the Master Course

{CODENATION}

Backend Development

Entity Relationship Diagrams

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Learning Objectives

To know what an ERD is and why they are used.

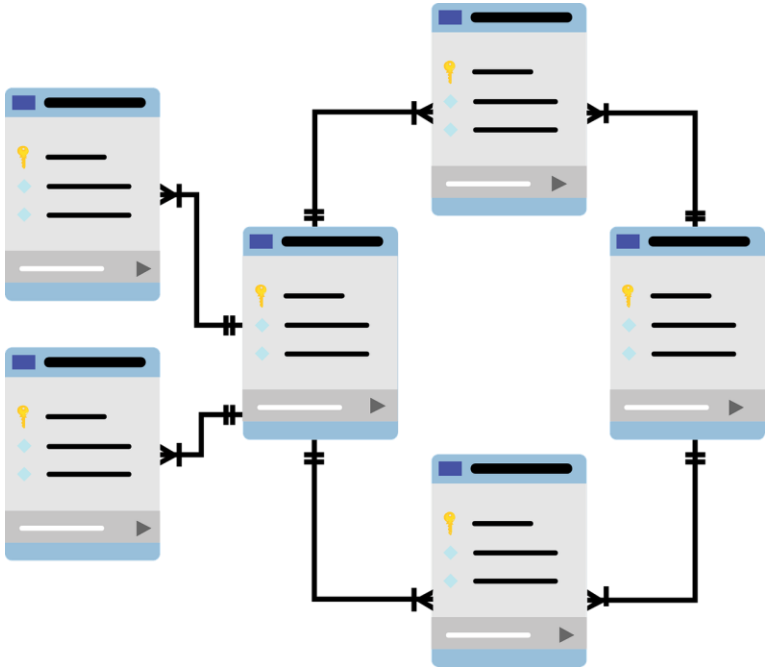
To create a new Entity Relationship Diagram.

To reverse engineer a diagram from existing tables.

To consider the relationships between tables in an ERD.

What is an ERD?

An Entity Relationship Diagram is a type of flowchart that illustrates how “entities” such as people, objects or concepts relate to each other within a system.



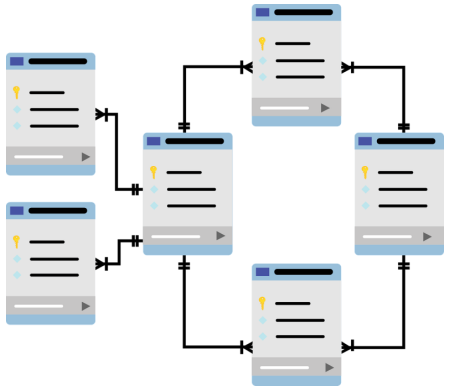
ERDs are used to design or debug relational databases and a set of symbols and connecting lines to depict the interconnectedness of entities, relationships and their attributes.

SQL

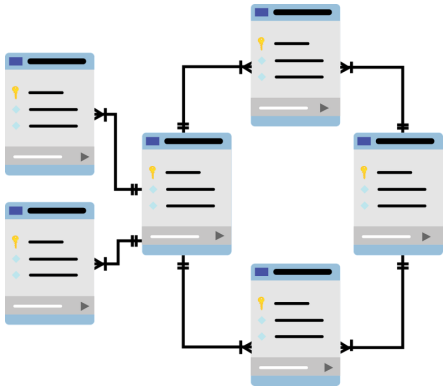
There are two ways to use ERDs...

