. Example: .\SQLEXPRESS means SQL Express at the local system

Oracle

Use connect string for the Oracle Server that you want to access as a Server name.

Important: it is strongly recommended to use native Oracle Call Interface ([OCI](#)) instead of direct connection.

Interbase and Firebird

Examples:

- Server: **localhost** and Database **c:\interbase\myDb.fdb** - connect to specified DB on local system.
- Server: **172.17.2.10/3051** and Database **/usr/local/db/myDb.fdb** - connect to specified server with alternate port 3051 on remote system 172.17.2.10

MySQL

- Use **localhost** for local MySQL
- `example.com;port=3306` means MySQL at example.com on 3306 port

DB2

ServerName;port=5000;protocol=TCPIP as a server name means connect to ServerName, use 5000 port and TCP/IP protocol.

PostgreSQL

ServerName as a server name means connect to ServerName, use 5432 port and TCP/IP protocol. Database name is required. localhost as a server name is acceptable. To specify custom port you should add `";port=NNNN"` string to server name.

server_name_or_ip-address;port=5432;DATABASE=dbname

Desktop Files

The second way is designed for connecting to desktop data files. Select the required format and specify the file name or the directory where the data is located. Other parameters are optional.

Connections to Desktop Data File

Text file (*.txt, *.csv) Format : CustomDelimiter ANSI Delimiter : |

Microsoft Access file (*.mdb, *.accdb) use Microsoft Jet (ODBC by default)

dBase, FoxBase or FoxPro file (*.dbf)

Microsoft Excel file (*.xls, *.xlsx, *.xlsb)

Paradox file (*.db)

FoxPro database container (*.dbc)

SQLite database

Location: D:\Projects And Files\tickets.mdb Browse...

Authentication information, optional: Read Only mode

User / Login:

Password: Note: Tickets

Predefined data sources: ODBC, IDAPI, Oracle Call Interface

A connection with the use of a data source is the most universal. You can select ODBC, IDAPI or OCI (if installed) interface and the preconfigured data source name. In this case, other options are similar to those of a direct connection. The "Manage" button allows you to get access to the external configuration utility if it is available. When you want to access the tables belonging to the single database schema (or owner), you should fill the "owner" entry; otherwise, all tables will be accessed.

Connections to existing and configured data sources

| | | |
|--------------|-----------------------------------------------|------------------------------------------|
| Interface | <input type="text" value="ODBC"/> | <input type="checkbox"/> Manual commit |
| Data source | <input type="text" value="localserver"/> | <input type="button" value="Manage..."/> |
| User (login) | <input type="text" value="sa"/> | |
| Password | <input type="password" value="xxxxxx"/> | |
| Database | <input type="text" value="Northwind"/> | |
| Owner | <input type="text" value="dbo"/> | |
| Note | <input type="text" value="Local SQL Server"/> | |

DSN File

The fourth way is using a DSN file. For this case, just select the file name with DSN definition.

Connections to existing and configured file DSN

File DSN name

Note

OLE DB connection

Use 'Configure' button to specify connection information. Password and owner fields are optional.

Connections using OLE DB providers

Connection properties Configure...

```
Provider=SQLOLEDB.1;  
Persist Security Info=False;  
User ID=sa;  
Initial Catalog=Northwind;  
Data Source=DTM-ACER2;  
Use Procedure for Prepare=1;  
Auto Translate=True;  
Packet Size=4096;
```

Password

Owner

Note

Connection Profiles

Connection profile helps you to save information about your connection (interface, data source or alias name, user name (login), password and database name, etc) and get access it by the one click.

Please fill connection properties and press "Add as new" to add a new profile. To modify the profile you should select it from the list at the top of the window, modify properties and press "Update". "Delete" button works when you select the profile to be deleted in the list.

"Save" and "Load" buttons allow you to save profiles to the disk file or load them. The "Export one" button helps to save single currently selected profile.

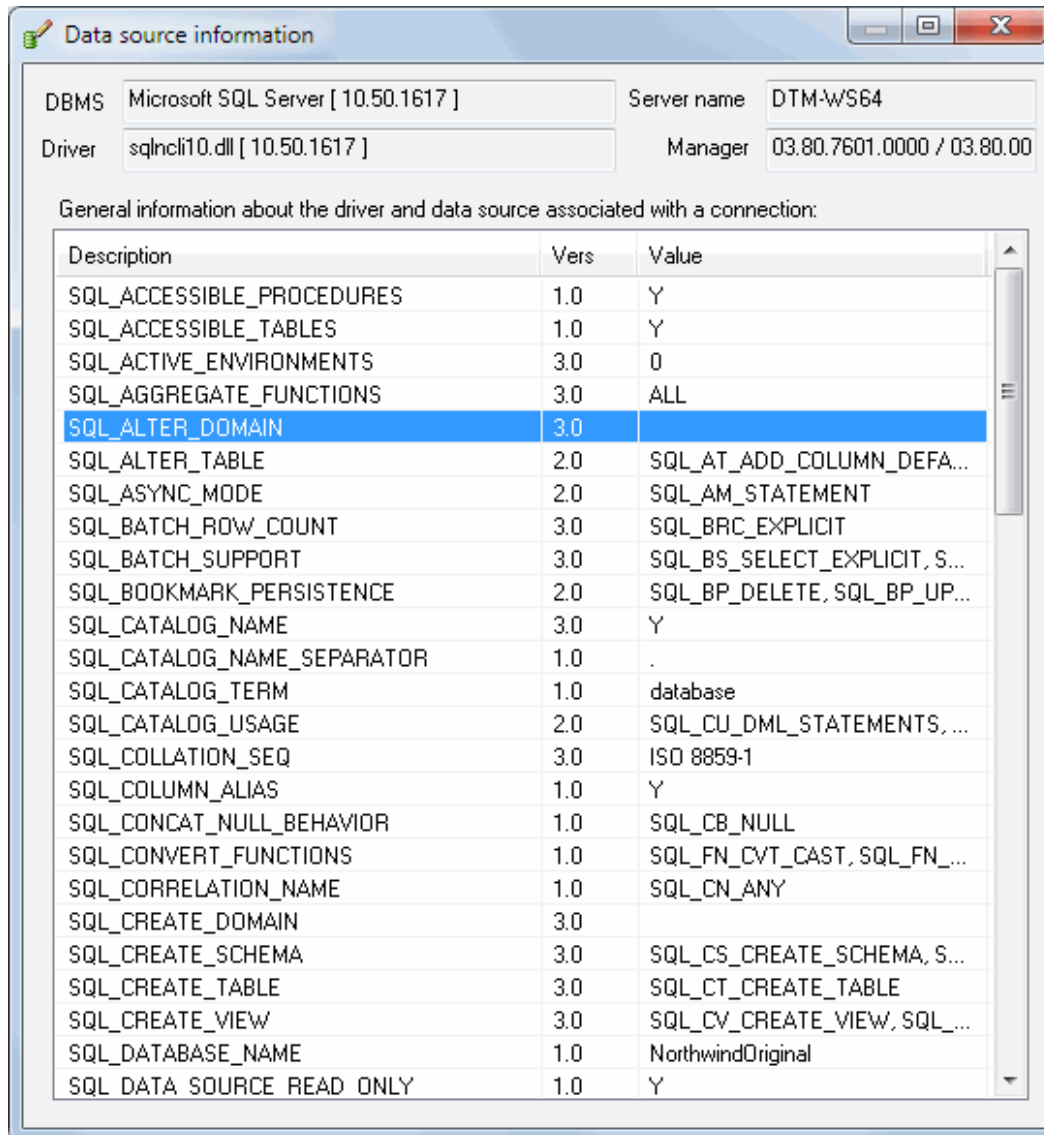
Important: all profiles are shared between all installed DTM soft products. That means once created profile can be used with any tool. At the other side if you remove the profile from the list you can't use it with DTM soft's products anymore.

| Mode | Interface | Source or Server | User | Owner | Database | Note |
|---------|-----------|------------------|------|-------|-------------------|--------------------|
| Direct | ODBC | . | | | Northwind | Local server |
| Direct | ODBC | DTM-XP | sa | | AdventureWorks | |
| Direct | ODBC | . | | dbo | NorthwindOriginal | Local Read Only DB |
| DSN | ODBC | Saramdb | | | | SaraMDB |
| DSN | ODBC | test_new | | | | Test MDB |
| Desktop | ODBC | ACCESS | | | | Test MDB |
| DSN | ODBC | test_old | | | | Test MDB |
| Direct | ODBC | . | | dbo | | |
| Direct | ODBC | . | | dbo | | 2 |
| DSN | OCI | ORCL | OE | | | ORCL/OE |
| DSN | ODBC | ORCL_ODBC | OE | OE | | ORCL/ODBC |
| DSN | OCI | 10G | OE | | | Oracle 10g (VM) |

Buttons: Add as New, Update profile, Remove profile, Export One..., Save..., Load...

