B.Com(Computer Applications) CBCS, Semester – III

Subject: Relational Database Management System

Computer Lab-Practical Solutions

Exercise – 1:

1. **Create table EMP with columns emp_num, ename, sal and enter 10 records.**

SQL>create table emp(emp_num number(3), ename varchar2(10),sal number(7,2));

Table created

Now inserting records into the emp table

SQL> insert into emp values(&emp_num,'&ename',&sal);

Enter value for emp_num : 101

Enter value for ename: waseem

Enter value for sal: 20000

old 1: insert into emp values(&emp_num,'&ename',&sal)

new 1: insert into emp values(101,'Raju',20000)

1 row created.

Press / enter to repeat the above statement to insert another record, repeat it for next 9 times, after inserting the emp table is

SQL> select * from emp;

EMP_NUM	ENAME	SAL
101	waseem	20000
102	raza	15000
103	shiva	18000
104	gangaram	17000
105	rashmika	1200
106	chandana	16000
107	sindhu	12000
108	bhargav	10000
109	anas	18000
110	sana	12000

10 rows selected.

2. **Add columns dname,dept_num,location for emp table.**

SQL> alter table emp add(dname varchar2(10),dept_num number(3),location varchar2(15));

Table altered.

After adding columns you need to update data for added columns to existing records in emp table as shown below.

SQL> update employee set dname='ACCOUNTS',dept_num=10,location='HYD' where emp_num=101;

1 row updated.

By using above syntax format update remaining 9 records with distinct values.

After updating emp table is

SQL > Select * from emp;

EMP_NUM	ENAME	SAL	DNAME	DEPT_NUM	Location
101	waseem	20000	ACCOUNTS	10	HYD
102	raza	15000	SALES	20	PUNE
103	shiva	18000	HR	30	KNR
104	gangaram	17000	ACCOUNTS	10	HYD
105	rashmika	1200	SALES	20	PUNE
106	chandana	16000	MARKETING	40	JGL
107	sindhu	12000	ACCOUNTS	10	HYD
108	bhargav	10000	SALES	20	PUNE
109	anas	18000	MARKETING	40	JGL
110	sana	12000	HR	30	KNR

10 Rows Selected.

3. **Rename the Emp table with Employee and modify the ename column size as 20.**

SQL> rename emp to employee;
Table renamed.

SQL> alter table employee modify ename varchar2(20);

Table altered.

4. **Display all the records from employee of dept_num 30**

SQL>select * from employee where dept_num=30;

EMP_NUM	ENAME	SAL	DNAME	DEPT_NUM	Location
103	shiva	18000	HR	30	KNR
110	sana	12000	HR	30	KNR

5. **Display the employee details whose have 2A's in their name.**

SQL>select * from employee where ename like '%a%a%';

EMP_NUM	ENAME	SAL	DNAME	DEPT_NUM	Location
102	raza	15000	SALES	20	PUNE
103	shiva	18000	HR	30	KNR
104	gangaram	17000	ACCOUNTS	10	HYD
105	rashmika	1200	SALES	20	PUNE
106	chandana	16000	MARKETING	40	JGL
108	bhargav	10000	SALES	20	PUNE
109	anas	18000	MARKETING	40	JGL
110	sana	12000	HR	30	KNR

6. **Drop the column dname and display details of employees whose salary greater than 15000.**

SQL>alter table employee drop column dname;

Note: This query is not executing in our version.

SQL> select from employee where sal>15000;

EMP_NUM	ENAME	SAL	DNAME	DEPT_NUM	Location
101	waseem	20000	ACCOUNTS	10	HYD
103	shiva	18000	HR	30	KNR
104	gangaram	17000	ACCOUNTS	10	HYD
106	chandana	16000	MARKETING	40	JGL
109	anas	18000	MARKETING	40	JGL

Exercise – 2:

1. **Display the details of employees whose join date is 01/11/2020.**

SQL> alter table employee add doj date;

Table altered.