Method 1

From a database to a diagram



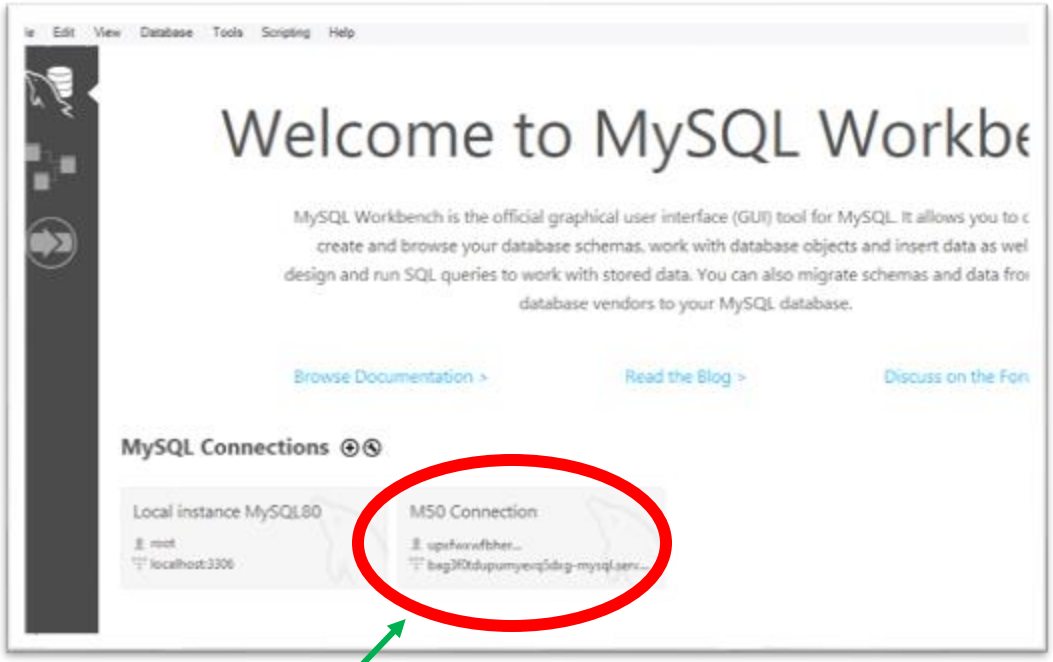
Method 2



Create a diagram which will give us the SQL

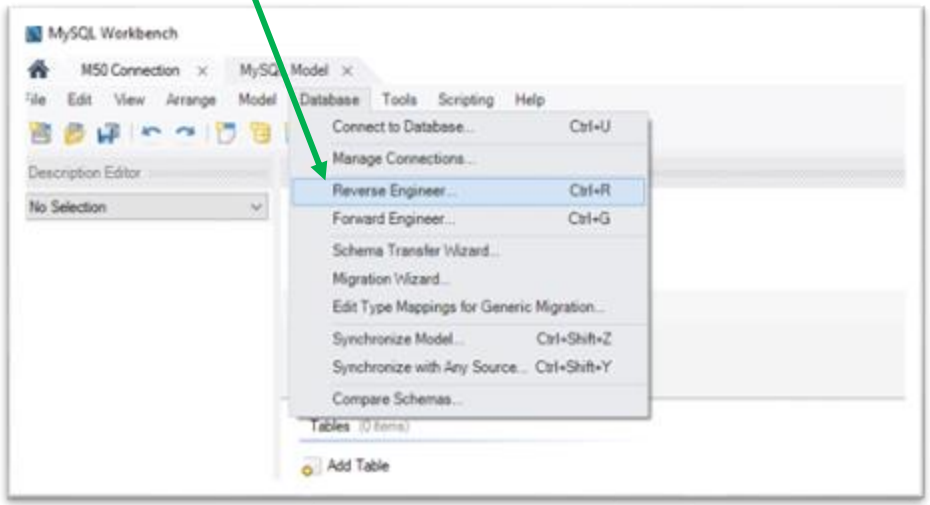
Method 1

From a database to a diagram.

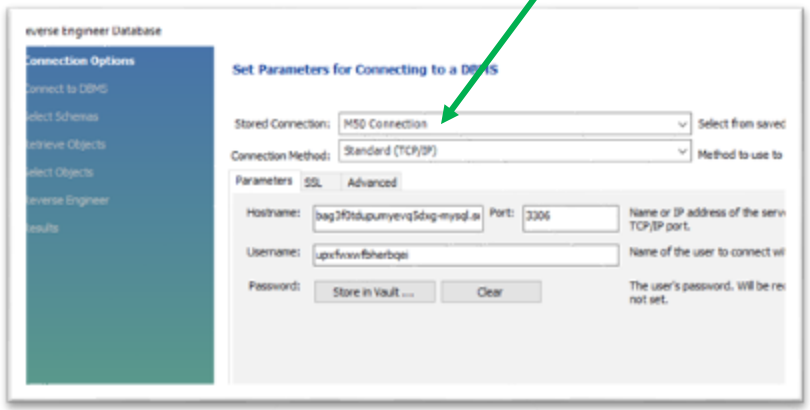


Select your database

Click 'Database', then
'Reverse Engineer'