Connection Information

The program provides detailed database, connection and driver information and properties. The "Information" button at the connect window allows you to view it.



The screenshot shows a window titled "Data source information" with the following fields:

- DBMS: Microsoft SQL Server [10.50.1617]
- Server name: DTM-WS64
- Driver: sqlncli10.dll [10.50.1617]
- Manager: 03.80.7601.0000 / 03.80.00

General information about the driver and data source associated with a connection:

| Description | Vers | Value |
|----------------------------|------|------------------------------|
| SQL_ACCESSIBLE_PROCEDURES | 1.0 | Y |
| SQL_ACCESSIBLE_TABLES | 1.0 | Y |
| SQL_ACTIVE_ENVIRONMENTS | 3.0 | 0 |
| SQLAggregate_FUNCTIONS | 3.0 | ALL |
| SQL_ALTER_DOMAIN | 3.0 | |
| SQL_ALTER_TABLE | 2.0 | SQL_AT_ADD_COLUMN_DEFA... |
| SQL_ASYNC_MODE | 2.0 | SQL_AM_STATEMENT |
| SQL_BATCH_ROW_COUNT | 3.0 | SQL_BRC_EXPLICIT |
| SQL_BATCH_SUPPORT | 3.0 | SQL_BS_SELECT_EXPLICIT, S... |
| SQL_BOOKMARK_PERSISTENCE | 2.0 | SQL_BP_DELETE, SQL_BP_UP... |
| SQL_CATALOG_NAME | 3.0 | Y |
| SQL_CATALOG_NAME_SEPARATOR | 1.0 | . |
| SQL_CATALOG_TERM | 1.0 | database |
| SQL_CATALOG_USAGE | 2.0 | SQL_CU_DML_STATEMENTS, ... |
| SQL_COLLATION_SEQ | 3.0 | ISO 8859-1 |
| SQL_COLUMN_ALIAS | 1.0 | Y |
| SQL_CONCAT_NULL_BEHAVIOR | 1.0 | SQL_CB_NULL |
| SQL_CONVERT_FUNCTIONS | 1.0 | SQL_FN_CVT_CAST, SQL_FN_... |
| SQL_CORRELATION_NAME | 1.0 | SQL_CN_ANY |
| SQL_CREATE_DOMAIN | 3.0 | |
| SQL_CREATE_SCHEMA | 3.0 | SQL_CS_CREATE_SCHEMA, S... |
| SQL_CREATE_TABLE | 3.0 | SQL_CT_CREATE_TABLE |
| SQL_CREATE_VIEW | 3.0 | SQL_CV_CREATE_VIEW, SQL_... |
| SQL_DATABASE_NAME | 1.0 | NorthwindOriginal |
| SQL DATA SOURCE READ ONLY | 1.0 | Y |

Troubleshooting Guide

| Problem description | Possible reason | Solutions |
|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Required database type not present in the list at Direct Connection and Desktop Connection pages | | Switch to "data source" connection mode and select data source from the list or configure new one with "Manage" button. |
| Required format is in the direct connection list, but not available (disabled). | ODBC driver for your database does not installed or not configured properly. | Install required driver. If it is already present in the system, please contact our support staff . |
| Errors during direct connection. | Compatibility problems. | Try to create data source for your database connection. |
| Login error for correct user name and password. | Read-only desktop data file. | Try to change file mode to 'read and write'. |
| I can't see relationships, defaults, etc in my Access Database. | Access interface. | Try to switch on "Use Microsoft Jet" check box at the "Desktop File" page of the Connect Window. |

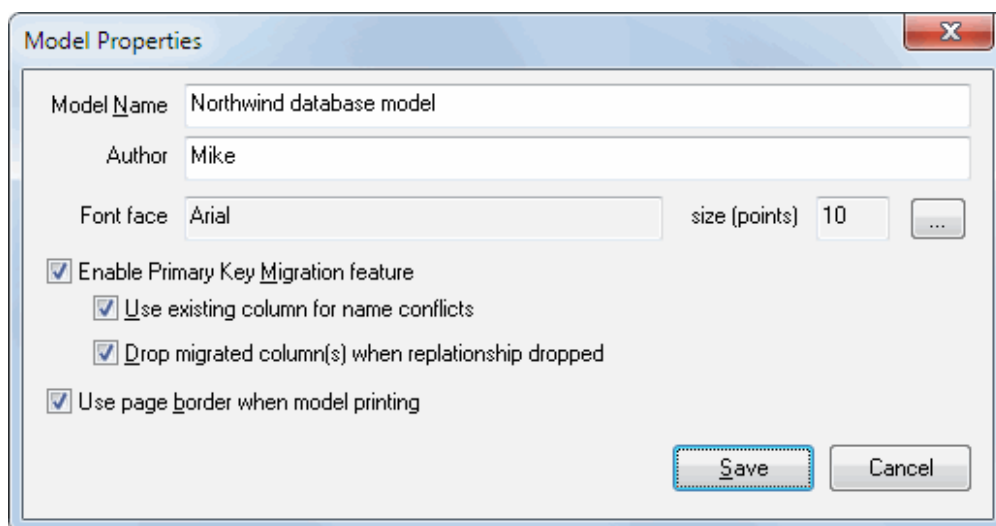
Model Properties

There are a few important model properties. This dialog box allows you to view or edit the following properties: the model font (its face and size), whether the primary keys migration mechanism should be used, whether the border should be used while printing the model.

Key migration is a mechanism when the primary key fields of the parent table ([entity](#)) become a part of the child table either getting into the primary key or not depending on whether the identifying or non-identifying [relationship](#) is used.

The parent entity is required for **identifying** relationship while in the case with **non-identifying** relationship the NULL value is acceptable for the field corresponding to the relationship.

Identifying relationships are shown with the help of continuous lines, while Non-identifying Relationships are represented by dotted lines. Entities that have no identifying parents are shown with right corners, while the rest of entities have rounded corners.



Model Properties

Model Name: Northwind database model

Author: Mike

Font face: Arial size (points): 10

Enable Primary Key Migration feature

Use existing column for name conflicts

Drop migrated column(s) when relationship dropped

Use page border when model printing

Save Cancel

There are four view modes for the data model. They are:

- Logical model. The program does not show data types and other properties for the entity.
- In the Physical mode, the program shows detailed information about table attributes: data types and nullability.
- Show Primary Keys only mode likes logical model but the program shows only primary key's columns.
- Entity title only. In this mode, the program shows only table (entity) name and relationships.

The user can select required view mode from the drop-down "view model" menu at the toolbar.

Q: How to add entity or table onto [model](#)?

A: Select the entity icon on the program toolbar. After you specify the necessary [properties](#) (you can specify them either immediately or later) and click Save, move the mouse pointer to the necessary position and click the left mouse button. The entity will be placed on the model.

Q: How to add a relationship?

A: Select the icon corresponding to the relationship type at the program toolbar. The cursor will show the current state. Select the parent entity and click the left mouse button. Specify the child entity and click the left mouse button. The relationship will be displayed, the key will migrate (if necessary) and the program will open the [relationship](#) properties editor.

Q: How to drop model object?

A: Use "drop" item in the context menu of the object.

A: or Use "drop" item in the context menu of the object browser tree.

Q: How to add [view](#) or [stored procedure](#)?

A: Select "VIEWS" (or PROCEDURES) tree item at the object browser tree and click the right mouse button. Select "New object" menu item.

A: or Use Model submenu of the main program menu.

Entity/Table Editor

The entity properties editor allows you to edit all important table (entity) characteristics: its name, note and column (attribute) list. Moreover, "[indexes](#)" and "[triggers](#)" buttons provide an easy way to edit objects associated with the current table.

The program allows you to assign the following characteristics to each table column: its name, data type, column size, default value, nullable property, comment and additional attributes like the text of the check constraint or some other DBMS-specific information. If there is a connection to the database, DTM Data Modeler allows you to select the data type from the list box. Otherwise, you should type it manually.

By default, migrated fields are not available for editing. If you want to change this option and make them editable, use the corresponding checkbox in the settings dialog box. When the relationship that created migrated columns is deleted, these columns are also removed from the child entity.

Entity/Table definition

Name "Order Details" Note Order Items definition

Attributes/Columns

| PK | Name | Datatype | Size | Default | Comment | Null | Linked |
|----|-----------|----------|--------|---------|---------|------|----------|
| Y | OrderID | int | | | | N | Orders |
| Y | ProductID | int | | | | N | Products |
| | UnitPrice | money | (19,4) | (0) | | N | |
| | Quantity | smallint | | (1) | | N | |
| | Discount | real | | (0) | | N | |

is Primary Key Name UnitPrice

Datatype money Size 19 Digits 4

Default (0)

Additional attributes

Nullable Column note

Primary Key name

Buttons: Background color..., Indexes..., Triggers..., Save, Cancel

Relationship Properties

The relationship property editor allows the user to view the type of relationship and the names of the parent and child entities. Also, you can edit its name and note. For [key migration](#), you can specify a name of the column in the target (child) [entity](#). Also, for non-identifying relationships the user can specify NULL or NOT NULL option for the migrated columns(s).

