DATABASE MANAGEMENT SYSTEMS RECORD

EXPERIMENT - 1

1. Create the DEPT table based on the DEPARTMENT following the table instance chart below. Confirm that the table is created.

QUERY:

```
create table dept(
    id number(7),
    name varchar(25)
);
```

OUTPUT:

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
DEPT	ID	NUMBER	-	7	0	-	✓	-	-
	NAME	VARCHAR2	50	-	-	-	✓	-	-

2. Create the EMP table based on the following instance chart. Confirm that the table is Created.

QUERY:

```
create table emp(
    id number(7),
    last_name varchar(25),
    first_name varchar(25),
    dept_id varchar(7)
);
```

OUTPUT:

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
EMP	ID	NUMBER	-	7	0	-	✓	-	-
	LAST_NAME	VARCHAR2	25	-	-	-	✓	-	-
	FIRST_NAME	VARCHAR2	25	-	-	-	✓	-	-
	DEPT_ID	VARCHAR2	7	-	-	-	✓	-	-

3. Modify the EMP table to allow for longer employee last names. Confirm the modification.(Hint: Increase the size to 50)

QUERY:

```
ALTER TABLE emp
MODIFY  last_name VARCHAR(50);
```

OUTPUT:

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
EMP	ID	NUMBER	-	7	0	-	✓	-	-
	LAST_NAME	VARCHAR2	50	-	-	-	✓	-	-
	FIRST_NAME	VARCHAR2	25	-	-	-	✓	-	-
	DEPT_ID	VARCHAR2	7	-	-	-	✓	-	-

4. Create the EMPLOYEES2 table based on the structure of EMPLOYEES table. Include Only the Employee_id, First_name, Last_name, Salary and Dept_id coloumns. Name the columns Id, First_name, Last_name, salary and Dept_id respectively.

QUERY:

```
CREATE TABLE EMPLOYEES2(
    ID NUMBER(7),
    FIRST_NAME VARCHAR(25),
    LAST_NAME VARCHAR(25),
    SALARY NUMBER(8,2),
    DEPT_ID NUMBER(4)
);
```

OUTPUT:

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
EMPLOYEES2	ID	NUMBER	-	7	0	-	✓	-	-
	FIRST_NAME	VARCHAR2	25	-	-	-	✓	-	-
	LAST_NAME	VARCHAR2	25	-	-	-	✓	-	-
	SALARY	NUMBER	-	8	2	-	✓	-	-
	DEPT_ID	NUMBER	-	4	0	-	✓	-	-

5. Drop the EMP table.

QUERY:

```
DROP TABLE EMP;
```

OUTPUT:

```
Table dropped.

0.07 seconds
```

6. Rename the EMPLOYEES2 table as EMP.

QUERY:

```
RENAME EMPLOYEES2 TO EMP;
```

OUTPUT:

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
EMP	ID	NUMBER	-	7	0	-	✓	-	-
	FIRST_NAME	VARCHAR2	25	-	-	-	✓	-	-
	LAST_NAME	VARCHAR2	25	-	-	-	✓	-	-
	SALARY	NUMBER	-	8	2	-	✓	-	-
	DEPT_ID	NUMBER	-	4	0	-	✓	-	-

7. Add a comment on DEPT and EMP tables. Confirm the modification by describing the table.

QUERY:

```
COMMENT ON TABLE DEPT IS 'DEPARTMENT TABLE';
```

```
COMMENT ON TABLE EMP IS 'EMPLOYEE TABLE';
```

OUTPUT:

TABLE_NAME	TABLE_TYPE	COMMENTS	ORIGIN_CON_ID
DEPT	TABLE	DEPARTMENT TABLE	3

TABLE_NAME	TABLE_TYPE	COMMENTS	ORIGIN_CON_ID
EMP	TABLE	EMPLOYEE TABLE	3

8. Drop the First_name column from the EMP table and confirm it.

QUERY:

```
ALTER TABLE EMP DROP COLUMN FIRST_NAME;
```

OUTPUT:

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
EMP	ID	NUMBER	-	7	0	-	✓	-	-
	LAST_NAME	VARCHAR2	25	-	-	-	✓	-	-
	SALARY	NUMBER	-	8	2	-	✓	-	-
	DEPT_ID	NUMBER	-	4	0	-	✓	-	-

EXPERIMENT - 2

Find the Solution for the following:

1. **Create MY_EMPLOYEE table with the following structure**

Query:

```
create table My_employee(
    id number(4) not null,
    last_name varchar(25),
    first_name varchar(25),
    userid varchar(25),
    salary number(9,2)
)
```

2. Add the first and second rows data to MY_EMPLOYEE table from the following sample data.

ID Last_name First_name Userid salary

1 Patel Ralph rpatel 895

2 Dancs Betty bdancs 860

3 Biri Ben bbiri 1100

4 Newman Chad Cnewman 750

5 Ropebur Audrey aropebur 1550

Query:

```
insert into my_employee(id,last_name,first_name,userid,salary)values(1,'patel','ralph','rpatel',895);
insert into my_employee(id,last_name,first_name,userid,salary)values(2,'dancs','betty','bdancs',860);
```

3.Display the table with values.

Query:

```
select * from my_employee;
```

Output:

ID	LAST_NAME	FIRST_NAME	USERID	SALARY
1	patel	ralph	rpatel	895
2	dancs	betty	bdancs	860

4. Populate the next two rows of data from the sample data. Concatenate the first letter of the first_name with the first seven characters of the last_name to produce Userid.

Query:

```
insert into my_employee(id,last_name,first_name,userid,salary)values(3,'biri','ben','bbiri',1100);
insert into my_employee(id,last_name,first_name,userid,salary)values(4,'newman','chad','cnewman',750);
```

```
update my_employee set userid=substr(first_name,1,1)||substr(last_name,1,7);
```

Output:

ID	LAST_NAME	FIRST_NAME	USERID	SALARY
1	patel	ralph	rpatel	895
2	dancs	betty	bdancs	860
3	biri	ben	bbiri	1100
4	newman	chad	cnewman	750

5. Make the data additions permanent.

Query:

```
commit;
```

6. Change the last name of employee 3 to Drexler.

Query:

```
update my_employee set last_name='drexler' where id =3;
```

Output:

ID	LAST_NAME	FIRST_NAME	USERID	SALARY
3	drexler	ben	bbiri	1100

7. Change the salary to 1000 for all the employees with a salary less than 900.

Query:

```
update my_employee set salary=1000 where salary < 900;
```

Output:

ID	LAST_NAME	FIRST_NAME	USERID	SALARY
1	patel	ralph	rpatel	1000
2	dancs	betty	bdancs	1000
3	drexler	ben	bbiri	1100
4	newman	chad	cnewman	1000

8. Delete Betty dancs from MY _EMPLOYEE table.

Query:

```
delete from my employee where first name='betty' and last name='dancs';
```

Output:

ID	LAST_NAME	FIRST_NAME	USERID	SALARY
1	patel	ralph	rpatel	1000
3	drexler	ben	bbiri	1100
4	newman	chad	cnewman	1000

9. Empty the fourth row of the emp table.

Query:

```
update my_employee set last_name =null,first_name=null,userid=null,salary=null where id=4;
```

Output:

ID	LAST_NAME	FIRST_NAME	USERID	SALARY
1	patel	ralph	rpatel	1000
3	drexler	ben	bbiri	1100
4	-	-	-	-

EXPERIMENT - 3

Find the Solution for the following:

1. Add a table-level PRIMARY KEY constraint to the EMP table on the ID column.The constraint should be named at creation. Name the constraint my_emp_id_pk.

Query:

```
create table emp(
    id number(6),
    name varchar(25),
    jobid varchar(8),
    constraint my_emp_id_pk primary key(id)
);
```

2. Create a PRIMAY KEY constraint to the DEPT table using the ID colum. The constraint should be named at creation. Name the constraint my_dept_id_pk.

Query:

```
create table dept(
    id number(4),
    name varchar(25),
    userid number(10),
    constraint my_dept_id_pk primary key(id)
);
```

3.Add a column DEPT_ID to the EMP table. Add a foreign key reference on the EMP table that ensures that the employee is not assigned to nonexistent deparment. Name the constraint my_emp_dept_id_fk.

Query:

```
alter table emp add dept_id number(10);
alter table emp add constraint my_emp_dept_id_fk foreign key(dept_id) references dept_id;
```

4. Modify the EMP table. Add a COMMISSION column of NUMBER data type, precision 2, scale 2. Add a constraint to the commission column that ensures that a commission value is greater than zero.

Query:

```
alter table emp add commission number(2,2);
alter table emp add constraint chk_commission_positive check(commission>0);
```