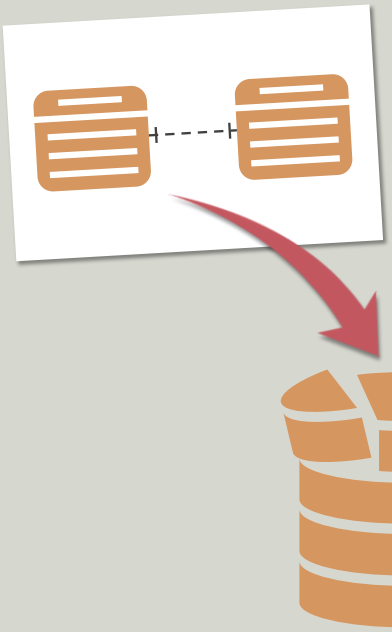
Generate Database

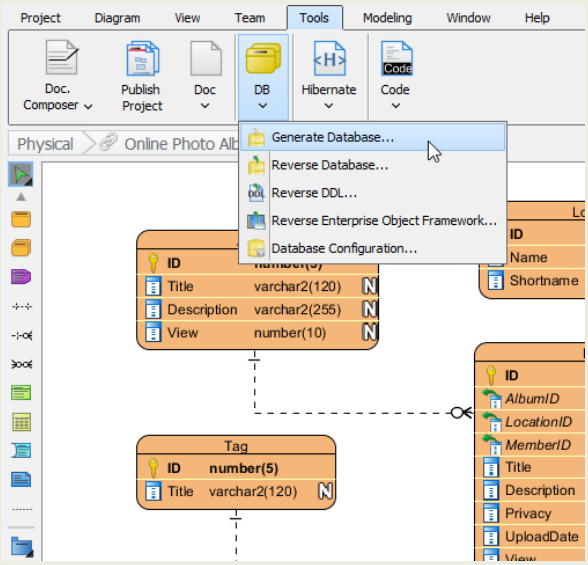


Generate database –

The process to **create** a database from ER model

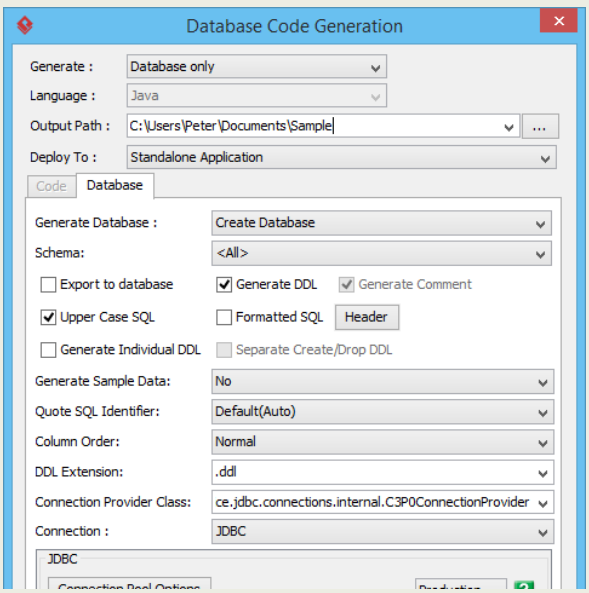
Generating Database

1. Under the **Tools** tab of Visual Paradigm, select **DB > Generate DB...**



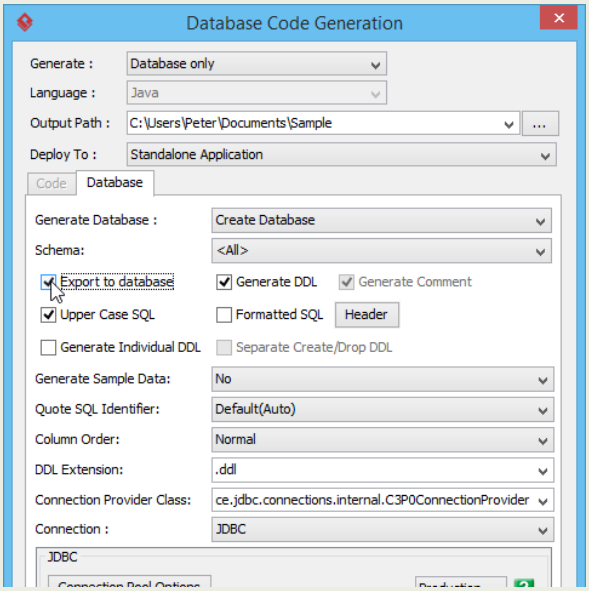
Generating Database

1. Under the **Tools** tab of Visual Paradigm, select **DB > Generate DB...**
2. Fill in the output path for storing the generated file like the DDL file.



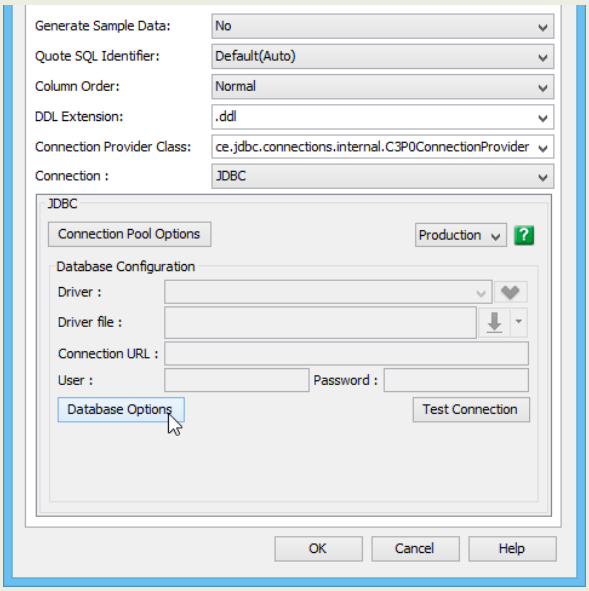
Generating Database

1. Under the **Tools** tab of Visual Paradigm, select **DB > Generate DB...**
2. Fill in the output path for storing the generated file like the DDL file.
3. Select **Export to database**.



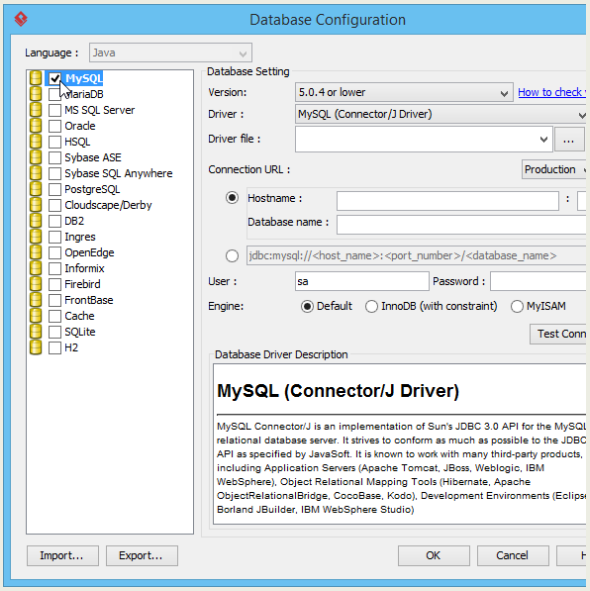
Generating Database

1. Under the **Tools** tab of Visual Paradigm, select **DB > Generate DB...**
2. Fill in the output path for storing the generated file like the DDL file.
3. Select **Export to database**.
4. Click on **Database Options**.



