

# DBMS Lab Experiment

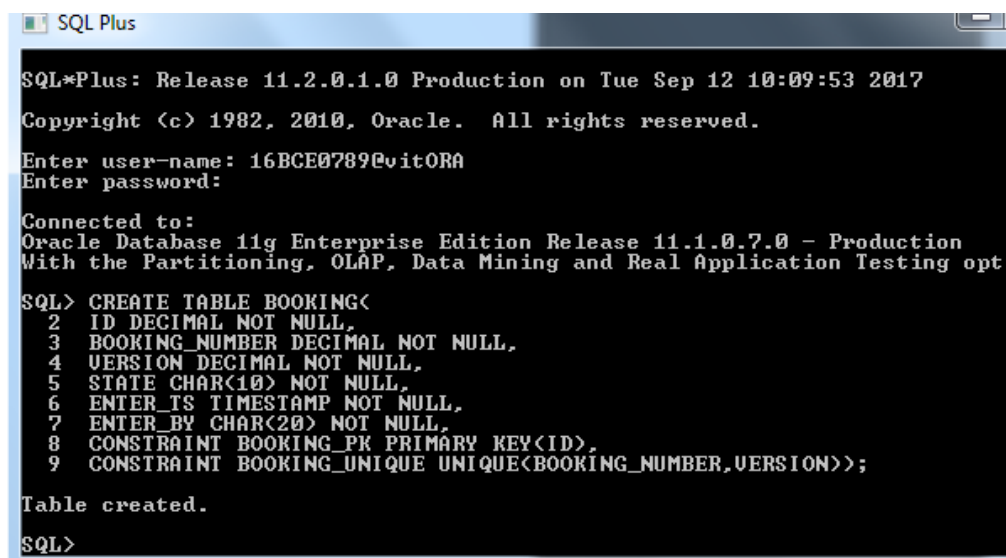
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Slot: D1+Td1

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## 1 Creation of the tables



```
SQL*Plus
SQL*Plus: Release 11.2.0.1.0 Production on Tue Sep 12 10:09:53 2017
Copyright (c) 1982, 2010, Oracle. All rights reserved.
Enter user-name: 16BCE0789@vitORA
Enter password:
Connected to:
Oracle Database 11g Enterprise Edition Release 11.1.0.7.0 - Production
With the Partitioning, OLAP, Data Mining and Real Application Testing opti
SQL> CREATE TABLE BOOKING(
  2  ID DECIMAL NOT NULL,
  3  BOOKING_NUMBER DECIMAL NOT NULL,
  4  VERSION DECIMAL NOT NULL,
  5  STATE CHAR(10) NOT NULL,
  6  ENTER_TS TIMESTAMP NOT NULL,
  7  ENTER_BY CHAR(20) NOT NULL,
  8  CONSTRAINT BOOKING_PK PRIMARY KEY(ID),
  9  CONSTRAINT BOOKING_UNIQUE UNIQUE(BOOKING_NUMBER,VERSION));
Table created.
SQL>
```

