

Assignment – 1

Creating table :

```
create table salgrade
(
  grade int primary key,
  losal int,
  hisal int
);

create table emp
(
  empno int primary key,
  ename varchar2(20),
  ejob varchar2(20),
  mgr int,
  hiredate date,
  sal int,
  comm int,
  deptno int,
  FOREIGN KEY(mgr) REFERENCES emp(empno) ON DELETE SET NULL
);

CREATE TABLE dept
(
  deptno INT PRIMARY KEY,
  dname VARCHAR(20),
  loc VARCHAR(20)
);
```

Adding constraints

```
ALTER TABLE emp
ADD FOREIGN KEY(deptno) REFERENCES dept(deptno) ON DELETE SET NULL;
```

Inserting Values

```
insert into salgrade values (1, 700, 1200);
insert into salgrade values (2, 1201, 1400);
insert into salgrade values (3, 1401, 2000);
insert into salgrade values (4, 2001, 3000);
insert into salgrade values (5, 3001, 9999);

insert into dept values( 10, 'ACCOUNTING', 'NEW YORK');
insert into dept values( 20, 'RESEARCH', 'DALLAS');
```

```
insert into dept values( 30, 'SALES', 'CHICAGO');
insert into dept values( 40, 'OPERATIONS', 'BOSTON');

insert into emp(empno, ename, ejob, hiredate, sal, comm, deptno)
values(7369, 'SMITH', 'CLERK', '17-DEC-80', 800, NULL, 20);

insert into emp(empno, ename, ejob, hiredate, sal, comm, deptno)
values(7499, 'ALLEN', 'SALESMAN', '20-FEB-81', 1600, 300, 30);

insert into emp(empno, ename, ejob, hiredate, sal, comm, deptno)
values(7521, 'WARD', 'SALESMAN', '22-FEB-81', 1250, 500, 30);

insert into emp(empno, ename, ejob, hiredate, sal, comm, deptno)
values(7566, 'JONES', 'MANAGER', '02-APR-81', 2975, null, 20);

insert into emp(empno, ename, ejob, hiredate, sal, comm, deptno)
values(7654, 'MARTIN', 'SALESMAN', '28-SEP-81', 1250, 1400, 30);

insert into emp(empno, ename, ejob, hiredate, sal, comm, deptno)
values( 7698, 'BLAKE', 'MANAGER', '01-MAY-81', 2850, null, 30);

insert into emp(empno, ename, ejob, hiredate, sal, comm, deptno)
values(7782, 'CLARK', 'MANAGER', '09-JUN-81', 2450, null, 10);

insert into emp(empno, ename, ejob, hiredate, sal, comm, deptno)
values( 7788, 'SCOTT', 'ANALYST', '19-APR-87', 3000, null, 20);

insert into emp(empno, ename, ejob, hiredate, sal, comm, deptno)
values( 7839, 'KING', 'PRESIDENT', '17-NOV-81', 5000, null, 10);

insert into emp(empno, ename, ejob, hiredate, sal, comm, deptno)
values( 7844, 'TURNER', 'SALESMAN', '08-SEP-81', 1500, 0, 30);

insert into emp(empno, ename, ejob, hiredate, sal, comm, deptno)
values( 7876, 'ADAMS', 'CLERK', '23-MAY-87', 1100, null, 20);

insert into emp(empno, ename, ejob, hiredate, sal, comm, deptno)
values(7900, 'JAMES', 'CLERK', '03-DEC-81', 950, null, 30);

insert into emp(empno, ename, ejob, hiredate, sal, comm, deptno)
values(7902, 'FORD', 'ANALYST', '03-DEC-81', 3000, null, 20);

insert into emp(empno, ename, ejob, hiredate, sal, comm, deptno)
values(7934, 'MILLER', 'CLERK', '23-JAN-82', 1300, null, 10);
```

Updating table

```
UPDATE emp SET mgr = 7902 WHERE empno = 7369;
UPDATE emp SET mgr = 7698 WHERE empno = 7499;
UPDATE emp SET mgr = 7698 WHERE empno = 7521;
UPDATE emp SET mgr = 7839 WHERE empno = 7566;
UPDATE emp SET mgr = 7698 WHERE empno = 7654;
UPDATE emp SET mgr = 7839 WHERE empno = 7698;
UPDATE emp SET mgr = 7839 WHERE empno = 7782;
UPDATE emp SET mgr = 7566 WHERE empno = 7788;
UPDATE emp SET mgr = 7698 WHERE empno = 7844;
UPDATE emp SET mgr = 7788 WHERE empno = 7876;
UPDATE emp SET mgr = 7698 WHERE empno = 7900;
UPDATE emp SET mgr = 7566 WHERE empno = 7902;
UPDATE emp SET mgr = 7782 WHERE empno = 7934;
```