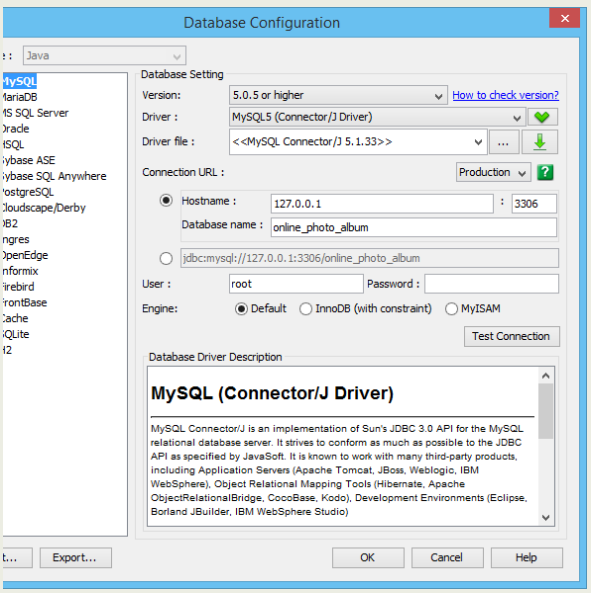
Generating Database

1. Under the **Tools** tab of Visual Paradigm, select **DB > Generate DB...**
2. Fill in the output path for storing the generated file like the DDL file.
3. Select **Export to database**.
4. Click on **Database Options**.
5. Select the DBMS you use.



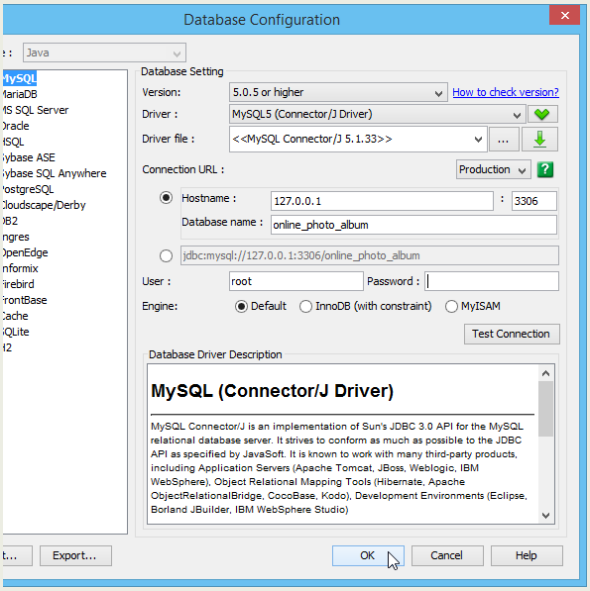
Generating Database

1. Under the **Tools** tab of Visual Paradigm, select **DB > Generate DB...**
2. Fill in the output path for storing the generated file like the DDL file.
3. Select **Export to database**.
4. Click on **Database Options**.
5. Select the DBMS you use.
6. Configure the database connection.



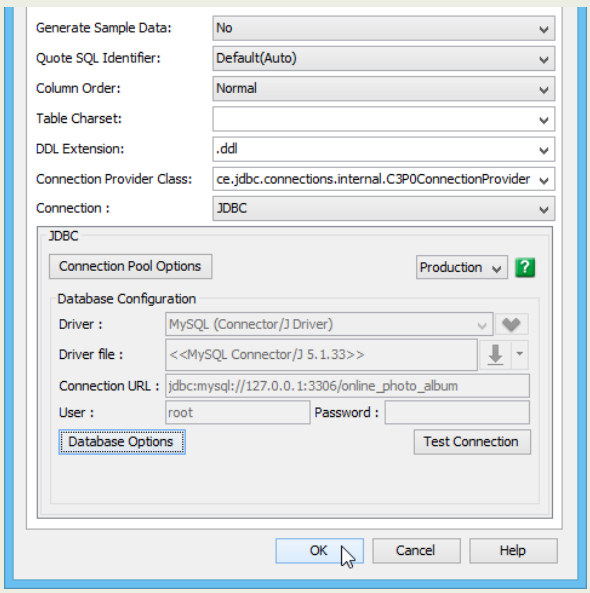
Generating Database

1. Under the **Tools** tab of Visual Paradigm, select **DB > Generate DB...**
2. Fill in the output path for storing the generated file like the DDL file.
3. Select **Export to database**.
4. Click on **Database Options**.
5. Select the DBMS you use.
6. Configure the database connection.
7. Click **OK**.

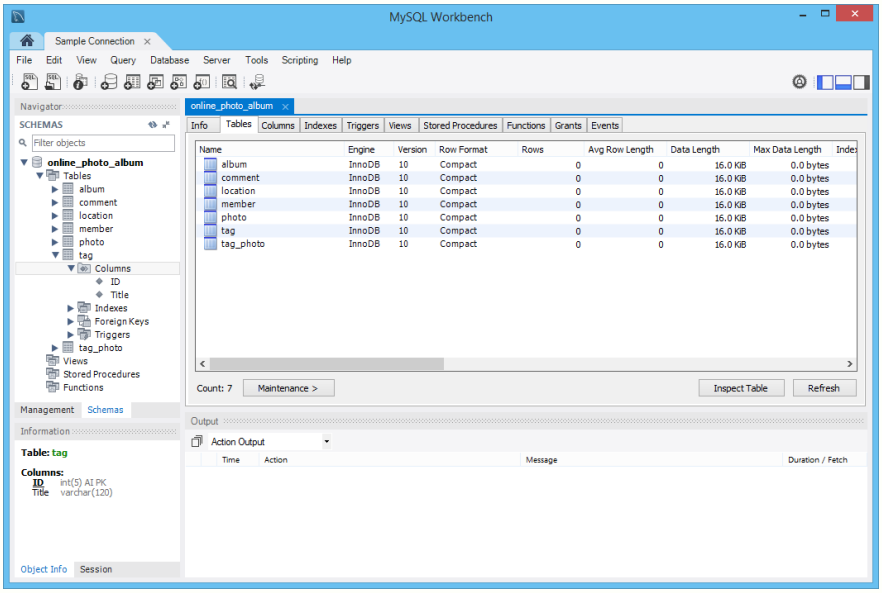


Generating Database

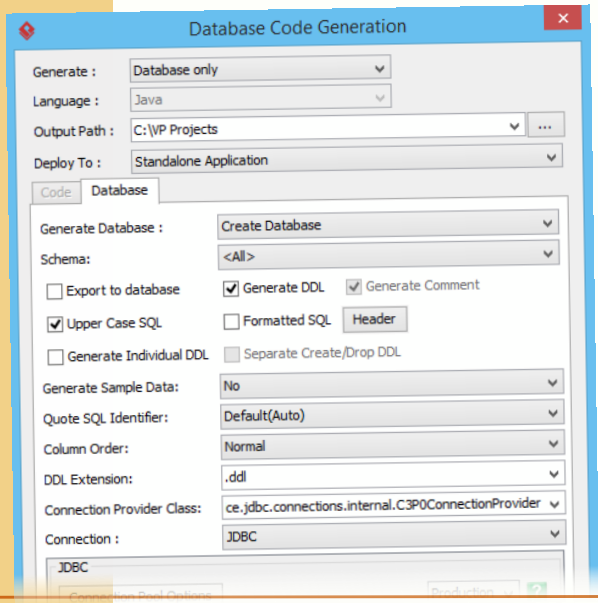
1. Under the **Tools** tab of Visual Paradigm, select **DB > Generate DB...**
2. Fill in the output path for storing the generated file like the DDL file.
3. Select **Export to database**.
4. Click on **Database Options**.
5. Select the DBMS you use.
6. Configure the database connection.
7. Click **OK**.
8. Click **OK** to generate.