Relationship 'FK_Order_Details_Products' properties

| | Parent / Master | Child / Detail |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| Entity / Table | Products | "Order Details" |
| Attribute(s) / Column(s) | ProductID ProductName SupplierID CategoryID QuantityPerUnit UnitPrice UnitsInStock UnitsOnOrder ReorderLevel Discontinued | ProductID |

NULL value is allowed

Type: Identifying

Name: FK_Order_Details_Products

Note:

ON DELETE: NO ACTION

ON UPDATE: NO ACTION

Save Cancel

Index Editor

The "Indexes" dialog box allows you to view or edit table indexes. For each index, you can specify its name and properties: unique and clustered. Also, you can enter a text note for it.

At the bottom of the window you can select columns included in the index and specify the mode (ASC or DESC) in which they will be included in the index.

The screenshot shows the 'Indexes for CustomerCustomerDemo' dialog box. It features a table of existing indexes, input fields for index name and note, checkboxes for Unique and Clustered properties, and a section for selecting table fields and their sort order (ASC or DESC) for the index.

| Name | Note | Unique | Clustered |
|-------------------------|------|--------|-----------|
| PK_CustomerCustomerDemo | | Y | N |
| | | | |
| | | | |

Index name: Unique Clustered

Note:

Table fields: CustomerID, CustomerTypeID

Index fields:

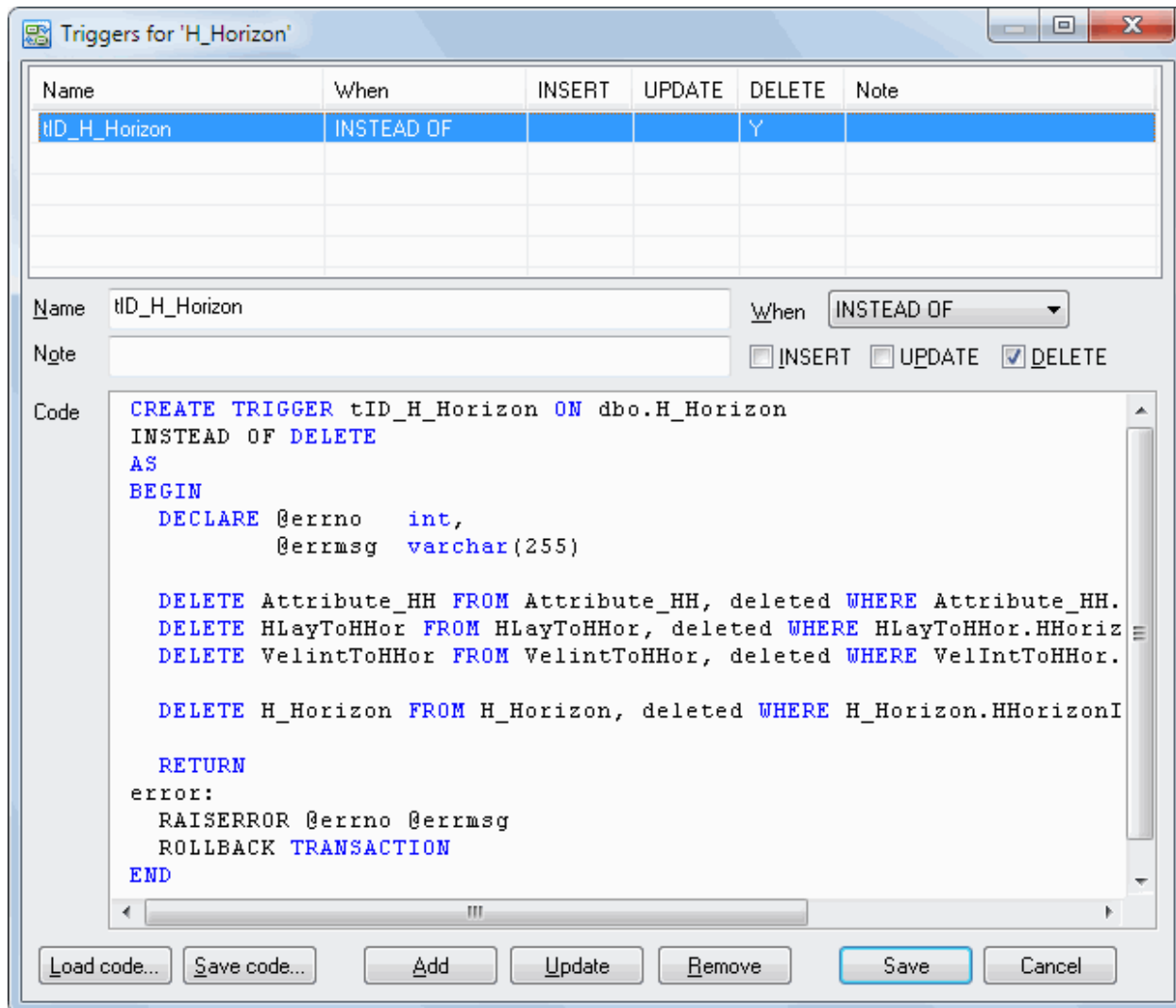
| Field | Mode |
|----------------|------|
| CustomerID | ASC |
| CustomerTypeID | ASC |
| | |
| | |
| | |
| | |
| | |

Buttons: Add, Update, Remove, Up, Down, Save, Cancel, ASC >, DESC >, <, <<

Trigger Editor

The "Triggers" dialog box shows the list of triggers associated with the current table. You can edit their codes or add text notes to them. You can also create new triggers or remove those already existing.

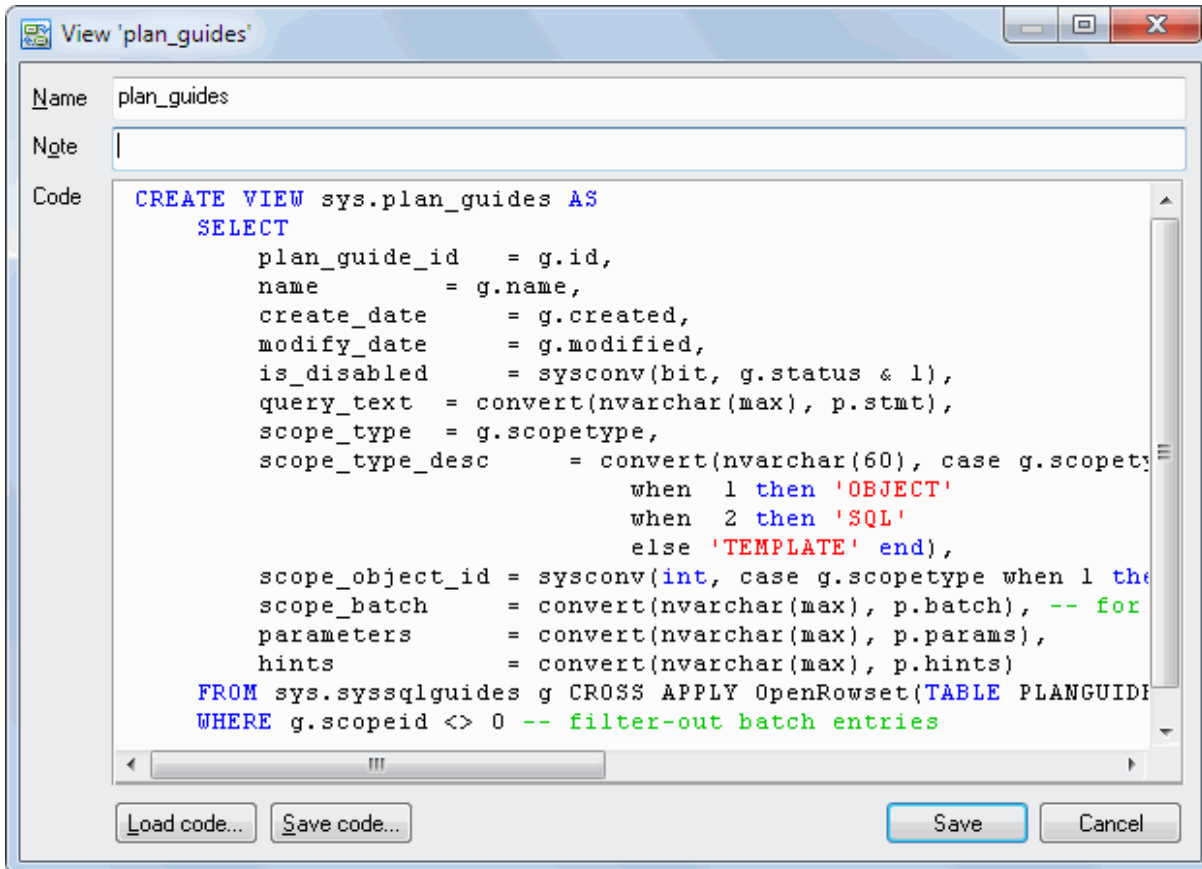
You can load a trigger code from a disk file or save text to an external file.