Queries:

	GRADE	LOSAL	HISAL		DEPTNO	DNAME	LOC
1	1	700	1200	1	10	ACCOUNTING	NEW YORK
2	2	1201	1400	2	20	RESEARCH	DALLAS
3	3	1401	2000	3	30	SALES	CHICAGO
4	4	2001	3000	4	40	OPERATIONS	BOSTON
5	5	3001	9999				

	EMPNO	ENAME	EJOB	MGR	HIREDATE	SAL	COMM	DEPTNO
1	7369	SMITH	CLERK	7902	17-12-80	800	(null)	20
2	7499	ALLEN	SALESMAN	7698	20-02-81	1600	300	30
3	7521	WARD	SALESMAN	7698	22-02-81	1250	500	30
4	7566	JONES	MANAGER	7839	02-04-81	2975	(null)	20
5	7654	MARTIN	SALESMAN	7698	28-09-81	1250	1400	30
6	7698	BLAKE	MANAGER	7839	01-05-81	2850	(null)	30
7	7782	CLARK	MANAGER	7839	09-06-81	2450	(null)	10
8	7788	SCOTT	ANALYST	7566	19-04-87	3000	(null)	20
9	7839	KING	PRESIDENT	(null)	17-11-81	5000	(null)	10
10	7844	TURNER	SALESMAN	7698	08-09-81	1500	0	30
11	7876	ADAMS	CLERK	7788	23-05-87	1100	(null)	20
12	7900	JAMES	CLERK	7698	03-12-81	950	(null)	30
13	7902	FORD	ANALYST	7566	03-12-81	3000	(null)	20
14	7934	MILLER	CLERK	7782	23-01-82	1300	(null)	10

- 1 Select all information of various tables
1.1 Salgrade 1.2 Emp 1.3 Dept

```
select * from salgrade;
select * from emp;
select * from dept;
```

	GRADE	LOSAL	HISAL		DEPTNO	DNAME	LOC
1	1	700	1200	1	10	ACCOUNTING	NEW YORK
2	2	1201	1400	2	20	RESEARCH	DALLAS
3	3	1401	2000	3	30	SALES	CHICAGO
4	4	2001	3000	4	40	OPERATIONS	BOSTON
5	5	3001	9999				

	EMPNO	ENAME	EJOB	MGR	HIREDATE	SAL	COMM	DEPTNO
1	7369	SMITH	CLERK	7902	17-12-80	800	(null)	20
2	7499	ALLEN	SALESMAN	7698	20-02-81	1600	300	30
3	7521	WARD	SALESMAN	7698	22-02-81	1250	500	30
4	7566	JONES	MANAGER	7839	02-04-81	2975	(null)	20
5	7654	MARTIN	SALESMAN	7698	28-09-81	1250	1400	30
6	7698	BLAKE	MANAGER	7839	01-05-81	2850	(null)	30
7	7782	CLARK	MANAGER	7839	09-06-81	2450	(null)	10
8	7788	SCOTT	ANALYST	7566	19-04-87	3000	(null)	20
9	7839	KING	PRESIDENT	(null)	17-11-81	5000	(null)	10
10	7844	TURNER	SALESMAN	7698	08-09-81	1500	0	30
11	7876	ADAMS	CLERK	7788	23-05-87	1100	(null)	20
12	7900	JAMES	CLERK	7698	03-12-81	950	(null)	30
13	7902	FORD	ANALYST	7566	03-12-81	3000	(null)	20
14	7934	MILLER	CLERK	7782	23-01-82	1300	(null)	10

2 See the structure of the above tables

```
desc salgrade;
desc emp;
desc dept;
```

Name	Null?	Type		Name	Null?	Type
-----		-----		-----		-----
EMPNO	NOT NULL	NUMBER(38)		DEPTNO	NOT NULL	NUMBER(38)
ENAME		VARCHAR2(20)		DNAME		VARCHAR2(20)
EJOB		VARCHAR2(20)		LOC		VARCHAR2(20)
MGR		NUMBER(38)				
HIREDATE		DATE				
GRADE	NOT NULL	NUMBER(38)				
LOSAL		NUMBER(38)				
HISAL		NUMBER(38)				
DEPTNO		NUMBER(38)				

3 List all information whose salary in between 1000 and 3000. Use EMP table

```
select * from emp where sal between 1000 and 3000;
```