Generating Database

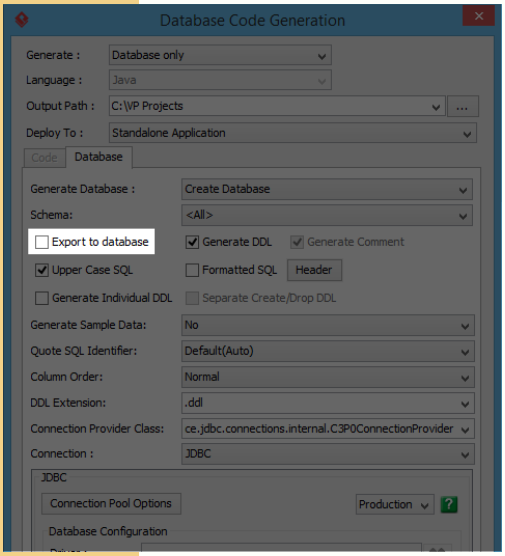


Generation Options



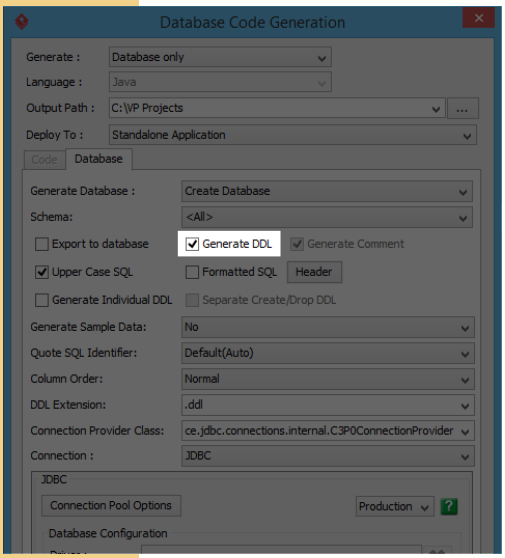
Database Code Generation

Generation Options ■ Export to Database



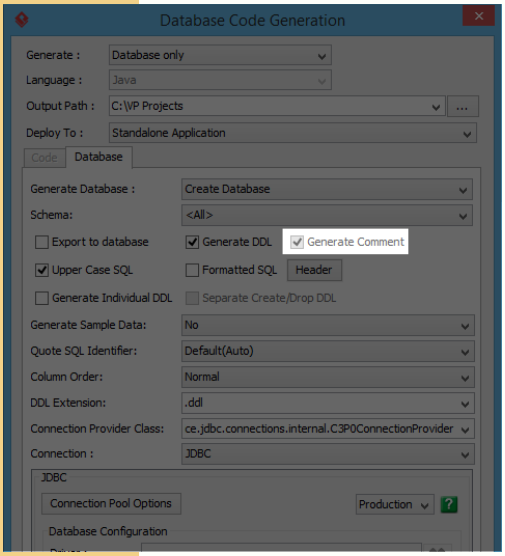
- Only generate DDL by default.
- Check this option to create tables in the **actual** DBMS.

Generation Options ■ Generate DDL



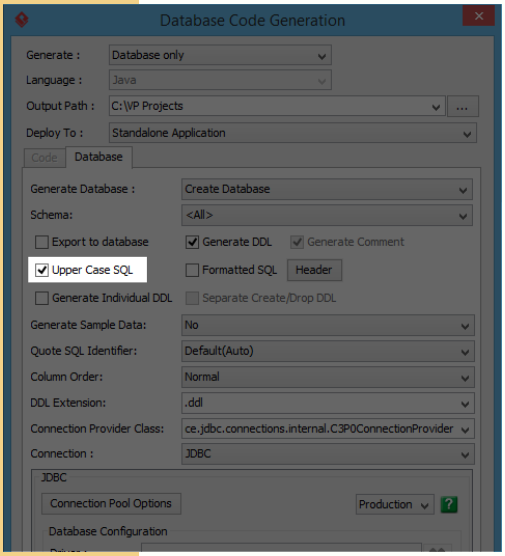
- DDL (Data Definition Language) is a syntax for defining data structure.
  - E.g.
    - **CREATE** TABLE PHOTO (...);
    - **DROP** TABLE PHOTO;
- Very often, you don't have direct access to the production database during designing/development. By using a DDL, you can:
  - Execute the table create scripts on the production database manually.
  - Automate the table creation process as part of the database re-initialization routine.

Generation Options ■ Generate Comment



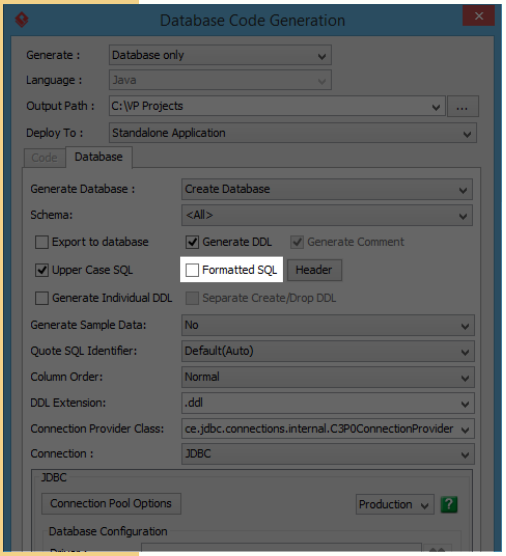
- Generate entity and column description as comments of tables and their columns.
- Not all DBMS are supported.

Generation Options ■ Upper Case SQL



- Force the content of the generated DDL to be in upper case.

Generation Options ■ Formatted SQL



- Apply proper line breaking and indentation to make the content looks prettier.

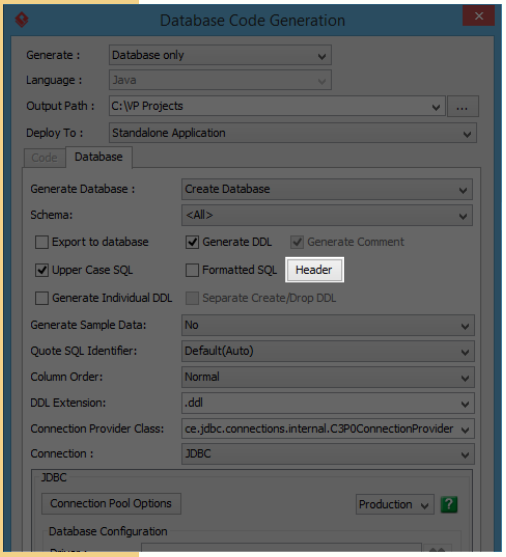
```
CREATE TABLE Photo (ID int(5) 
CREATE TABLE Album (ID int(5) 
CREATE TABLE Comment (ID int(5
CREATE TABLE Tag (ID int(5) NO
CREATE TABLE Location (ID int(
CREATE TABLE Member (ID int(10
CREATE TABLE Tag_Photo (TagID 
CREATE VIEW `View` AS SELECT F
ALTER TABLE Photo ADD INDEX FK
ALTER TABLE Tag_Photo ADD INDE
ALTER TABLE Photo ADD INDEX FK
ALTER TABLE Comment ADD INDEX 
ALTER TABLE Photo ADD INDEX FK
ALTER TABLE Tag_Photo ADD INDE
```

☐ Formatted SQL

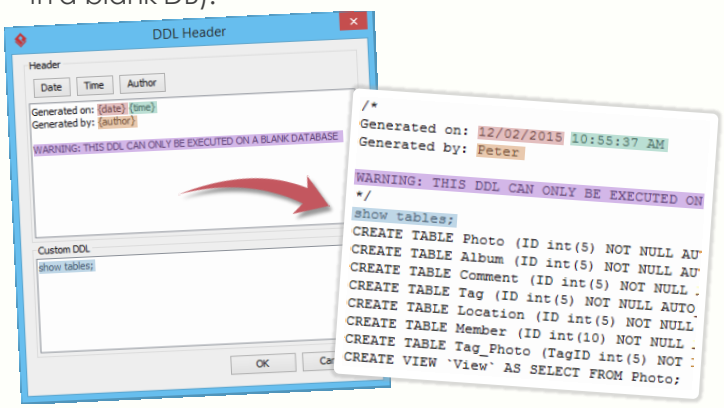
```
CREATE TABLE Photo (
  ID           int(5) NOT NULL
  AlbumID      int(11) NOT NULL
  LocationID   int(11) NOT NULL
  MemberID     int(11) NOT NULL
  Title        varchar(120),
  Description  varchar(255),
  Privacy      varchar(20),
  UploadDate   date,
  `View`       int(10),
  ImagePath    varchar(50),
  PRIMARY KEY (ID));
CREATE TABLE Album (
  ID           int(5) NOT NULL
  Title        varchar(120),
```

☑ Formatted SQL

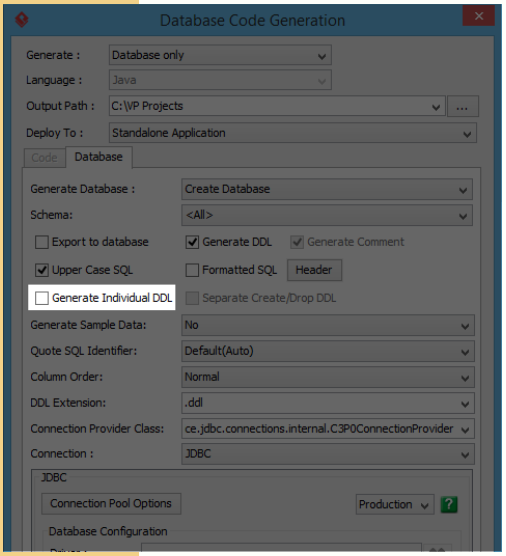
Generation Options ■ Header



- Include the **date** and **time** of generating DDL, the **author** as well as **custom description**.
- For stating the assumption or the DB configuration required for executing the DDL script (e.g. must run in a blank DB).

