Name : kiran kidecha
Roll No: 130

DBMS1 Practical

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)

```
Run SQL Command Line

SQL> create table student(sid int not null primary key, sname varchar(20),gender varchar(10),dob date,remark varchar(10),mark int,class
 varchar(30) default'FY BSCIT',emailid varchar(35) not null unique,check(gender in('male','female')));

Table created.

SQL> desc student
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 SID                                       NOT NULL NUMBER(38)
 SNAME                                              VARCHAR2(20)
 GENDER                                             VARCHAR2(10)
 DOB                                                DATE
 REMARK                                             VARCHAR2(10)
 MARK                                               NUMBER(38)
 CLASS                                              VARCHAR2(30)
 EMAILID                                   NOT NULL VARCHAR2(35)

SQL>
```

b) Course (cid, cname, credits)

```
Select Run SQL Command Line

SQL> create table course(cid int not null primary key,cname varchar(20),credits int);

Table created.

SQL> desc course
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 CID                                       NOT NULL NUMBER(38)
 CNAME                                              VARCHAR2(20)
 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(30);

Table altered.

SQL> desc course
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 CID                                       NOT NULL NUMBER(38)
 CNAME                                              VARCHAR2(30)
 CREDITS                                            NUMBER(38)

SQL>
```

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

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

Table altered.

SQL> desc course
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 CID                                       NOT NULL NUMBER(38)
 CNAME                                              VARCHAR2(30)
 CREDITS                                            NUMBER(38)
 COURSEHOUR                                         NUMBER(38)

SQL>
```

c) Add a column cdesc

```
SQL> alter table course
  2  add cdesc varchar(20);

Table altered.

SQL> desc course
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 CID                                       NOT NULL NUMBER(38)
 CNAME                                              VARCHAR2(30)
 CREDITS                                            NUMBER(38)
 COURSEHOUR                                         NUMBER(38)
 CDESC                                              VARCHAR2(20)

SQL>
```

3) Alter the structure of Student Table

a) Add column age with minimum age as 17.

Run SQL Command Line

```
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(20)
 GENDER                                             VARCHAR2(10)
 DOB                                                DATE
 REMARK                                             VARCHAR2(10)
 MARK                                               NUMBER(38)
 CLASS                                              VARCHAR2(30)
 EMAILID                                   NOT NULL VARCHAR2(35)
 AGE                                                NUMBER(38)

SQL>
```

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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(20)
 GENDER                                             VARCHAR2(10)
 REMARK                                             VARCHAR2(10)
 MARK                                               NUMBER(38)
 CLASS                                              VARCHAR2(30)
 EMAILID                                   NOT NULL VARCHAR2(35)
 AGE                                                NUMBER(38)

SQL>
```

c) 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                                              VARCHAR2(20)
 GENDER                                             VARCHAR2(10)
 REMARK                                             VARCHAR2(10)
 MARK                                               NUMBER(38)
 CLASS                                              VARCHAR2(30)
 EMAILID                                   NOT NULL VARCHAR2(35)
 AGE                                                NUMBER(38)
 PHONENO                                            NUMBER(38)

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(20)
 GENDER                                             VARCHAR2(10)
 REMARK                                             VARCHAR2(10)
 MARK                                               NUMBER(38)
 CLASS                                              VARCHAR2(30)
 EMAILID                                   NOT NULL VARCHAR2(35)
 AGE                                                NUMBER(38)
 CONTACTNO                                          NUMBER(38)

SQL>
```

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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                                              VARCHAR2(20)
 GENDER                                             VARCHAR2(10)
 REMARK                                             VARCHAR2(10)
 MARK                                               NUMBER(38)
 CLASS                                              VARCHAR2(30)
 EMAILID                                   NOT NULL VARCHAR2(35)
 AGE                                                NUMBER(38)
 CONTACTNO                                          NUMBER(38)

SQL>
```

5) Describe the structure of both the tables.

```
SQL> desc course
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 CID                                       NOT NULL NUMBER(38)
 CNAME                                              VARCHAR2(30)
 CREDITS                                            NUMBER(38)
 COURSEHOUR                                         NUMBER(38)
 CDESC                                              VARCHAR2(20)

SQL>
```

```
SQL> desc student_details
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 SID                                       NOT NULL NUMBER(38)
 SNAME                                              VARCHAR2(20)
 GENDER                                             VARCHAR2(10)
 REMARK                                             VARCHAR2(10)
 MARK                                               NUMBER(38)
 CLASS                                              VARCHAR2(30)
 EMAILID                                   NOT NULL VARCHAR2(35)
 AGE                                                NUMBER(38)
 CONTACTNO                                          NUMBER(38)

SQL>
```