## 2 Adding values to the table:

```
SQL Plus
6  ENTER_TS TIMESTAMP NOT NULL,
7  ENTER_BY CHAR(20) NOT NULL,
8  CONSTRAINT BOOKING_PK PRIMARY KEY(ID),
9  CONSTRAINT BOOKING_UNIQUE UNIQUE(BOOKING_NUMBER,VERSION));

Table created.

SQL> INSERT INTO BOOKING VALUES(1,4711,1,'CREATED',TIMESTAMP'2014-02-02 10:01:01',
', 'EMILY');

1 row created.

SQL> INSERT INTO BOOKING VALUES(2,4711,2,'MODIFIED',TIMESTAMP'2014-02-03 11:01:01',
', 'EMILY');

1 row created.

SQL> INSERT INTO BOOKING VALUES(3,4711,3,'CANCELED',TIMESTAMP'2014-02-10 09:01:01',
', 'JOHN');

1 row created.

SQL> INSERT INTO BOOKING VALUES(4,4712,1,'CREATED',TIMESTAMP'2014-03-10 12:12:12',
', 'EMILY');

1 row created.

SQL> INSERT INTO BOOKING VALUES(5,4712,2,'DELIVERED',TIMESTAMP'2014-03-12 06:01:00',
', 'CHARLES');

1 row created.

SQL> INSERT INTO BOOKING VALUES(6,4713,1,'CREATED',TIMESTAMP'2014-03-11 08:50:02',
', 'EMILY');

1 row created.

SQL> INSERT INTO BOOKING VALUES(7,4713,2,'CANCELED',TIMESTAMP'2014-03-12 08:40:12',
', 'EMILY');

1 row created.

SQL> INSERT INTO BOOKING VALUES(8,4713,3,'REOPENED',TIMESTAMP'2014-03-13 10:04:32',
', 'JACK');

1 row created.

SQL> INSERT INTO BOOKING VALUES(9,4713,4,'DELIVERED',TIMESTAMP'2014-03-15 06:40:12',
', 'JACK');

1 row created.

SQL> COMMIT;

Commit complete.

SQL>
```

3 Practise the following sub query

3a

```

SQL> SELECT * FROM BOOKING B
  2 WHERE<BOOKING_NUMBER,VERSION>IN
  3 <SELECT BOOKING_NUMBER,MAX<VERSION> FROM BOOKING SQ GROUP BY BOOKING_NUMBER
  4 ORDER BY BOOKING_NUMBER;

```

ID	BOOKING_NUMBER	VERSION	STATE
ENTER_TS			
ENTER_BY			
3	4711	3	CANCELED
10-FEB-14 09.01.01.000000 AM			
JOHN			
5	4712	2	DELIVERED
12-MAR-14 06.01.00.000000 AM			
CHARLES			
ID	BOOKING_NUMBER	VERSION	STATE
ENTER_TS			
ENTER_BY			
9	4713	4	DELIVERED
15-MAR-14 06.40.12.000000 AM			
JACK			

```

SQL>

```

3b

```

SQL> SELECT * FROM BOOKING B
  2 WHERE VERSION!=<SELECT MAX<VERSION> FROM BOOKING>
  3 AND BOOKING_NUMBER = 4711
  4 ORDER BY VERSION;

```

ID	BOOKING_NUMBER	VERSION	STATE
ENTER_TS			
ENTER_BY			
1	4711	1	CREATED
02-FEB-14 10.01.01.000000 AM			
EMILY			
2	4711	2	MODIFIED
03-FEB-14 11.01.01.000000 AM			
EMILY			
ID	BOOKING_NUMBER	VERSION	STATE
ENTER_TS			
ENTER_BY			
3	4711	3	CANCELED
10-FEB-14 09.01.01.000000 AM			
JOHN			

```

SQL>

```

3c

```

      3      4711      3 CANCELED
10-FEB-14 09.01.01.000000 AM
JOHN

SQL> SELECT * FROM BOOKING B
  2 WHERE VERSION!=<SELECT MAX<VERSION> FROM BOOKING SQ WHERE SQ.BOOKING_NUMBER
=B.BOOKING_NUMBER> AND BOOKING_NUMBER=4711 ORDER BY VERSION;

      ID BOOKING_NUMBER      VERSION STATE
-----
ENTER_TS
-----
ENTER_BY
-----
      1      4711      1 CREATED
02-FEB-14 10.01.01.000000 AM
EMILY
      2      4711      2 MODIFIED
03-FEB-14 11.01.01.000000 AM
EMILY
      ID BOOKING_NUMBER      VERSION STATE
-----
ENTER_TS
-----
ENTER_BY
-----

SQL>

```

4. Practise the following using sub queries a) Find the booking with the most versions. b) Find all bookings with are canceled (in the latest version).

4a

```

SQL> SELECT MAX<VERSION> FROM BOOKING;

MAX<VERSION>
-----
      4

SQL> SELECT * FROM BOOKING WHERE VERSION = <SELECT MAX<VERSION> FROM BOOKING>;

      ID BOOKING_NUMBER      VERSION STATE
-----
ENTER_TS
-----
ENTER_BY
-----
      9      4713      4 DELIVERED
15-MAR-14 06.40.12.000000 AM
JACK

```

4b

```
SQL> SELECT * FROM BOOKING WHERE STATE='CANCELED';
```

ENTER_TS	ID	BOOKING_NUMBER	VERSION	STATE
10-FEB-14 09.01.01.000000 AM	3	4711	3	CANCELED
12-MAR-14 08.40.12.000000 AM	7	4713	2	CANCELED

Joins

1Creation of tables:

```
SQL> CREATE TABLE ENGLISH<TAG INT,INENGLISH VARCHAR(255)>;
```

Table created.

```
SQL> CREATE TABLE HINDI<TAG INT,INHINDI VARCHAR(255)>;
```

Table created.

```
SQL> CREATE TABLE DEPARTMENT<
 2 DEPARTMENT_ID NUMBER(10) NOT NULL,
 3 DEPARTMENT_NAME VARCHAR2(50) NOT NULL,
 4 CONSTRAINT DEPARTMENT_PK PRIMARY KEY(DEPARTMENT_ID)>;
```

Table created.

```
SQL> CREATE TABLE EMPLOYEES<
 2 EMPLOYEE_ID NUMBER(10) NOT NULL,
 3 LAST_NAME VARCHAR2(50) NOT NULL,
 4 EMAIL VARCHAR2(30),
 5 HIRE_DATE DATE,
 6 JOB_ID VARCHAR2(30),
 7 DEPARTMENT_ID NUMBER(10),
 8 salary number(6),
 9 MANAGER_ID NUMBER(6),
10 CONSTRAINT EMPLOYEES_PK PRIMARY KEY(EMPLOYEE_ID),
11 CONSTRAINT FK_DEPARTMENTS FOREIGN KEY(DEPARTMENT_ID) REFERENCES DEPARTMENT<
DEPARTMENT_ID)>;
```

