

多表查询介绍

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前言

- 现实中我们需要查询的数据是在多个表中的，那么如何从多个表中查询数据呢？这就需要通过表的连接来实现查询了。





培训目标

- 学完本课程后，您应该能：
 - 了解多表连接的种类
 - 学会使用等值连接查询数据
 - 了解自连接，左连接，右连接和全连接的操作



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1.1 多表连接查询

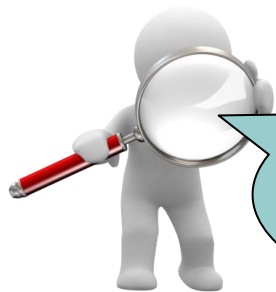
- 多表连接查询是通过连接多个表，从而获取到多个表中数据。

EMPLOYEES

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	2014/12/17	1000		20
7499	ALLEN	SALESMAN	7698	2015/2/20	1600	300	30
7521	WARD	SALESMAN	7698	2015/2/22	1250	500	30
7566	JONES	MANAGER	7839	2015/4/2	2975		20
7654	MARTIN	SALESMAN	7698	2014/9/28	1250	1400	30
7698	BLAKE	MANAGER	7839	2015/5/1	2850		30

DEPARTMENTS

DEPTNO	DNAME	LOC
10	ACCOUNTING	NEW YORK
20	RESEARCH	DALLAS
30	SALES	CHICAGO
40	OPERATIONS	BOSTON
60	TRAINING	HANGZHOU



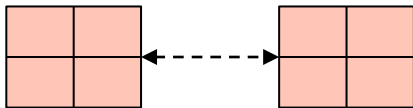
查询出员工工号，
名字，部门号和
部门名称

EMPNO	ENAME	DEPTNO	DNAME
	SMITH	20	RESEARCH
7499	ALLEN	30	SALES
7521	WARD	30	SALES
7566	JONES	20	RESEARCH
7654	MARTIN	30	SALES
7782	CLARK	10	ACCOUNTING

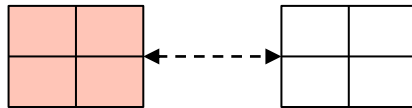
1.1 多表连接查询（续）

- 多表连接种类：

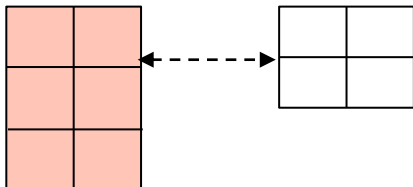
自连接



等值连接



外连接



1.2 自连接查询操作

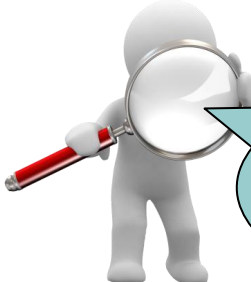
- 一个表自己与自己建立连接称为自连接或自身连接。

EMPLOYEES (WORKER)

EMPNO	ENAME	JOB	MGR	HIREDATE
7369	SMITH	CLERK	7902	2014/12/17
7499	ALLEN	SALESMAN	7698	2015/2/20
7521	WARD	SALESMAN	7698	2015/2/22
7566	JONES	MANAGER	7839	2015/4/2
7654	MARTIN	SALESMAN	7698	2014/9/28
7698	BLAKE	MANAGER	7839	2015/5/1

EMPLOYEES (MANAGER)

EMPNO	ENAME	JOB	MGR	HIREDATE
7369	SMITH	CLERK	7902	2014/12/17
7499	ALLEN	SALESMAN	7698	2015/2/20
7521	WARD	SALESMAN	7698	2015/2/22
7566	JONES	MANAGER	7839	2015/4/2
7654	MARTIN	SALESMAN	7698	2014/9/28
7698	BLAKE	MANAGER	7839	2015/5/1



查询出员工名字
及其领导名字

ENAME	WORKS FOR'	ENAME
FORD	works for	JONES
SCOTT	works for	JONES
JACK	works for	BLAKE
JAMES	works for	BLAKE
TURNER	works for	BLAKE

1.2 自连接查询操作（续）

```
SQL> SELECT work.ename, ' works for ', mgr.ename  
2 FROM emp work, emp mgr  
3 WHERE work.mgr=mgr.empno(+);
```

ENAME	'WORKSFOR'	ENAME
-----	-----	-----
FORD	works for	JONES
SCOTT	works for	JONES
JACK	works for	BLAKE
JAMES	works for	BLAKE
TURNER	works for	BLAKE
MARTIN	works for	BLAKE
WARD	works for	BLAKE
ALLEN	works for	BLAKE
MILLER	works for	CLARK
ADAMS	works for	SCOTT
CLARK	works for	KING
BLAKE	works for	KING
JONES	works for	KING
SMITH	works for	FORD
KING	works for	
HELEN	works for	
RACHEL	works for	

