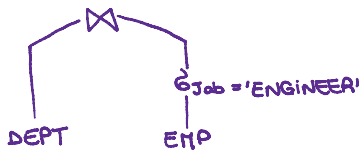


Lab05

venerdi 2 dicembre 2022 09:00

1.



```
SELECT *
FROM emp, dept
WHERE emp.deptno = dept.deptno AND emp.job = 'ENGINEER';
```

Risultato query x Explain plan x				
SQL 0,01 secondi				
OPERATION	OBJECT_NAME	OPTIONS	CARDINALITY	COST
SELECT STATEMENT				142
HASH JOIN				142
Access Predicates				
EMP.DEPTNO=DEPT.DEPTNO				
TABLE ACCESS	DEPT	FULL		3
TABLE ACCESS	EMP	FULL		139
Filter Predicates				
EMP.JOB='ENGINEER'				

```
SELECT /*+FIRST_ROWS(1)*/
FROM emp, dept
WHERE emp.deptno = dept.deptno AND emp.job = 'ENGINEER';
```

Risultato query x Explain plan x				
SQL 0,02 secondi				
OPERATION	OBJECT_NAME	OPTIONS	CARDINALITY	COST
SELECT STATEMENT				5
NESTED LOOPS				5
NESTED LOOPS				5
TABLE ACCESS	EMP	FULL		2
Filter Predicates				
EMP.JOB='ENGINEER'				
INDEX	SYS_C0063105	UNIQUE SCAN		0
Access Predicates				
EMP.DEPTNO=DEPT.DEPTNO				
TABLE ACCESS	DEPT	BY INDEX ROWID		1

```
SELECT /*+FIRST_ROWS(2)*/
FROM emp, dept
WHERE emp.deptno = dept.deptno AND emp.job = 'ENGINEER';
```

Risultato query x Explain plan x				
SQL 0,04 secondi				
OPERATION	OBJECT_NAME	OPTIONS	CARDINALITY	COST
SELECT STATEMENT				5
HASH JOIN				5
Access Predicates				
EMP.DEPTNO=DEPT.DEPTNO				
TABLE ACCESS	DEPT	FULL		3
TABLE ACCESS	EMP	FULL		2
Filter Predicates				
EMP.JOB='ENGINEER'				

```
SELECT /*+FIRST_ROWS(10)*/
FROM emp, dept
WHERE emp.deptno = dept.deptno AND emp.job = 'ENGINEER';
```

Risultato query x Explain plan x				
SQL 0,016 secondi				
OPERATION	OBJECT_NAME	OPTIONS	CARDINALITY	COST
SELECT STATEMENT				5
HASH JOIN				5
Access Predicates				
EMP.DEPTNO=DEPT.DEPTNO				
TABLE ACCESS	DEPT	FULL		3
TABLE ACCESS	EMP	FULL		2
Filter Predicates				
EMP.JOB='ENGINEER'				

1.

```
SELECT /*+NO_USE_HASH(e d)*/ d.deptno, AVG(e.sal)
```

```

FROM emp e, dept d
WHERE d.deptno = e.deptno
GROUP BY d.deptno;

```

Risultato query x Explain plan x					
SQL 0,016 secondi					
OPERATION	OBJECT_NAME	OPTIONS	CARDINALITY	COST	
SELECT STATEMENT				507	143
NESTED LOOPS				507	143
VIEW	SYS.VW_GRC_5			508	143
HASH		GROUP BY		508	143
TABLE ACCESS	EMP	FULL		50111	139
INDEX	SYS_C0063105	UNIQUE SCAN		1	0
Access Predicates D.DEPTNO=ITEM_1					

```

SELECT /*+USE_HASH(e d)*/ d.deptno, AVG(e.sal)
FROM emp e, dept d
WHERE d.deptno = e.deptno
GROUP BY d.deptno;

```

Trace automatico x Risultato query x Explain plan x					
SQL 0,024 secondi					
OPERATION	OBJECT_NAME	OPTIONS	CARDINALITY	COST	
SELECT STATEMENT				507	144
HASH JOIN				507	144
Access Predicates D.DEPTNO=ITEM_1					
INDEX	SYS_C0063105	FULL SCAN		507	1
VIEW	SYS.VW_GRC_5			508	143
HASH		GROUP BY		508	143
TABLE ACCESS	EMP	FULL		50111	139

- ```

SELECT /*+NO_USE_HASH(e d)*/ ename, job, sal, dname
FROM emp e, dept d
WHERE e.deptno = d.deptno
AND NOT EXISTS
(SELECT * FROM salgrade WHERE e.sal = hisal);

```

| Trace automatico x Risultato query x Explain plan x |              |                |             |       |     |
|-----------------------------------------------------|--------------|----------------|-------------|-------|-----|
| SQL   0,031 secondi                                 |              |                |             |       |     |
| OPERATION                                           | OBJECT_NAME  | OPTIONS        | CARDINALITY | COST  |     |
| SELECT STATEMENT                                    |              |                |             | 50012 | 551 |
| HASH JOIN                                           |              | RIGHT ANTI     |             | 50012 | 551 |
| Access Predicates<br>E.SAL=HISAL                    |              |                |             |       |     |
| TABLE ACCESS                                        | SALGRADE     | FULL           |             | 999   | 3   |
| MERGE JOIN                                          |              |                |             | 50012 | 547 |
| TABLE ACCESS                                        | DEPT         | BY INDEX ROWID |             | 507   | 4   |
| INDEX                                               | SYS_C0063105 | FULL SCAN      |             | 507   | 1   |
| SORT                                                |              | JOIN           |             | 50111 | 543 |
| Access Predicates<br>E.DEPTNO=D.DEPTNO              |              |                |             |       |     |
| Filter Predicates<br>E.DEPTNO=D.DEPTNO              |              |                |             |       |     |
| TABLE ACCESS                                        | EMP          | FULL           |             | 50111 | 139 |

```

SELECT /*+USE_HASH(e d)*/ ename, job, sal, dname
FROM emp e, dept d
WHERE e.deptno = d.deptno
AND NOT EXISTS
(SELECT * FROM salgrade WHERE e.sal = hisal);

```

| Trace automatico x Risultato query x Explain plan x |             |            |             |       |     |
|-----------------------------------------------------|-------------|------------|-------------|-------|-----|
| SQL   0,002 secondi                                 |             |            |             |       |     |
| OPERATION                                           | OBJECT_NAME | OPTIONS    | CARDINALITY | COST  |     |
| SELECT STATEMENT                                    |             |            |             | 50012 | 146 |
| HASH JOIN                                           |             | RIGHT ANTI |             | 50012 | 146 |
| Access Predicates<br>E.SAL=HISAL                    |             |            |             |       |     |
| TABLE ACCESS                                        | SALGRADE    | FULL       |             | 999   | 3   |
| HASH JOIN                                           |             |            |             | 50012 | 143 |
| Access Predicates<br>E.DEPTNO=D.DEPTNO              |             |            |             |       |     |
| TABLE ACCESS                                        | DEPT        | FULL       |             | 507   | 3   |
| TABLE ACCESS                                        | EMP         | FULL       |             | 50111 | 139 |