Table created.

```
SQL>
```

## 2 Adding values into the tables

```
Table created.  
SQL> INSERT INTO ENGLISH VALUES(1,'ONE');  
1 row created.  
SQL> INSERT INTO ENGLISH VALUES(2,'TWO');  
1 row created.  
SQL> INSERT INTO ENGLISH VALUES(3,'THREE');  
1 row created.
```

```
SQL> INSERT INTO HINDI VALUES(2,'DO');  
1 row created.  
SQL> INSERT INTO HINDI VALUES(3,'TEEN');  
1 row created.  
SQL> INSERT INTO HINDI VALUES(4,'CHAR');  
1 row created.  
SQL>
```

```
SQL> INSERT INTO DEPARTMENT VALUES(1,'DATA GROUP');  
1 row created.  
SQL> INSERT INTO DEPARTMENT VALUES(2,'PURCHASING');  
1 row created.  
SQL> INSERT INTO DEPARTMENT VALUES(3,'CALL CENTER');  
1 row created.  
SQL> INSERT INTO DEPARTMENT VALUES(4,'COMMUNICATION');  
1 row created.  
SQL>
```

```
SQL Plus
SQL> INSERT INTO EMPLOYEES(EMPLOYEE_ID, LAST_NAME, EMAIL, HIRE_DATE, JOB_ID, SALARY,
EPARTMENT_ID, MANAGER_ID) VALUES(1001, 'LAWSON', 'LAWSON@G.COM', '01-JAN-2002', 'MGR',
,30000,1,1004);

1 row created.

SQL> INSERT INTO EMPLOYEES(EMPLOYEE_ID, LAST_NAME, EMAIL, HIRE_DATE, JOB_ID, SALARY,
EPARTMENT_ID, MANAGER_ID) VALUES(1002, 'WELLS', 'WELLS@G.COM', '01-JAN-2002', 'DBA',
0000,2,1005);

1 row created.

SQL> INSERT INTO EMPLOYEES(EMPLOYEE_ID, LAST_NAME, EMAIL, HIRE_DATE, JOB_ID, SALARY,
EPARTMENT_ID, MANAGER_ID) VALUES(1003, 'BLISS', 'BLISS@G.COM', '01-JAN-2002', 'PROG',
24000,3,1004);

1 row created.

SQL> INSERT INTO EMPLOYEES(EMPLOYEE_ID, LAST_NAME, EMAIL, HIRE_DATE, JOB_ID, SALARY,
EPARTMENT_ID, MANAGER_ID) VALUES(1004, 'KYTE', 'TKYTE@G.COM', 'SYSDATE-3650', 'MGR',
5000,4,1005);
INSERT INTO EMPLOYEES(EMPLOYEE_ID, LAST_NAME, EMAIL, HIRE_DATE, JOB_ID, SALARY, DEPAR
MENT_ID, MANAGER_ID) VALUES(1004, 'KYTE', 'TKYTE@G.COM', 'SYSDATE-3650', 'MGR', 25000
4,1005)

*
ERROR at line 1:
ORA-01858: a non-numeric character was found where a numeric was expected

SQL> INSERT INTO EMPLOYEES(EMPLOYEE_ID, LAST_NAME, EMAIL, HIRE_DATE, JOB_ID, SALARY,
EPARTMENT_ID, MANAGER_ID) VALUES(1004, 'KYTE', 'TKYTE@G.COM', 'SYSDATE-3650', 'MGR', 25
00,4,1005);

1 row created.

SQL> INSERT INTO EMPLOYEES(EMPLOYEE_ID, LAST_NAME, EMAIL, HIRE_DATE, JOB_ID, SALARY,
EPARTMENT_ID, MANAGER_ID) VALUES(1005, 'VIPER', 'SDILLON@G.COM', 'SYSDATE', 'PROG', 200
0,1,1006);

1 row created.

SQL> INSERT INTO EMPLOYEES(EMPLOYEE_ID, LAST_NAME, EMAIL, HIRE_DATE, JOB_ID, SALARY,
EPARTMENT_ID, MANAGER_ID) VALUES(1006, 'BECK', 'CLBECK@G.COM', 'SYSDATE', 'PROG', 20000
2, NULL);

1 row created.

SQL> INSERT INTO EMPLOYEES(EMPLOYEE_ID, LAST_NAME, EMAIL, HIRE_DATE, JOB_ID, SALARY,
EPARTMENT_ID, MANAGER_ID) VALUES(1007, 'JAVA', 'JAV@01@G.COM', 'SYSDATE', 'PROG', 20000
3,1006);

1 row created.

SQL> INSERT INTO EMPLOYEES(EMPLOYEE_ID, LAST_NAME, EMAIL, HIRE_DATE, JOB_ID, SALARY,
```

```
SQL> INSERT INTO EMPLOYEES(EMPLOYEE_ID, LAST_NAME, EMAIL, HIRE_DATE, JOB_ID, SALARY,
EPARTMENT_ID, MANAGER_ID) VALUES(1003, 'BLISS', 'BLISS@G.COM', '01-JAN-2002', 'PROG',
24000, 3, 1004);
```

```
1 row created.
```

```
SQL> INSERT INTO EMPLOYEES(EMPLOYEE_ID, LAST_NAME, EMAIL, HIRE_DATE, JOB_ID, SALARY,
EPARTMENT_ID, MANAGER_ID) VALUES(1004, 'KYTE', 'TKYTE@G.COM', 'SYSDATE-3650', 'MGR',
5000, 4, 1005);
INSERT INTO EMPLOYEES(EMPLOYEE_ID, LAST_NAME, EMAIL, HIRE_DATE, JOB_ID, SALARY, DEPAR
MENT_ID, MANAGER_ID) VALUES(1004, 'KYTE', 'TKYTE@G.COM', 'SYSDATE-3650', 'MGR', 25000
4, 1005)
```