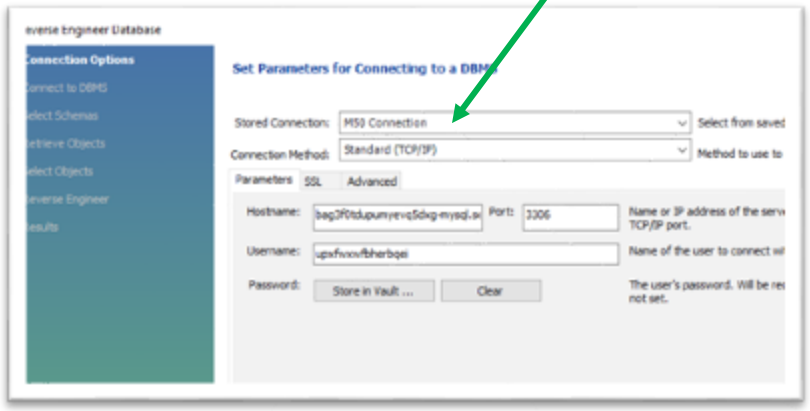
Select your database



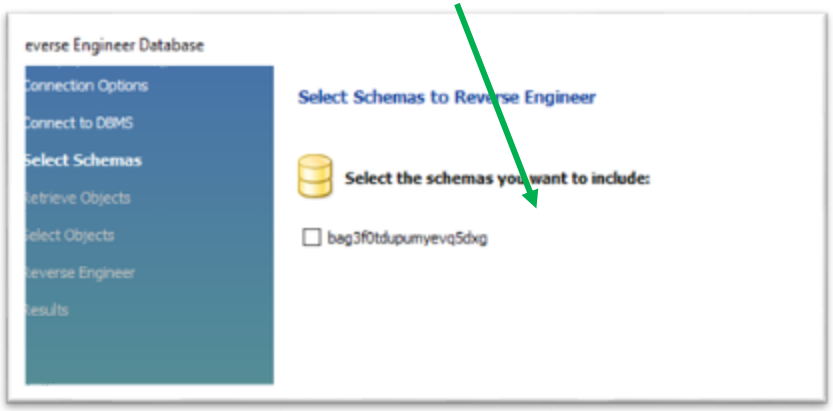
Method 1

From a database to a diagram.

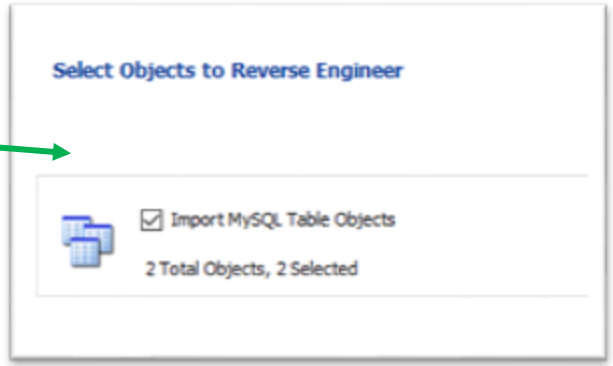
Select your database



After it has fetched your database information, click on the schema to include in the diagram.



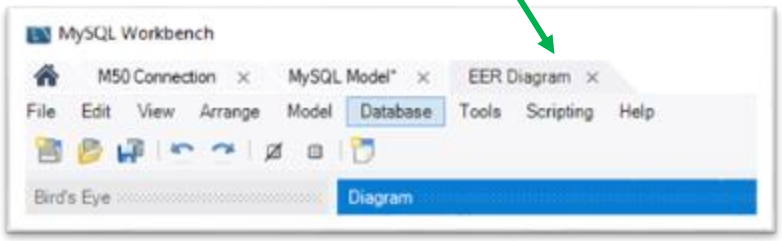
Select the tables to import on the diagram