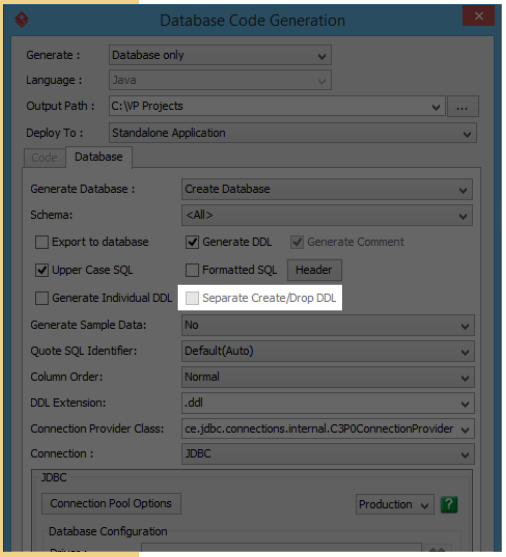


Generation Options ■ Generate Individual DDL



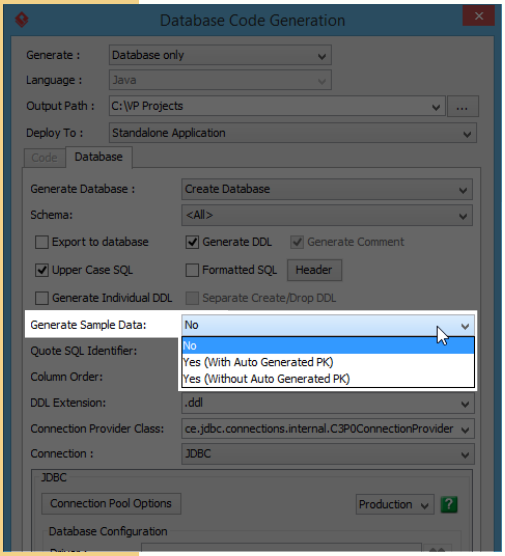
- Split **table creation** statements and **foreign key constraint creation** statements into two files.

Generation Options ■ Separate Create/Drop DDL

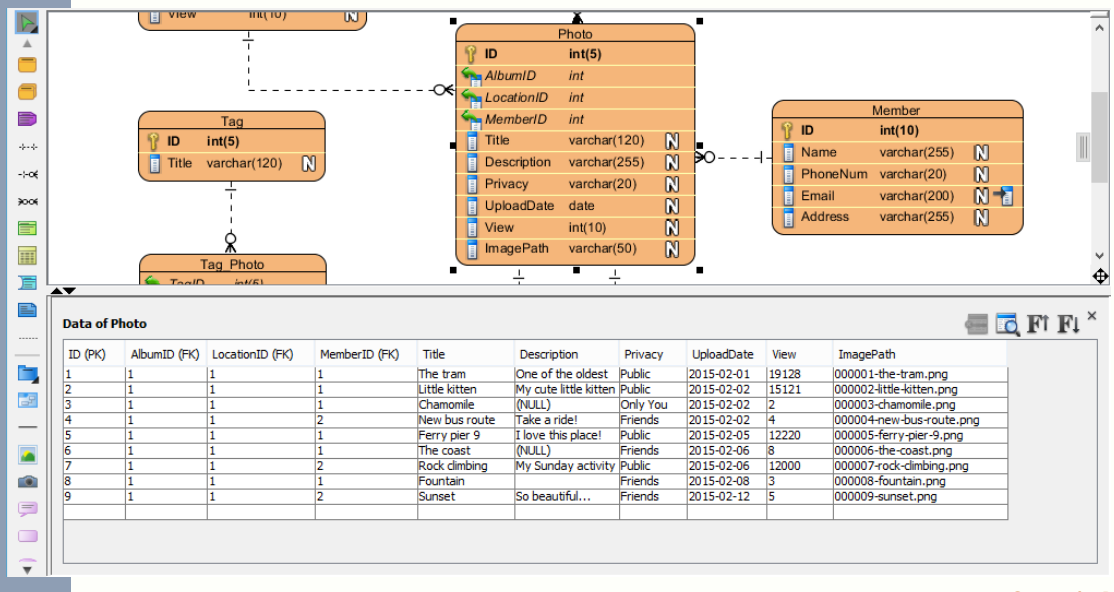


- Split **table creation** statements **drop** statements into two files.
- Only available when **Drop and Create Database** is chosen as the **Generate Database** option.

Generation Options ■ Generate Sample Data

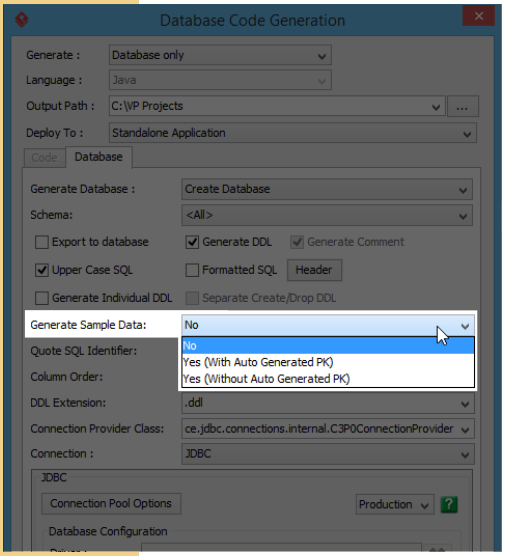


Generation Options ■ Generate Sample Data



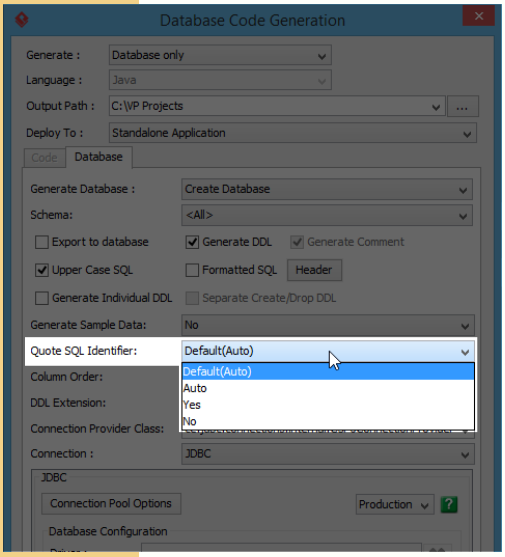
ID (PK)	AlbumID (FK)	LocationID (FK)	MemberID (FK)	Title	Description	Privacy	UploadDate	View	ImagePath
1	1	1	1	The tram	One of the oldest	Public	2015-02-01	19128	000001-the-tram.png
2	1	1	1	Little kitten	My cute little kitten	Public	2015-02-02	15121	000002-little-kitten.png
3	1	1	1	Chamomile	(NULL)	Only You	2015-02-02	2	000003-chamomile.png
4	1	1	2	New bus route	Take a ride!	Friends	2015-02-02	4	000004-new-bus-route.png
5	1	1	1	Ferry pier 9	I love this place!	Public	2015-02-05	12220	000005-ferry-pier-9.png
6	1	1	1	The coast	(NULL)	Friends	2015-02-06	8	000006-the-coast.png
7	1	1	2	Rock climbing	My Sunday activity	Public	2015-02-06	12000	000007-rock-climbing.png
8	1	1	1	Fountain		Friends	2015-02-08	3	000008-fountain.png
9	1	1	2	Sunset	So beautiful...	Friends	2015-02-12	5	000009-sunset.png

