Cesar Santiago

ID: 970403634

COP4710 Database Systems

Pf. J. Teichert

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*EX1\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

SQL> edit

Wrote file afiedt.buf

1 SELECT COUNT(\*)

2\* FROM Grade

3 /

COUNT(\*)

----------

209

SQL> edit

Wrote file afiedt.buf

1 SELECT COUNT(\*)

2\* FROM Student

SQL> /

COUNT(\*)

----------

48

SQL> edit

Wrote file afiedt.buf

1 SELECT COUNT(\*)

2\* FROM Section

SQL> /

COUNT(\*)

----------

32

* We can predict that 209 \* 48 \* 32 = 321024

SQL> edit

Wrote file afiedt.buf

1 SELECT COUNT(\*)

2\* FROM Section, Student, Grade

SQL> /

COUNT(\*)

----------

321024

* We get the predicted outcome in the Cartesian product.

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*EX2\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

SQL> SELECT COUNT(Section\_ID)

2 FROM Section;

COUNT(SECTION\_ID)

-----------------

32

SQL> SELECT COUNT(DISTINCT Section\_ID)

2 FROM Grade;

COUNT(DISTINCTSECTION\_ID)

-------------------------

30

* This tells us that there are two section\_id rows in section that go unused in Grade.

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*EX3\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

SQL> edit

Wrote file afiedt.buf

1 SELECT s.sname, g.grade

2 FROM Student s, Grade g

3 WHERE s.stno = g.student\_number

4 AND (g.grade = 'A' OR g.grade = 'B')

5\* AND (s.major = 'ACCT')

SQL> /

SNAME GRA

------------------------------------------------------------ ---

Donald A

Chris B

Chris B

Chris B

Francis B

Francis B

Sebastian B

7 rows selected.

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*EX4\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

a)

SQL> edit

Wrote file afiedt.buf

1 SELECT COUNT(s.sname)

2 FROM Student s

3 WHERE s.sname LIKE 'SMITH'

4\* OR s.sname LIKE 'Smith'

SQL> /

COUNT(S.SNAME)

--------------

1

b)

SQL> edit

Wrote file afiedt.buf

1 SELECT COUNT(s.sname)

2 FROM Student s

3\* WHERE s.sname LIKE '%SMITH%'

SQL> /

COUNT(S.SNAME)

--------------

0

c)

SQL> edit

Wrote file afiedt.buf

1 SELECT COUNT(s.sname)

2 FROM Student s

3\* WHERE s.sname LIKE '%LD'

SQL> /

COUNT(S.SNAME)

--------------

0

d)

The answer is 2, 3, and 4. The only sequences that show up are those that have substrings after the SMITH string.

e) No, aggregate functions are those that work in multiple rows whereas this function works row-wise independently.

f)

SQL> SELECT s.sname || '...'

2 FROM Student s;

S.SNAME||'...'

---------------------------------------------------------------------

Lineas...

Mary...

Brenda...

Richard...

Kelly...

Lujack...

Reva...

Elainie...

Harley...

Donald...

Chris...

S.SNAME||'...'

---------------------------------------------------------------------

Lynette...

Susan...

Monica...

Bill...

Hillary1...

Phoebe...

Holly...

Sadie...

Jessica...

Steve...

Brad...

S.SNAME||'...'

---------------------------------------------------------------------

Cedric...

Alan...

Rachel...

George...

Jerry...

Cramer...

Fraiser...

Harrison...

Francis...

Smithly...

Sebastian...

S.SNAME||'...'

---------------------------------------------------------------------

Jake...

Losmith...

Genevieve...

Lindsay...

Stephanie...

Thornton...

Lionel...

Benny...

Gus...

Zelda...

Mario...

S.SNAME||'...'

---------------------------------------------------------------------

Romona...

Ken...

Smith...

Jake...

48 rows selected.

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*EX5\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

Wrote file afiedt.buf

1 SELECT c.course\_number, c.course\_name

2 FROM Course c

3\* WHERE c.course\_number LIKE 'COSC3%'

SQL> /

COURSE\_NUMBER

------------------------

COURSE\_NAME

------------------------------------------------------------

COSC3320

DATA STRUCTURES

COSC3380

DATABASE

COSC3701

OPERATIONS RESEARCH

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*EX6\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

SQL> SELECT COUNT(DISTINCT sname)

2 FROM Student;

COUNT(DISTINCTSNAME)

--------------------

47

SQL> SELECT COUNT(\*)

2 FROM Student;

COUNT(\*)

----------

48

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*EX7\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

SQL> edit

Wrote file afiedt.buf

1 SELECT COUNT(s.course\_num)

2 FROM Section s

3\* WHERE s.course\_num LIKE 'MATH%'

SQL> /

COUNT(S.COURSE\_NUM)

-------------------

6

SQL> edit

Wrote file afiedt.buf

1 SELECT COUNT(c.course\_number)

2 FROM Course c

3\* WHERE c.course\_number LIKE 'MATH%'

SQL> /

COUNT(C.COURSE\_NUMBER)

----------------------

6

1 SELECT COUNT(g.grade)

2 FROM Section s, Grade g

3 WHERE s.course\_num LIKE 'MATH%'

4\* AND s.section\_ID = g.section\_ID

SQL> /

COUNT(G.GRADE)

--------------

8

* From the count there seems to be no difference between the course number in Course and the one in Section. However there seems to be duplicates of course numbers in Grade.

