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超低资源占用,告别卡顿慢

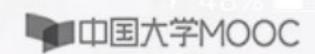


自由编辑

享受Word一样的编辑自由



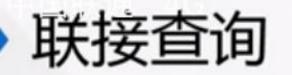
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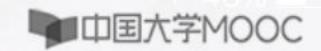


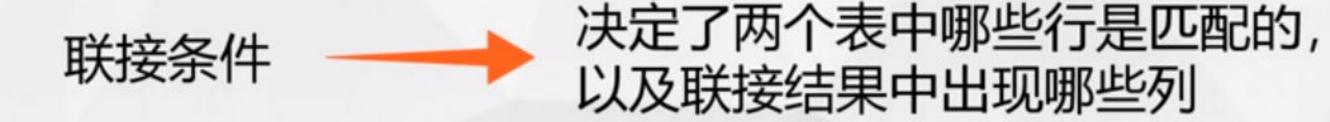
联接查询

如果查询的数据涉及两个或多个表,可以使用联接操作,称为联接查询。

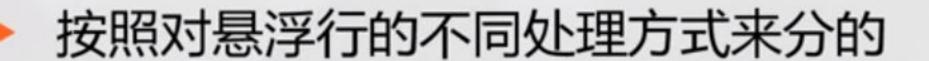


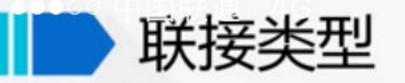


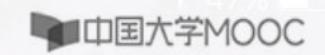


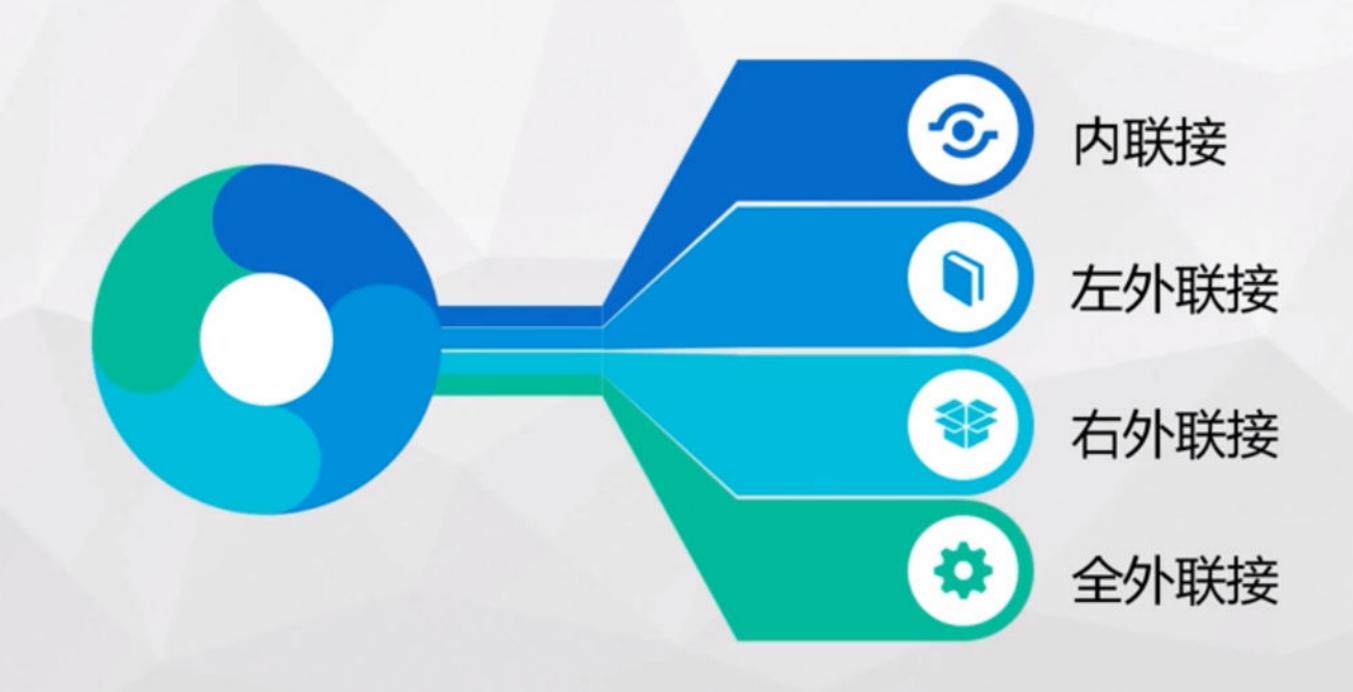


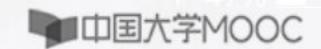
联接类型



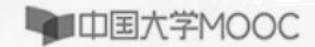






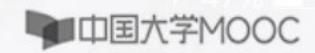








查询每个考生及其报考的试卷

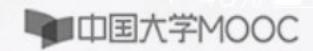


FROM examinee, eeexam WHERE examinee.eeid =eeexam.eeid; 或者:

FROM examinee CROSS JOIN eeexam WHERE examinee.eeid = eeexam.eeid;



查询每个考生及其报考的试卷



```
SELECT *
FROM examinee, eeexam
WHERE examinee.eeid = eeexam.eeid;
或者:
SELECT *
FROM examinee CROSS JOIN eeexam
WHERE examinee.eeid = eeexam.eeid;
```

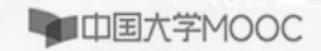
自然联接

即自然内联接,是在笛卡尔积的基础上选取所有同名列上取值相等的行,结果表中同名列只出现一次。

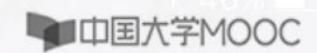




查询每个考生及其报考的试卷



SELECT *
FROM examinee NATURAL JOIN eeexam;



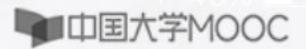
属性联接

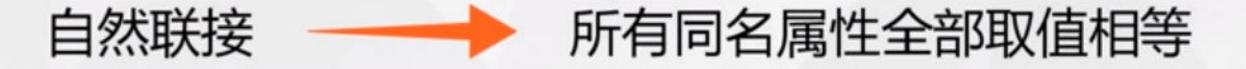