Generation Options ■ Generate Sample Data



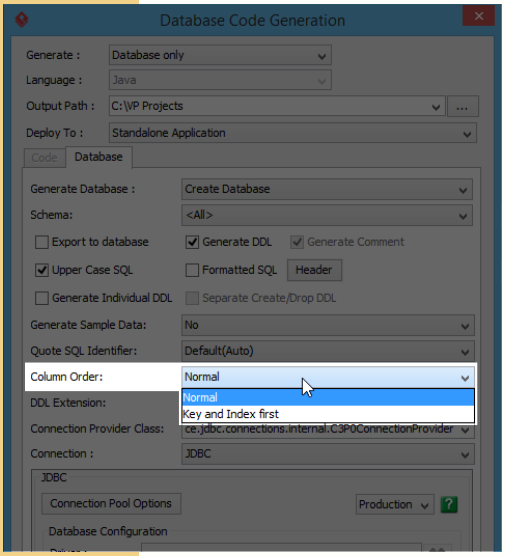
- Prepare sample data for development purpose.
- Enable same team to share a **common** set of sample data.

Generation Options ■ Quote SQL Identifier



- Words like **SELECT**, **ORDER** are known as reserved words.
- Reserved words are permitted as identifiers if they are quoted in SQL statements.
  - E.g. CREATE TABLE '**Order**'...
- You can keep this option "Auto" or "Yes" to let us add proper quotes for you.
- However, we don't recommend the use of reserved words. This is to avoid potential errors.

Generation Options ■ Column Order

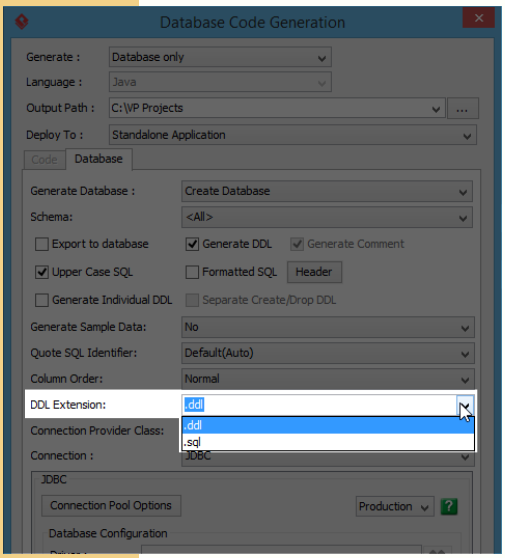


- By default, we generate **CREATE TABLE** statement by following the column order presented in ER model, like this:

- You can enforce the column order by having key and index column created before the other columns, like this:

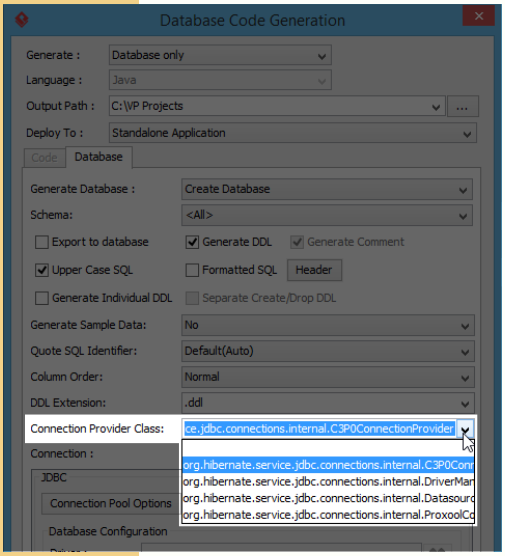
- It can be a good practice to have key and index generated first as this may avoid potential problems in data insertion.

Generation Options ■ DDL Extension



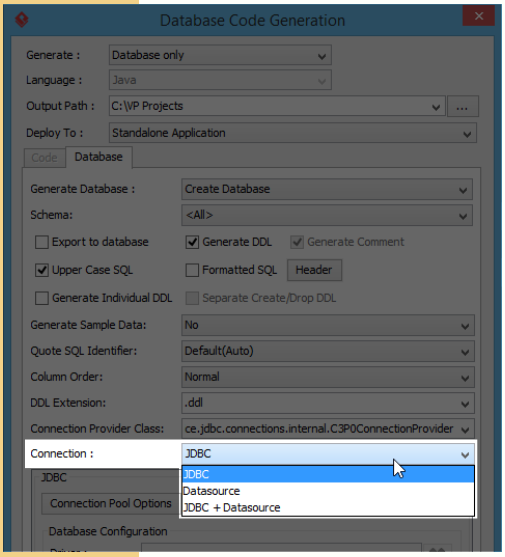
- Generate the DDL as **.ddl** file(s) or **.sql** file(s).

Generation Options ■ Connection Provider Class



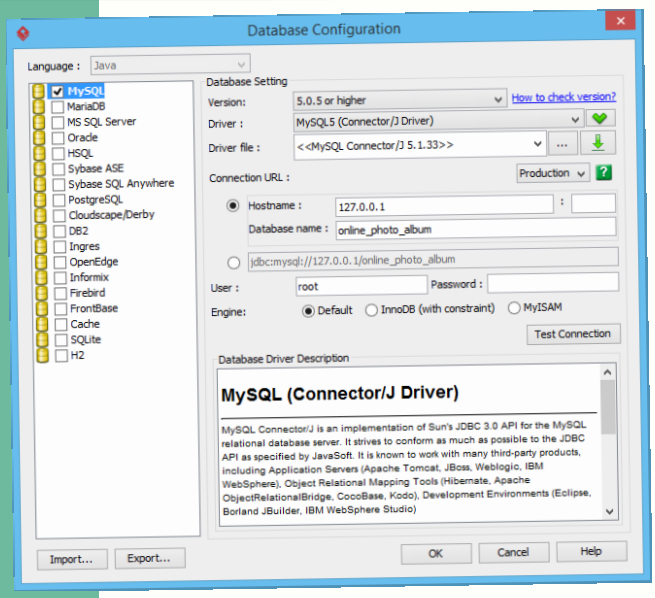
- A strategy for obtaining JDBC connections.
- Just leave it as-is if you are unsure.

Generation Options ■ Connection



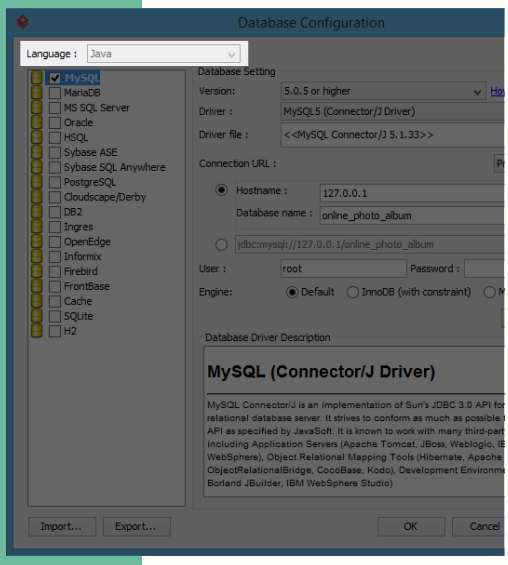
- For use with Hibernate (ORM).
- **JDBC**: standard Java database API.
- **Datasource**: use database connection from application server.
- **JDBC + Datasource**: generate two configuration files for JDBC and database.