Update the doj column values to ten records, after updating employee table is

SQL> select * from employee;

EMP_NUM	ENAME	SAL	DNAME	DEPT_NUM	Location	DOJ
101	waseem	20000	ACCOUNTS	10	HYD	01-MAR-20
102	raza	15000	SALES	20	PUNE	05-AUG-15
103	shiva	18000	HR	30	KNR	25-DEC-19
104	gangaram	17000	ACCOUNTS	10	HYD	01-APR-20
105	rashmika	1200	SALES	20	PUNE	01-NOV-20
106	chandana	16000	MARKETING	40	JGL	20-NOV-20
107	sindhu	12000	ACCOUNTS	10	HYD	01-JAN-21
108	bhargav	10000	SALES	20	PUNE	05-FEB-21
109	anas	18000	MARKETING	40	JGL	01-MAR-21
110	sana	12000	HR	30	KNR	11-JAN-21

10 Rows Selected.

SQL>select * from employee where doj='01-nov-2020';

EMP_NUM	ENAME	SAL	DNAME	DEPT_NUM	Location	DOJ
105	rashmika	1200	SALES	20	PUNE	01-NOV-20

2. Add column job to the employee table and list the clerks in the deptno of 10.

SQL>alter table employee add job varchar2(10);

Table altered.

And update job column values to all the records and table is

SQL> update employee set job='MANAGER' where dname='HR';

2 rows updated.

SQL> update employee set job='CLERK' where dname='ACCOUNTS';

3 rows updated.

SQL> update employee set job='SOFTWARE' where dname='SALES';

3 rows updated.

SQL> update employee set job='ADMIN' where dname='MARKETING';

2 rows updated.

SQL> select *from empoloyee;

EMP_NUM	ENAME	SAL	DNAME	DEPT_NUM	Location	DOJ	JOB
101	waseem	20000	ACCOUNTS	10	HYD	01-MAR-20	CLERK
102	raza	15000	SALES	20	PUNE	05-AUG-15	SOFTWARE
103	shiva	18000	HR	30	KNR	25-DEC-19	MANAGER
104	gangaram	17000	ACCOUNTS	10	HYD	01-APR-20	CLERK
105	rashmika	1200	SALES	20	PUNE	01-NOV-20	SOFTWARE
106	chandana	16000	MARKETING	40	JGL	20-NOV-20	ADMIN
107	sindhu	12000	ACCOUNTS	10	HYD	01-JAN-21	CLERK
108	bhargav	10000	SALES	20	PUNE	05-FEB-21	SOFTWARE
109	anas	18000	MARKETING	40	JGL	01-MAR-21	ADMIN
110	sana	12000	HR	30	KNR	11-JAN-21	MANAGER

10 Rows Selected.

SQL> select *from empoloyee where job='clerk' and dept_num=10;

EMP_NUM	ENAME	SAL	DNAME	DEPT_NUM	Location	DOJ	JOB
101	waseem	20000	ACCOUNTS	10	HYD	01-MAR-20	CLERK
104	gangaram	17000	ACCOUNTS	10	HYD	01-APR-20	CLERK
107	sindhu	12000	ACCOUNTS	10	HYD	01-JAN-21	CLERK

3. Display the details of employee whose salary is less than 10000

SQL>select * from employee where sal<10000;

EMP_NUM	ENAME	SAL	DNAME	DEPT_NUM	Location	DOJ	JOB
105	rashmika	1200	SALES	20	PUNE	01-NOV-20	SOFTWARE

4. Display the details of employee salaries in descending order.

SQL>select ename, sal from employee order by sal desc;

ENAME	SAL
waseem	20000
anas	18000
shiva	18000
gangaram	17000
chandana	16000
raza	15000
sindhu	12000
sana	12000
bhargav	10000
rashmika	1200

5.

6. **Display the names of employee in upper case.**

```
SQL>select upper(ename) from employee;

Upper(ENAME)
------------------------------
WASEEM
RAZA
SHIVA
GANGARAM
RASHMIKA
CHANDANA
SINDHU
BHARGAV
ANAS
SANA
```

7. **Display the names of the employees in lower case.**

```
SQL>select lower(ename) from employee;

lower(ENAME)
------------------------------
waseem
raza
shiva
gangaram
rashmika
chandana
sindhu
bhargav
anas
sana
```

Exercise – 3:

1. **Find the Dept which has maximum number of employee.**

   SQL>select dname,count(*) from employee group by dname having count(*)=(select max(count(*)) from employee group by dept_num);