View Editor

The "Views" dialog box allows you to view or to edit the code of the view.

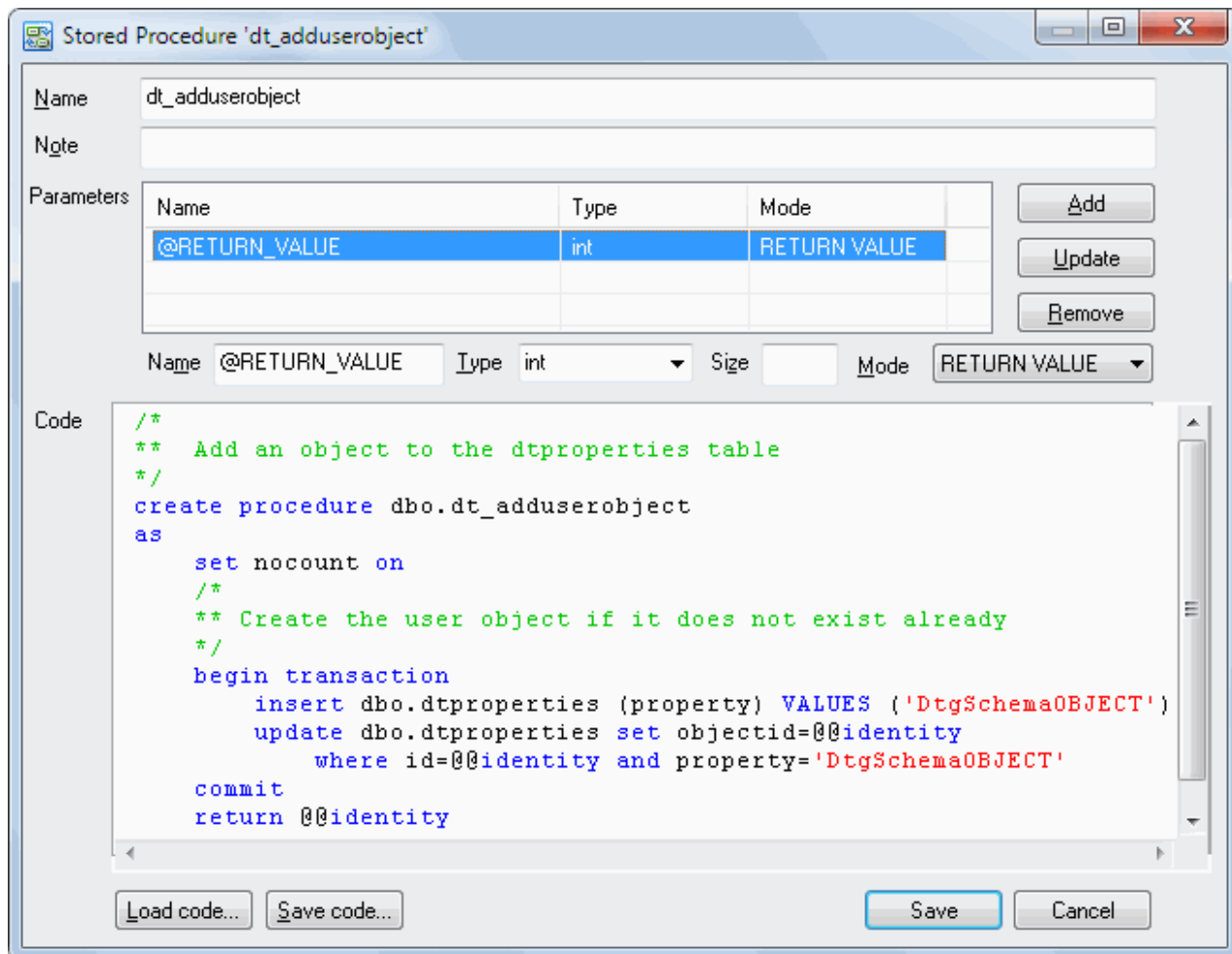
Also, You can load a view's code from a disk file or save text to an external file.



Procedure Editor

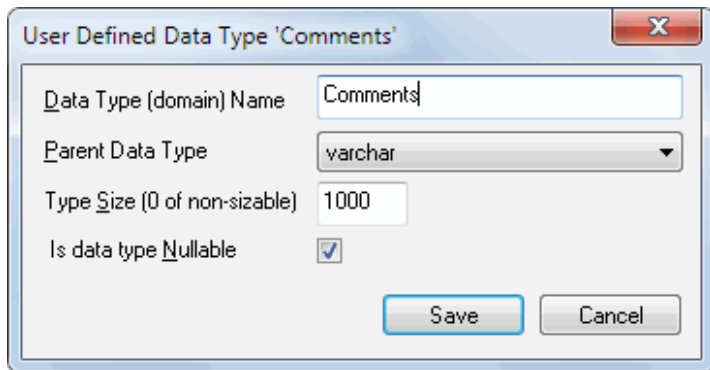
The "Stored Procedure" dialog box allows you to view or to edit code and parameters of the stored procedure.

Also, You can load a procedure code from a disk file or save text to an external file.



User Defined Data Types

The "Data Type" dialog box allows the user to define custom (user defined) data types.

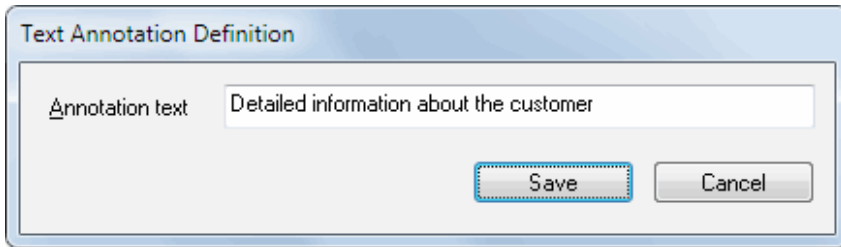


The screenshot shows a dialog box titled "User Defined Data Type 'Comments'". It contains the following fields and controls:

- Data Type (domain) Name:** A text input field containing "Comments".
- Parent Data Type:** A dropdown menu with "varchar" selected.
- Type Size (0 of non-sizable):** A text input field containing "1000".
- Is data type Nullable:** A checked checkbox.
- Buttons:** "Save" and "Cancel" buttons at the bottom.

Text Notes

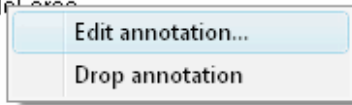
The user can add one-line text notes (annotations) to model. To add this object you should use related toolbar button or item in the Model menu. Please note that the program does not use this object during database schema (DDL statements) generation.



The image shows a dialog box titled "Text Annotation Definition". It contains a text input field with the label "Annotation text" and the value "Detailed information about the customer". Below the input field are two buttons: "Save" and "Cancel".

To edit or drop annotations the user can access to object's context menu that accessible by right mouse click.