\*

```
ERROR at line 1:
```

```
ORA-01858: a non-numeric character was found where a numeric was expected
```

```
SQL> INSERT INTO EMPLOYEES(EMPLOYEE_ID, LAST_NAME, EMAIL, HIRE_DATE, JOB_ID, SALARY,
EPARTMENT_ID, MANAGER_ID) VALUES(1004, 'KYTE', 'TKYTE@G.COM', 'SYSDATE-3650', 'MGR', 25
00, 4, 1005);
```

```
1 row created.
```

```
SQL> INSERT INTO EMPLOYEES(EMPLOYEE_ID, LAST_NAME, EMAIL, HIRE_DATE, JOB_ID, SALARY,
EPARTMENT_ID, MANAGER_ID) VALUES(1005, 'UIPER', 'SDILLON@G.COM', 'SYSDATE', 'PROG', 200
0, 1, 1006);
```

```
1 row created.
```

```
SQL> INSERT INTO EMPLOYEES(EMPLOYEE_ID, LAST_NAME, EMAIL, HIRE_DATE, JOB_ID, SALARY,
EPARTMENT_ID, MANAGER_ID) VALUES(1006, 'BECK', 'CLBECK@G.COM', 'SYSDATE', 'PROG', 20000
2, NULL);
```

```
1 row created.
```

```
SQL> INSERT INTO EMPLOYEES(EMPLOYEE_ID, LAST_NAME, EMAIL, HIRE_DATE, JOB_ID, SALARY,
EPARTMENT_ID, MANAGER_ID) VALUES(1007, 'JAVA', 'JAVAA01@G.COM', 'SYSDATE', 'PROG', 20000
3, 1006);
```

```
1 row created.
```

```
SQL> INSERT INTO EMPLOYEES(EMPLOYEE_ID, LAST_NAME, EMAIL, HIRE_DATE, JOB_ID, SALARY,
EPARTMENT_ID, MANAGER_ID) VALUES(1008, 'ORACLE', 'WUELASQ@G.COM', 'SYSDATE', 'DBA', 200
0, 4, 1006);
```

```
1 row created.
```

```
SQL>
```



3 Give the result for Cartesian join for the first two tables

```
SQL> SELECT * FROM ENGLISH,HINDI;
```

```
      TAG
```

```
INENGLISH
```

```
      TAG
```

```
INHINDI
```

```
ONE      1
```

```
DO       2
```

```
      TAG
```

```
INENGLISH
```

```
      TAG
```

```
INHINDI
```

```
TWO      2
```

```
DO       2
```

```
      TAG
```

```
INENGLISH
```

```
      TAG
```

```
INHINDI
```

```
THREE    3
```

```
DO       2
```

```
      TAG
```

```
INENGLISH
```

		TAG
		INENGLISH
		TAG
		INHINDI
DO	2	
DO	2	
		TAG
		INENGLISH
		TAG
		INHINDI
TEEN	3	
DO	2	
		TAG
		INENGLISH
		TAG
		INHINDI
CHAR	4	
DO	2	
		TAG
		INENGLISH
		TAG

IN ENGLISH

TAG

IN HINDI

ONE 1

TEEN 3

TAG

IN ENGLISH

TAG

IN HINDI

TWO 2

TEEN 3

TAG

IN ENGLISH

TAG

IN HINDI

THREE 3

TEEN 3

TAG

IN ENGLISH

TAG

IN HINDI



INENGLISH	
TAG	
INHINDI	
DO	2
TEEN	3
TAG	
INENGLISH	
TAG	
INHINDI	
TEEN	3
TEEN	3
TAG	
INENGLISH	
TAG	
INHINDI	
CHAR	4
TEEN	3
TAG	
INENGLISH	
TAG	
INHINDI	

CHAR	4	
	TAG	
INENGLISH		
	TAG	
INHINDI		
DO	2	
CHAR	4	
	TAG	
INENGLISH		
	TAG	
INHINDI		
TEEN	3	
CHAR	4	
	TAG	
INENGLISH		
	TAG	
INHINDI		
CHAR	4	
CHAR	4	
18 rows selected.		
SQL>		

