CSE2007 DBMS LAB

SLOT: L39+L40
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EXPERIMENT NO.-2

1. create following tables:

```
bonus:
-----
Name                                    Null?      Type
--------------------------------- -------- -----------------------
 ENAME                                              VARCHAR2(10 CHAR)
 JOB                                                VARCHAR2(9 CHAR)
 SAL                                                NUMBER
 COMM                                               NUMBER
```

CODE-

```
CREATE TABLE bonus(ENAME varchar2(10),JOB varchar2(9),SAL number(9),COMM
number(9));
```

OUTPUT-

Bonus

ENAME	JOB	SAL	COMM
empty			

```
emp:
----
Name                                    Null?      Type
--------------------------------- -------- -----------------------
 EMPNO                                   NOT NULL NUMBER(4)
 ENAME                                              VARCHAR2(10 CHAR)
 JOB                                                VARCHAR2(9 CHAR)
 MGR                                                NUMBER(4)
 HIREDATE                                           DATE
 SAL                                                NUMBER(7,2)
 COMM                                               NUMBER(7,2)
 DEPTNO                                             NUMBER(2)
```

CODE-

```
CREATE TABLE emp(EMPNO number(4) not null,ENAME varchar(10),JOB
varchar2(9),MGR number(4),HIREDATE date,SAL number(7,2),COMM
number(7,2),DEPTNO number(2));
```

OUTPUT-

Emp

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
empty							

```
dept:
----
Name                                 Null?    Type
 -------------------------------- -------- ----------------------
 DEPTNO                               NOT NULL NUMBER(2)
 DNAME                                        VARCHAR2(14 CHAR)
 LOC                                          VARCHAR2(13 CHAR)
```

CODE-

```
CREATE TABLE dept(DEPTNO number(2) not null,DNAME varchar2(14),LOC
varchar2(13));
```

OUTPUT-

Dept

DEPTNO	DNAME	LOC
empty		

```
salgrade:
--------
Name                                 Null?    Type
 -------------------------------- -------- ----------------------
 GRADE                                NOT NULL NUMBER
 LOSAL                                        NUMBER
 HISAL                                        NUMBER
```

CODE-

```
CREATE TABLE salgrade(GRADE number not null,LOSAL number,HISAL number);
```

OUTPUT-

Salgrade

GRADE	LOSAL	HISAL
empty		

2. Insert the following data into tables:

emp table:

```
    EMPNO ENAME      JOB             MGR HIREDATE          SAL       COMM     DEPTNO
---------- ---------- --------- ---------- ----------- ---------- ---------- ----------
      7369 SMITH      CLERK           7902 17-DEC-1980        800                    20
      7499 ALLEN      SALESMAN        7698 20-FEB-1981       1600        300         30
      7521 WARD       SALESMAN        7698 22-FEB-1981       1250        500         30
      7566 JONES      MANAGER         7839 02-APR-1981       2975                    20
      7654 MARTIN     SALESMAN        7698 28-SEP-1981       1250       1400         30
      7698 BLAKE      MANAGER         7839 01-MAY-1981       2850                    30
      7782 CLARK      MANAGER         7839 09-JUN-1981       2450                    10
      7788 SCOTT      ANALYST         7566 19-APR-1987       3000                    20
      7839 KING       PRESIDENT            17-NOV-1981       5000                    10
      7844 TURNER     SALESMAN        7698 08-SEP-1981       1500          0         30
      7876 ADAMS      CLERK           7788 23-MAY-1987       1100                    20
      7900 JAMES      CLERK           7698 03-DEC-1981        950                    30
      7902 FORD       ANALYST         7566 03-DEC-1981       3000                    20
      7934 MILLER     CLERK           7782 23-JAN-1982       1300                    10
```