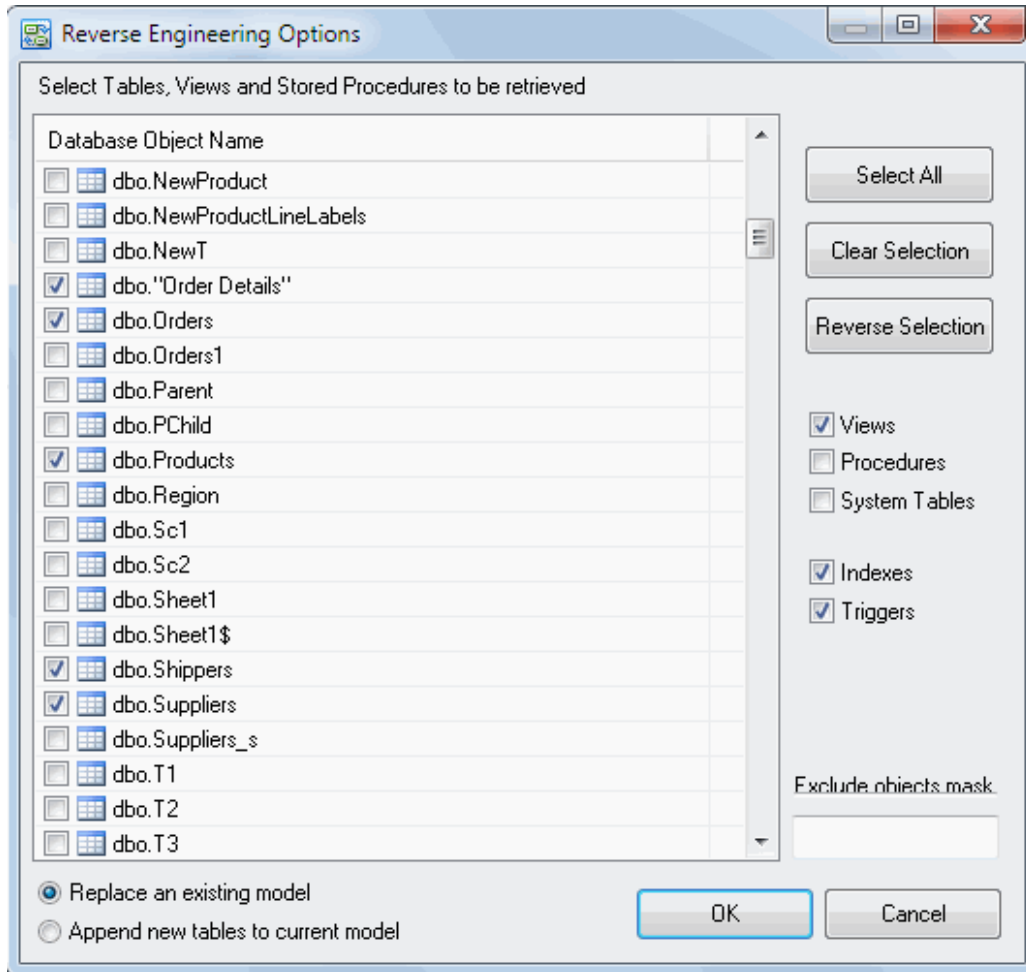
Main model area



Reverse Engineering Options

The "Reverse Engineering Options" dialog box helps you to select objects and setup options for Reverse Engineering procedure.

If the exclude mask is specified the program skips any object that has a mask as the substring of the object's name.

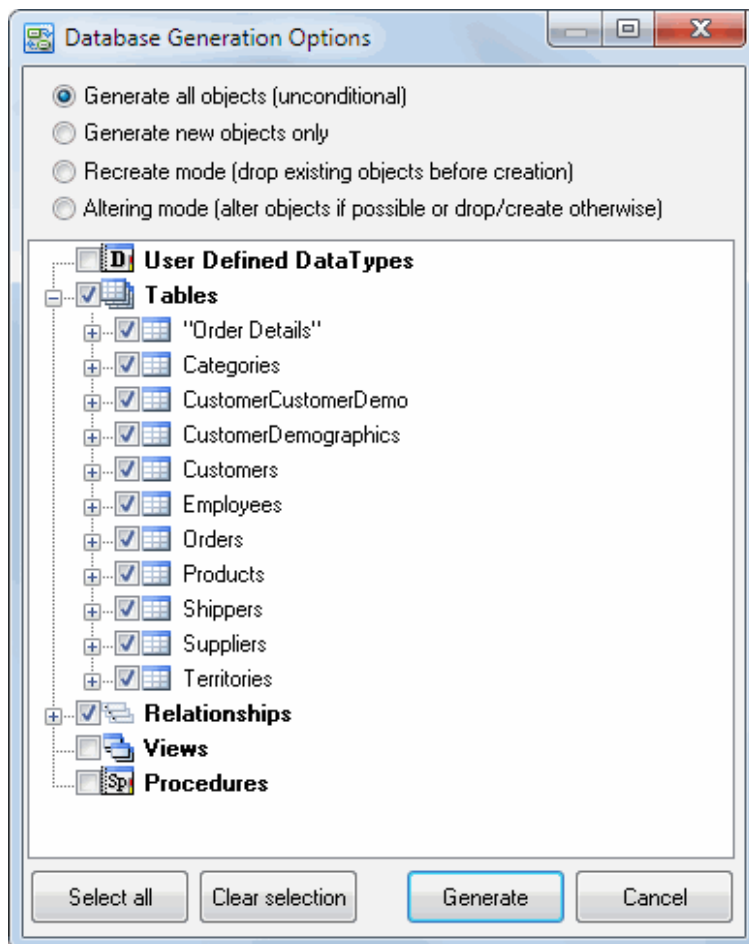


Object Selection

When generating the database schema (forward engineering), the program allows the user to select objects that will be generated. This dialog box represents the list of objects in a tree view. By selecting the necessary objects, you add them to the list that will be generated. If you select a group of objects or clear this selection, the corresponding operation will be applied to all objects in the subtree.

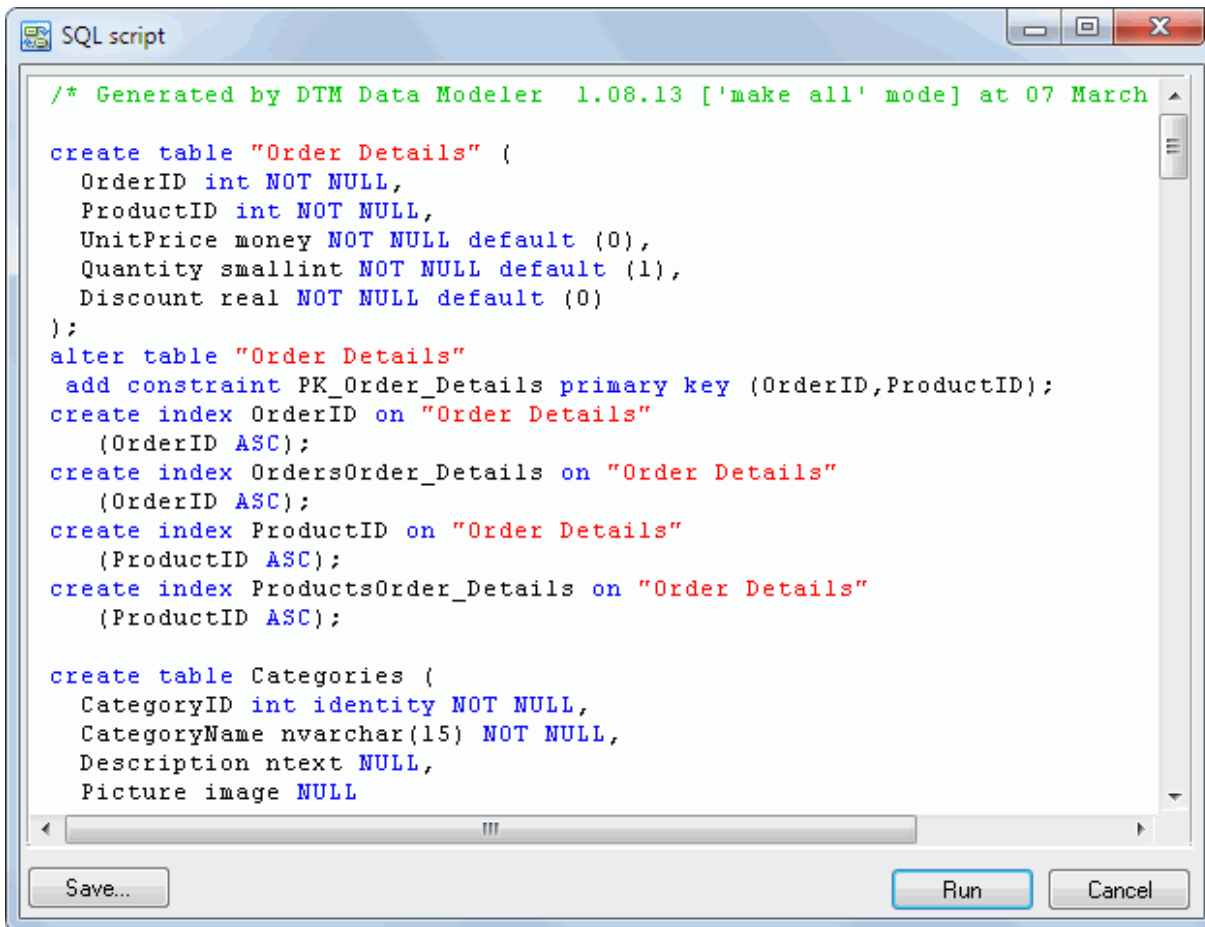
Also, this dialog helps the user to select generation mode. There are four methods:

1. Unconditional. In this mode, the program generates CREATE statements for all objects.
2. New only. The program generates SQL code for new objects only.
3. Recreate. The program produces DROP statements before CREATE statements.
4. Alter mode. Same as 'Recreate' but the program uses ALTER statement instead of DROP/CREATE when possible.



Database schema creation script preview

This dialog box allows you to view or to modify generated script.