4 Practise the following queries

4a

```
SQL> SELECT HINDI.TAG, ENGLISH.INENGLISH, HINDI.INHINDI
  2 FROM ENGLISH, HINDI
  3 WHERE ENGLISH.TAG = HINDI.TAG;
```

	TAG	
INENGLISH		
INHINDI		
TWO	2	
DO		
THREE	3	
TEEN		
TAG		
INENGLISH		
INHINDI		
DO	2	
DO		
TEEN	3	
TAG		
INENGLISH		
INHINDI		
TEEN		
CHAR	4	
CHAR		

```
SQL>
```

4b

```
SQL> SELECT HINDI.TAG,ENGLISH.INENGLISH,HINDI.INHINDI
  2  FROM ENGLISH INNER JOIN HINDI
  3  ON ENGLISH.TAG=HINDI.TAG;

      TAG
-----
INENGLISH
-----
INHINDI
-----
TWO      2
DO
DO
THREE    3
TEEN
TEEN
      TAG
-----
INENGLISH
-----
INHINDI
-----
DO      2
DO
DO
TEEN    3
TEEN
      TAG
-----
INENGLISH
-----
INHINDI
-----
TEEN
TEEN
CHAR    4
CHAR
CHAR
SQL>
```

4c

```
SQL> SELECT E.EMPLOYEE_ID,E.LAST_NAME,D.DEPARTMENT_NAME
 2  FROM EMPLOYEES E RIGHT OUTER JOIN DEPARTMENT D
 3  ON E.DEPARTMENT_ID = D.DEPARTMENT_ID
 4  WHERE D.DEPARTMENT_NAME='PURCHASING';
```

```
EMPLOYEE_ID LAST_NAME
```

```
DEPARTMENT_NAME
```

```
1002 WELLS
PURCHASING
```

```
1006 BECK
PURCHASING
```

```
SQL>
```

4d

```
SQL> SELECT E.EMPLOYEE_ID,E.LAST_NAME,D.DEPARTMENT_NAME
 2  FROM EMPLOYEES E RIGHT OUTER JOIN DEPARTMENT D
 3  ON E.DEPARTMENT_ID = D.DEPARTMENT_ID
 4  WHERE D.DEPARTMENT_NAME='PURCHASING'
 5  ORDER BY D.DEPARTMENT_NAME,E.LAST_NAME;
```

```
EMPLOYEE_ID LAST_NAME
```

```
DEPARTMENT_NAME
```

```
1006 BECK
PURCHASING
```

```
1002 WELLS
PURCHASING
```

```
SQL>
```

4e

```
SQL> SELECT E.EMPNO,E.ENAME,D.DNAME
 2  FROM EMP E RIGHT OUTER JOIN DEPT D
 3  ON E.DEPTNO=D.DEPTNO
 4  WHERE D.LOC='CHICAGO'
 5  ORDER BY D.DNAME,E.ENAME;
```

EMPNO	ENAME	DNAME
7499	ALLEN	Sales
7698	BLAKE	Sales
7900	JAMES	Sales
7654	MARTIN	Sales
7844	TURNER	Sales
7521	WARD	Sales

```
6 rows selected.
```

```
SQL>
```

4f



```
SQL> SELECT E.EMPNO,E.ENAME,D.DNAME
  2 FROM EMP E LEFT OUTER JOIN DEPT D
  3 ON E.DEPTNO=D.DEPTNO
  4 WHERE E.JOB='MANAGER';
```

EMPNO	ENAME	DNAME
7698	BLAKE	Sales
7782	CLARK	Accounting
7566	JONES	Research

```
SQL>
```

4g

```
SQL> select e.empno,e.ename,d.dname
  2 from emp e right outer join dept d
  3 on e.deptno=d.deptno
  4 where d.loc='CHICAGO';
```

EMPNO	ENAME	DNAME
7521	WARD	Sales
7654	MARTIN	Sales
7844	TURNER	Sales
7900	JAMES	Sales
7499	ALLEN	Sales
7698	BLAKE	Sales

```
6 rows selected.
```

Thank You