DB Configuration ns



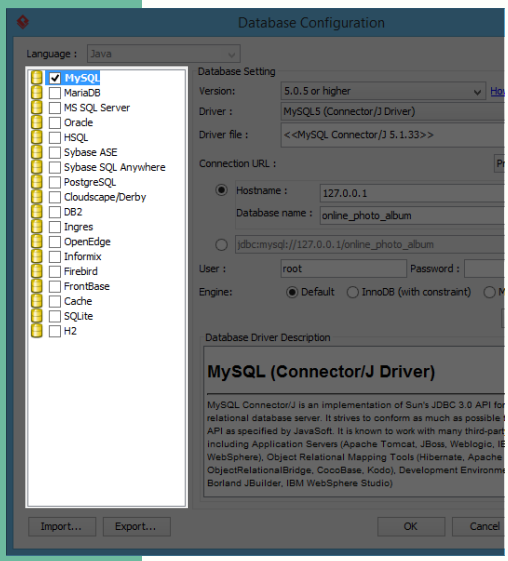
Database Configuration

DB Configuration ■ Language



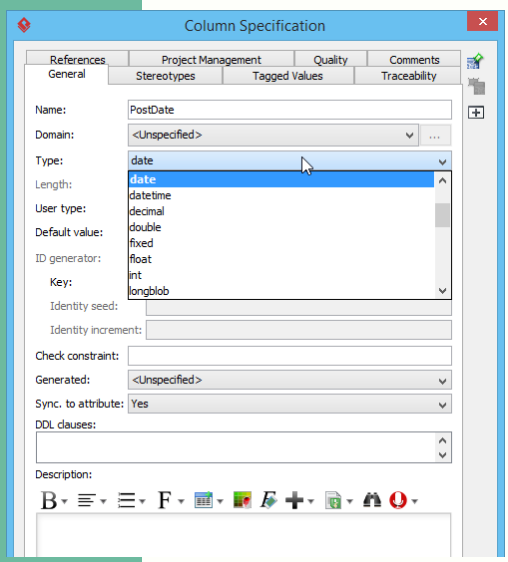
- For use with Hibernate (ORM).

DB Configuration ■ DBMS (Vendor) List



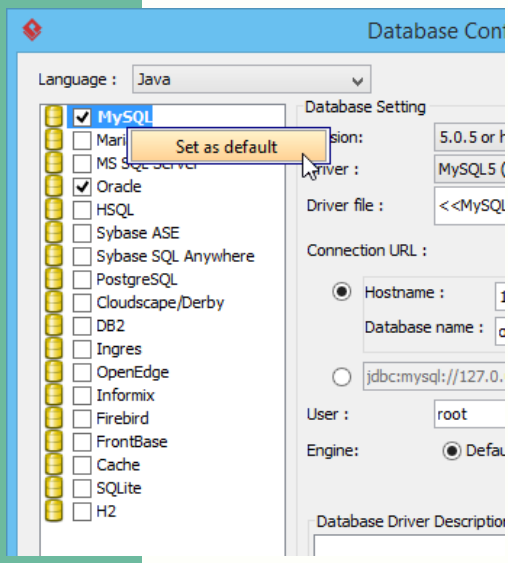
- Your team may be using multiple DBMS.
- Here you can select the databases your team use.

DB Configuration ■ DBMS (Vendor) List



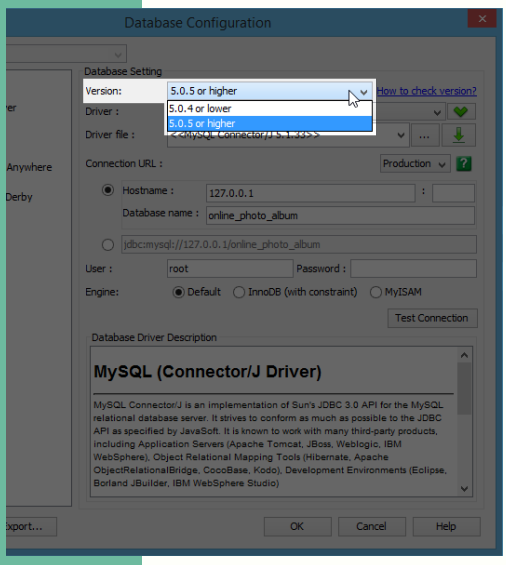
- Your team may be using multiple DBMS.
- Here you can select the databases your team use.
- The allowable data type selection for entity column is based on your database selection.

DB Configuration ■ DBMS (Vendor) List



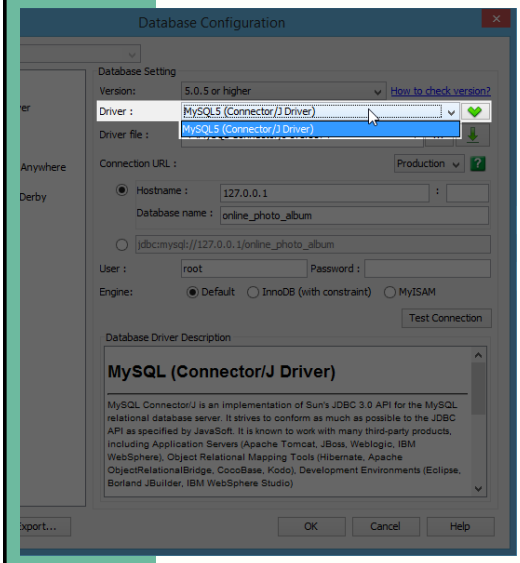
- Your team may be using multiple DBMS.
- Here you can select the databases your team use.
- The allowable data type selection for entity column is based on your database selection.
- Database and DDL generation follows the **default database** selection.
- You can set a default by right clicking on it and select **Set as Default** from the popup menu.

DB Configuration ■ Version



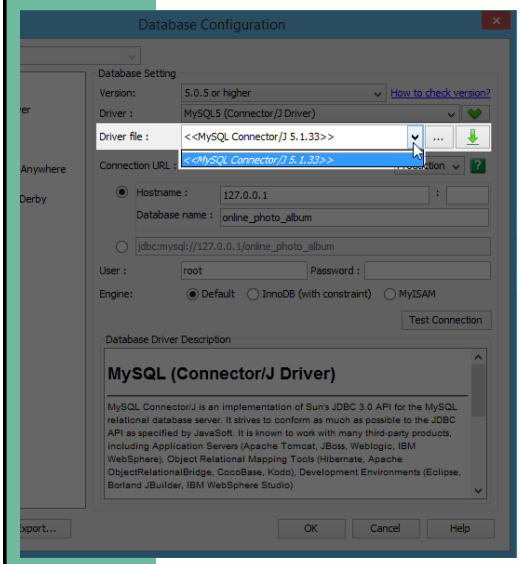
- There may be a slightly different in database setting for different database versions.
- Choose the right version for your database.

DB Configuration ■ Driver



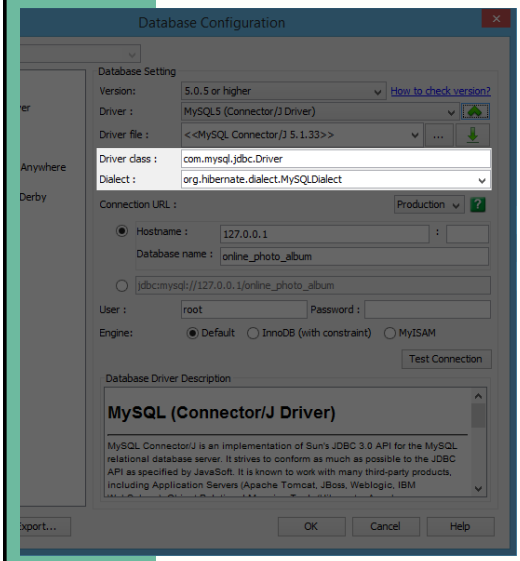
- A driver is a software component essential for us to connect with your database.
- There are different driver suppliers on the market.
- Choose the one you like or leave it as default if you are uncertain.