The screenshot shows a window titled "SQL script" with a text area containing the following SQL code:

```
/* Generated by DTM Data Modeler 1.08.13 ['make all' mode] at 07 March

create table "Order Details" (
  OrderID int NOT NULL,
  ProductID int NOT NULL,
  UnitPrice money NOT NULL default (0),
  Quantity smallint NOT NULL default (1),
  Discount real NOT NULL default (0)
);
alter table "Order Details"
  add constraint PK_Order_Details primary key (OrderID,ProductID);
create index OrderID on "Order Details"
  (OrderID ASC);
create index OrdersOrder_Details on "Order Details"
  (OrderID ASC);
create index ProductID on "Order Details"
  (ProductID ASC);
create index ProductsOrder_Details on "Order Details"
  (ProductID ASC);

create table Categories (
  CategoryID int identity NOT NULL,
  CategoryName nvarchar(15) NOT NULL,
  Description ntext NULL,
  Picture image NULL
```

At the bottom of the window, there are three buttons: "Save...", "Run", and "Cancel".

Product Settings

You can configure the default model properties in the Settings dialog box. Moreover, you can specify (type or select from the list box) the SQL statement separator, as well as to specify whether to restore the connection and to load the recent model when the program is started.

Product settings

Default model properties

- Enable Primary Key Migration feature
 - Use exist column for name conflicts
 - Drop migrated column(s) when reparation dropped
- Use page Border when model printing

Font face: Arial size: 10

Use data types if not connected: Generic

- Restore connection at the program startup
- Load recent model at the program startup
- Allow to Edit migrated fields
- Allow to edit parent column of relationships
- Ask for connect (if connection is not present)
- Show welcome screen at the program start up
- Write 'Title' comment to generated script
- Write 'Total' comment to generated script
- Show fields in Object Tree

Generate NULL values: Always

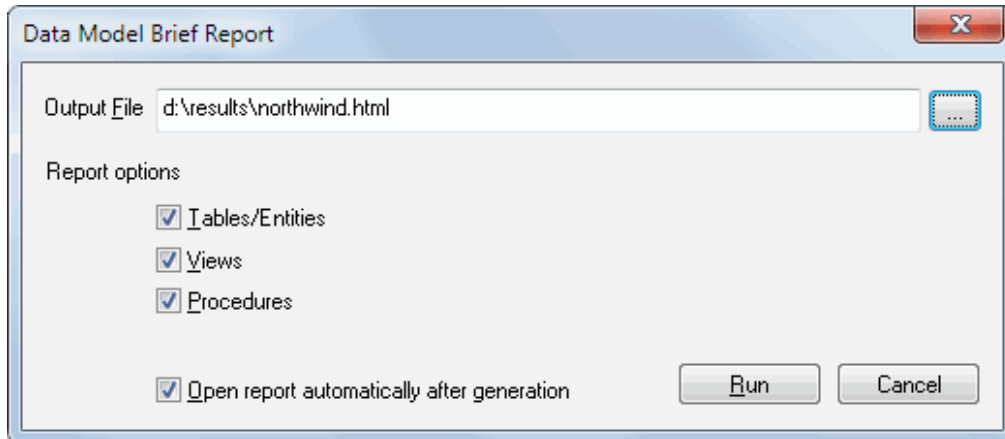
SQL statement separator: ;

Log level: Core (default) Location: C:\Users\Mike\AppData\Roaming\dm.log

Save Cancel

Brief Database Model Report

This window helps you to create easy HTML report for the current data model. To create rich database schema/model report please use [DTM Schema Reporter](http://www.sqledit.com/sr) (www.sqledit.com/sr).



Data Model Brief Report

Output File: d:\results\northwind.html

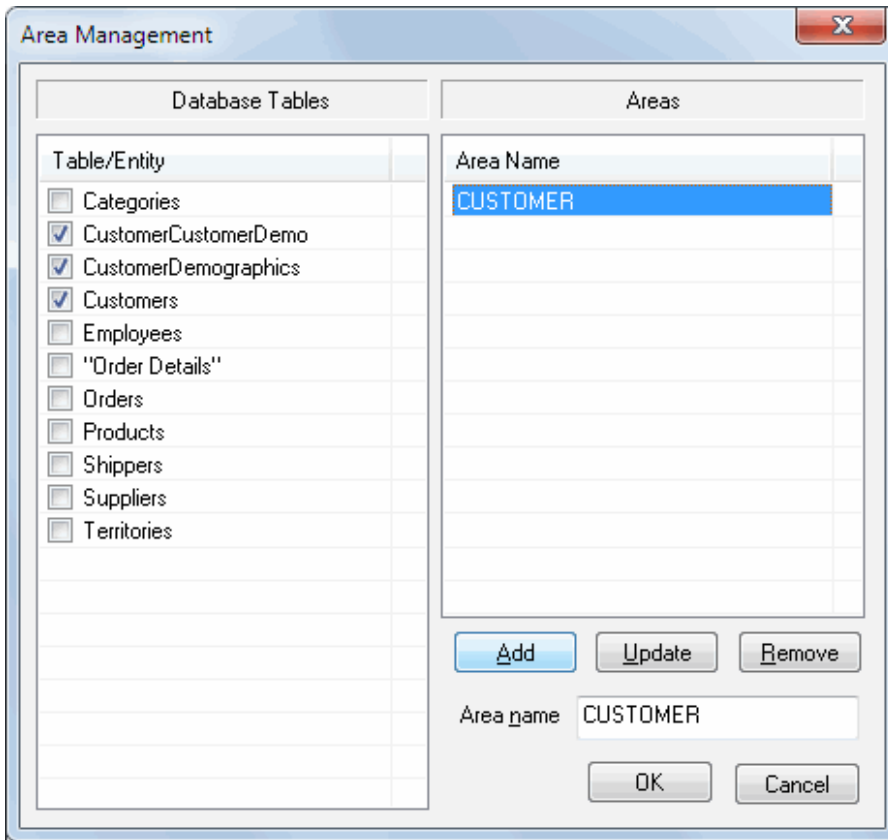
Report options:

- Tables/Entities
- Views
- Procedures
- Open report automatically after generation

Run Cancel

Area Management

The area is read-only view for the part of the current model. This window helps the user to define, modify or drop areas.



Model Conversion Tool

This tool allows the user to change target database system for the model. Currently, the tool supports Oracle, Microsoft SQL Server, Microsoft Access, IBM DB2, PostgreSQL, MySQL and Interbase/Firebird, and SQLite.

Data Model Conversion Tool

This window helps you to change targeter database system for your active model.
Please select source and target system.

Source database: MSSQL Target database: ORACLE

| Table | Column | Source Type | Size | New Type | Size |
|----------------------|----------------|--------------|------|-----------|------|
| Categories | CategoryID | int identity | | NUMBER | 38 |
| | CategoryName | nvarchar | 15 | nvarchar2 | 15 |
| | Description | ntext | | NCLOB | |
| | Picture | image | | BLOB | |
| CustomerCustomerDemo | CustomerID | nchar | 5 | nchar | 5 |
| | CustomerTypeID | nchar | 10 | nchar | 10 |
| CustomerDemographics | CustomerTypeID | nchar | 10 | nchar | 10 |
| | CustomerDesc | ntext | | NCLOB | |
| Customers | CustomerID | nchar | 5 | nchar | 5 |
| | CompanyName | nvarchar | 40 | nvarchar2 | 40 |
| | ContactName | nvarchar | 30 | nvarchar2 | 30 |
| | ContactTitle | nvarchar | 30 | nvarchar2 | 30 |
| | Address | nvarchar | 60 | nvarchar2 | 60 |
| | City | nvarchar | 15 | nvarchar2 | 15 |
| | Region | nvarchar | 15 | nvarchar2 | 15 |
| | PostalCode | nvarchar | 10 | nvarchar2 | 10 |
| | Country | nvarchar | 15 | nvarchar2 | 15 |

Preview Convert Cancel

Data Model Notation

DTM Data Modeler uses basic elements of IDEF1X notation. IDEF1X is a method for designing relational databases.

There are two basic elements of model: entity and relationship. In IDEF1X notation, entities are either independent (also known as parent or master) or dependent (also known as child or detail).

Also, relationships are either identifying or non-identifying.

Any entity must contain one or more attributes. Attributes are properties used to describe an entity. Any attribute must have name and type (data type like integer or char).

A key is a set of attributes that uniquely identify an entity instance. DTM Data Modeler supports primary keys only and every entity has only one primary key. The attributes of the primary key displayed above the horizontal line in the entity box.