CODE-

```sql
CREATE TABLE emp(EMPNO number(4) not null,ENAME varchar(10),JOB
varchar2(9),MGR number(4),HIREDATE date,SAL number(7,2),COMM
number(7,2),DEPTNO number(2));
INSERT INTO emp (EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, COMM, DEPTNO)
VALUES
  (7369, 'SMITH', 'CLERK', 7902,'17-DEC-1980', 800, NULL, 20),
  (7499, 'ALLEN', 'SALESMAN', 7698, '20-FEB-1981', 1600, 300, 30),
  (7521, 'WARD', 'SALESMAN', 7698, '22-FEB-1981', 1250, 500, 30),
  (7566, 'JONES', 'MANAGER', 7839, '02-APR-1981', 2975, NULL, 20),
  (7654, 'MARTIN', 'SALESMAN', 7698,  '28-SEP-1981', 1250, 1400, 30),
  (7698, 'BLAKE', 'MANAGER', 7839,  '01-MAY-1981', 2850, NULL, 30),
  (7782, 'CLARK', 'MANAGER', 7839, '09-JUN-1981', 2450, NULL, 10),
  (7788, 'SCOTT', 'ANALYST', 7566,  '19-APR-1987', 3000, NULL, 20),
  (7839, 'KING', 'PRESIDENT', NULL,  '17-NOV-1981', 5000, NULL, 10),
  (7844, 'TURNER', 'SALESMAN', 7698,  '08-SEP-1981', 1500, 0, 30),
  (7876, 'ADAMS', 'CLERK', 7788,  '23-MAY-1987', 1100, NULL, 20),
  (7900, 'JAMES', 'CLERK', 7698,  '03-DEC-1981', 950, NULL, 30),
  (7902, 'FORD', 'ANALYST', 7566,  '03-DEC-1981', 3000, NULL, 20),
  (7934, 'MILLER', 'CLERK', 7782,  '23-JAN-1982', 1300, NULL, 10);
```

OUTPUT-

Emp

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	17-DEC-1980	800		20
7499	ALLEN	SALESMAN	7698	20-FEB-1981	1600	300	30
7521	WARD	SALESMAN	7698	22-FEB-1981	1250	500	30
7566	JONES	MANAGER	7839	02-APR-1981	2975		20
7654	MARTIN	SALESMAN	7698	28-SEP-1981	1250	1400	30
7698	BLAKE	MANAGER	7839	01-MAY-1981	2850		30
7782	CLARK	MANAGER	7839	09-JUN-1981	2450		10
7788	SCOTT	ANALYST	7566	19-APR-1987	3000		20
7839	KING	PRESIDENT		17-NOV-1981	5000		10
7844	TURNER	SALESMAN	7698	08-SEP-1981	1500	0	30
7876	ADAMS	CLERK	7788	23-MAY-1987	1100		20
7900	JAMES	CLERK	7698	03-DEC-1981	950		30
7902	FORD	ANALYST	7566	03-DEC-1981	3000		20
7934	MILLER	CLERK	7782	23-JAN-1982	1300		10

dept table:

```
 DEPTNO DNAME          LOC
---------- -------------- -------------
        10 ACCOUNTING     NEW YORK
        20 RESEARCH       DALLAS
        30 SALES          CHICAGO
        40 OPERATIONS     BOSTON
```

CODE-

```
CREATE TABLE dept(DEPTNO number(2) not null,DNAME varchar2(14),LOC
varchar2(13));
INSERT INTO dept(DEPTNO, DNAME,LOC)
VALUES
(10, 'ACCOUNTING', 'NEW YORK'),
(20, 'RESEARCH' ,'DALLAS'),
(30, 'SALES', 'CHICAGO'),
(40, 'OPERATIONS','BOSTON');
```

OUTPUT-

Dept

DEPTNO	DNAME	LOC
10	ACCOUNTING	NEW YORK
20	RESEARCH	DALLAS
30	SALES	CHICAGO
40	OPERATIONS	BOSTON

salgrade table:

```
GRADE       LOSAL       HISAL
----------  ----------  ----------
        1         700        1200
        2        1201        1400
        3        1401        2000
        4        2001        3000
        5        3001        9999
```

CODE-

```sql
CREATE TABLE salgrade(GRADE number not null,LOSAL number,HISAL number);
INSERT INTO salgrade(GRADE,LOSAL,HISAL)
VALUES
(1,700,1200),
(2,1201,1400),
(3,1401,2000),
(4,2001,3000),
(5,3001,9999);
```

OUTPUT-

Salgrade

GRADE	LOSAL	HISAL
1	700	1200
2	1201	1400
3	1401	2000
4	2001	3000
5	3001	9999

Answer the following queries:

0. describe all table structures and data in inserted order.
Ans0.

```sql
DESCRIBE bonus;
DESCRIBE emp;
DESCRIBE dept;
DESCRIBE salgrade;
```

TABLE BONUS

Column	Null?	Type
ENAME	-	VARCHAR2(10)
JOB	-	VARCHAR2(9)
SAL	-	NUMBER(9,0)
COMM	-	NUMBER(9,0)

TABLE EMP

Column	Null?	Type
EMPNO	NOT NULL	NUMBER(4,0)
ENAME	-	VARCHAR2(10)
JOB	-	VARCHAR2(9)
MGR	-	NUMBER(4,0)
HIREDATE	-	DATE
SAL	-	NUMBER(7,2)
COMM	-	NUMBER(7,2)
DEPTNO	-	NUMBER(2,0)

Table created.

