





# Practice SQL JOIN Methods

This page provides exercises and solutions to help you practice SQL JOIN methods. These exercises are based on the Oracle HR schema, and may be performed online or by running the sample schema scripts on your local database server. For additional exercises in other subjects, use this link.

#### Inner JOIN Practice

- 1. Employees and departments (*Employees & Departments* tables)
  - 1. For each employee, display the first name, last name, department number and department name.
  - 2. Display the first name, last name, department number and department name, for all employees in departments 50 or 90.
- 2. Departments and locations (*Departments*, Employees & *Locations* tables)
  - 1. For each department, display the department name, city, and state province.
  - 2. For each employee, display the full name, department name, city, and state province.
  - 3. Display the full name, department name, city, and state province, for all employees whose last name contains the letter *a*.

# None Equi JOIN Practice

 For each employee, display the first name, salary, and job grade (Employees & Job\_Grades tables)

#### **Outer JOIN Practice**

1. Employees & departments

- Display the first name, last name, department number and department name, for all employees including those without any department.
- 2. Modify your query to display all departments including departments without any employees.

#### Self JOIN Practice

- 1. Employees and managers (*Employees* table)
  - 1. For each employee, display the last name, and the manager's last name.
  - 2. Modify your query to display all employees including those without any manager.
- 2. Display the first name, last name, and department number for all employees who work in the same department as employee whose last name is "King".
- 3. Display the last name and salary for all employees who earn less than employee number 103.

#### Solutions - Oracle

These solutions apply to Oracle, for solutions that apply to SQL Server click here.

```
01
     -- 1.
02
     -- a
    SELECT emp.first_name , emp.last_name ,
03
            emp.department_id , dep.department_name
04
05
    FROM employees emp , departments dep
    WHERE emp.department_id = dep.department_id
06
    -- b
07
80
    SELECT emp.first_name , emp.last_name ,
            emp.department_id , dep.department_name
09
    FROM employees emp , departments dep
10
11
    WHERE emp.department_id = dep.department_id
12
    AND
13
           emp.department_id IN (50 , 90)
```

```
14
     ORDER BY emp.last_name
15
     -- 2.
16
     -- a
17
     SELECT dep.department_name , loc.city , loc.state_province
            departments dep , locations loc
18
     FROM
     WHERE dep.location_id = loc.location_id
19
     -- b
20
    SELECT emp.last_name | | ' '| emp.first_name AS "FULL_NAME",
21
            dep.department_name , loc.city , loc.state_province
22
23
            employees emp , departments dep , locations loc
     FROM
24
    WHERE
                   emp.department_id = dep.department_id
25
     AND
                   dep.location_id = loc.location_id
26
27
     -- C
    SELECT emp.last_name | | ' '| emp.first_name AS "FULL_NAME",
28
            dep.department_name , loc.city , loc.state_province
29
30
     FROM
            employees emp , departments dep , locations loc
                   emp.department_id = dep.department_id
31
    WHERE
32
     AND
33
                  dep.location_id = loc.location_id
34
                  emp.last_name LIKE '%a%'
    AND
35
     -- 3.
36
     SELECT emp.last_name , emp.salary , job_g.grade_level
37
     FROM
            employees emp , job_grades job_g
38
    WHERE
           emp.salary BETWEEN job_g.lowest_sal AND job_g.highest_
39
     -- 4.
40
     -- a
41
     SELECT emp.first_name , emp.last_name , emp.department_id ,
42
     FROM employees emp, departments dep
43
     WHERE emp.department_id = dep.department_id (+)
     -- b
44
45
     SELECT emp.first_name , emp.last_name , emp.department_id ,
46
     FROM employees emp , departments dep
47
     WHERE emp.department_id (+) = dep.department_id
     -- 5.
48
49
     -- a
50
     SELECT emp.last_name AS "EMPLOYEE_NAME",
            mng.last_name AS "MANAGER_NAME"
51
            employees emp , employees mnq
52
     FROM
```

```
53
     WHERE
            emp.manager_id = mng.employee_id
54
     -- b
55
     SELECT emp.last_name AS "EMPLOYEE_NAME", mng.last_name AS "M
56
     FROM
            employees emp , employees mng
57
    WHERE
            emp.manager_id = mng.employee_id (+)
     -- 6.
58
59
     SELECT emp.last_name , emp.first_name , emp.department_id
            employees emp , employees specific_employee
60
     FROM
61
    WHERE
            emp.department_id = specific_employee.department_id
62
            specific_employee.last_name = 'King'
     AND
     -- AND emp.last_name <> 'King'
63
     -- 7.
64
     SELECT emp.last_name , emp.salary
65
            employees emp , employees specific_emp
     FROM
66
67
            emp.salary < specific_emp.salary</pre>
     WHERE
68
     AND
            specific_emp.employee_id = 103
```