EMPNO	ENAME	EJOB	MGR	HIREDATE	SAL	COMM	DEPTNO
1	7499 ALLEN	SALESMAN	7698	20-02-81	1600	300	30
2	7521 WARD	SALESMAN	7698	22-02-81	1250	500	30
3	7566 JONES	MANAGER	7839	02-04-81	2975	(null)	20
4	7654 MARTIN	SALESMAN	7698	28-09-81	1250	1400	30
5	7698 BLAKE	MANAGER	7839	01-05-81	2850	(null)	30
6	7782 CLARK	MANAGER	7839	09-06-81	2450	(null)	10
7	7788 SCOTT	ANALYST	7566	19-04-87	3000	(null)	20
8	7844 TURNER	SALESMAN	7698	08-09-81	1500	0	30
9	7876 ADAMS	CLERK	7788	23-05-87	1100	(null)	20
10	7902 FORD	ANALYST	7566	03-12-81	3000	(null)	20
11	7934 MILLER	CLERK	7782	23-01-82	1300	(null)	10

4 List name and salary only of employees. Use EMP table.

```
select ename, sal from emp;
```

ENAME	SAL
1 SMITH	800
2 ALLEN	1600
3 WARD	1250
4 JONES	2975
5 MARTIN	1250
6 BLAKE	2850
7 CLARK	2450
8 SCOTT	3000
9 KING	5000
10 TURNER	1500
11 ADAMS	1100
12 JAMES	950
13 FORD	3000
14 MILLER	1300

5 List the above in sorted order. Sort by name. Use EMP table

```
select ename, sal from emp order by ename;
```

ENAME	SAL
1 ADAMS	1100
2 ALLEN	1600
3 BLAKE	2850
4 CLARK	2450
5 FORD	3000
6 JAMES	950
7 JONES	2975
8 KING	5000
9 MARTIN	1250
10 MILLER	1300
11 SCOTT	3000
12 SMITH	800
13 TURNER	1500
14 WARD	1250

6 List all employee name and dept no who are in dept 10 and 30. Use EMP table

```
select ename, deptno from emp where deptno=10 or deptno=30;
```

	ENAME	DEPTNO
1	ALLEN	30
2	WARD	30
3	MARTIN	30
4	BLAKE	30
5	CLARK	10
6	KING	10
7	TURNER	30
8	JAMES	30
9	MILLER	10

7 List name ,job of all clerks in dept 20 . Use EMP table

```
select ename, ejob from emp where deptno=20 and ejob='CLERK';
```

	ENAME	EJOB
1	SMITH	CLERK
2	ADAMS	CLERK

8 List name,job of all clerks in dept 20 and 30. Use EMP table

```
select ename, ejob from emp where (deptno=20 or deptno=30) and ejob='CLERK';
```

	ENAME	EJOB
1	SMITH	CLERK
2	ADAMS	CLERK
3	JAMES	CLERK

9 Display all employees whose name starts with 'S'. Use EMP table.

```
select * from emp where ename like 'S%';
```

	EMPNO	ENAME	EJOB	MGR	HIREDATE	SAL	COMM	DEPTNO
1	7369	SMITH	CLERK	7902	17-12-80	800	(null)	20
2	7788	SCOTT	ANALYST	7566	19-04-87	3000	(null)	20

10 Display all employees whose name has four characters only. Use EMP table

```
select * from emp where ename like '____';
```

	EMPNO	ENAME	EJOB	MGR	HIREDATE	SAL	COMM	DEPTNO
1	7521	WARD	SALESMAN	7698	22-02-81	1250	500	30
2	7839	KING	PRESIDENT	(null)	17-11-81	5000	(null)	10
3	7902	FORD	ANALYST	7566	03-12-81	3000	(null)	20

11 Display all employees whose name ends with 'L'. Use EMP table.

```
select * from emp where ename like '%L';
```

No output

12 List all employees who have a manager. Use EMP table.

```
select * from emp where mgr is not null;
```

	EMPNO	ENAME	EJOB	MGR	HIREDATE	SAL	COMM	DEPTNO
1	7369	SMITH	CLERK	7902	17-12-80	800	(null)	20
2	7499	ALLEN	SALESMAN	7698	20-02-81	1600	300	30
3	7521	WARD	SALESMAN	7698	22-02-81	1250	500	30
4	7566	JONES	MANAGER	7839	02-04-81	2975	(null)	20
5	7654	MARTIN	SALESMAN	7698	28-09-81	1250	1400	30
6	7698	BLAKE	MANAGER	7839	01-05-81	2850	(null)	30
7	7782	CLARK	MANAGER	7839	09-06-81	2450	(null)	10
8	7788	SCOTT	ANALYST	7566	19-04-87	3000	(null)	20
9	7844	TURNER	SALESMAN	7698	08-09-81	1500	0	30
10	7876	ADAMS	CLERK	7788	23-05-87	1100	(null)	20
11	7900	JAMES	CLERK	7698	03-12-81	950	(null)	30
12	7902	FORD	ANALYST	7566	03-12-81	3000	(null)	20
13	7934	MILLER	CLERK	7782	23-01-82	1300	(null)	10