TABLE DEPT

Column	Null?	Type
DEPTNO	NOT NULL	NUMBER(2,0)
DNAME	-	VARCHAR2(14)
LOC	-	VARCHAR2(13)

TABLE SALGRADE

Column	Null?	Type
GRADE	NOT NULL	NUMBER
LOSAL	-	NUMBER
HISAL	-	NUMBER

```sql
SELECT * FROM bonus ORDER BY ENAME;
SELECT * FROM emp ORDER BY EMPNO;
SELECT * FROM dept ORDER BY DEPTNO;
SELECT * FROM salgrade ORDER BY GRADE;
```

Output

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	17-DEC-1980	800		20
7499	ALLEN	SALESMAN	7698	20-FEB-1981	1600	300	30
7521	WARD	SALESMAN	7698	22-FEB-1981	1250	500	30
7566	JONES	MANAGER	7839	02-APR-1981	2975		20
7654	MARTIN	SALESMAN	7698	28-SEP-1981	1250	1400	30
7698	BLAKE	MANAGER	7839	01-MAY-1981	2850		30
7782	CLARK	MANAGER	7839	09-JUN-1981	2450		10
7788	SCOTT	ANALYST	7566	19-APR-1987	3000		20
7839	KING	PRESIDENT		17-NOV-1981	5000		10
7844	TURNER	SALESMAN	7698	08-SEP-1981	1500	0	30
7876	ADAMS	CLERK	7788	23-MAY-1987	1100		20
7900	JAMES	CLERK	7698	03-DEC-1981	950		30
7902	FORD	ANALYST	7566	03-DEC-1981	3000		20
7934	MILLER	CLERK	7782	23-JAN-1982	1300		10

Output

DEPTNO	DNAME	LOC
10	ACCOUNTING	NEW YORK
20	RESEARCH	DALLAS
30	SALES	CHICAGO
40	OPERATIONS	BOSTON

GRADE	LOSAL	HISAL
1	700	1200
2	1201	1400
3	1401	2000
4	2001	3000
5	3001	9999

1. select all the information from the emp table.
Ans.

```sql
SELECT * FROM emp;
```

2. Display ename, job, hiredate from emp table.
Ans.

```sql
SELECT ENAME, JOB, HIREDATE FROM emp;
```
Output

ENAME	JOB	HIREDATE
SMITH	CLERK	17-DEC-1980
ALLEN	SALESMAN	20-FEB-1981
WARD	SALESMAN	22-FEB-1981
JONES	MANAGER	02-APR-1981
MARTIN	SALESMAN	28-SEP-1981
BLAKE	MANAGER	01-MAY-1981
CLARK	MANAGER	09-JUN-1981
SCOTT	ANALYST	19-APR-1987
KING	PRESIDENT	17-NOV-1981
TURNER	SALESMAN	08-SEP-1981
ADAMS	CLERK	23-MAY-1987
JAMES	CLERK	03-DEC-1981
FORD	ANALYST	03-DEC-1981
MILLER	CLERK	23-JAN-1982

3. select all employees whose salary between 1000 and 2000.
Ans.

```sql
SELECT * FROM emp WHERE SAL BETWEEN 1000 AND 2000;
```
Output

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7499	ALLEN	SALESMAN	7698	20-FEB-1981	1600	300	30
7521	WARD	SALESMAN	7698	22-FEB-1981	1250	500	30
7654	MARTIN	SALESMAN	7698	28-SEP-1981	1250	1400	30
7844	TURNER	SALESMAN	7698	08-SEP-1981	1500	0	30
7876	ADAMS	CLERK	7788	23-MAY-1987	1100		20
7934	MILLER	CLERK	7782	23-JAN-1982	1300		10

4. List department names and numbers in the department name order
Ans.

```sql
SELECT DNAME, DEPTNO FROM dept ORDER BY DNAME;
```
Output

DNAME	DEPTNO
ACCOUNTING	10
OPERATIONS	40
RESEARCH	20
SALES	30

5. List the details of the employees in dept 10 and 20 in alphabetical order of names.
Ans.

```sql
SELECT * FROM emp WHERE DEPTNO IN (10, 20) ORDER BY ENAME;
```
Output