The following table describes method elements that can be used with DTM Data Modeler:

| Model element | Visual representation |
|-----------------------------------------------------|-----------------------|
| Independent Entity | |
| Dependent Entity | |
| Identifying relationship | |
| Non-identifying relationship, NULL does not allowed | |
| Non-identifying relationship, NULL is allowed | |
| Primary Key | |



Hot Keys

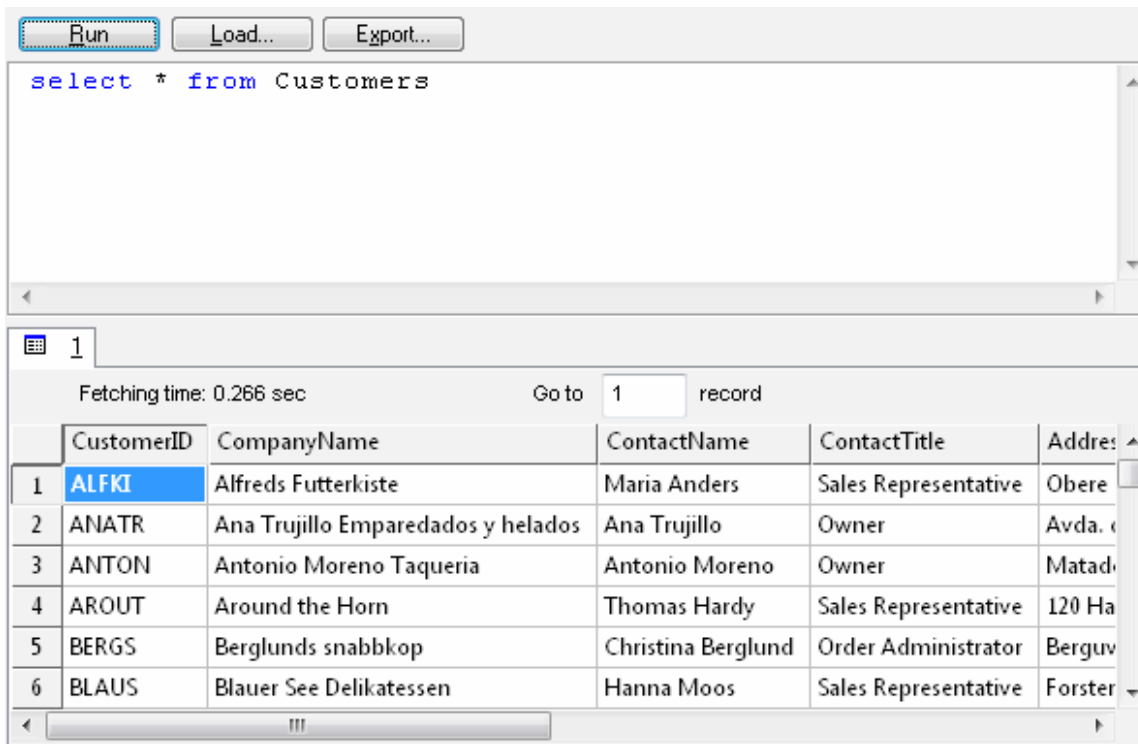
| Hotkey | Function or Option |
|---------------|---------------------------|
| + | Increase model scale |
| - | Decrease model scale |
| Ctrl+C | Connect to data source |
| Ctrl+D | Disconnect |
| Ctrl+G | Generate database |
| Ctrl+N | New model |
| Ctrl+O | Load model |
| Ctrl+P | Print model |
| Ctrl+QL | View log file |
| Ctrl+R | Reverse engineering |
| Ctrl+S | Save model |
| F1 | Show context help |
| Alt+F7 | Product settings |

SQL Console

The tool has a special window where you can specify and execute any SQL statements. You can copy the results of executing a statement onto the clipboard or export it into various formats like text, SQL, HTML, XML or Microsoft Excel. Placing the mouse cursor over the column header will show the type of data stored in this field.

Important: the SQL console does not show any warning before data deletion or modifying.

Note: SQL console shows only begins of large strings. Typically you can view up to 512 first symbols.

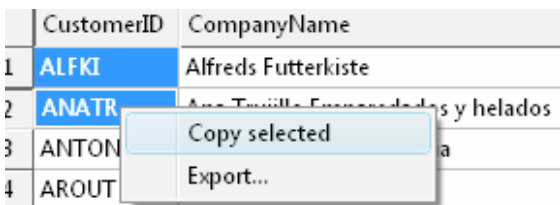


The screenshot shows the SQL Console interface. At the top, there are three buttons: "Run", "Load...", and "Export...". Below the buttons is a text area containing the SQL query: `select * from Customers`. Below the query area, there is a table with the following data:

| | CustomerID | CompanyName | ContactName | ContactTitle | Address |
|---|------------|------------------------------------|--------------------|----------------------|------------|
| 1 | ALFKI | Alfreds Futterkiste | Maria Anders | Sales Representative | Obere... |
| 2 | ANATR | Ana Trujillo Emparedados y helados | Ana Trujillo | Owner | Avda. c... |
| 3 | ANTON | Antonio Moreno Taqueria | Antonio Moreno | Owner | Matad... |
| 4 | AROUT | Around the Horn | Thomas Hardy | Sales Representative | 120 Ha... |
| 5 | BERGS | Berglunds snabbkop | Christina Berglund | Order Administrator | Berguv... |
| 6 | BLAUS | Blauer See Delikatessen | Hanna Moos | Sales Representative | Forster... |

Menu item "Load" allows you to read SQL script from the external file.

There is a picture of local menu accessed by the right click inside the results window.



The screenshot shows a close-up of the results window. A context menu is open over the first two rows of the table. The menu items are "Copy selected" and "Export...".

| | CustomerID | CompanyName |
|---|------------|------------------------------------|
| 1 | ALFKI | Alfreds Futterkiste |
| 2 | ANATR | Ana Trujillo Emparedados y helados |
| 3 | ANTON | Antonio Moreno Taqueria |
| 4 | AROUT | Around the Horn |

What differences between the demo and full versions of DTM Data Modeler?

General functions

- With the demo version the user enabled to create up to 6 tables/entities per project.
- Reverse engineering option of the demo version replaces some column names and SQL text's parts to DEMO strings.

Supplemental functions

- SQL console partially replaces result values to DEMO string.

No other demo limitations are present except nag-screen at program shutdown.

[DTM SQL Editor](http://www.sqledit.com/editor) (www.sqledit.com/editor) is a set of powerful database management tools that allow you to achieve two goals - to have unified access to different types of databases and to have a set of solutions that makes processing your data easy. DTM SQL Editor gives database users, developers and administrators an ability to access different databases, whether desktop or client-server ones (provided you have ODBC driver installed). This is very convenient, since most organizations use several different types of databases installed and each stores data in different formats and with varying parameters. Having a program that can get data from various sources is often essential. Furthermore, in addition to letting you quickly switch between different data sources, DTM SQL Editor lets you see database schema and results of the query execution.

[DTM Migration Kit](http://www.sqledit.com/mk) (www.sqledit.com/mk) is a powerful yet simple data migration tool that comes in handy if you run multiple databases. Use it to import, export or migrate data between different data sources (ODBC, OLE DB, or Oracle Call Interface supported). The program is fully automatic and supports all popular database formats. Simple visual interface lets you set own transformation and flow control rules to give you added flexibility.

[DTM Schema Reporter](http://www.sqledit.com/sr) (www.sqledit.com/sr) is a reporting tool for database schema. The program creates reports in RTF, HTML, XML or plain text formats and supports all common database interfaces - ODBC, OLE DB, or even Oracle Call Interface. This utility helps technical writers and database administrators create a report of any complexity level within seconds. Also, you can alter table order in the report and manually add annotations to the individual tables.

[DTM Data Generator](http://www.sqledit.com/dg) (www.sqledit.com/dg) is a simple, powerful and fully customizable utility that generates data for database testing purposes. Currently, database developers and administrators often have to spend hours of dull work to create test data sets before examining database performance. This tool makes all this unnecessary by automatically creating database objects AND sets of SQL statements, if necessary.

[DTM Data Editor](http://www.sqledit.com/de) (www.sqledit.com/de) is a data viewer and editor for database professionals who are tired of wasting their time on mundane tasks. The program uses form-based interface and works with any ODBC data source. SQL statements are generated automatically and can be modified later. For data that has foreign key - primary key relation, there are options to enter values manually or select them from a list, which is much faster.

[DTM DB Stress](http://www.sqledit.com/stress) (www.sqledit.com/stress) is a utility for stress testing the server parts of information systems and applications, as well as DBMSs and servers themselves. This tool allows you to create and configure a continuous set of requests to the server of the OLAP (query execution) and OLTP (adding, modifying and deleting data in the database) types. At the same time, the user can flexibly change both the number and the priority of this or that type of requests to a database or an application.

[DTM Data Modeler](http://www.sqledit.com/dm) (www.sqledit.com/dm) is a CASE tool for database developers that supports both forward and reverse engineering. It is an easy-to-use tool allowing you to work both with logical and physical data models in the form of an entity-relationship diagram. The product is intended for database architects and developers and works with data sources via the ODBC interface, which means compatibility with all modern DBMS. Along with basic model properties (sets of entities and relationships between them), the program allows you to create indexes and triggers on the physical level corresponding to the tables of the database that is modeled.

[DTM Data Scrubber](http://www.sqledit.com/scr) (www.sqledit.com/scr) is a set of intelligent tools for data verification (audit) and scrubbing (cleaning). Depending on user-defined rules and data properties, the program either creates a report about the actual state of affairs or performs database data correction.