1.3 等值连接查询操作

- 在连接条件中使用等于号(=)运算符比较被连接列的列值，其查询结果中列出被连接表中的所有列，包括其中的重复列。

EMPNO	ENAME	JOB	MGR	HIREDATE	DEPTNO
7369	SMITH	CLERK	7902	2014/12/17	20
7499	ALLEN	SALESMAN	7698	2015/2/20	30
7521	WARD	SALESMAN	7698	2015/2/22	30
7566	JONES	MANAGER	7839	2015/4/2	20
7654	MARTIN	SALESMAN	7698	2014/9/28	30
7698	BLAKE	MANAGER	7839	2015/5/1	30

DEPTNO	DNAME	LOC
10	ACCOUNTING	NEW YORK
20	RESEARCH	DALLAS
30	SALES	CHICAGO
40	OPERATIONS	BOSTON
60	TRAINING	HANGZHOU

=



查询出员工名字，
工作，部门号及
部门名称

ENAME	JOB	DEPTNO	DNAME
SMITH	CLERK	20	RESEARCH
ALLEN	SALESMAN	30	SALES
WARD	SALESMAN	30	SALES
JONES	MANAGER	20	RESEARCH
MARTIN	SALESMAN	30	SALES

1.3 等值连接查询操作（续）

```
SQL> SELECT emp.ename,emp.job,dept.deptno,dept.dname  
2 FROM emp,dept  
3 WHERE emp.deptno=dept.deptno;
```

ENAME	JOB	DEPTNO	DNAME
SMITH	CLERK	20	RESEARCH
ALLEN	SALESMAN	30	SALES
WARD	SALESMAN	30	SALES
JONES	MANAGER	20	RESEARCH
MARTIN	SALESMAN	30	SALES
BLAKE	MANAGER	30	SALES
CLARK	MANAGER	10	ACCOUNTING
SCOTT	ANALYST	20	RESEARCH
KING	PRESIDENT	10	ACCOUNTING
TURNER	SALESMAN	30	SALES
ADAMS	CLERK	20	RESEARCH
JAMES	CLERK	30	SALES
FORD	ANALYST	20	RESEARCH
MILLER	CLERK	10	ACCOUNTING
RACHEL	TRAINER	60	TRAINING
HELEN	TRAINER	60	TRAINING

1.4 左外连接查询操作

- 左连接就是返回左边的匹配行，不考虑右边的表是否有相应的行。

EMPLOYEES

EMPNO	ENAME	JOB	MGR	HIREDATE	DEPTNO
7369	SMITH	CLERK	7902	2014/12/17	20
7499	ALLEN	SALESMAN	7698	2015/2/20	30
7521	WARD	SALESMAN	7698	2015/2/22	30
7566	JONES	MANAGER	7839	2015/4/2	20
7654	MARTIN	SALESMAN	7698	2014/9/28	30
7370	JACK	SALESMAN	7698	2014/9/28	70
7698	BLAKE	MANAGER	7839	2015/5/1	30

DEPARTMENT

DEPTNO	DNAME	LOC
10	ACCOUNTING	NEW YORK
20	RESEARCH	DALLAS
30	SALES	CHICAGO
40	OPERATIONS	BOSTON
60	TRAINING	HANGZHOU



查询结果显示部门号为70的信息

ENAME	JOB	DEPTNO	DNAME
MILLER	CLERK	10	ACCOUNTING
KING	PRESIDENT	10	ACCOUNTING
...			
RACHEL	TRAINER	60	TRAINING
JACK	SALESMAN		

1.4 左外连接查询操作（续）

```
SQL> SELECT emp.ename,emp.job,dept.deptno,dept.dname  
2 FROM emp,dept  
3 WHERE emp.deptno=dept.deptno(+);
```

ENAME	JOB	DEPTNO	DNAME
MILLER	CLERK	10	ACCOUNTING
KING	PRESIDENT	10	ACCOUNTING
CLARK	MANAGER	10	ACCOUNTING
FORD	ANALYST	20	RESEARCH
ADAMS	CLERK	20	RESEARCH
SCOTT	ANALYST	20	RESEARCH
JONES	MANAGER	20	RESEARCH
SMITH	CLERK	20	RESEARCH
JAMES	CLERK	30	SALES
TURNER	SALESMAN	30	SALES
BLAKE	MANAGER	30	SALES
MARTIN	SALESMAN	30	SALES
WARD	SALESMAN	30	SALES
ALLEN	SALESMAN	30	SALES
HELEN	TRAINER	60	TRAINING
RACHEL	TRAINER	60	TRAINING
JACK	SALESMAN		

1.5 右外连接查询操作

- 右连接就是返回右边的匹配行，不考虑左边的表是否有相应的行。

EMPLOYEES

EMPNO	ENAME	JOB	MGR	HIREDATE	DEPTNO
7369	SMITH	CLERK	7902	2014/12/17	20
7499	ALLEN	SALESMAN	7698	2015/2/20	30
7521	WARD	SALESMAN	7698	2015/2/22	30
7566	JONES	MANAGER	7839	2015/4/2	20
7654	MARTIN	SALESMAN	7698	2014/9/28	30
7370	JACK	SALESMAN	7698	2014/9/28	70
7698	BLAKE	MANAGER	7839	2015/5/1	30

