a//Table\_name: id\_name //Left

1 dog

1 cat

1 dog

2 pig

6 bettry

4 tiger

10 lion

4 snack

b//Table\_name: id\_name\_null //Right

1 null

2 null

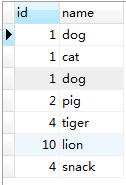
3 fish

4 snack

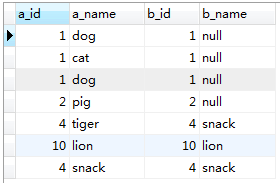
10 lion

/\*INNER JOIN\*/

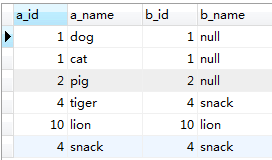
/\*1\*/SELECT id\_name.id, id\_name.name FROM id\_name INNER JOIN id\_name\_null ON id\_name.id = id\_name\_null.id;



/\*2\*/SELECT id\_name.id AS a\_id, id\_name.name AS a\_name,id\_name\_null.id AS b\_id,id\_name\_null.name AS b\_name FROM id\_name INNER JOIN id\_name\_null ON id\_name.id = id\_name\_null.id;

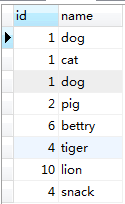


/\*3\*/SELECT DISTINCT id\_name.id AS a\_id, id\_name.name AS a\_name,id\_name\_null.id AS b\_id,id\_name\_null.name AS b\_name FROM id\_name INNER JOIN id\_name\_null ON id\_name.id = id\_name\_null.id;



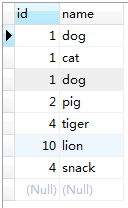
/\*\*LEFT OUTER JOIN == LEFT JOIN \*/

/\*4\*/SELECT id\_name.id, id\_name.name FROM id\_name LEFT OUTER JOIN id\_name\_null ON id\_name.id = id\_name\_null.id;

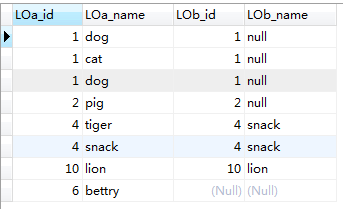


/\*\*RIGHT OUTER JOIN == RIGHT JOIN \*/

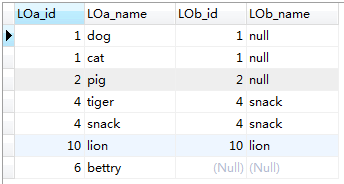
* SELECT id\_name.id, id\_name.name FROM id\_name RIGHT OUTER JOIN id\_name\_null ON id\_name.id = id\_name\_null.id;



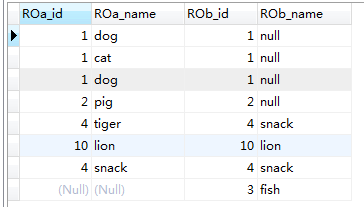
/\*5\*/SELECT id\_name.id AS LOa\_id, id\_name.name AS LOa\_name,id\_name\_null.id AS LOb\_id,id\_name\_null.name AS LOb\_name FROM id\_name LEFT OUTER JOIN id\_name\_null ON id\_name.id = id\_name\_null.id;



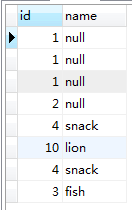
/\*6\*/SELECT DISTINCT id\_name.id AS LOa\_id, id\_name.name AS LOa\_name,id\_name\_null.id AS LOb\_id,id\_name\_null.name AS LOb\_name FROM id\_name LEFT OUTER JOIN id\_name\_null ON id\_name.id = id\_name\_null.id;



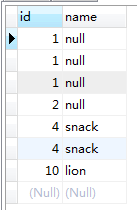
* SELECT id\_name.id AS ROa\_id, id\_name.name AS ROa\_name,id\_name\_null.id AS ROb\_id,id\_name\_null.name AS ROb\_name FROM id\_name RIGHT OUTER JOIN id\_name\_null ON id\_name.id = id\_name\_null.id;