13 List all employees who do not have a manager. Use EMP table

```
select * from emp where mgr is null;
```

	EMPNO	ENAME	EJOB	MGR	HIREDATE	SAL	COMM	DEPTNO
1	7839	KING	PRESIDENT	(null)	17-11-81	5000	(null)	10

14 List name and Total of salary i.e sal+commission. Use EMP table.

```
select ename, sal+ NVL(comm, 0) "TOTAL SALARY" from emp;
```

	ENAME	TOTAL SALARY
1	SMITH	800
2	ALLEN	1900
3	WARD	1750
4	JONES	2975
5	MARTIN	2650
6	BLAKE	2850
7	CLARK	2450
8	SCOTT	3000
9	KING	5000
10	TURNER	1500
11	ADAMS	1100
12	JAMES	950
13	FORD	3000
14	MILLER	1300

15 List name and Annual Salary i.e sal*12. Use EMP table

```
select ename, sal*12 "ANNUAL SALARY" from emp;
```

	ENAME	ANNUAL SALARY
1	SMITH	9600
2	ALLEN	19200
3	WARD	15000
4	JONES	35700
5	MARTIN	15000
6	BLAKE	34200
7	CLARK	29400
8	SCOTT	36000
9	KING	60000
10	TURNER	18000
11	ADAMS	13200
12	JAMES	11400
13	FORD	36000
14	MILLER	15600

16 List all employees who joined in the year 1991. Use EMP table

```
select * from emp where to_char(hiredate,'YYYY') LIKE '1991';
```

No output

17 Display data as who , what ,when and how much display should look like

Eg: SMITH HAS HELD THE POSITION OF CLERK IN DEPARTMENT 20 SINCE '12-OCT-1990' AND EARNS 1500.

```
select ename||'HAS HELD THE POSITION OF '||ejob||' IN DEPARTMENT '
||deptno||' SINCE '||to_char(hiredate, 'dd-MON-
yyyy')||' AND EARNS '||sal||'.'
"Employee Details" from emp;
```

	Employee Details
1	SMITHHAS HELD THE POSITION OF CLERK IN DEPARTMENT 20 SINCE 17-DEC-1980 AND EARNS 800.
2	ALLENHAS HELD THE POSITION OF SALESMAN IN DEPARTMENT 30 SINCE 20-FEB-1981 AND EARNS 1600.
3	WARDHAS HELD THE POSITION OF SALESMAN IN DEPARTMENT 30 SINCE 22-FEB-1981 AND EARNS 1250.
4	JONESHAS HELD THE POSITION OF MANAGER IN DEPARTMENT 20 SINCE 02-APR-1981 AND EARNS 2975.
5	MARTINHAS HELD THE POSITION OF SALESMAN IN DEPARTMENT 30 SINCE 28-SEP-1981 AND EARNS 1250.
6	BLAKEHAS HELD THE POSITION OF MANAGER IN DEPARTMENT 30 SINCE 01-MAY-1981 AND EARNS 2850.
7	CLARKHAS HELD THE POSITION OF MANAGER IN DEPARTMENT 10 SINCE 09-JUN-1981 AND EARNS 2450.
8	SCOTTHAS HELD THE POSITION OF ANALYST IN DEPARTMENT 20 SINCE 19-APR-1987 AND EARNS 3000.
9	KINGHAS HELD THE POSITION OF PRESIDENT IN DEPARTMENT 10 SINCE 17-NOV-1981 AND EARNS 5000.
10	TURNERHAS HELD THE POSITION OF SALESMAN IN DEPARTMENT 30 SINCE 08-SEP-1981 AND EARNS 1500.
11	ADAMSHAS HELD THE POSITION OF CLERK IN DEPARTMENT 20 SINCE 23-MAY-1987 AND EARNS 1100.
12	JAMESHAS HELD THE POSITION OF CLERK IN DEPARTMENT 30 SINCE 03-DEC-1981 AND EARNS 950.
13	FORDHAS HELD THE POSITION OF ANALYST IN DEPARTMENT 20 SINCE 03-DEC-1981 AND EARNS 3000.
14	MILLERHAS HELD THE POSITION OF CLERK IN DEPARTMENT 10 SINCE 23-JAN-1982 AND EARNS 1300.

