


Department of Electronic & Information Engineering  
The Hong Kong Polytechnic University  
**EIE3112 Database System**  
MySQL Workbench: A Quick Start

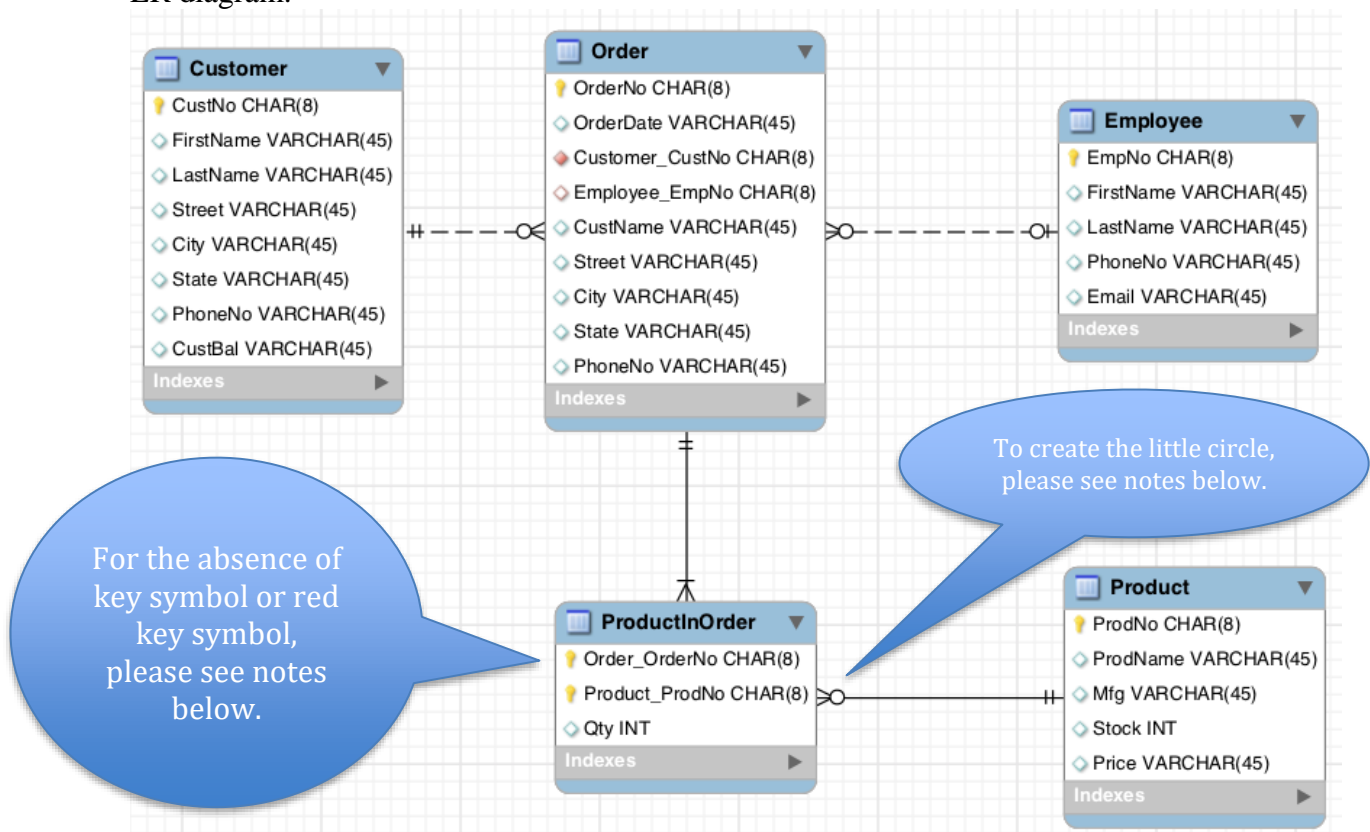
1. Check if your computer already has MySQL Workbench and MySQL Server installed. In Windows, click the “Start” button. Then, in the Search Box, type “Workbench”. If Workbench is not installed, download the MySQL Workbench by going to BlackBoard > Content > Download Resources or <https://dev.mysql.com/downloads/workbench/>
2. Install MySQL Workbench to your computer.
3. Launch MySQL Workbench.
4. **File → New Model.** To add a new schema, click the “+” symbol in the right of the Physical Schemas Pane. You may also use the existing MySQL Schema “mydb”.
5. **Add a Table.** In the Physical Schema section, double-click Add Table. This will automatically load the table editor, with the default table name being table1. In the table editor, change the name of the table from “table1” to “DEPARTMENT”.
6. **Add a Column.** Double click a cell within the Column Name column. Change the name to “DeptNo” and keep the Datatype as INT. Then, be sure PK (PRIMARY KEY), NN (NOT NULL), and AI (AUTO\_INCREMENT) are all checked.
7. **Display an ER Diagram.** From the main menu, select Model, Create Diagram from Catalog Objects. The ER Diagram will be created and displayed.
8. **Add another Table.** Click the MySQL Model tab. Create another table called EMPLOYEE. Add a primary key EmpNo. To add this table to the diagram, click EER Diagram tab. Then, drag the EMPLOYEE table in the Catalog Tree (in the left panel) to the Diagram Pane.
9. **Save Your Tables.** Save your schema (ER diagram). File → Save Model .....
10. **Add Relationship.** On the left of the Diagram Pane, select a type of relationship from the left. If you are creating a one-to-many non-identifying relationship  , first click the table that is on the “many” side (e.g., EMPLOYEE) of the relationship, then on the table (e.g., DEPARTMENT) containing the referenced key. This creates a column (foreign key) in the table on the many-side of the relationship. The default name of this column is *table\_name\_key\_name* where the table name and the key name refer to the table containing the referenced key. To display the captions of relationship on your ER diagram, you need to select Edit → Preferences → Modeling → Diagram → tick “Show Captions” → click “OK”.
11. **Create SQL Statements.** Workbench can generate the SQL statements implementing the schema that you have defined. To do this, select File → Export → Forward Engineer SQL CREATE Script.