DB Configuration ■ Driver File



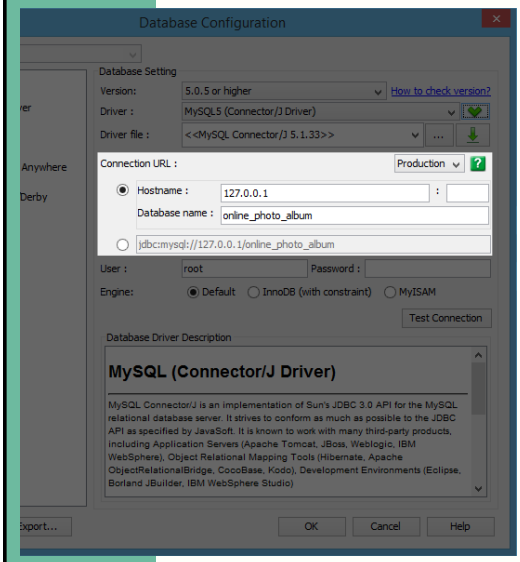
- JDBC is a popular option in database connectivity.
- We use JDBC in connecting with database.
- In order for DB generation to function, you have to specify the JDBC driver here.
- It can be downloaded automatically by clicking
- If it failed to find one, you will be redirected to the download URL.

DB Configuration ■ Driver Class & Dialect



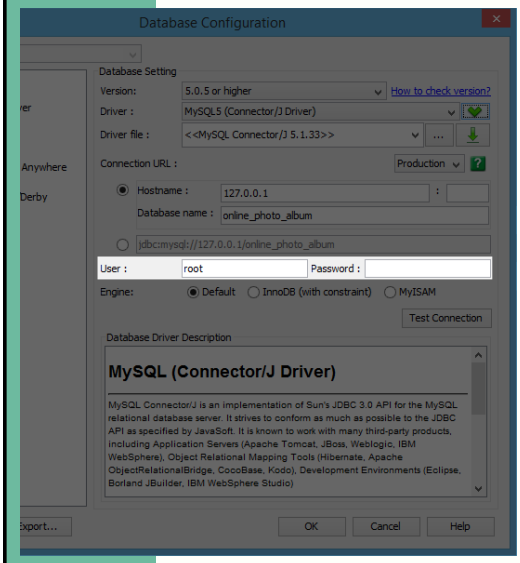
- Driver class is the driver manager which JDBC drivers try to make connections with.
- Dialect is for Hibernate (ORM) purpose. It specifies the SQL language to use to talk to your database.

DB Configuration ■ Connection URL



- Specify the connection details of your database.
- If you have selected to **Export to Database**, the database specified here will be altered.

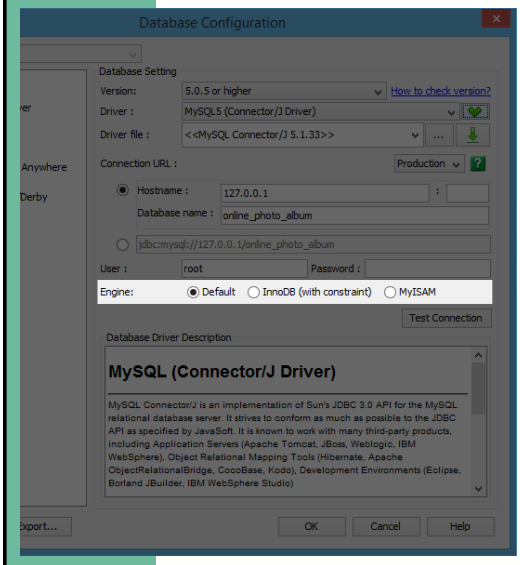
DB Configuration ■ User & Password



- Enter the user name and password for accessing the database.

Generate Database

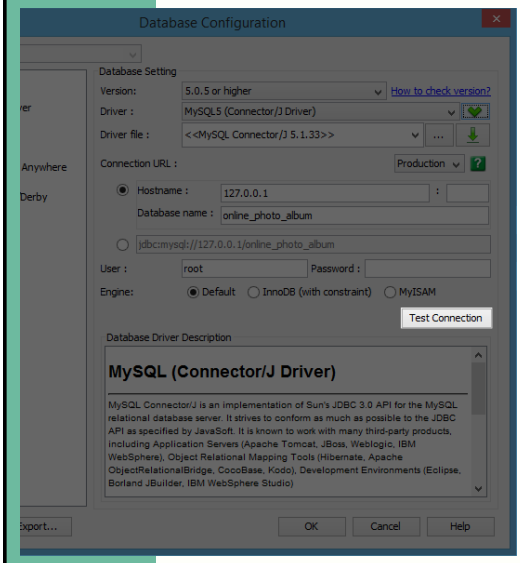
DB Configuration ■ Engine



- For MySQL and MariaDB only.
- MySQL and MariaDB supports different types of table engines.
- The two most commonly used engines are Innodb and MyISAM.

Generate Database

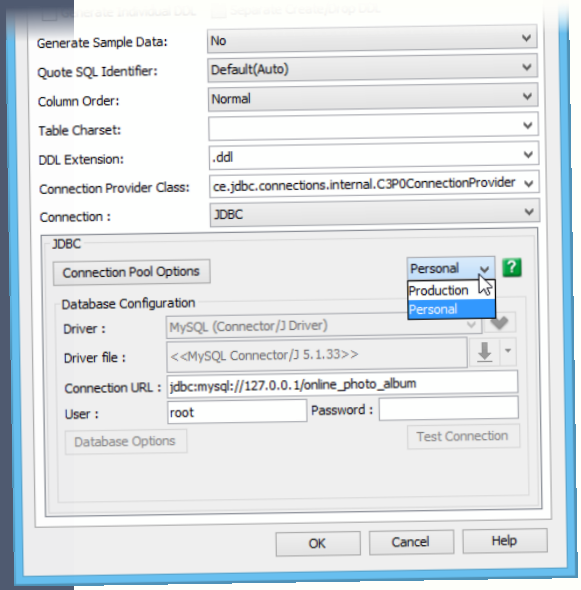
DB Configuration ■ Test Connection



- Make sure the connection setting is valid.
- Invalid connection will lead to a failure in database generation.

