

**Practical 1: Study of Data Definition Language Statement**

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)

```
Select Run SQL Command Line

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SQL> connect system/jovial
Connected.
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 varchar(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>
```

b. course(cId,cname,credits)

```
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)

SQL>
```

2) Alter the structure of the course table

c. Modify data type of cname

```
SQL> alter table course
2 modify cname varchar(20)
3 ;

Table altered.

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

SQL>
```

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)

SQL>
```

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)
CDISC VARCHAR2(10)

SQL>
```

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)

SQL>
```

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)

SQL>
```

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)

```
SQL>
```

i. Rename phoneno to contactno

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

Table altered.

```
SQL> desc studnt;
```

ERROR:

ORA-04043: object studnt does not exist

```
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)

```
SQL>
```

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)

```
SQL>
```

6) Drop the table student\_details and course.

```
SQL> drop table course;
```

Table dropped.

```
SQL> drop table student_details;
```

Table dropped.

```
SQL>
```

- 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)

```
SQL>
```

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

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

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		NUMBER(38)
SALARY		NUMBER(38)
HIREDATE		DATE

```
SQL>
```

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

```
SQL>
```

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

```
SQL>
```

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

```
SQL>
```

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 d

```
SQL> create table Department(Department_Id varchar(20) primary key, Department_Name varchar(25));
```

Table created.

```
SQL> alter table Department
2 modify Department_Name varchar(25) not null;
```

Table altered.

```
SQL> desc Department
```

Name	Null?	Type
DEPARTMENT_ID	NOT NULL	VARCHAR2(20)
DEPARTMENT_NAME	NOT NULL	VARCHAR2(25)

```
SQL>
```

2. Instructor Table: Instructor\_id varchar2(20) primary key, Department\_Id varchar2(20) Foreign key, Last\_Name varchar2(20) must have value, First\_Name varchar2(200) must have value, Telephone varchar2(20) must be unique, gender char(1) must be either 'F' or 'M', Address varchar(10) default value must be 'MUMBAI'.



```
SQL> create table Instructor(Instructor_id varchar(20) primary key, Department_Id varchar(20) references Department(Department_Id), Last_name varchar(20),First_name varchar(200) not null, Telephone varchar(20) unique,gender char(1) check(gender='F' or gender='M'),city varchar(10) default 'MUMBAI');
```

Table created.

```
SQL> desc Instructor
```

Name	Null?	Type
-----	-----	-----
INSTRUCTOR_ID	NOT NULL	VARCHAR2(20)
DEPARTMENT_ID		VARCHAR2(20)
LAST_NAME		VARCHAR2(20)
FIRST_NAME	NOT NULL	VARCHAR2(200)
TELEPHONE		VARCHAR2(20)
GENDER		CHAR(1)
CITY		VARCHAR2(10)

```
SQL>
```

D) Create the following described below:

**Table Name: EMP**

Column	Data Type	Length	Precision	Scale	Primary Key	Nullable
EMPNO	Int	-	-	-	Yes	-
ENAME	Varchar2	10	-	-	-	No
JOB	Varchar2	9	-	-	-	✓
MGR	Int	-	-	-	-	✓
HIREDATE	Date	-	-	-	-	✓
SAL	Number	-	7	2	-	✓
COMM	Int	-	-	-	-	✓
DEPTNO	Int	-	-	-	-	✓

**Table Name: DEPT**

Column	Data Type	Length	Precision	Scale	Primary Key	Nullable
DEPTNO	Int	-	-	-	Yes	-
DNAME	Varchar2	14	-	-	-	No
LOC	Varchar2	13	-	-	-	✓

```

Run SQL Command Line

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SQL> connect system/jovial
Connected.
SQL> create table jovial_DEPT(Dept_no int primary key, Dname varchar(14) not null, Loc Varchar(13));

Table created.

Run SQL Command Line

SQL> create table jovial_EMP(Emp_no int primary key, Ename varchar(10) not null, Job varchar(9),MGR int, Hiredate date,
SAL decimal (7,2), Comm int, Dept_no int references jovial_DEPT(Dept_no));

Table created.

SQL>

Run SQL Command Line

SQL> desc jovial_DEPT;
Name                                Null?    Type
-----
DEPT_NO                             NOT NULL NUMBER(38)
DNAME                               NOT NULL VARCHAR2(14)
LOC                                  VARCHAR2(13)

SQL> desc jovial_EMP;
Name                                Null?    Type
-----
EMP_NO                              NOT NULL NUMBER(38)
ENAME                               NOT NULL VARCHAR2(10)
JOB                                  VARCHAR2(9)
MGR                                  NUMBER(38)
HIREDATE                            DATE
SAL                                  NUMBER(7,2)
COMM                                 NUMBER(38)
DEPT_NO                             NUMBER(38)

SQL>

```