18 Supply values at runtime and display all employees in the user specified job title

```
SELECT * from emp where ejob='&ejob';
```

	EMPNO	ENAME	EJOB	MGR	HIREDATE	SAL	COMM	DEPTNO
1	7369	SMITH	CLERK	7902	17-12-80	800	(null)	20
2	7876	ADAMS	CLERK	7788	23-05-87	1100	(null)	20
3	7900	JAMES	CLERK	7698	03-12-81	950	(null)	30
4	7934	MILLER	CLERK	7782	23-01-82	1300	(null)	10

Enter Substitution Variable

Enter value for ejob:

CLERK

OK Cancel

- 19 Find all employees joined on a specified date entered by the user.

```
select * from emp where hiredate='&hiredate';
```

	EMPNO	ENAME	EJOB	MGR	HIREDATE	SAL	COMM	DEPTNO
1	7369	SMITH	CLERK	7902	17-12-80	800	(null)	20

Enter Substitution Variable

Enter value for hiredate:

17-DEC-1980

OKCancel

- 20 Generate a query that accepts two dates i.e. the joining dates of EMP(range) at runtime and gives the output. Rerun it and then change the substitution variables with && and return it twice.

```
select * from emp where hiredate between '&joiningDate1' and '&joiningDate2';
```

Enter Substitution Variable

Enter value for joiningDate1:

20-02-81

OKCancel

Enter Substitution Variable

Enter value for joiningDate2:

31-DEC-1981

OKCancel

	EMPNO	ENAME	EJOB	MGR	HIREDATE	SAL	COMM	DEPTNO
1	7499	ALLEN	SALESMAN	7698	20-02-81	1600	300	30
2	7521	WARD	SALESMAN	7698	22-02-81	1250	500	30
3	7566	JONES	MANAGER	7839	02-04-81	2975	(null)	20
4	7654	MARTIN	SALESMAN	7698	28-09-81	1250	1400	30
5	7698	BLAKE	MANAGER	7839	01-05-81	2850	(null)	30
6	7782	CLARK	MANAGER	7839	09-06-81	2450	(null)	10
7	7839	KING	PRESIDENT	(null)	17-11-81	5000	(null)	10
8	7844	TURNER	SALESMAN	7698	08-09-81	1500	0	30
9	7900	JAMES	CLERK	7698	03-12-81	950	(null)	30
10	7902	FORD	ANALYST	7566	03-12-81	3000	(null)	20

- 21 Define one variable i.e the REM= 'sal*12+NVL(comm.,0) Use the variable to find all employees who earn \$10000 a year or more

```
declare REM number;
begin
  select (SAL*12)+(NVL(COMM,0))
  into REM from EMP where REM>10000;
end;
```

	ENAME	REM
1	ALLEN	19500
2	WARD	15500
3	JONES	35700
4	MARTIN	16400
5	BLAKE	34200
6	CLARK	29400
7	SCOTT	36000
8	KING	60000
9	TURNER	18000
10	ADAMS	13200
11	JAMES	11400
12	FORD	36000
13	MILLER	15600

22 . Create a EMP10 table which has the following fields

Empno NUMBER(2)
 Ename VARCHAR2(25)
 Date_join DATE
 Deptno NUMBER(2)
 Salary NUMBER(10,2)
 Job VARCHAR2(10)
 Comm NUMBER(7,2)

```
create table emp10
(
empno number(2),
ename varchar2(25),
date_join date,
deptno number(2),
salary number(10,2),
job varchar2(10),
comm number(7,2)
);
```

Table EMP10 created.

23 Create another table with the following constraints

Empno NUMBER(2)
 Ename VARCHAR2(25)
 Date_join DATE
 Deptno NUMBER(2)
 Salary NUMBER(10,2)
 Job VARCHAR2(10)
 Comm NUMBER(7,2)

```
create table emp10
(
empno number(2),
ename varchar2(25),
date_join date,
deptno number(2),
salary number(10,2),
```

```
job varchar2(10),  
comm number(7,2)  
);
```

Table EMP10 created.

- 24 Give different field names to the table. Create a table emp20 with only name, sal and job from EMP table with employees of department 20

```
create table emp20  
(  
  ename varchar2(25),  
  salary number(10,2),  
  job varchar2(10)  
);  
insert into emp20 select ename, sal, ejob from emp where deptno=20;
```

	ENAME	SALARY	JOB
1	SMITH	800	CLERK
2	JONES	2975	MANAGER
3	SCOTT	3000	ANALYST
4	ADAMS	1100	CLERK
5	FORD	3000	ANALYST