Method 1

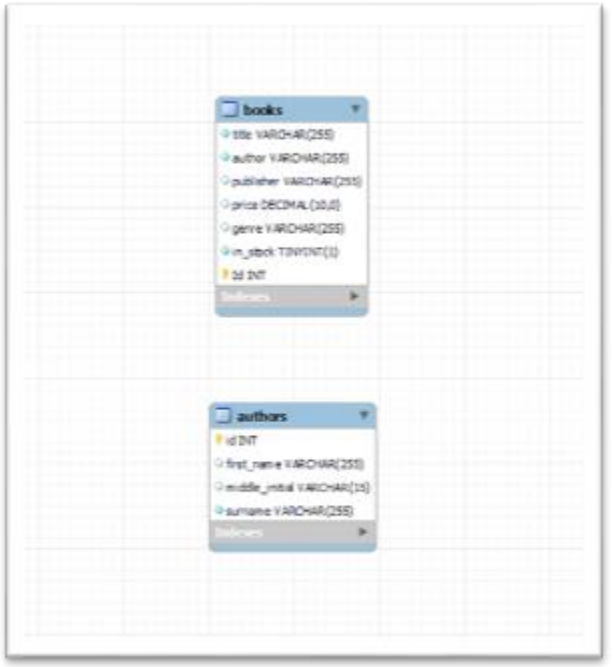
From a database to a diagram.

A new tab appears called **EER Diagram**.



The tables and any connecting lines have been organised for you.

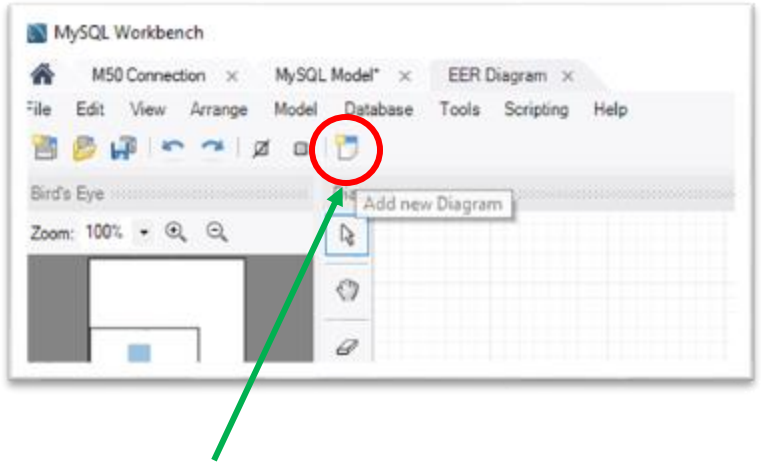
This is your diagram



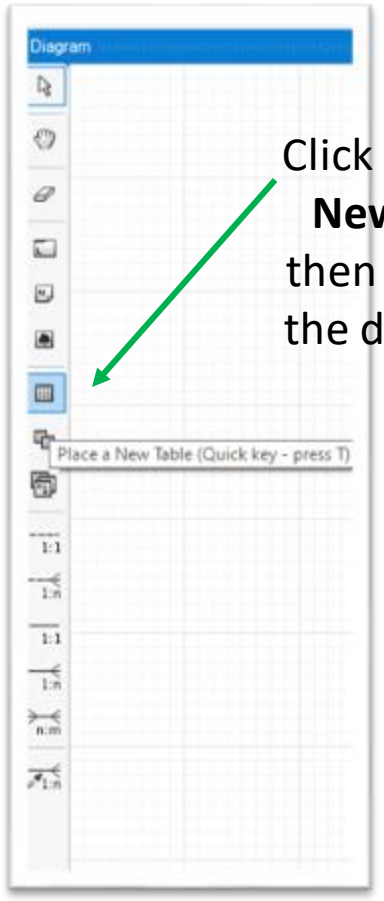
Each table shows the column names with icons to represent the different properties

Method 2

Create a diagram from scratch.

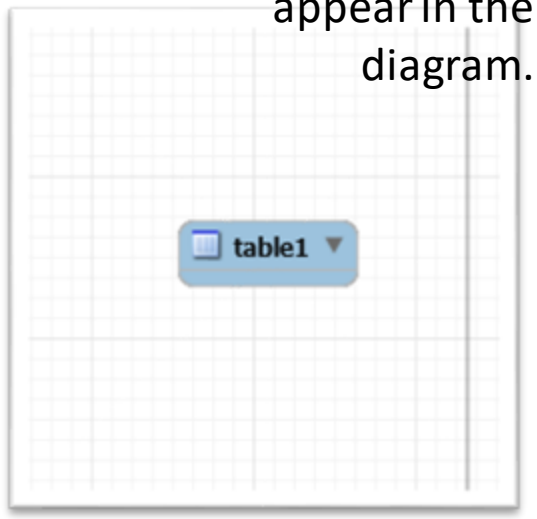


Click on the 'Add New Diagram' button.