即属性内联接,是在笛卡尔积的基础上选取指定同名属性上取值相等的行,结果表中这些指定同名属性只出现一次。





属性联接与自然联接的区别





属性联接 指定其中若干同名属性取值相等

条件联接

即条件内联接,是在笛卡尔积运算的基础上选取满足给定条件的行。

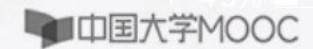


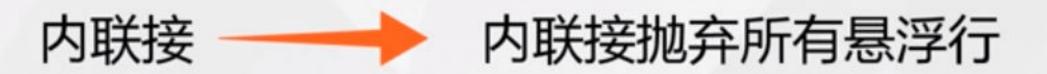
FROM examinee JOIN eeexam ON examinee.eeid = eeexam.eeid;

悬浮行

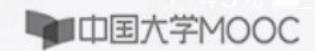
左表当中的一些行在右表中没有相匹配的行; 右表当中的一些行在左表中没有相匹配的行。







外联接 左外联接,右外联接,全外联接



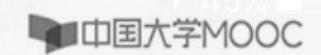
左外联接的计算

内联接: 计算内联接的结果

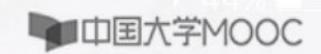
外联接: 把左侧表中的悬浮行加入结果表,

这些行中来自右侧表的属性赋为空值null









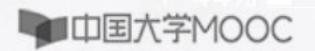
pgSQL的联接的计算

- ※ 内联接用INNER而外联接用OUTER
- ※ 默认为INNER
- ※ LEFT、RIGHT、FULL均隐含外联接





查询表EREXAM和表EXAMPAPER自然左外联接



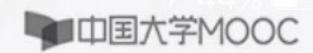
SELECT *

FROM erexam NATURAL LEFT OUTER JOIN exampaper;

或者:

SELECT *

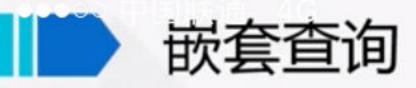
FROM erexam NATURAL LEFT JOIN exampaper;

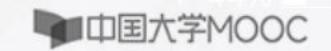


查询块

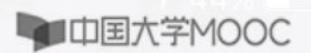
一个SELECT-FROM-WHERE语句称为一个查询块。











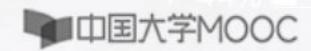
表式嵌套

查询块可以出现在另外一个查询中表名可以出现的任何地方。



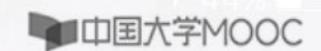


查询平均成绩良好(≥80)的考生人数



```
WITH avgach(eeid,avgachieve) AS

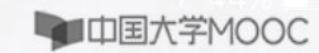
( SELECT eeid,AVG(achieve)
FROM eeexam
GROUP BY eeid
)
SELECT COUNT(*)
FROM avgach
WHERE avgachieve>=80;
```