## Homework (no need to submit; to be used in Lab 1)

Draw an ER diagram for this order-entry database to be used in Lab1 using MySQL Workbench. You may use the following field names for the tables (Foreign keys are not shown, as they will be automatically generated by MySQL Workbench, i.e. you DO NOT need to input foreign keys by yourself!).

- Customer table: CustNo, FirstName, LastName, Street, City, State, PhoneNo, CustBal (Customer Balance);
- Employee table: EmpNo, FirstName, LastName, PhoneNo, Email;
- Order table: OrderNo, OrderDate, CustName, Street, City, State, PhoneNo;
- ProductInOrder table: Qty;
- Product table: ProdNo, ProdName, Mfg (manufacturer), stock, price.

Note that to facilitate the import of text files in Lab1, **the order of fields in the tables must be consistent with that of the text files.** To ensure the consistency, you may refer to the following ER diagram.



- This ERD will be used in Lab1, please save in your USB drive for future use.
- Your ERD must be exactly the same as the diagram above including the number of fields, the order of fields, the data type of fields and the primary keys. Otherwise, you will encounter problem while importing data and you may then need to redo from the beginning.
- Do not create foreign keys (e.g. Customer\_CustNo, Employee\_EmpNo, Order\_OrderNo, Product\_ProdNo) on your own as they will be automatically generated by MySQL Workbench when you create one-to-many relationship. Otherwise, you will find duplicate fields for these attributes.
- You need to input "(8)" for CHAR(8), otherwise it will remain as CHAR which will accept one character only. Similar case for VARCHAR(45).

## Legend

Solid diamond: NN (Not Null) constraint

Hollow diamond: no NN constraint

Red: Foreign key (automatically created when adding relationship, one side PK put to many side as FK)

Yellow key: Primary key

Missing key symbol (bug) for both PK and FK e.g. Order\_OrderNo and Product\_ProdNo in ProductInOrder table.

## MySQL Workbench bug (absence of key symbol)

In MySQL Workbench, normally a yellow key symbol is used to indicate that an attribute is primary key.

A red diamond symbol is used to indicate that an attribute is foreign key.

