基于 openGauss 的 SQL 查询练习实验报告

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基于 emp_project，完成以下 SQL 查询：

1. 给出职工中所有男性的所有信息（empid,empname,age,sex,edpid）

select*from employee where sex='男';

```
postgres=# select*from employee where sex='男';
 empid | empname | age | sex | depid
-------+---------+-----+-----+-------
 10102 | 张三    |  34 | 男  | d1
 10211 | 李飞    |  24 | 男  | d2
 22020 | 周成    |  39 | 男  | d2
 25348 | 冯鑫    |  27 | 男  | d1
 29346 | 王鑫    |  32 | 男  | d1
(5 rows)
```

2. 统计“李”性职工信息，按年龄降序排序。（empid,empname,age,location）

select empid,empname,age,location

from employee natural join department

where empname like '李%'

order by age DESC;

```
postgres=# select empid,empname,age,location
postgres-# from employee natural join department
postgres-# where empname like '李%'
postgres-# order by age DESC;
 empid | empname | age | location
-------+---------+-----+----------
 28559 | 李凤    |  41 | 广州
 10211 | 李飞    |  24 | 北京
(2 rows)
```

3. 给出每位职员参与项目的最高预算和最低预算（empname， highestbudget，lowestbudget）

select empname,max(budget) as highestbudget,min(budget) as lowestbudget

from employee natural join workson natural join project

group by empid;

```
postgres=# select empname,max(budget) as highestbudget,min(budget) as lowestbudget
postgres-# from employee natural join workson natural join project
postgres-# group by empid;
 empname | highestbudget | lowestbudget
---------+---------------+--------------
 王玲    |        150000 |       120000
 冯鑫    |        150000 |        40000
 张三    |        185000 |        40000
 李飞    |        120000 |        85000
 王鑫    |        120000 |       120000
 周成    |         56000 |        40000
 李凤    |        185000 |       120000
 张伟    |        150000 |       150000
(8 rows)
```

4. 给出所有项目超过一个的员工的 id 和参加的项目个数（empid, num）

select empid,count(proid) as num

from workson

group by empid

having count(proid)>1;

```
postgres=# select empid,count(proid) as num
postgres-# from workson
postgres-# group by empid
postgres-# having count(proid)>1;
 empid | num
-------+-----
 18316 |   3
 22020 |   2
 28559 |   3
 25348 |   3
 10102 |   8
 10211 |   2
(6 rows)
```

5. 给出项目种类号为“c2”且预算最多的项目。(proid，projectname，budget)

select proid,projectname,budget

from project

where budget>=all(select budget from project where catid='c2') and catid='c2';

```
postgres=# select proid,projectname,budget
postgres-# from project
postgres-# where budget>=all(select budget from project where catid='c2') and catid='c2';
 proid | projectname | budget
-------+-------------+--------
 p4    | 服务器采购  | 150000
(1 row)
```

6. 给出参加“产品推广”项目，但不担任职位的员工的信息，(empid,empname，age,sex.depid)

select empid,empname,age,sex,depid

from employee natural join project natural join workson

where projectname='产品推广' and job is null;

```
postgres=# select empid,empname,age,sex,depid
postgres-# from employee natural join project natural join workson
postgres-# where projectname='产品推广' and job is null;
 empid | empname | age | sex | depid
-------+---------+-----+-----+-------
 25348 | 冯鑫    |  27 | 男  | d1
(1 row)
```

7. 给出工号为“10102”的员工每类项目的参加总数，若没有参加过某类项目，则参加项目

总数显示为 0（catid，proNum）

```
select catid,count(*)
from category natural join project natural join workson
where empid='10102'
group by catid;
```

```
postgres=# select catid,count(*)
postgres-# from category natural join project natural join workson
postgres-# where empid='10102'
postgres-# group by catid;
 catid | count
-------+-------
 c3    |     1
 c1    |     1
 c4    |     2
 c5    |     1
 c2    |     3
(5 rows)
```

8. 给出没有参与“软件类”项目女性职工的信息（empid,empname, age,sex,depid)

```
select empid,empname,age,sex,depid
from employee natural join workson natural join project natural join category
where sex='女' and empid not in
    (select empid from workson natural join project natural join category where catname='软件类')
group by empid;
```

```
postgres=# select empid,empname,age,sex,depid
postgres-# from employee natural join workson natural join project natural join category
postgres-# where sex='女' and empid not in(select empid from workson natural join project natural join category where catname='软件类')
postgres-# group by empid;
 empid | empname | age | sex | depid
-------+---------+-----+-----+-------
 17114 | 张伟    |  36 | 女  | d1
 18316 | 王玲    |  29 | 女  | d4
(2 rows)
```

9. 给出有 30 岁以上男性员工的地点名称和该地男员工最大年龄，结果按最大年龄升序排序

select location,max(age) as maxage

from department natural join employee e

where e.sex='男' and e.age>30

group by location;

```
postgres=# select location,max(age) as maxage
postgres-# from department natural join employee e
postgres-# where e.sex='男' and e.age>30
postgres-# group by location;
 location | maxage
----------+--------
 天津     |     34
 北京     |     39
(2 rows)
```

10. 给出在广州工作的、参加"'产品推广'"项目的职员 id、姓名及他们参加的项目个数 (empid, empname, procnt)

select empid,empname,count(proid) as procnt

from employee natural join workson natural join project

where empid in (select empid

from employee natural join department natural join workson natural join project

where location='广州' and projectname='产品推广')

group by empid;

```
postgres=# select empid,empname,count(proid) as procnt
postgres-# from employee natural join workson natural join project
postgres-# where empid in (select empid
postgres(#              from employee natural join department natural join workson natural join project
postgres(#              where location='广州' and projectname='产品推广')
postgres-# group by empid;
 empid | empname | procnt
-------+---------+--------
 28559 | 李凤    |      3
(1 row)
```