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7876	ADAMS	CLERK	7788	23-MAY-1987	1100		20
7782	CLARK	MANAGER	7839	09-JUN-1981	2450		10
7902	FORD	ANALYST	7566	03-DEC-1981	3000		20
7566	JONES	MANAGER	7839	02-APR-1981	2975		20
7839	KING	PRESIDENT		17-NOV-1981	5000		10
7934	MILLER	CLERK	7782	23-JAN-1982	1300		10
7788	SCOTT	ANALYST	7566	19-APR-1987	3000		20
7369	SMITH	CLERK	7902	17-DEC-1980	800		20

6. List the names of all clerks in dept 20.
Ans.

```sql
SELECT ENAME FROM emp WHERE JOB = 'CLERK' AND DEPTNO = 20;
```

Output

ENAME
SMITH
ADAMS

7. List the employee number,name,job,title and hiredate of employee in department 10?
Code-

```sql
SELECT empno, ename, job, hiredate FROM emp WHERE DEPTNO = 10;
```

Output

EMPNO	ENAME	JOB	HIREDATE
7782	CLARK	MANAGER	09-JUN-1981
7839	KING	PRESIDENT	17-NOV-1981
7934	MILLER	CLERK	23-JAN-1982

8. Select the name and salary of all employee who are clerks?
Code-

```sql
SELECT ename, sal FROM emp WHERE job = 'CLERK';
```

Output

ENAME	SAL
SMITH	800
ADAMS	1100
JAMES	950
MILLER	1300

9. Select the name and annual salary of all employees?
Code-

```sql
SELECT ename, sal * 12 AS annual_salary FROM emp;
```

Output

ENAME	annual_salary
SMITH	9600
ALLEN	19200
WARD	15000
JONES	35700
MARTIN	15000
BLAKE	34200
CLARK	29400
SCOTT	36000
KING	60000
TURNER	18000
ADAMS	13200
JAMES	11400
FORD	36000
MILLER	15600

10. List the name,job,salary of everyone hired on december 17,1980?
Code-

```sql
SELECT ename, job, sal FROM emp WHERE hiredate = '17-DEC-1980';
```

Output

ENAME	JOB	SAL
SMITH	CLERK	800

11. List the department name and department number for departments with numbers greater than or equal to 20?
Code-

```
SELECT dname, deptno FROM dept WHERE deptno>=20;
```

Output

DNAME	DEPTNO
RESEARCH	20
SALES	30
OPERATIONS	40

12. List the names of employees whose salaries are less than 2500?
Code-

```
SELECT ename FROM emp WHERE sal<2500;
```

Output

ENAME
SMITH
ALLEN
WARD
MARTIN
CLARK
TURNER
ADAMS
JAMES
MILLER

13. Display the name, monthly salary and daily salary and hourly salary for employees assume that the sal column in the table is the monthly salary, that there are 22 working days in a month, and that there are 8 working hours in a day. rename the columns as monthly, daily, hourly?
Code-

```
SELECT ename,sal AS monthly,sal / 22 AS daily,sal / 22 / 8 AS hourly FROM emp;
```

Output

ENAME	monthly	daily	hourly
SMITH	800	36	4
ALLEN	1600	72	9
WARD	1250	56	7
JONES	2975	135	16
MARTIN	1250	56	7
BLAKE	2850	129	16
CLARK	2450	111	13
SCOTT	3000	136	17
KING	5000	227	28
TURNER	1500	68	8
ADAMS	1100	50	6
JAMES	950	43	5
FORD	3000	136	17
MILLER	1300	59	7

14. List the names and employer s numbers of managers who earn more than 2600 display in alphabetic order by name?
Code-

```
SELECT ename,empno FROM emp WHERE job = 'MANAGER' AND sal > 2600 ORDER BY ename;
```

Output

ENAME	EMPNO
BLAKE	7698
JONES	7566

15. Display all employee names who have 'TH' or 'LL' in them?
Code-

```
SELECT ename FROM emp WHERE ename LIKE '%TH%' OR ename LIKE '%LL%';
```

Output

ENAME
SMITH
ALLEN
MILLER

16. List the details of employees in departments 10 and 20 in alphabtical order of name?
Code-

```
SELECT * FROM emp WHERE deptno=10 OR deptno=20 ORDER BY ename;
```

