Experiment 5 Queries involving JOINS and subquery

1. Experimental objectives

1）Master the use of INNER JOIN clauses.

2）Master the methods of using subqueries.

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 two or more tables that should be used in the queries.

3）Use INNER JOIN to complete the queries.

4）Use subqueries clauses to complete the queries if necessary.

4. Experimental content

4.1 Queries involving two or more tables(JOINS)

1) Get a list of project names with the employee numbers of the employees working on them.

NOTE: pname is from **PROJ**, eno is from **WORKS** (could use **EMP**, but **WORKS** is closer to **PROJ**)

2) Get the names of employees in the 'information' department

NOTE: ename is from **EMP**, dname (used for selection clause) is from **DEPT**

dno is the primary/foreign key match between **DEPT** and **EMP**

3) Get the names of all projects worked on by the employee named 'pearse'

NOTE: pname is from **PROJ**; ename is from **EMP**; **PROJ** and **EMP** join through **WORKS**

eno is the primary/foreign key match between **EMP** and **WORKS**

pno is the primary/foreign key match between **WORKS** and **PROJ**

4) Get a list of employee names with their department names

5) Get a list of employee names with their department names for employees earning more than £25,000

6) Get a list of project names with the names of all employees

4.2 Subqueries

1) Query 2) (Get the names of employees in the information department) could be answered using a subquery approach. Try it. (Query 1 cannot use a subquery).

2) Query 3) could also be specified as a subquery.

3) Get the employees with a lower than average salary

4) How many employees are there in the 'information' department (i.e. dname)?

   NOTE: Try this as a single query block join and also as a nested query.

5) Get a list of employee names for projects named 'payroll' or 'database'.
   NOTE: Again, try this as a single query block join and also as a nested query.

6) Get the names of all employees with an above average salary.

7) Get the names and salaries of all employees in the 'information' department with salaries above the average for employees in the 'information' department.

8) Get the names and salaries of employees in the 'information' department who have a higher salary than the maximum salary in the 'service' department.