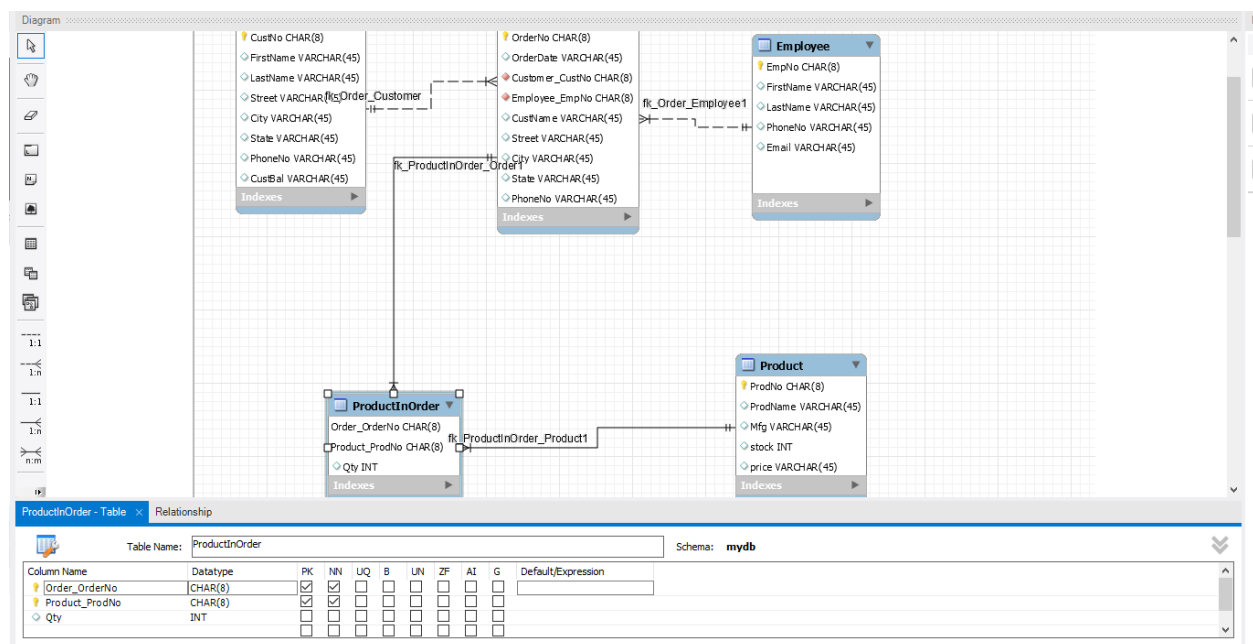
A solid diamond means NOT NULL while a hollow diamond means that NULL value is allowed.

In older versions of MySQL Workbench, a yellow key or a red key symbol is used to indicate that an attribute is both a primary key and foreign key.

But in the latest version of MySQL Workbench, the key symbol disappears if an attribute is both a primary key and foreign key.

This is probably the bug of MySQL Workbench.

So it's normal if you can't see any key symbol for 'Order\_OrderNo' and 'Product\_ProdNo' in 'ProductInOrder' table in the ERD of Tutorial 1 because they are both PK and FK.



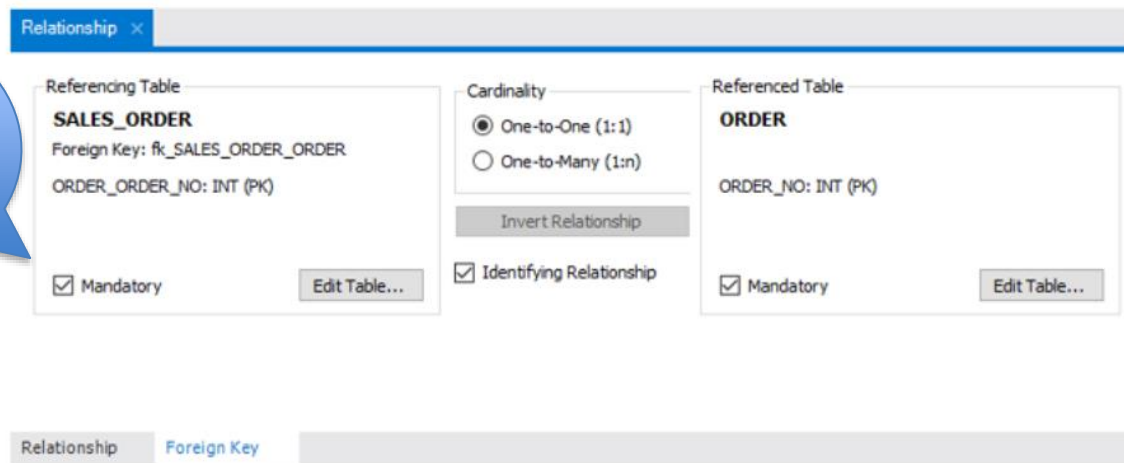
PK must be NN (Not NULL).

All are not AI (Auto Increment).

## To create the little circle ...

Extracted from Lec02 notes:

- To edit relationship in MySQL Workbench,
  - Double click the relationship between tables, or
  - Right click the relationship between tables and select "Edit Relationship"



The meaning of identifying relationship and non-identifying relationship will be explained in Lec02.

## Notes for Windows version

- Windows version: need to install visual studio first for running the installer (as reported by students)

## Notes for Mac version

- Latest version 8.0.23 seems to have some problem
- ver8.0.21 can be opened by mac, but you need to click "open anyway" in setting>security & privacy>general
- Please download ver 8.0.19 from Blackboard for Mac users
- To change the order, you need to right click and select "move up" or "move down" instead of dragging
- For step 10, "MySQL Workbench → Preferences" instead of "Edit → Preferences"