

# Altering the nullable of column from ERD

Written Date : August 16, 2010

A nullable column in a database table means a column that accepts nothing to be its value when inserting or updating a record. On the contrary, non-nullable column is a column that must be filled. With <u>Visual Paradigm</u>, you can modify the nullable property of a column, and directly update to your database schema. In this tutorial, you will learn how to modify the nullable property of a column in ERD, and update your database schema using the Update Database feature. Note that you are expected to have a fundamental knowledge on database modeling with ERD and database engineering.

### Setting up your database

MySQL will be used as database software throughout this tutorial. You can, however, use any other types of database products that Visual Paradigm supports. Once you are familiar with the database software you are using, you will not find it hard to complete this tutorial.

Before you start, create a database. Name it myshop.



# Configuring your database

1. Create a project with Visual Paradigm. Select **Tools** > **Database** > **Database** Configuration... from the main menu.

2. In the **Database Configuration** dialog box, select the database software you use from the list. In this tutorial, check **MySQL**.

| 6 Database Configuration |                  |
|--------------------------|------------------|
| Language : Java          | •                |
| 📒 🖳 MySQL                | Database Setting |
| SQL Server               | Version:         |
| Oracle                   | Driver           |

3. In the **Database Setting** panel, press on the upside down arrow button next to **Driver file** field.

| Database Setting |                            |                       |
|------------------|----------------------------|-----------------------|
| Version:         | 5.0.4 or lower 🗸 🗸         | How to check version? |
| Driver :         | MySQL (Connector/J Driver) | ▼                     |
| Driver file :    |                            |                       |
| Connection URL : |                            |                       |

If your database provider does not support downloading driver file, the pop-up **Download** dialog box will notify you that the database software is not available and provide a link for downloading the driver file. Alternatively, you can refer to **Database Driver Description** section. There shows you the link for downloading the driver file.

| MySOL Connector/Lis  |   |   |  |  |  |
|--|---|---|--|--|--|
| MySQL Connector/J is an implementation of Sun's JDBC 3.0 API for the MySQL<br>relational database server. It strives to conform as much as possible to the JDBC<br>API as specified by JavaSoft. It is known to work with many third-party products,<br>including Application Servers (Apache Tomcat, JBoss, Weblogic, IBM<br>WebSphere), Object Relational Mapping Tools (Hibernate, Apache<br>ObjectRelationalBridge, CocoBase, Kodo), Development Environments (Eclipse,<br>Borland JBuilder, IBM WebSphere Studio) |   |   |  |  |  |
| Driver file:   | The jar zin or class file that contains the JDBC driver | Ŧ |  |  |  |

4. Fill in the connection information to connect to database. Enter *myshop* as database name. For MySQL DB users, select **InnoDB** as engine to keep the relationships among entities when generating database.

| Connec  | tion URL :         |  |
|---------|--------------------|--|
| ۲       | Hostname :         | 127.0.0.1 :                              |
|         | Database name :    | myshop                                   |
| $\odot$ | jdbc:mysql://127.0 | .0.1/myshop                              |
| User :  | root               | Password :                               |
| Engine: | 🔘 Defa             | ault 💿 InnoDB (with constraint) 💿 MyISAM |

5. Finally, check on **Test Connection** to verify the connection. Click **OK** to close the configuration dialog box.

# **Drawing an ERD**

https://www.visual-paradigm.com/tutorials/alteringnullablecolumn.jsp

1. Create an ERD. Right-click on Entity Relationship Diagram in Diagram Navigator and select New Entity Relationship Diagram from the pop-up menu.



- 2. Immediately name the diagram as **MyShop ERD** at the top left corner. Keep **Physical Model** selected at the top right corner.
- 3. Create an entity. Press on **Entity** in diagram toolbar and drag it on the diagram. Name it as *Product* and press **Enter** to confirm.



4. Let's add columns to the entity. Right-click on *Product* and select **New Column** from the popup menu. Enter +*id:int* as name (note: The plus sign is to indicate that this is a Primary Key column). Press **Enter**.



5. Next, add another column *name : varchar(255)*. The entity now turns into the image as shown below:



6. Right-click on the name column. You can see that the option **Nullable** is checked. This means that you can enter nothing for product name when inserting or updating a product record.



