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Practical 1

A) Write the query for the following.

1) Create the following table and include the necessary constraints NOT NULL, DEFAULT, CHECK, PRIMARY KEY,UNIQUE.

a) Student (sId,sname,gender,dob,marks,class,email)

b) course(cId,cname,credits)

```
SQL> create table student(sid int primary key, sname varchar(10) not null, gender varchar(10) not
 null,dob date not null,marks int check(marks>50), class varchar(10) default 'FYCS', emailid varc
har(10));

Table created.

SQL> desc student
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 SID                                       NOT NULL NUMBER(38)
 SNAME                                     NOT NULL VARCHAR2(10)
 GENDER                                    NOT NULL VARCHAR2(10)
 DOB                                       NOT NULL DATE
 MARKS                                              NUMBER(38)
 CLASS                                              VARCHAR2(10)
 EMAILID                                            VARCHAR2(10)

SQL> create table course(cid int primary key,cname varchar(10) not null,credits int not null);

Table created.

SQL> desc course
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 CID                                       NOT NULL NUMBER(38)
 CNAME                                     NOT NULL VARCHAR2(10)
 CREDITS                                   NOT NULL NUMBER(38)
```

2) Alter the structure of the course table

c) Modify data type of cname

d) Add a column coursehours with minimum course hours greater than 45.

```
SQL> alter table course
  2  add coursehours int check(coursehours>45);

Table altered.

SQL> desc course
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------
 CID                                       NOT NULL NUMBER(38)
 CNAME                                     NOT NULL VARCHAR2(20)
 CREDITS                                   NOT NULL NUMBER(38)
 COURSEHOURS                                        NUMBER(38)
```

e) Add a column cdesc

```
SQL> alter table course
  2  add cdesc varchar(10);

Table altered.

SQL> desc course
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------
 CID                                       NOT NULL NUMBER(38)
 CNAME                                     NOT NULL VARCHAR2(20)
 CREDITS                                   NOT NULL NUMBER(38)
 COURSEHOURS                                        NUMBER(38)
 CDESC                                              VARCHAR2(10)
```

3) Alter the structure of the student table

f) Add column age with minimum age as 17

```
SQL> alter table student
  2  add age int check(age>17);

Table altered.

SQL> desc student
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------
 SID                                       NOT NULL NUMBER(38)
 SNAME                                     NOT NULL VARCHAR2(10)
 GENDER                                    NOT NULL VARCHAR2(10)
 DOB                                       NOT NULL DATE
 MARKS                                              NUMBER(38)
 CLASS                                              VARCHAR2(10)
 EMAILID                                            VARCHAR2(10)
 AGE                                                NUMBER(38)
```

g) Delete column dob

```
SQL> alter table student
  2  drop column dob;

Table altered.

SQL> desc student
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------
 SID                                       NOT NULL NUMBER(38)
 SNAME                                     NOT NULL VARCHAR2(10)
 GENDER                                    NOT NULL VARCHAR2(10)
 MARKS                                              NUMBER(38)
 CLASS                                              VARCHAR2(10)
 EMAILID                                            VARCHAR2(10)
 AGE                                                NUMBER(38)
```

h) Add a column phoneno

```
SQL> alter table student
  2  add phoneno int;

Table altered.

SQL> desc student
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------
 SID                                       NOT NULL NUMBER(38)
 SNAME                                     NOT NULL VARCHAR2(10)
 GENDER                                    NOT NULL VARCHAR2(10)
 MARKS                                              NUMBER(38)
 CLASS                                              VARCHAR2(10)
 EMAILID                                            VARCHAR2(10)
 AGE                                                NUMBER(38)
 PHONENO                                            NUMBER(38)
```

i) Rename phoneno to contactno

```
SQL> alter table student
  2  rename column phoneno to contactno;

Table altered.

SQL> desc student
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------
 SID                                       NOT NULL NUMBER(38)
 SNAME                                     NOT NULL VARCHAR2(10)
 GENDER                                    NOT NULL VARCHAR2(10)
 MARKS                                              NUMBER(38)
 CLASS                                              VARCHAR2(10)
 EMAILID                                            VARCHAR2(10)
 AGE                                                NUMBER(38)
 CONTACTNO                                          NUMBER(38)
```

4) Rename student table as Student_details

```
SQL> alter table student
  2  rename to student_details;

Table altered.
```

```
SQL> desc student_details
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------
 SID                                       NOT NULL NUMBER(38)
 SNAME                                     NOT NULL VARCHAR2(10)
 GENDER                                    NOT NULL VARCHAR2(10)
 MARKS                                              NUMBER(38)
 CLASS                                              VARCHAR2(10)
 EMAILID                                            VARCHAR2(10)
 AGE                                                NUMBER(38)
 CONTACTNO                                          NUMBER(38)
```