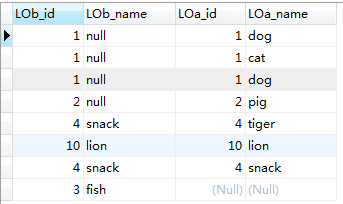
/\*7\*/SELECT id\_name\_null.id, id\_name\_null.name FROM id\_name\_null LEFT OUTER JOIN id\_name ON id\_name\_null.id = id\_name.id;



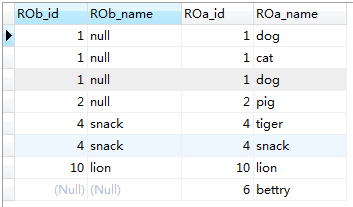
* SELECT id\_name\_null.id, id\_name\_null.name FROM id\_name\_null RIGHT OUTER JOIN id\_name ON id\_name\_null.id = id\_name.id;



/\*8\*/SELECT id\_name\_null.id AS LOb\_id, id\_name\_null.name AS LOb\_name,id\_name.id AS LOa\_id,id\_name.name AS LOa\_name FROM id\_name\_null LEFT OUTER JOIN id\_name ON id\_name.id = id\_name\_null.id;



* SELECT id\_name\_null.id AS ROb\_id, id\_name\_null.name AS ROb\_name,id\_name.id AS ROa\_id,id\_name.name AS ROa\_name FROM id\_name\_null RIGHT OUTER JOIN id\_name ON id\_name.id = id\_name\_null.id;



a//Table\_name: id\_name //Left

1 dog

1 cat

1 dog

2 pig

6 bettry

4 tiger

10 lion

4 snack

b//Table\_name: id\_name\_null //Right

1 null

2 null

3 fish

4 snack

10 lion

c//Table name: table\_null

null null

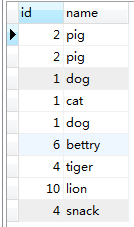
2 null

2 null

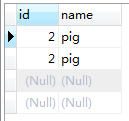
3 test

**/\*LEFT(RIGHT) OUTER JOIN 或者LEFT(RIGHT) JOIN ，when one table（table\_null） is null \*/**

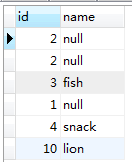
1、SELECT id\_name.id , id\_name.name FROM id\_name LEFT OUTER JOIN table\_null ON id\_name.id = table\_null.id;



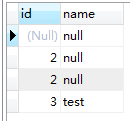
* SELECT id\_name.id , id\_name.name FROM id\_name RIGHT OUTER JOIN table\_null ON id\_name.id = table\_null.id;



2、 SELECT id\_name\_null.id , id\_name\_null.name FROM id\_name\_null LEFT OUTER JOIN table\_null ON id\_name\_null.id = table\_null.id;

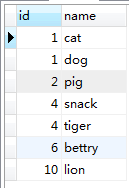


* SELECT table\_null.id , table\_null.name FROM id\_name\_null RIGHT OUTER JOIN table\_null ON id\_name\_null.id = table\_null.id;

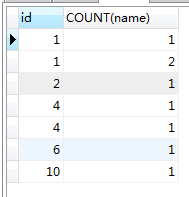


3、**/\*group by Table：** id\_name **\*/ ------>Group By本身就有Distinct的作用。**

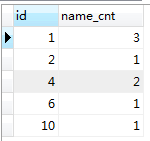
SELECT id,name FROM id\_name GROUP BY id,name;



SELECT id,COUNT(name) FROM id\_name GROUP BY id,name;

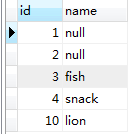


SELECT id,COUNT(name) AS name\_cnt FROM id\_name GROUP BY id;



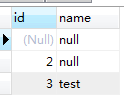
**/\*group by Table：** id\_name\_null **\*/**

SELECT id,name FROM id\_name\_null GROUP BY id;



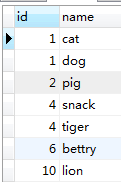
**/\*group by Table：** table\_null **\*/**

SELECT id,name FROM table\_null GROUP BY id,name;

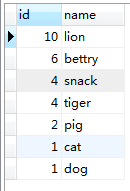


4、**/\* group by & order by ---对比如下：\*/**

SELECT id,name FROM id\_name GROUP BY id,name;



SELECT id,name FROM id\_name GROUP BY id,name ORDER BY id DESC;