Click '**Place a New Table**' then click on the diagram.

A new table should appear in the diagram.



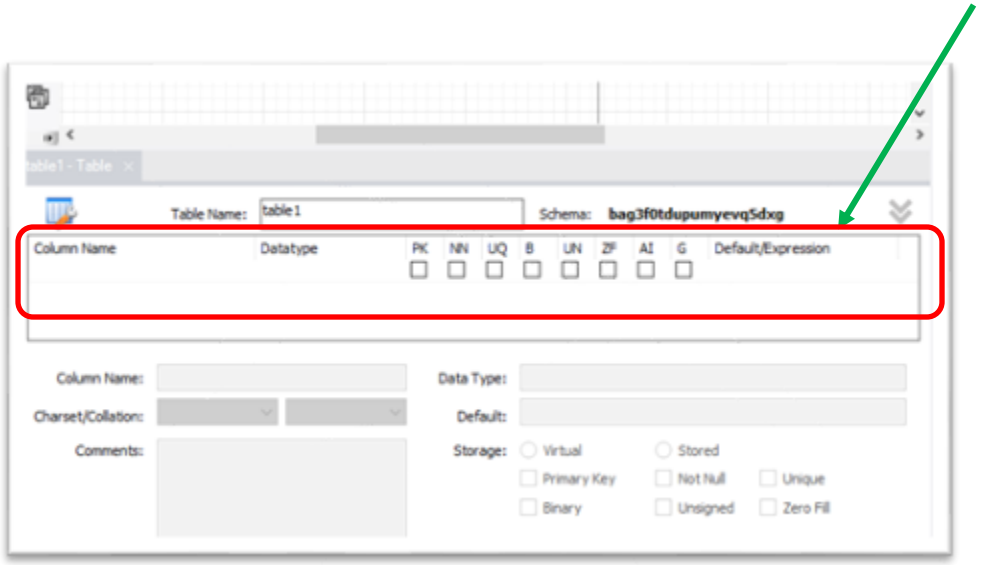
Double-click on the table to start adding your table columns.

Method 2

Create a diagram from scratch.

SQL

After double-clicking on the table diagram, you can then add some columns – one-by-one. As you did earlier, give the column a name, datatype and any constraints.



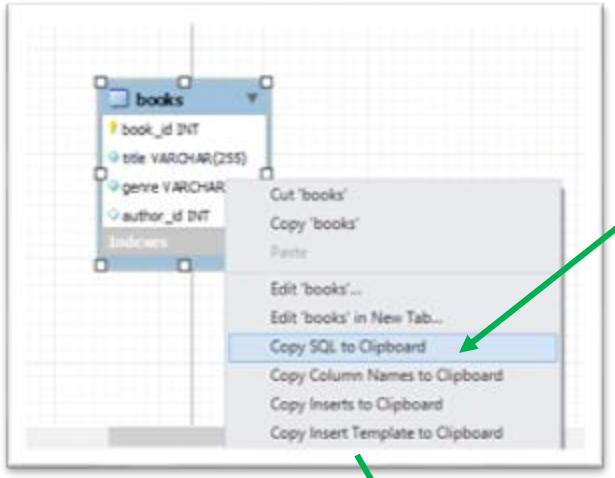
Add in the rest of your column names and details.

Show how to add a foreign key(s) to a table using ERDiagrams??????

Method 2

Create a diagram from scratch.

SQL



When your table design is done, you can right-click on it to copy the SQL commands to create it.

To save time with INSERT statements, you can copy this Template.

Activity 1

Experiment with the 'Reverse Engineer' features of MySQL Workbench to create your ER Diagram from your own tables from yesterday.

Use the table Diagrams to create the SQL statements that would be helpful when writing SQL Queries.

Stretch

Workbench has a 'Forward Engineer' feature which allows us to create a database for tables in a diagram. Investigate how his work by creating some tables using ERD, then selecting the Database --> Forward Engineer option.

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