Experiment 3 Simple queries (1)

1. Experimental objectives

1）Master the solution of attaching a database into the lab environment.

2）Master the method of using SELECT.

3）Master the methods of managing simple queries.

2. Experimental environment

SQL Server 2017

3. Experimental key points

1）Attaching the projemp database that will be used into the lab environment.

projemp relational schema:

DEPT (dno, dname, location)

EMP (eno, ename, salary, age, supno, dno*)

WORKS (eno*, pno*, role)

PROJ (pno, pname, ptype, budget)

2）Find the table that should be used in the queries.

3）Use SELECT clause to complete the queries.

4. Experimental content

4.1 Attaching the projemp database

1) Download the projemp database file (*projemp.mdf*) from the Lab Resources folder on Blackboard to your download folder.

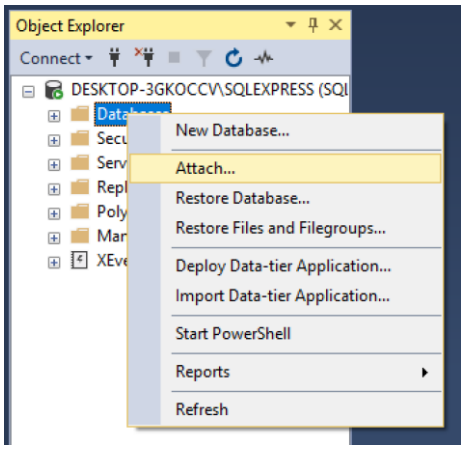
2) **Copy & Paste** *projemp.mdf* from your download folder to

C:\Program Files\Microsoft SQL Server\MSSQL14.SQLEXPRESS\MSSQL\DATA

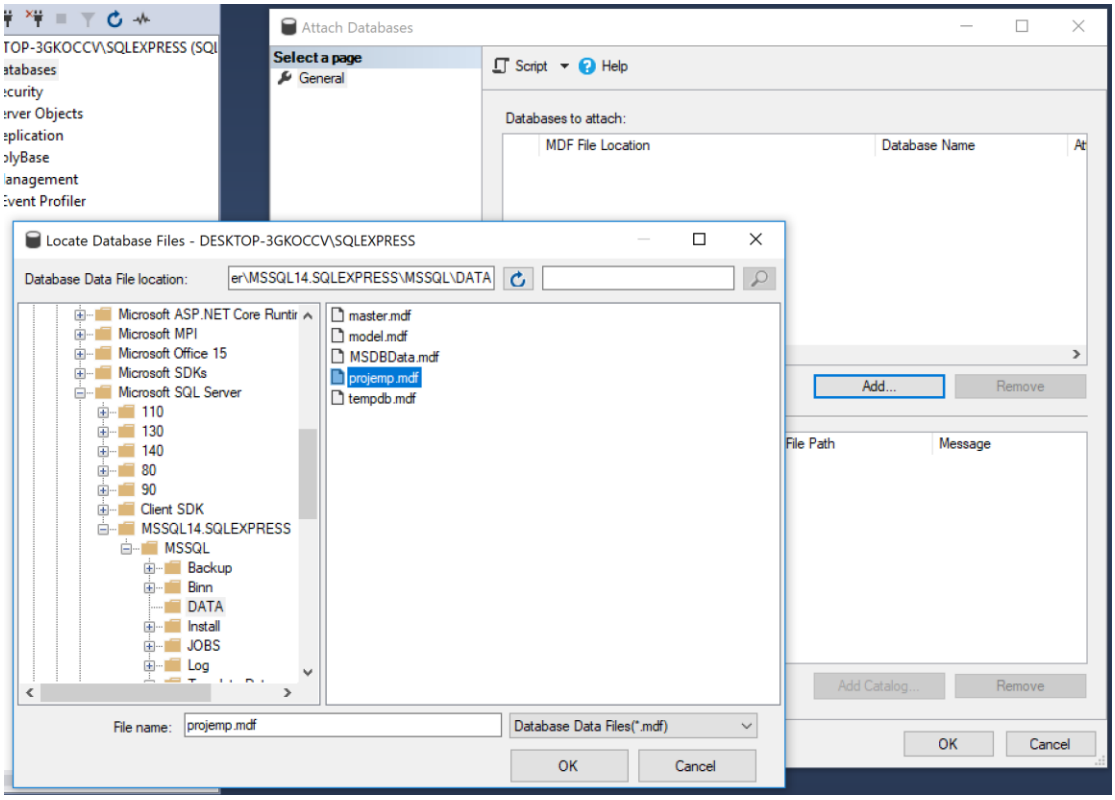
In general, always use **'Copy & Paste'** when moving database files - do **NOT** use **'Drag & Drop'.** If necessary, click 'continue' if you are asked for administrator permissions.

3) Open SQL Server Management Studio (SSMS) and connect to the server.

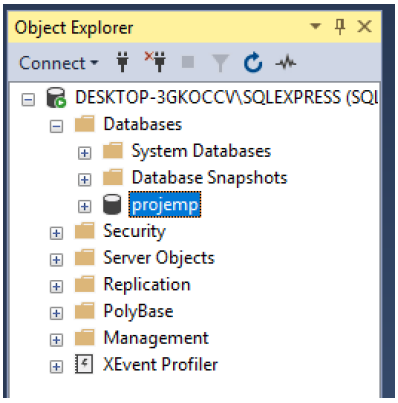
4) In Object Explorer, **right click** on Databases, and click 'Attach…' on the pop-up menu.



5) Click ‘Add…’ on the dialogue box, select *projemp.mdf* when the list of available databases appears, then click ‘OK’ on both dialogue boxes to attach the database.



6) Expand the Databases tab in Object Explorer. projemp should now be attached and available for use.



7) Use database file projemp on SQL Server - Execute USE projemp; in a New Query window

Click on ***New Query*** on the top menu to create a new query.

USE projemp;

GO Placed before each query ensures the correct database is current

4.2 Complete the following queries using SELECT clause

1) Display all the records in the EXP table;
2) Get the employee names and ages of those employees in department number 'd1'. (11 records)
3) Get the employee number and name of all employees aged above 30 in department number ‘d2’ (1 records)

NOTE: Values of a character datatype attribute (e.g., dno) must be shown in inverted commas (single not double), whereas numeric datatype attributes are not.

4) Get the names of employees earning less than £20,000 or more than £30,000. (13 records)
5) How many employees are in department number 'd3'? (1 records)
6) Get the total salary of all employees in department number ‘d1’ (adds up all salaries in department ‘d1’) (1 records)
7) Get the employee names and their salaries in ascending order of salary.

NOTE: ASC is the default value if **ASC** or **DESC** is not entered; **DESC** sorts in descending order

Try changing **ASC** to **DESC** and changing the **ORDER BY** attribute to ename

8) Get the employees who have salaries of £18,000 or £20,000 (Use of the **IN**

predicate) (2 records)

9) Get the names of employees who earn a salary above £25,000. (10 records)
10) Get the names of employees who earn a salary above £25,000 and are in department number 'd1'. (6 records)
11) What is the average age of employees in department number 'd2'?(29)
12) List the names, salaries and ages of all employees in department number 'd1' in descending order of age (oldest to youngest).(11 records)
13) How many employees have a salary greater than £20,000 and are in department number 'd1?'(9)