注意点

WITH子句只在包含它自己的查询语句中有效,WITH子句中的AS不能省略。





查询平均成绩≥80的考生人数

SELECT COUNT(*)

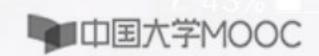
FROM (SELECT eeid, avg (achieve)

FROM eeexam

GROUP BY eeid

) AS avgach (eeid, avgachieve)

WHERE avgachieve > = 80;



集合式嵌套

查询块也可以出现在集合能够出现的任何的地方。



查询218811011013号考生报考的试卷号和试卷名●□国大学MOOC

```
SELECT eid, ename
FROM exampaper
WHERE eid IN
         (SELECT eid
          FROM eeexam
          WHERE eeid='218811011013');
```



考生答卷表 eeexam

<u>eeid</u>	<u>eid</u>	achieve
218811011013	0205000002	92
218811011013	0210000001	85
218811011013	0201020001	88
218811011117	0210000001	90
218811011117	0201020001	80

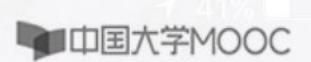
考生表 examinee



<u>eeid</u>	eename	eesex	eeage	eedepa
218811011013	刘诗诗	男	20	历史学院
218811011014	刘诗诗	男	21	历史学院
218811011219	王琳懿	女	18	文学院
218811011220	王琳懿	女	19	文学院
218811011221	刘慧杰	女	19	文学院
218811011117	刘慧杰	女	19	教育学部
218811011025	张立帆	男	20	心理学院
218811011027	张立帆	男	19	心理学院
218811011028	刘慧杰	男	20	心理学院




```
SELECT *
FROM examinee
WHERE EXISTS
(SELECT *
FROM eeexam
WHERE eeid=examinee.eeid AND eid= '0205000002');
```

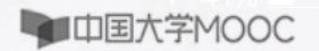


若内层查询结果非空,则EXISTS产生"true"

若内层查询结果为空,则EXISTS产生"false"



查询有考生名叫刘诗诗的学院的考生平均年龄



SELECT eedepa, AVG(eeage) FROM examinee GROUP BY eedepa HAVING eedepa IN

> (SELECT eedepa FROM examinee WHERE eename='刘诗诗');

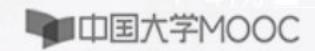
标量式嵌套

如果能确定查询块只返回单行单列的单个值,查询块可以出现在单个属性名、单个表达式、单个常量,即单值表达式能够出现的任何地方。





查询各个院系名及其考官人数



```
SELECT dname,
(SELECT COUNT(*)
FROM examiner
WHERE examiner.erdepa=department.dname)
FROM department;
```

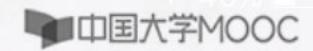


```
SELECT eeid, eename
FROM examinee
WHERE eedepa =
```

(SELECT eedepa FROM examinee WHERE eeid='218811011028');



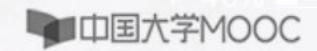
查询每个院系的平均分



```
SELECT (
       SELECT eedepa
       FROM examinee
       WHERE eeexam.eeid=examinee.eeid),
       avg(achieve)
FROM eeexam
GROUP BY (
          SELECT eedepa
          FROM examinee
          WHERE eeexam.eeid=examinee.eeid);
```



查询每个院每个考生得分,列出院名、考生名和分数, 按院名升序排列,同院按分数升序排列



```
SELECT (
       SELECT eedepa
       FROM examinee
       WHERE eeexam.eeid=examinee.eeid),
       ( SELECT eename
       FROM examinee
       WHERE eeexam.eeid=examinee.eeid),
       achieve
FROM eeexam
ORDER BY (
          SELECT eedepa
          FROM examinee
          WHERE eexam.eeid=examinee.eeid),
          achieve ASC;
```



对EXAMINEE表按照EEID升序,从考生人数的四分之一处开始,列 中国大学MOOC 出四分之一的考生信息

