

Practical 1: Study of Data Definition Language Statement

A) Write the query for the following

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

a) Student (sid, sname, gender, dob, remark, marks, class, email)

```
SQL> create table student(sid int not null primary key,sname varchar(10),gender varchar(5),dob date,remark varchar(6),marks int,class varchar(5) default'BAF',email varchar(10) not null unique,check(gender in('male','female')));
```

Table created.

```
SQL> desc student
```

Name	Null?	Type

SID	NOT NULL	NUMBER(38)
SNAME		VARCHAR2(10)
GENDER		VARCHAR2(5)
DOB		DATE
REMARK		VARCHAR2(6)
MARKS		NUMBER(38)
CLASS		VARCHAR2(5)
EMAIL	NOT NULL	VARCHAR2(10)

b) Course (cid, cname, credits)

```
SQL> create table course(cid int not null primary key,cname varchar(8),credits int default'10');
```

Table created.

```
SQL> desc course
```

Name	Null?	Type

CID	NOT NULL	NUMBER(38)
CNAME		VARCHAR2(8)
CREDITS		NUMBER(38)

```
SQL> █
```

2) Alter the structure of the Course table

a) Modify datatype of cname.

```
SQL> alter table course
  2  modify(cname varchar(6));
```

Table altered.

```
SQL> desc couse
```

ERROR:

ORA-04043: object couse does not exist

```
SQL> desc course
```

Name	Null?	Type
CID	NOT NULL	NUMBER(38)
CNAME		VARCHAR2(6)
CREDITS		NUMBER(38)

```
SQL>
```

- b) 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> dsec course
```

SP2-0734: unknown command beginning "dsec cours..." - rest of line ignored.

```
SQL> desc course
```

Name	Null?	Type
CID	NOT NULL	NUMBER(38)
CNAME		VARCHAR2(6)
CREDITS		NUMBER(38)
COURSEHOURS		NUMBER(38)

```
SQL>
```

- c) Add a column cdesc

```
SQL> alter table course
  2  add cdesc varchar(5);
```

Table altered.

```
SQL> desc course
```

Name	Null?	Type
CID	NOT NULL	NUMBER(38)
CNAME		VARCHAR2(6)
CREDITS		NUMBER(38)
COURSEHOURS		NUMBER(38)
CDESC		VARCHAR2(5)

```
SQL>
```

- 3) Alter the structure of Student Table

- a) 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		VARCHAR2(10)
GENDER		VARCHAR2(5)
DOB		DATE
REMARK		VARCHAR2(6)
MARKS		NUMBER(38)
CLASS		VARCHAR2(5)
EMAIL	NOT NULL	VARCHAR2(10)
AGE		NUMBER(38)

b) Delete the column dob

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

Table altered.

```
SQL> desc student
```

Name	Null?	Type
SID	NOT NULL	NUMBER(38)
SNAME		VARCHAR2(10)
GENDER		VARCHAR2(5)
REMARK		VARCHAR2(6)
MARKS		NUMBER(38)
CLASS		VARCHAR2(5)
EMAIL	NOT NULL	VARCHAR2(10)
AGE		NUMBER(38)

```
SQL> █
```

c) Add a column phoneno.

```
SQL> alter table student
2 add phoneno varchar(10);
```

Table altered.

```
SQL> desc student
```

Name	Null?	Type
SID	NOT NULL	NUMBER(38)
SNAME		VARCHAR2(10)
GENDER		VARCHAR2(5)
REMARK		VARCHAR2(6)
MARKS		NUMBER(38)
CLASS		VARCHAR2(5)
EMAIL	NOT NULL	VARCHAR2(10)
AGE		NUMBER(38)
PHONENO		VARCHAR2(10)

```
SQL>
```

d) 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		VARCHAR2(10)
GENDER		VARCHAR2(5)
REMARK		VARCHAR2(6)
MARKS		NUMBER(38)
CLASS		VARCHAR2(5)
EMAIL	NOT NULL	VARCHAR2(10)
AGE		NUMBER(38)
CONTACTNO		VARCHAR2(10)

```
SQL> █
```

4) Rename Student table as Student_details.

```
SQL> rename student to Student_details;
```

Table renamed.

```
SQL> desc Student_details
```

Name	Null?	Type
SID	NOT NULL	NUMBER(38)
SNAME		VARCHAR2(10)
GENDER		VARCHAR2(5)
REMARK		VARCHAR2(6)
MARKS		NUMBER(38)
CLASS		VARCHAR2(5)
EMAIL	NOT NULL	VARCHAR2(10)
AGE		NUMBER(38)
CONTACTNO		VARCHAR2(10)

```
SQL> █
```

5) Describe the structure of both the tables.