[DTM Data Comparer](http://www.sqledit.com/dcmp) (www.sqledit.com/dcmp) is a visual tool for data compare and synchronization. The program successively views the contents of both tables basing on the order of ascending of unique key values and shows differences or creates synchronization script.

[DTM Schema Comparer](http://www.sqledit.com/scmp) (www.sqledit.com/scmp) is a tool for database schemas comparison and synchronization. The comparison process supports tables, views, indexes, triggers and stored procedures. The visual representation of database schemas as a tree makes the comparison process more comfortable.

[DTM Query Reporter](http://www.sqledit.com/qr) (www.sqledit.com/qr) is a reporting tool for database query. This utility helps technical writers, developers and database administrators create a report based on database query within seconds.

[DTM Schema Inspector](http://www.sqledit.com/si) (www.sqledit.com/si) is a database schema browsing and management tool that let you work with database schemas more effectively.

[DTM DB Event](http://www.sqledit.com/event) (www.sqledit.com/event) is a database monitoring and management tool. This utility allows the user to define a few situations (events). For each event the user can define what the program should do if the event is occur.

[DTM Flat File Generator](#). Easy to use tool that helps any developer or QA engineer to create test data file. It supports tab-delimited, CSV, fixed width and custom separated output files. The generator has powerful import and export file structure features.

[DTM Test XML Generator](#). The tool is powerful generator for XML documents with structure defined by user and random but realistic data. More than 30 predefined generators with powerful pattern engine. The rich import XML structure options are available.

[DTM Data Generator for Excel](#) is a tool for text Excel spreadsheet population. Easy to use interface based on predefined generators, rich value library and high performance.

[DTM Data Generator for JSON](#) produces JSON files with defined structure in a bulk manner. Fast and easy structure editor and smart import options helps the user to generate test set in a few clicks only.

[DTM Database Content Analyzer](#) is a statistical tool for database content. It collects a few dozens of most interesting data: database objects size, value frequency, clusters, etc. This tool replaces and extends "Statistics" report of obsolete versions DTM Schema Reporter.



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How can I order DTM Data Modeler software?

The software is available worldwide via the Internet. Secure online, mail/check and corporate purchase order options are available. For detailed information please click following link to open [order page](#) or copy <http://www.sqledit.com/dm/order.html> to your web browser.

If you have any payment questions feel free to contact the DTM Data Modeler technical support at support@sqledit.com



Program Installation

To run installation program:

- Open the windows Start menu and select "Run" item
- Select or enter installation file name and path (dm.exe or dm_d.exe)* and click OK

* - professional and enterprise editions of the tool may have another suffix.

Notes:

- Please be sure that existing version of the tool is not running when you install a new version.
- We recommend to [uninstalling](#) old version of the DTM Data Modeler before new version installation.
- Installation by administrator for another user is supported for most environments.



Uninstall the Software

The Uninstall feature removes all installed DTM Data Modeler components and all records in the Windows registry made by the installation script. You can uninstall this program by selecting the "**DTM Data Modeler**" item in "**Add/Remove Programs Dialog**" in "**Control Panel**".

Another uninstallation way is to run "unins000.exe" from the product's folder directly.

Important! Uninstall feature of the program does not remove files and objects created by users such as configuration files, registry records etc.



How to upgrade your copy of DTM Data Modeler?

The user can refer to "Check for Update" features to get information about available updates.

Please contact our support staff at support@sqledit.com to upgrade commercial version of the tool.

Demo version is available for [download](#) free of charge.

When you upgrade your copy of DTM Data Modeler please send us the following information:

- You name, company name and how to contact you
- Payment information (at least "ORDER No" and "Date")

If you have some question or unusual problem feel free to contact the DTM Data Modeler technical support at support@sqledit.com

When you contact technical support, you should be prepared to provide the following information:

- DTM Data Modeler version (you can find this information from About menu item of Help menu).
- Type and version of the ODBC or IDAPI driver or OLE DB provider.
- DBMS version and operating system version (including service pack version, if applicable).
- DTM Data Modeler Log file.
- A description of what you do before the problem occurs.
- Error messages you see when the problem occurs.
- Your name, company name and how to contact you.

See Also: [log_file](#)



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Database catalog - The collection of system tables, tables that store metadata about that specific database.

Database record - one row in a table (table can be a result of SQL-query).

Database schema - logically connected, usually owner-based, set of DBMS objects (tables, views, procedures etc).

DBMS - database management system.

DBMS connection - the fact that both client and DBMS server have signed a contract and ready to query and data communications.

Drag-n-drop - the file manipulation technique when the mouse is used to move the file from the place of storage to the program, which performs processing.

SQL language - the declarative language used to manipulate the data and its' structure in the modern DBMS and their client applications.

IDAPI - Integrated Database Application Program Interface, unified DBMS access interface.

OCI - Oracle Call Interface, access interface for Oracle Server.

ODBC - Open Database Connectivity, unified DBMS access interface.

Metadata - information about data. See also: database schema

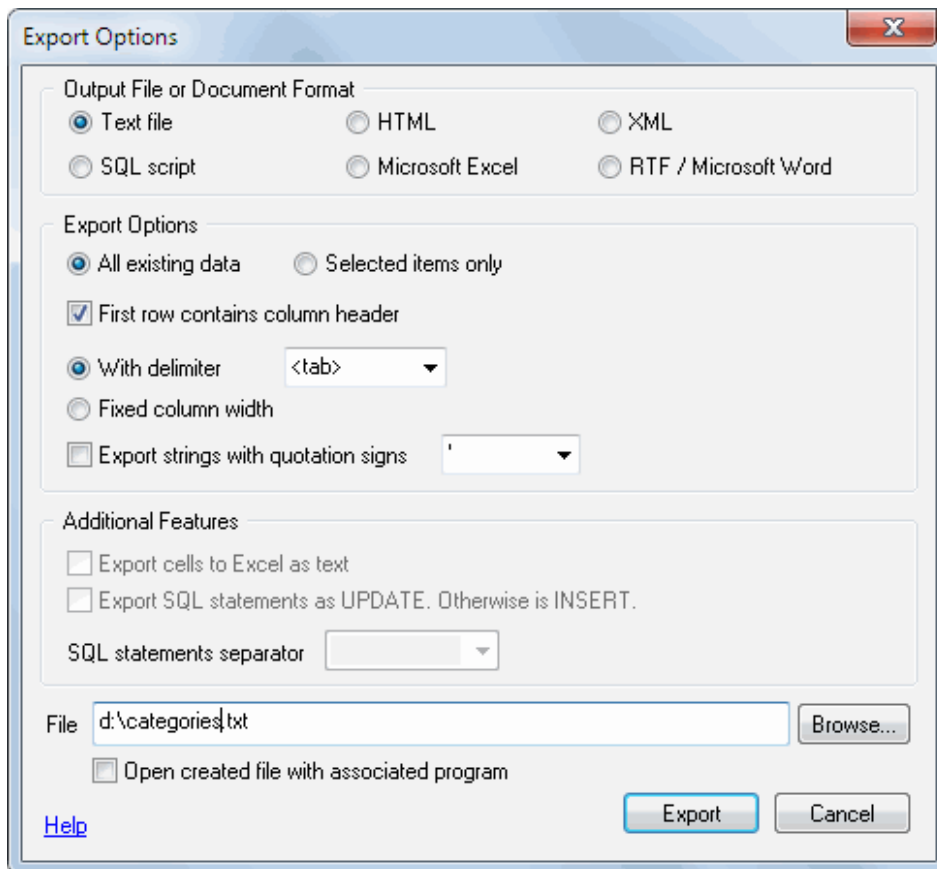
SQL statement - single SQL operator having the complete role in a data manipulation script.

SQL-server - program or program complex, which is able to execute the SQL-queries.

Export results of Query Execution

Types of export:

- text file with separators or with fixed columns width.
- HTML file
- XML document
- RTF document
- set of SQL statements (INSERT or UPDATE)
- direct to Microsoft® Excel (installed Microsoft Excel required)



Warning! Export for long binary data types (also known as BLOBs) is not supported.

Clipboard support

| | |
|-------------------------------------------------|-------------------|
| Copy selected text onto Clipboard | Ctrl-Ins, Ctrl-C |
| Cut selected onto Clipboard | Shift-Del, Ctrl-X |
| Insert text from clipboard into cursor position | Shift-Ins, Ctrl-V |

Log file

When running the program, you have to select one of menu items from "**Tools->Log file**" in order to view or truncate your Log file. The log file contains the detailed description of any errors and other events that occurred while processing script.

Default log file location is product's directory and the name is ERROR.LOG. When the user has no enough permissions DTM Data Modeler saves log to typical path like C:\Documents and Settings\\Application Data\dm.log or C:\Users\\AppData\Roaming\dm.log

The log file is a text file that contains three type of records:

1. The software product identification block: product name version and operating system information.
2. Error records: wrong SQL statements, exceptions, etc.
3. Notification and statistics.