DEPARTMENT

DEPTNO	DNAME	LOC
10	ACCOUNTING	NEW YORK
20	RESEARCH	DALLAS
30	SALES	CHICAGO
80	MARKETING	BOSTON
60	TRAINING	HANGZHOU



查询结果显示部门号为80的信息

ENAME	JOB	DEPTNO	DNAME
MILLER	CLERK	10	ACCOUNTING
KING	PRESIDENT	10	ACCOUNTING
...			
		40	OPERATIONS
		80	MARKETING

1.5 右外连接查询操作（续）

```
SQL> SELECT emp.ename,emp.job,dept.deptno,dept.dname  
2 FROM emp,dept  
3 WHERE emp.deptno(+)=dept.deptno;
```

ENAME	JOB	DEPTNO	DNAME
SMITH	CLERK	20	RESEARCH
ALLEN	SALESMAN	30	SALES
WARD	SALESMAN	30	SALES
JONES	MANAGER	20	RESEARCH
MARTIN	SALESMAN	30	SALES
CLARK	MANAGER	10	ACCOUNTING
SCOTT	ANALYST	20	RESEARCH
TURNER	SALESMAN	30	SALES
ADAMS	CLERK	20	RESEARCH
JAMES	CLERK	30	SALES
FORD	ANALYST	20	RESEARCH
MILLER	CLERK	10	ACCOUNTING
RACHEL	TRAINER	60	TRAINING
HELEN	TRAINER	60	TRAINING
		50	IT
		40	OPERATIONS
		80	MARKETING

1.6 全外连接查询操作

- 左表和右表都不做限制，所有的记录都显示，不足的地方用null 填充。

EMPLOYEES

EMPNO	ENAME	JOB	MGR	HIREDATE	DEPTNO
7369	SMITH	CLERK	7902	2014/12/17	20
7499	ALLEN	SALESMAN	7698	2015/2/20	30
7521	WARD	SALESMAN	7698	2015/2/22	30
7566	JONES	MANAGER	7839	2015/4/2	20
7654	MARTIN	SALESMAN	7698	2014/9/28	30
7370	JACK	SALESMAN	7698	2014/9/28	70
7698	BLAKE	MANAGER	7839	2015/5/1	30

DEPARTMENT

DEPTNO	DNAME	LOC
10	ACCOUNTING	NEW YORK
20	RESEARCH	DALLAS
30	SALES	CHICAGO
80	MARKETING	BOSTON
60	TRAINING	HANGZHOU



查询结果显示部门号为70，部门号为80的信息

ENAME	JOB	DEPTNO	DNAME
MILLER	CLERK	10	ACCOUNTING
KING	PRESIDENT	10	ACCOUNTING
...			
JACK	SALESMAN		
		40	OPERATIONS
		80	MARKETING

1.6 全外连接查询操作（续）

```
SQL> SELECT emp.ename,emp.job,dept.deptno,dept.dname  
2 FROM emp FULL JOIN dept  
3 ON emp.deptno=dept.deptno;
```

ENAME	JOB	DEPTNO	DNAME
SMITH	CLERK	20	RESEARCH
ALLEN	SALESMAN	30	SALES
WARD	SALESMAN	30	SALES
JONES	MANAGER	20	RESEARCH
CLARK	MANAGER	10	ACCOUNTING
SCOTT	ANALYST	20	RESEARCH
KING	PRESIDENT	10	ACCOUNTING
TURNER	SALESMAN	30	SALES
ADAMS	CLERK	20	RESEARCH
JAMES	CLERK	30	SALES
FORD	ANALYST	20	RESEARCH
MILLER	CLERK	10	ACCOUNTING
RACHEL	TRAINER	60	TRAINING
HELEN	TRAINER	60	TRAINING
JACK	SALESMAN		
		50	IT
		40	OPERATIONS
		80	MARKETING

小测验

- 对左连接说法正确的是 (A)
 - A. 返回左边的匹配行，不考虑右边的表是否有相应的行
 - B. 返回右边的匹配行，不考虑左边的表是否有相应的行
 - C. 一个表自己与自己建立连接
 - D. 左边表和右边表都不做限制，所有的记录都显示
- `SELECT emp.ename,emp.job,dept.deptno,dept.dname FROM emp,dept`
`WEHRE emp.deptno(+)=dept.deptno.`该语句属于哪种连接查询？ (D)
 - A. 自连接查询 B.左外连接查询
 - C.等值连接查询 D.右外连接查询

小测验

- 从员工表中查询员工名字及其领导名字,下列哪个语句可以实现? (A)
 - ▣ SELECT work.ename,' works for ', mgr.ename FROM emp work,emp mgr WHERE work.mgr=mgr.empno;
 - ▣ SELECT work.ename,' works for ', mgr.ename FROM emp work,emp mgr;
 - ▣ SELECT work.ename,' works for ', work.mgr FROM emp work;
 - ▣ SELECT ename,' works for ', mgr FROM emp;

谢谢

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