Output

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7876	ADAMS	CLERK	7788	23-MAY-1987	1100		20
7782	CLARK	MANAGER	7839	09-JUN-1981	2450		10
7902	FORD	ANALYST	7566	03-DEC-1981	3000		20
7566	JONES	MANAGER	7839	02-APR-1981	2975		20
7839	KING	PRESIDENT		17-NOV-1981	5000		10
7934	MILLER	CLERK	7782	23-JAN-1982	1300		10
7788	SCOTT	ANALYST	7566	19-APR-1987	3000		20
7369	SMITH	CLERK	7902	17-DEC-1980	800	300	20

17. Select the information about manager and the president from the column job in the table emp. Order the result by department number?
Code-

```
SELECT * FROM emp WHERE job='MANAGER' OR job='PRESIDENT' ORDER BY deptno;
```

Output

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7782	CLARK	MANAGER	7839	09-JUN-1981	2450		10
7839	KING	PRESIDENT		17-NOV-1981	5000		10
7566	JONES	MANAGER	7839	02-APR-1981	2975		20
7698	BLAKE	MANAGER	7839	01-MAY-1981	2850		30

18. List the employee name that do not end with S ?
Code-

```
SELECT ename FROM emp WHERE ename NOT LIKE '%S';
```

Output

ENAME
SMITH
ALLEN
WARD
MARTIN
BLAKE
CLARK
SCOTT
KING
TURNER
FORD
MILLER

19. List the employee name that start with C ?
Code-

```
SELECT ename FROM emp WHERE ename LIKE 'C%';
```

Output

ENAME
CLARK

20. List the name,job and department of everyone whose name falls in
the alphabetic range C to F ?
Code-

```
SELECT ename, job, deptno FROM emp WHERE ename BETWEEN 'C' AND 'F' ORDER BY
ename;
```

Output

ENAME	JOB	DEPTNO
CLARK	MANAGER	10

21. List employee details working in department 20,30 or 40?
Code-

```
SELECT * FROM emp WHERE deptno=20 OR deptno=30 OR deptno=40;
```

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	17-DEC-1980	800	300	20
7499	ALLEN	SALESMAN	7698	20-FEB-1981	1600	500	30
7521	WARD	SALESMAN	7698	22-FEB-1981	1250		30
7566	JONES	MANAGER	7839	02-APR-1981	2975		20
7654	MARTIN	SALESMAN	7698	28-SEP-1981	1250	1400	30
7698	BLAKE	MANAGER	7839	01-MAY-1981	2850		30
7788	SCOTT	ANALYST	7566	19-APR-1987	3000		20
7844	TURNER	SALESMAN	7698	08-SEP-1981	1500	0	30
7876	ADAMS	CLERK	7788	23-MAY-1987	1100		20
7900	JAMES	CLERK	7698	03-DEC-1981	950		30
7902	FORD	ANALYST	7566	03-DEC-1981	3000		20

22. List of employees whose names start with M and end with R ?
Code-

```sql
SELECT ename FROM emp WHERE ename LIKE 'M%R';
```

Output

ENAME
MILLER

23. Display all employee who were hired during 1983?
Code-

```sql
SELECT * FROM emp WHERE hiredate BETWEEN '1-JAN-1983' AND '31-DEC-1983';
```

Output

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	17-DEC-1980	800	300	20
7499	ALLEN	SALESMAN	7698	20-FEB-1981	1600	500	30
7521	WARD	SALESMAN	7698	22-FEB-1981	1250		30
7654	MARTIN	SALESMAN	7698	28-SEP-1981	1250	1400	30
7788	SCOTT	ANALYST	7566	19-APR-1987	3000		20
7839	KING	PRESIDENT		17-NOV-1981	5000		10
7876	ADAMS	CLERK	7788	23-MAY-1987	1100		20
7934	MILLER	CLERK	7782	23-JAN-1982	1300		10

24. Display the data as shown below:
          Smith has held the position of clerk in department 20
since 10 june 83.
          Allen has held the position of salesman in department
30since 13 june 1983.
          Ward has held position of salesman in department 30 since
13 june 1983.
Code-

```sql
SELECT ENAME || ' has held the position of ' || JOB || ' in department ' ||
DEPTNO || ' since ' || HIREDATE AS formatted_data FROM emp WHERE ENAME IN
('SMITH', 'ALLEN', 'WARD');
```

Output

formatted_data
SMITH has held the position of CLERK in department 20 since 17-DEC-1980
ALLEN has held the position of SALESMAN in department 30 since 20-FEB-1981
WARD has held the position of SALESMAN in department 30 since 22-FEB-1981