6) Drop the table student_details and course.

```
SQL> drop table course;

Table dropped.

SQL> drop table student_details;

Table dropped.

SQL> desc course
ERROR:
ORA-04043: object course does not exist


SQL> desc student_details
ERROR:
ORA-04043: object student_details does not exist
```

B) 1. Create a table EMPLOYEE with following attributes and specific data types and constraints required (Emp_no, E_name, E_address, E_ph_no, Dept_no, Dept_name,Job_id , Salary)

```
SQL> create table employee(Emp_no int primary key,E_name varchar(10) not null,E_address
varchar(20),E_ph_no int,Dept_no int not null,Dept_name varchar(10),Job_id int,salary int
);

Table created.

SQL> desc employee
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 EMP_NO                                    NOT NULL NUMBER(38)
 E_NAME                                    NOT NULL VARCHAR2(10)
 E_ADDRESS                                          VARCHAR2(20)
 E_PH_NO                                            NUMBER(38)
 DEPT_NO                                   NOT NULL NUMBER(38)
 DEPT_NAME                                          VARCHAR2(10)
 JOB_ID                                             NUMBER(38)
 SALARY                                             NUMBER(38)
```

2. Add a new column HIREDATE to the existing relation.

```
SQL> alter table employee
  2  add hiredate date;

Table altered.

SQL>
SQL> desc employee
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------
 EMP_NO                                    NOT NULL NUMBER(38)
 E_NAME                                    NOT NULL VARCHAR2(10)
 E_ADDRESS                                          VARCHAR2(20)
 E_PH_NO                                            NUMBER(38)
 DEPT_NO                                   NOT NULL NUMBER(38)
 DEPT_NAME                                          VARCHAR2(10)
 JOB_ID                                             NUMBER(38)
 SALARY                                             NUMBER(38)
 HIREDATE                                           DATE
```

alter

3. Change the datatype of JOB_ID from char to varchar2.

```
SQL> alter table employee
  2  modify Job_id varchar(20);

Table altered.

SQL> desc employee
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------
 EMP_NO                                    NOT NULL NUMBER(38)
 E_NAME                                    NOT NULL VARCHAR2(10)
 E_ADDRESS                                          VARCHAR2(20)
 E_PH_NO                                            NUMBER(38)
 DEPT_NO                                   NOT NULL NUMBER(38)
 DEPT_NAME                                          VARCHAR2(10)
 JOB_ID                                             VARCHAR2(20)
 SALARY                                             NUMBER(38)
 HIREDATE                                           DATE
```

4. Change the name of column/field Emp_no to E_no.

```
SQL> alter table employee
  2  rename column Emp_no to E_no;

Table altered.

SQL> desc employee
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------
 E_NO                                      NOT NULL NUMBER(38)
 E_NAME                                    NOT NULL VARCHAR2(10)
 E_ADDRESS                                          VARCHAR2(20)
 E_PH_NO                                            NUMBER(38)
 DEPT_NO                                   NOT NULL NUMBER(38)
 DEPT_NAME                                          VARCHAR2(10)
 JOB_ID                                             VARCHAR2(20)
 SALARY                                             NUMBER(38)
 HIREDATE                                           DATE
```

5. Modify the column width of the job field of emp table.

```
SQL> alter table employee
  2  modify Job_id varchar(10);

Table altered.

SQL> desc employee
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------
 E_NO                                      NOT NULL NUMBER(38)
 E_NAME                                    NOT NULL VARCHAR2(10)
 E_ADDRESS                                          VARCHAR2(20)
 E_PH_NO                                            NUMBER(38)
 DEPT_NO                                   NOT NULL NUMBER(38)
 DEPT_NAME                                          VARCHAR2(10)
 JOB_ID                                             VARCHAR2(10)
 SALARY                                             NUMBER(38)
 HIREDATE                                           DATE
```

C) Create the following tables with specified attributes and constraints

1) Department Table: Department_Id varchar2(20) primary key, Department_Name varchar2(25) with required data.
2) Instructor Table: Instructor_id varchar2(20) primary key, Department_Id varchar2(20) Foreign key, Last_Name varchar2(25), First_Name varchar2(200) must have value, Telephone varchar2(20) must be unique, gender char(1) must be either ‘F’ or ‘M’,city varchar(10) default value must be ‘MUMBAI’.