

Practical 9 – Foreign Keys

Objectives of this practical

- To insert foreign keys into existing relations

Contents

Section A: Add New Relations	3
Add foreign keys to Existing Tables.....	3
Section B: Create & Populate New Tables	4
Section C: Generate the ERD	4

There is **NO BrightSpace submission** for this practical.

Section A: Add New Relations

Add foreign keys to Existing Tables

Use the **Alter Table** statement to add one foreign key (non self-referencing foreign key) to each of the following three tables.

- course
- department
- staff

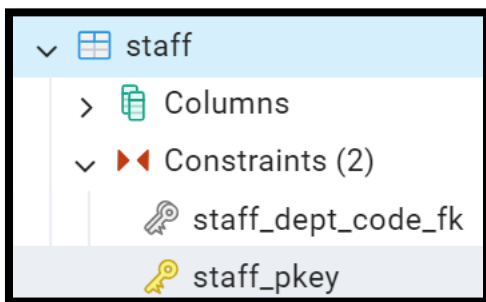
<https://www.postgresql.org/docs/current/sql-altertable.html>

example:

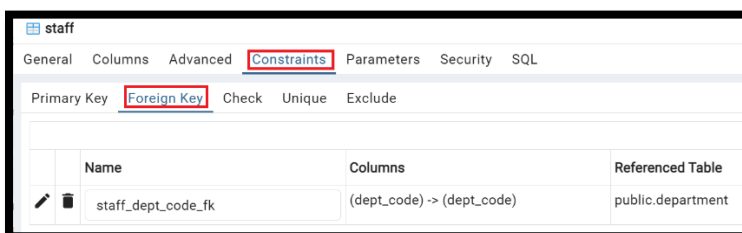
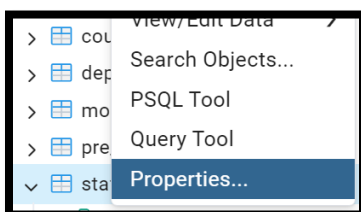
To add a foreign key constraint to a table:

```
ALTER TABLE distributors ADD CONSTRAINT distfk FOREIGN KEY (address) REFERENCES addresses (address);
```

You can confirm that the foreign key has been created under the table > Constraints



And also, the table > Properties > Constraints > Foreign Key



Section B: Create & Populate New Tables

Download the zip file from the LMS.

It comprises the following sql files.

Run each of the sql files to create the new tables and populate them with the relevant primary and foreign keys.

You will encounter 2 errors as you work through them.

Fix the sql appropriately to complete the insertion.

1. staff_dependent
2. module
3. pre_requisite
4. country
5. student
6. stud_mod_performance

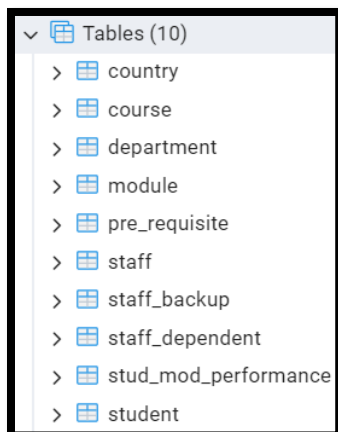
Error 1:

In step 2 when you insert records for the module table, there are 14 records to be inserted but the last one could not be inserted. Why?

Error 2:

In step 5 when you create the student table, an error was encountered. What is the cause?

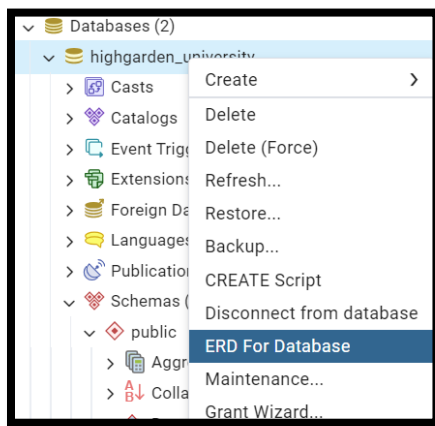
You should have 10 tables at the end of this practical.

**Section C: Generate the ERD**

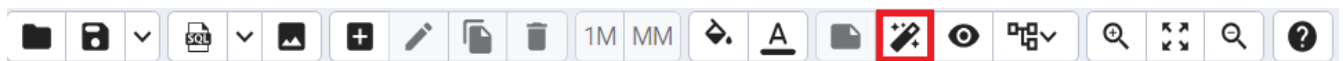
Use PgAdmin to generate the updated ERD.

To generate the ERD of the database:

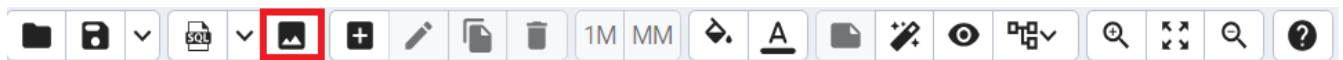
Right click on the database and choose ERD For Database.



On the query tool, click the Auto-Align button to align the elements in the diagram.



Then click the Download image button to download the ERD.



The ERD will look like this: