

Name: Aadil Khan

Roll No: 20

FYCS

Practical No: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)

```
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(cld,cname,credits)

```
SQL> desc course
```

Name	Null?	Type
CID	NOT NULL	NUMBER(38)
CNAME	NOT NULL	VARCHAR2(20)
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(30);
```

Table altered.

```
SQL> desc course
```

Name	Null?	Type
CID	NOT NULL	NUMBER(38)
CNAME	NOT NULL	VARCHAR2(30)
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(30)
CREDITS	NOT NULL	NUMBER(38)
COURSEHOURS	NOT NULL	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(30)
CREDITS	NOT NULL	NUMBER(38)
COURSEHOURS	NOT NULL	NUMBER(38)
CDESC		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 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> desc course
ERROR:
ORA-04043: object course does not exist

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

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(50), e_ph_no int, dept_no int not null, dept_name varchar(10) not null, 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(50)
E_PH_NO		NUMBER(38)
DEPT_NO	NOT NULL	NUMBER(38)
DEPT_NAME	NOT NULL	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(50)
E_PH_NO		NUMBER(38)
DEPT_NO	NOT NULL	NUMBER(38)
DEPT_NAME	NOT NULL	VARCHAR2(10)
JOB_ID		NUMBER(38)
SALARY		NUMBER(38)
HIREDATE		DATE

```
SQL>
```

- 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(50)
E_PH_NO		NUMBER(38)
DEPT_NO	NOT NULL	NUMBER(38)
DEPT_NAME	NOT NULL	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(50)
E_PH_NO		NUMBER(38)
DEPT_NO	NOT NULL	NUMBER(38)
DEPT_NAME	NOT NULL	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(50)
E_PH_NO		NUMBER(38)
DEPT_NO	NOT NULL	NUMBER(38)
DEPT_NAME	NOT NULL	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 data.

```
SQL> create table department(department_id varchar(20) primary key, department_name varchar(20));
Table created.
SQL> desc department
Name Null? Type
-----
DEPARTMENT_ID NOT NULL VARCHAR2(20)
DEPARTMENT_NAME VARCHAR2(20)
SQL> alter table department
2 modify department_name varchar(20) not null;
Table altered.
SQL> desc department
Name Null? Type
-----
DEPARTMENT_ID NOT NULL VARCHAR2(20)
DEPARTMENT_NAME NOT NULL VARCHAR2(20)
SQL>
```

2) Instructor Table: Instructor_id varchar2(20) primary key, Department_Id varchar2(20) Foreign key, Last_Name varchar2(20), 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) 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	-	-	-	✓

```
SQL> create table aadil_dept(dept_no int primary key, dname varchar(14), loc varchar(13));
```

Table created.

```
SQL> desc aadil_dept
```

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

```
SQL>
```

```
SQL> create table aadil_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 aadil_dept(dept_no));
```

Table created.

```
SQL> desc aadil_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>
```

Adil Khan