5、

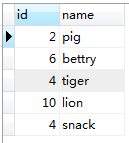
Having与Where的区别：

where 子句的作用是在对查询结果进行分组前，将不符合where条件的行去掉，即在分组之前过滤数据，where条件中不能包含聚组函数，使用where条件过滤出特定的行。

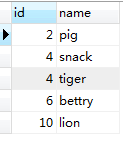
having 子句的作用是筛选满足条件的组，即在分组之后过滤数据，条件中经常包含聚组函数，使用having 条件过滤出特定的组，也可以使用多个分组标准进行分组。

**/\* Where、 group by、having：**id\_name **\*/**

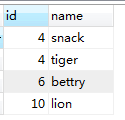
SELECT id,name FROM id\_name WHERE id > 1;



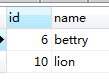
SELECT id,name FROM id\_name WHERE id > 1 GROUP BY id,name;



SELECT id,name FROM id\_name GROUP BY id,name HAVING SUM(id) > 2;



SELECT id,name FROM id\_name WHERE id >4 GROUP BY id,name HAVING SUM(id) > 2;



a//Table\_name: id\_name

1 dog

1 cat

1 dog

2 pig

6 bettry

4 tiger

10 lion

4 snack

d//Table name: id\_name\_score

1 zcw 90

1 stu 85

1 work 60

3 viver 10

3 viven 20

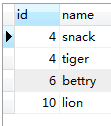
8 spring 60

8 spring 66

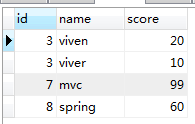
7 mvc 99

1. **/\* group by、having：**id\_name **&** id\_name\_score **对比如下：\*/**

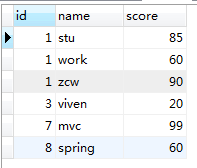
SELECT id,name FROM id\_name GROUP BY id,name HAVING SUM(id) > 2;



* SELECT id,name,score FROM id\_name\_score GROUP BY id,name HAVING SUM(id) > 2;

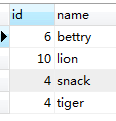


* SELECT id,name,score FROM id\_name\_score GROUP BY id,name HAVING SUM(score) > 15;

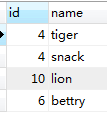


1. **/\* Where、 group by、having、 order by：**id\_name **&** id\_name\_score **对比如下：\*/**

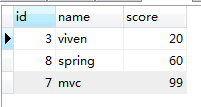
SELECT id,name FROM id\_name WHERE id >3 GROUP BY id,name HAVING SUM(id) > 2 ORDER BY name;



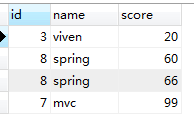
* SELECT id,name FROM id\_name WHERE id >3 GROUP BY id,name HAVING SUM(id) > 2 ORDER BY name DESC;



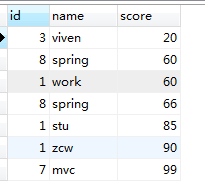
* SELECT id,name,score FROM id\_name\_score WHERE id >1 GROUP BY id,name HAVING SUM(score) > 10 ORDER BY name DESC;



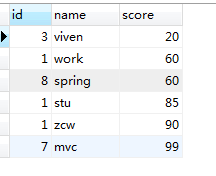
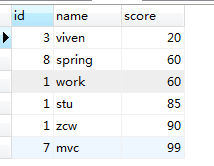
* SELECT id,name,score FROM id\_name\_score WHERE id >1 GROUP BY id,name,score HAVING SUM(score) > 10 ORDER BY name DESC;



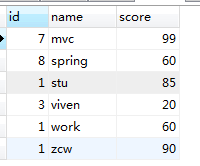
* SELECT id,name,score FROM id\_name\_score WHERE id <10 GROUP BY id,name,score HAVING SUM(score) > 10 ORDER BY score;



* SELECT id,name,score FROM id\_name\_score WHERE id <10 GROUP BY id,name HAVING SUM(score) > 10 ORDER BY score;

 or: 

* SELECT id,name,score FROM id\_name\_score WHERE id <10 GROUP BY id,name HAVING SUM(score) > 10 ORDER BY name;



* SELECT id,name,score FROM id\_name\_score WHERE id <10 GROUP BY id,name,score HAVING SUM(score) > 10 ORDER BY name;