```
SQL> desc course
```

Name	Null?	Type
CID	NOT NULL	NUMBER(38)
CNAME		VARCHAR2(6)
CREDITS		NUMBER(38)
COURSEHOURS		NUMBER(38)
CDESC		VARCHAR2(5)

```
SQL> desc Student_details
```

Name	Null?	Type

SID	NOT NULL	NUMBER(38)
SNAME		VARCHAR2(10)
GENDER		VARCHAR2(5)
REMARK		VARCHAR2(6)
MARKS		NUMBER(38)
CLASS		VARCHAR2(5)
EMAIL	NOT NULL	VARCHAR2(10)
AGE		NUMBER(38)
CONTACTNO		VARCHAR2(10)

6) Drop the table student_details and Course.

```
SQL> drop table Student_details;
```

Table dropped.

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

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,E_name varchar(10),E_address varchar(20),E_ph_no varchar(10),Dept_no int,Dept_name varchar(10),Job_id char,salary varchar(5));
```

Table created.

```
SQL> desc EMPLOYEE
```

Name	Null?	Type

EMP_NO		NUMBER(38)
E_NAME		VARCHAR2(10)
E_ADDRESS		VARCHAR2(20)
E_PH_NO		VARCHAR2(10)
DEPT_NO		NUMBER(38)
DEPT_NAME		VARCHAR2(10)
JOB_ID		CHAR(1)
SALARY		VARCHAR2(5)

```
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		NUMBER(38)
E_NAME		VARCHAR2(10)
E_ADDRESS		VARCHAR2(20)
E_PH_NO		VARCHAR2(10)
DEPT_NO		NUMBER(38)
DEPT_NAME		VARCHAR2(10)
JOB_ID		CHAR(1)
SALARY		VARCHAR2(5)
HIREDATE		DATE

```
SQL> _
```

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

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

Table altered.

```
SQL> desc EMPLOYEE
```

Name	Null?	Type
EMP_NO		NUMBER(38)
E_NAME		VARCHAR2(10)
E_ADDRESS		VARCHAR2(20)
E_PH_NO		VARCHAR2(10)
DEPT_NO		NUMBER(38)
DEPT_NAME		VARCHAR2(10)
JOB_ID		VARCHAR2(10)
SALARY		VARCHAR2(5)
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		NUMBER(38)
E_NAME		VARCHAR2(10)
E_ADDRESS		VARCHAR2(20)
E_PH_NO		VARCHAR2(10)
DEPT_NO		NUMBER(38)
DEPT_NAME		VARCHAR2(10)
JOB_ID		VARCHAR2(10)
SALARY		VARCHAR2(5)
HIREDATE		DATE

```
SQL>
```

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

```
SQL> alter table EMPLOYEE
2 modify Job_id varchar(30);
```

Table altered.

```
SQL> desc EMPLOYEE
```

Name	Null?	Type
E_NO		NUMBER(38)
E_NAME		VARCHAR2(10)
E_ADDRESS		VARCHAR2(20)
E_PH_NO		VARCHAR2(10)
DEPT_NO		NUMBER(38)
DEPT_NAME		VARCHAR2(10)
JOB_ID		VARCHAR2(30)
SALARY		VARCHAR2(5)
HIREDATE		DATE

C) Create the following tables with specified attributes and constraints

Department Table: Department_Id varchar2(20) primarykey, Department_Name varchar2(25) with required data.

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

Table created.

```
SQL> desc Department
```

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

```
SQL> _
```

Instructor Table: Instructor_id varchar2(20) primary key,foreign key, Department_Id varchar2(20),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'

```
SQL> create table Instructor(Instructor_Id varchar(20) primary key,Department_Id varchar(20),Foreign key(Department_Id)references Department(Department_id),Last_Name varchar(25),First_Name varchar(200) not null,Telephone varchar(20) unique,gender char(1) check(gender in ('F','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(25)
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	-	-	-	-	✓

SQL> create table EMP_Bechu(EMPNO int primary key not null,ENAME varchar(10) not null,JOB varchar(9),MGR int,HIREDATE date,SAL number(7,2),COMM int,DEPTNO int);

Table created.

SQL> desc EMP_Bechu

Name	Null?	Type
-----	-----	-----
EMPNO	NOT NULL	NUMBER(38)
ENAME	NOT NULL	VARCHAR2(10)
JOB		VARCHAR2(9)
MGR		NUMBER(38)
HIREDATE		DATE
SAL		NUMBER(7,2)
COMM		NUMBER(38)
DEPTNO		NUMBER(38)

SQL>

Table Name: DEPT

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

SQL> create table DEPT_Bechu(DEPTNO int primary key not null,DNAME varchar(14) not null,LOC varchar(13));

Table created.

SQL> desc DEPT_Bechu

Name	Null?	Type
-----	-----	-----
DEPTNO	NOT NULL	NUMBER(38)
DNAME	NOT NULL	VARCHAR2(14)
LOC		VARCHAR2(13)

SQL> █