Generate Database

Personal & Production DB Connectivity



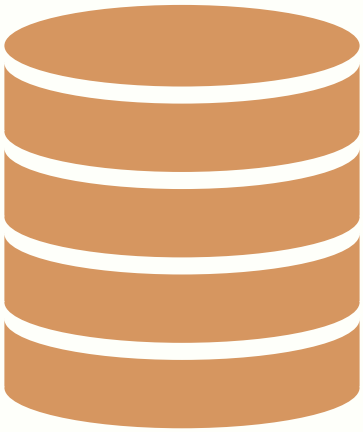
Personal/

Production

DB Connectivity

Generate Database

Personal & Production DB Connectivity

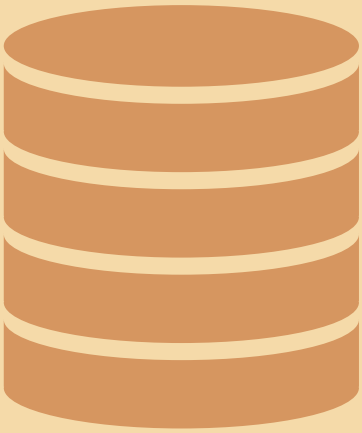


Database is one of the key components of an information system

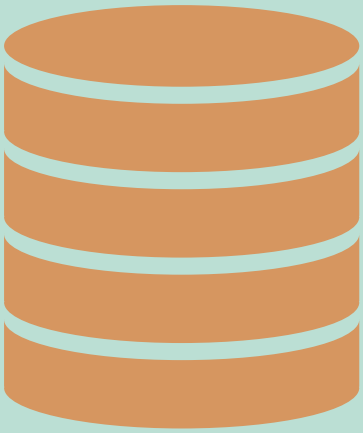
Generate Database

Personal & Production DB Connectivity

Development

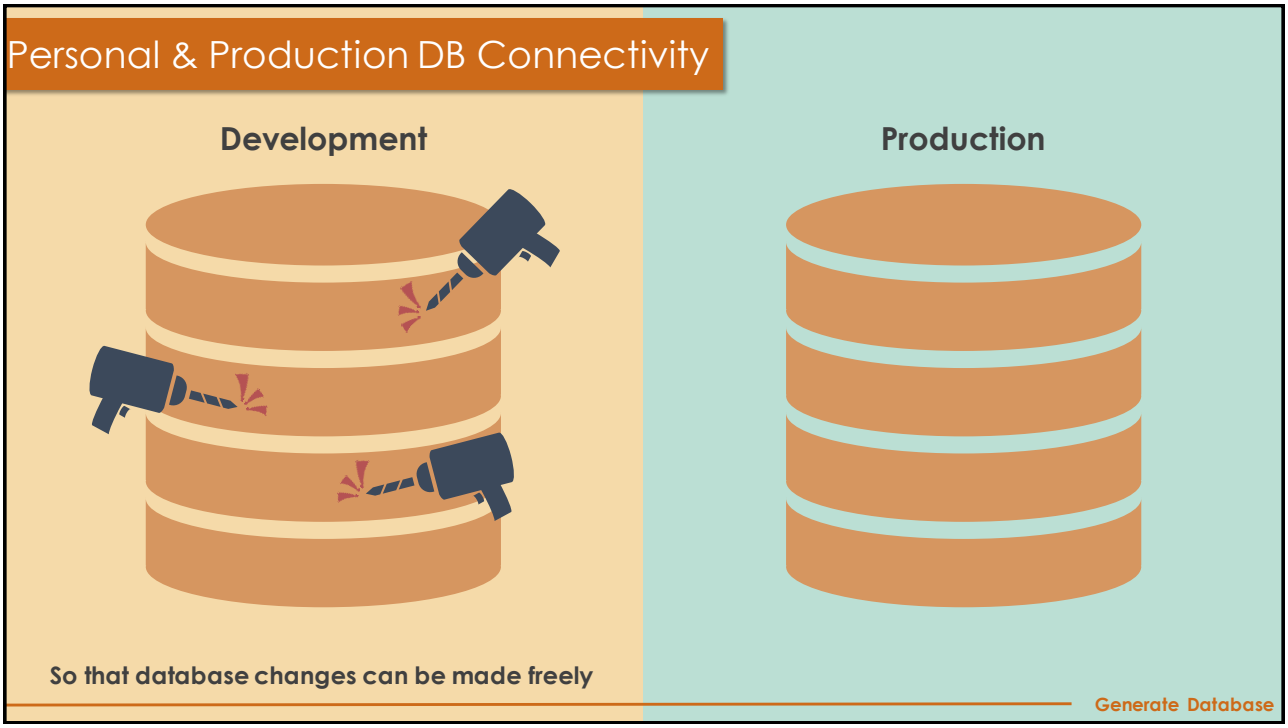


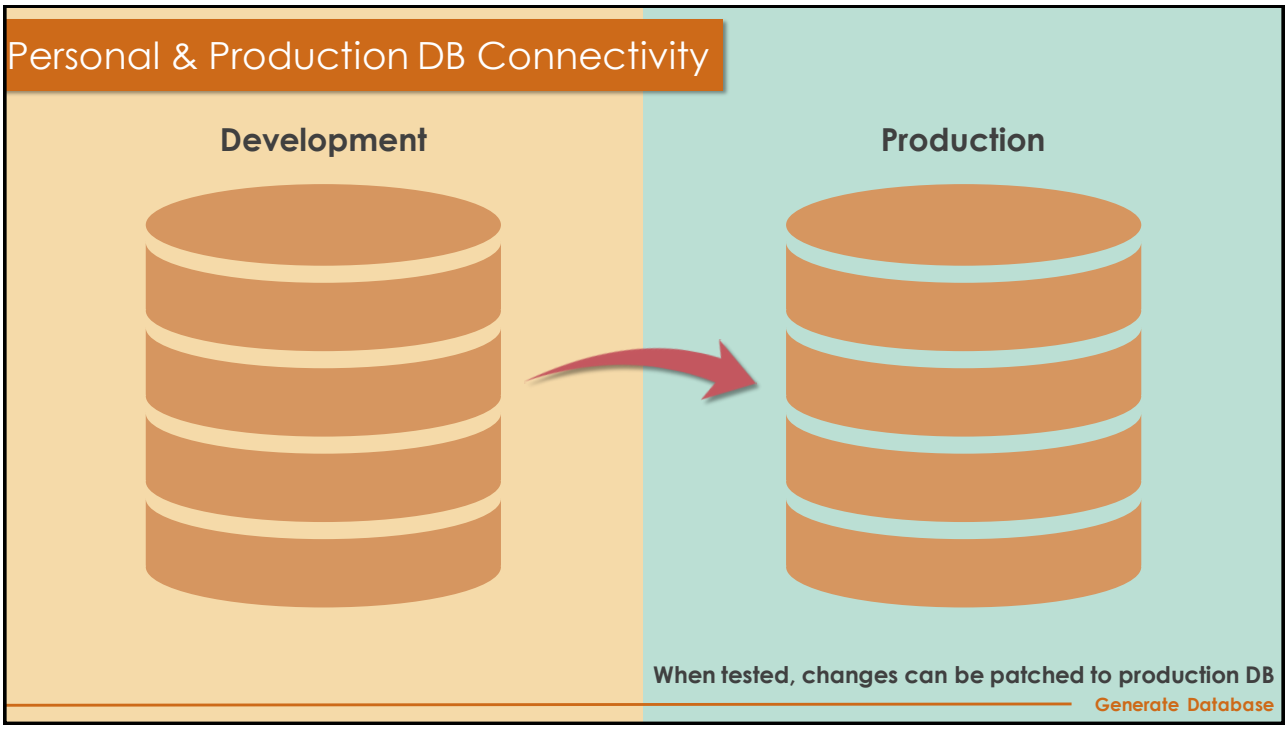
Production



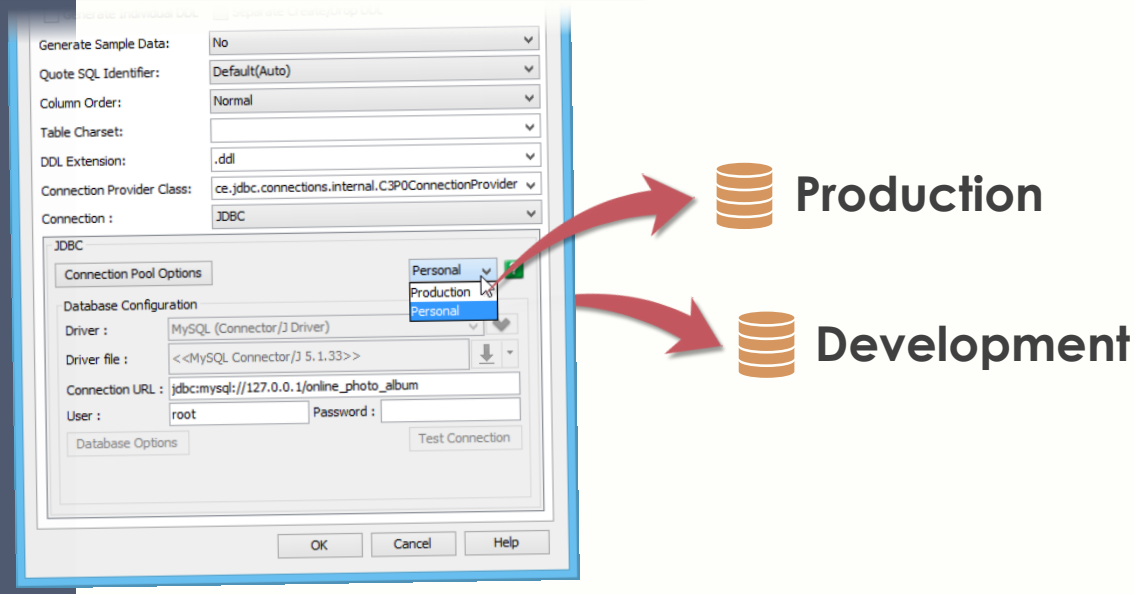
In order to keep a system stable, separate databases are used for development and production

Generate Database


Personal & Production DB Connectivity
Development
Production
So that database changes can be made freely
Generate Database


Personal & Production DB Connectivity
Development
Production
When tested, changes can be patched to production DB
Generate Database

Personal & Production DB Connectivity



Summary

- Overview of generation options
- Database configuration
- Setting production/personal database connection