DNAME	COUNT(*)
ACCOUNTS	3
SALES	3

2. **List the year in which maximum number of employee was recruited.**

   SQL> select to_char(doj,'yyyy') year from employee group by to_char(doj,'yyyy') having count(*)=(select max(count(*)) from employee group by to_char(doj,'yyyy'));

YEAR
2017

3. **Display the details of employees who are working for deptno 10 and 20.**
   SQL> select * from employee where dept_num in(10,20);

EMP_NUM	ENAME	SAL	DNAME	DEPT_NUM	Location	DOJ	JOB
101	waseem	20000	ACCOUNTS	10	HYD	01-MAR-20	CLERK
102	raza	15000	SALES	20	PUNE	05-AUG-15	SOFTWARE
104	gangaram	17000	ACCOUNTS	10	HYD	01-APR-20	CLERK
105	rashmika	1200	SALES	20	PUNE	01-NOV-20	SOFTWARE
107	sindhu	12000	ACCOUNTS	10	HYD	01-JAN-21	CLERK
108	bhargav	10000	SALES	20	PUNE	05-FEB-21	SOFTWARE

4. **Update the HRA=15%, DA=10%, TA=10% for all the Employees whose is experience more than 10 years.**

   Before update HRA,DA and TA we have to add three columns and update those values to employee table.
   Adding three columns:

   SQL> alter table employee add(HRA number(7,2),DA number(7,2),TA number(7,2));

   Table altered.
   SQL> update employee set HRA=sal*0.15,DA=sal*0.1,TA=sal*0.1 where (months_between(sysdate,doj)/12)>10;
   No rows selected

5. **Write a query to delete duplicate records from emp.**

   SQL> delete from employee where emp_num=(select emp_num from employee group by emp_num having count(*)>1);

   0 rows deleted.

-Prepared by Mohammed Waseem Raza

6. Display the sum of salaries in department wise.

SQL> select dept_num,sum(sal) from employee group by dept_num;

DEPT_NUM	SUM(SAL)
10	49000
20	26200
30	30000
40	34000

Exercise – 4:

1. **Make the duplicate table as emp12 on emp**

   SQL> create table emp12 as select * from employee;

   Table created.

2. **Add Constraint Primary Key for emp_num and dept_num columns for emp table**

   SQL> alter table employee add constraint con1 primary key(emp_num,dept_num);

   Table altered.

3. **Remove the referential integrity from employee table and dept table.**

   SQL> alter table employee drop constraint con1;

   Table altered.

4. **Display the name of Employees who earn the Highest salary in their respective departments.**

   SQL> select ename from employee where (dept_num,sal) in(select dept_num,max(sal) from employee group by dept_num);

   ENAME
   ---
   waseem
   raza
   shiva
   anas

5. **Display the employees whose job as manager.**

   SQL> select emp_num,ename,job from employee where job='MANAGER';

EMP_NUM	ENAME	JOB
103	shiva	MANAGER
110	sana	MANAGER

6. **Display the details of employees whose name is ALLEN.**
   SQL> select emp_num,ename,sal from employee where ename='ALLEN';

   no rows selected

Exercise – 5:

1. **Display all rows from Emp Table. The System wait after every Screen full of information.**
   SQL> set pause on;
   SQL> select emp_num,ename,sal from employee;

   If you want to see the output of selected columns from employees press enter key then it display selected columns

EMP_NUM	ENAME	SAL
101	waseem	20000
102	raza	15000
103	shiva	18000
104	gangaram	17000
105	rashmika	1200
106	chandana	16000
107	sindhu	12000
108	bhargav	10000
109	anas	18000
110	sana	12000

2. **Create view for emp table.**
   SQL> create view v1 as select * from employee;

   View created.
3. **Create a view for emp table where deptno=10.**
   SQL> create view v2 as select * from employee where dept_num=10;

   View created.
4. **Drop table the view of emp table.**
   SQL> drop view v1;

   View dropped.
5. **Delete all the records from the emp where the deptname is NULL.**
   SQL> delete from employee where dname is null;

   0 rows deleted.
6. **Delete the rows of employees whose experience is less than 5 year.**
   SQL> delete from employee where ((months_between(sysdate,doj))/12)<5;

   10 rows deleted.