## Solutions - SQL Server

```
01
     -- 1.
02
     -- a
     SELECT emp.first_name , emp.last_name ,
03
04
            emp.department_id ,
                                   dep.department_name
05
     FROM employees emp JOIN departments dep
     ON emp.department_id = dep.department_id
06
     -- b
07
     SELECT emp.first_name , emp.last_name ,
80
09
            emp.department_id , dep.department_name
10
     FROM employees emp JOIN departments dep
     ON emp.department_id = dep.department_id
11
12
     AND
13
           emp.department_id IN (50 , 90)
14
    ORDER BY emp.last_name
15
     -- 2.
16
     -- a
     SELECT dep.department_name , loc.city , loc.state_province
17
18
     FROM
            departments dep JOIN locations loc
19
     ON dep.location_id = loc.location_id
20
      -- b
```

```
21
     SELECT emp.last_name + ' '+ emp.first_name AS 'FULL_NAME',
22
            dep.department_name , loc.city , loc.state_province
            employees emp JOIN departments dep
23
     FROM
24
     ON
                emp.department_id = dep.department_id
25
            JOIN locations loc
            dep.location_id = loc.location_id
26
     ON
27
     -- C
    SELECT emp.last_name + ' '+ emp.first_name AS 'FULL_NAME',
28
            dep.department_name , loc.city , loc.state_province
29
            employees emp JOIN departments dep
30
     FROM
31
     ON
                emp.department_id = dep.department_id
             JOIN locations loc
32
            dep.location_id = loc.location_id
33
     ON
34
    WHERE
            emp.last_name LIKE '%a%'
35
     -- 3.
36
     SELECT emp.last_name , emp.salary , job_q.grade_level
37
            employees emp JOIN job_grades job_g
     FROM
38
     ON emp.salary BETWEEN job_g.lowest_sal AND job_g.highest_sa
39
     -- 4.
40
     -- a
     SELECT emp.first_name , emp.last_name , emp.department_id ,
41
42
     FROM employees emp LEFT OUTER JOIN departments dep
43
     ON emp.department_id = dep.department_id
     -- b
44
45
     SELECT emp.first_name , emp.last_name , emp.department_id ,
     FROM employees emp RIGHT OUTER JOIN departments dep
46
47
     ON emp.department_id = dep.department_id
48
     -- 5.
49
     -- a
50
     SELECT emp.last_name AS 'EMPLOYEE_NAME',
51
            mng.last_name AS 'MANAGER_NAME'
52
     FROM
            employees emp JOIN employees mng
53
     ON emp.manager_id = mng.employee_id
     -- b
54
55
     SELECT emp.last_name AS 'EMPLOYEE_NAME', mng.last_name AS 'M
56
     FROM
            employees emp LEFT OUTER JOIN employees mng
57
     ON emp.manager_id = mng.employee_id
58
     -- 6.
59
     SELECT emp.last_name , emp.first_name , emp.department_id
```

```
FROM
            employees emp JOIN employees specific_employee
60
61
     ON emp.department_id = specific_employee.department_id
            specific_employee.last_name = 'King'
62
     AND
     -- AND emp.last_name <> 'King'
63
64
     -- 7.
     SELECT emp.last_name , emp.salary
65
            employees emp JOIN employees specific_emp
66
     FROM
         emp.salary < specific_emp.salary</pre>
67
     ON
68
          specific_emp.employee_id = 103
     AND
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                                                     Print
                                           y Twitter
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```

### Login