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*EX8\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

SQL> DESC all\_tables

Name Null? Type

----------------------------------------- -------- ----------------------------

OWNER NOT NULL VARCHAR2(30)

TABLE\_NAME NOT NULL VARCHAR2(30)

TABLESPACE\_NAME VARCHAR2(30)

CLUSTER\_NAME VARCHAR2(30)

IOT\_NAME VARCHAR2(30)

STATUS VARCHAR2(8)

PCT\_FREE NUMBER

PCT\_USED NUMBER

INI\_TRANS NUMBER

MAX\_TRANS NUMBER

INITIAL\_EXTENT NUMBER

NEXT\_EXTENT NUMBER

MIN\_EXTENTS NUMBER

MAX\_EXTENTS NUMBER

PCT\_INCREASE NUMBER

FREELISTS NUMBER

FREELIST\_GROUPS NUMBER

LOGGING VARCHAR2(3)

BACKED\_UP VARCHAR2(1)

NUM\_ROWS NUMBER

BLOCKS NUMBER

EMPTY\_BLOCKS NUMBER

AVG\_SPACE NUMBER

CHAIN\_CNT NUMBER

AVG\_ROW\_LEN NUMBER

AVG\_SPACE\_FREELIST\_BLOCKS NUMBER

NUM\_FREELIST\_BLOCKS NUMBER

DEGREE VARCHAR2(10)

INSTANCES VARCHAR2(10)

CACHE VARCHAR2(5)

TABLE\_LOCK VARCHAR2(8)

SAMPLE\_SIZE NUMBER

LAST\_ANALYZED DATE

PARTITIONED VARCHAR2(3)

IOT\_TYPE VARCHAR2(12)

TEMPORARY VARCHAR2(1)

SECONDARY VARCHAR2(1)

NESTED VARCHAR2(3)

BUFFER\_POOL VARCHAR2(7)

FLASH\_CACHE VARCHAR2(7)

CELL\_FLASH\_CACHE VARCHAR2(7)

ROW\_MOVEMENT VARCHAR2(8)

GLOBAL\_STATS VARCHAR2(3)

USER\_STATS VARCHAR2(3)

DURATION VARCHAR2(15)

SKIP\_CORRUPT VARCHAR2(8)

MONITORING VARCHAR2(3)

CLUSTER\_OWNER VARCHAR2(30)

DEPENDENCIES VARCHAR2(8)

COMPRESSION VARCHAR2(8)

COMPRESS\_FOR VARCHAR2(12)

DROPPED VARCHAR2(3)

READ\_ONLY VARCHAR2(3)

SEGMENT\_CREATED VARCHAR2(3)

RESULT\_CACHE VARCHAR2(7)

SQL> SELECT COUNT(\*)

2 FROM all\_tables;

COUNT(\*)

----------

155

SQL> edit

Wrote file afiedt.buf

1 SELECT c.owner, c.table\_name

2 FROM all\_tables c

3\* WHERE c.owner = 'CAS156'

SQL> /

OWNER

--------------------------------------------------------------------------------

TABLE\_NAME

--------------------------------------------------------------------------------

CAS156

CUST

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*EX9\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Table** | **Attribute** | **Rows** | **Distinct Rows** | **Rows without Nulls** |
| Student | stno | 48 | 48 | 48 |
| Student | sname | 48 | 47 | 48 |
| Student | major | 48 | 8 | 45 |
| Student | class | 38 | 4 | 4 |
| Section | section\_id | 32 | 32 | 32 |
| Section | course\_num | 32 | 20 | 32 |
| Section | semester | 32 | 2 | 32 |
| Section | year | 32 | 5 | 32 |
| Section | instructor | 29 | 15 | 29 |
| Section | bldg | 29 | 5 | 29 |
| Section | room | 25 | 4 | 25 |
| Grade | student\_number | 209 | 46 | 209 |
| Grade | section\_id | 209 | 30 | 209 |
| Grade | grade | 114 | 5 | 114 |

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*EX10\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

SQL> edit

Wrote file afiedt.buf

1 SELECT COUNT(capacity)

2\* FROM Room

SQL> /

COUNT(CAPACITY)

----------

10

SQL> edit

Wrote file afiedt.buf

1 SELECT SUM(capacity)

2\* FROM Room

SQL> /

SUM(CAPACITY)

-------------

352

SQL> edit

Wrote file afiedt.buf

1 SELECT AVG(capacity)

2\* FROM Room

SQL> /

AVG(CAPACITY)

-------------

39.1111111

SQL> edit

Wrote file afiedt.buf

1 SELECT MIN(capacity)

2\* FROM Room

SQL> /

MIN(CAPACITY)

-------------

22

SQL> edit

Wrote file afiedt.buf

1 SELECT MAX(capacity)

2\* FROM Room

SQL> /

MAX(CAPACITY)

-------------

85

SQL> edit

Wrote file afiedt.buf

1 SELECT NVL(capacity, '40')

2\* FROM Room

SQL> /

NVL(CAPACITY,'40')

------------------

85

35

60

35

22

40

25

25

25

40

10 rows selected.