### Generating database

- 1. Select **Tools > Database > Generate Database...** from the main menu.
- 2. In the **Database Code Generation** dialog box, select **Export to database** and **Generate sample data**. If you do not select them, both database and sample data will not be created in database.

| 🌀 Database Co  | de Generat               | ion                               |  |  |  |  |  |
|----------------|--------------------------|-----------------------------------|--|--|--|--|--|
| Generate :     | Database o               | Database only                     |  |  |  |  |  |
| Language :     | Java                     | ▼                                 |  |  |  |  |  |
| Output Path :  | C:\Users\Pe              | C:\Users\Peter\Documents\untitled |  |  |  |  |  |
| Deploy To :    | Standalone Application 👻 |                                   |  |  |  |  |  |
| Code Databa    | ase                      |                                   |  |  |  |  |  |
| Generate Data  | oase :                   | Create Database 👻                 |  |  |  |  |  |
| Export to d    | latabase                 | ✓ Generate DDL                    |  |  |  |  |  |
| Upper Case SQL |                          | Formatted SQL Header              |  |  |  |  |  |
| Generate s     | ample data               | Cenerate Individual DDL           |  |  |  |  |  |

3. Click **OK** to start generation.

# Checking your database

You can now check yor database, to see if the name column was generated as nullable or not. Here is a screenshot captured under MySQL.

| D:\apps\mysql\bin\mysql.exe   |           |       |              |                 |   |
|---|-----------|-------|--------------|-----------------|---|
| Welcome to the MySQL monitor. Commands end with ; or \g.<br>Your MySQL connection id is 8<br>Server version: 5.0.51b-community-nt-log MySQL Community Edition (GPL) |           |       |              |                 |   |
| Type 'help;' or '∖h' for  | help. T   | уре ' | ∖c' to cle   | ear the buffer. |   |
| mysql> use myshop;<br>Database changed<br>mysql> desc product;  |           |       |              |                 |   |
| Field   Type  | Null      | Кеу   | Default      | Extra           |   |
| id   int(10)<br>  name   varchar(255)   | NO<br>YES | PRI   | NULL<br>NULL | auto_increment  |   |
| 2 rows in set (0.01 sec)  | >         |       |              |                 | • |
| mysql>  |           |       |              |                 |   |
|   |           |       |              |                 |   |
|   |           |       |              |                 |   |
|   |           |       |              |                 | ~ |
|   |           |       |              |                 |   |

### Altering the nullable setting

1. Now, go back to the diagram. Right-click on the name column and de-select **Nullable** from the pop-up menu. Immediately, the symbol "**N**" does no longer appear in the entity shape.



- 2. To update database, select **Tools** > **Object-Relational Mapping (ORM)** > **Generate Database...** from the main menu.
- 3. In the **Database Code Generation** dialog box, select **Update Database** for the action to perform.

| S Database Code Generation |                        |                           |   |  |   |  |  |
|----------------------------|------------------------|---------------------------|---|--|---|--|--|
| Generate :                 | Database o             | only                      | • |  |   |  |  |
| Language :                 | Java                   |                           | - |  |   |  |  |
| Output Path :              | C:\Users\P             | eter \Documents \untitled |   |  | ▼ |  |  |
| Deploy To :                | Standalone Application |                           |   |  |   |  |  |
| Code Databa                | ase                    |                           |   |  |   |  |  |
| Generate Data              | base :                 | Create Database           |   |  | - |  |  |
| Export to database         |                        | Create Database           |   |  |   |  |  |
|                            |                        | Update Database           | 1 |  |   |  |  |
| Upper Case SQL             |                        | Drop and Create Database  |   |  |   |  |  |
| Generate sample data       |                        | Generate Individual DDL   |   |  |   |  |  |

- 4. Click **OK** to start updating database.
- 5. Check the database again. This time, you can see that the name column is no longer nullable.



**Related Links** 

• What is Entity Relationship Diagram (ERD)?



Visual Paradigm home page (https://www.visual-paradigm.com/)

Visual Paradigm tutorials (https://www.visual-paradigm.com/tutorials/)