6) Drop the table student_details and Course.

```
SQL> drop table student_details;

Table dropped.

SQL> drop table course;

Table dropped.

SQL>
```

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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)

```
Run SQL Command Line

SQL> create table EMPLOYEE(Emp_no int primary key,E_name varchar(10),E_address varchar(20),E_ph_no int not null,Dept_name varchar(20),J
ob_id char unique,salary varchar(25));

Table created.

SQL> desc EMPLOYEE
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 EMP_NO                                    NOT NULL NUMBER(38)
 E_NAME                                             VARCHAR2(10)
 E_ADDRESS                                          VARCHAR2(20)
 E_PH_NO                                   NOT NULL NUMBER(38)
 DEPT_NAME                                          VARCHAR2(20)
 JOB_ID                                             CHAR(1)
 SALARY                                             VARCHAR2(25)

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                                             VARCHAR2(10)
 E_ADDRESS                                          VARCHAR2(20)
 E_PH_NO                                   NOT NULL NUMBER(38)
 DEPT_NAME                                          VARCHAR2(20)
 JOB_ID                                             VARCHAR2(20)
 SALARY                                             VARCHAR2(25)
 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                                             VARCHAR2(10)
 E_ADDRESS                                          VARCHAR2(20)
 E_PH_NO                                   NOT NULL NUMBER(38)
 DEPT_NAME                                          VARCHAR2(20)
 JOB_ID                                             VARCHAR2(20)
 SALARY                                             VARCHAR2(25)

SQL>
```

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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                                             VARCHAR2(10)
 E_ADDRESS                                          VARCHAR2(20)
 E_PH_NO                                   NOT NULL NUMBER(38)
 DEPT_NAME                                          VARCHAR2(20)
 JOB_ID                                             VARCHAR2(20)
 SALARY                                             VARCHAR2(25)
 HIREDATE                                           DATE

SQL>
```

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

```
SQL> alter table  EMPLOYEE
  2  modify Job_id varchar(15);

Table altered.

SQL> desc EMPLOYEE
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 E_NO                                      NOT NULL NUMBER(38)
 E_NAME                                             VARCHAR2(10)
 E_ADDRESS                                          VARCHAR2(20)
 E_PH_NO                                   NOT NULL NUMBER(38)
 DEPT_NAME                                          VARCHAR2(20)
 JOB_ID                                             VARCHAR2(15)
 SALARY                                             VARCHAR2(25)
 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)
```

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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’.

```
SQL> create table Instructor(Instructor_id varchar(20) primary key,Department_ID varchar(20) references Department(Department_ID),Last_
Name varchar(25),First_name varchar(200) not null,Telephone varchar(20) unique,gender char(1) check(gender='F' or gender='M'),city varc
har(10) default 'MUMBAI');

Table created.
```

```
SQL> create table Instructor_kiran as select * from Instructor;

Table created.

SQL> desc Instructor_kiran
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 INSTRUCTOR_ID                                      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:

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(EMPNO INT PRIMARY KEY,ENAME VARCHAR(10) NOT NULL,JOB VARCHAR(9),MGR INT,HIREDATE DATE,SAL NUMBER(7,2),COMM INT,DE
PTNO INT references Dept(DEPTNO));

Table created.
```

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```
SQL> create table EMP_kiran as select * from EMP;

Table created.

SQL> desc EMP_kiran
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 EMPNO                                              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>
```

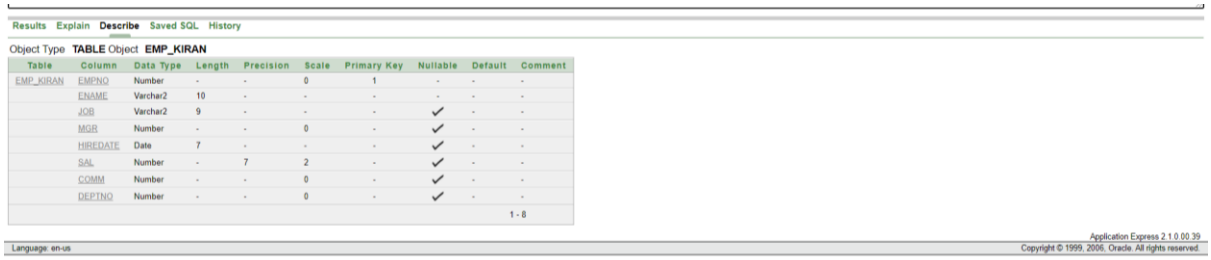

Table Name: DEPT

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

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

Table created.

SQL>
```

```
SQL> desc DEPT_kiran
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 DEPTNO                                    NOT NULL NUMBER(38)
 DNAME                                     NOT NULL VARCHAR2(14)
 LOC                                                VARCHAR2(13)

SQL>
```

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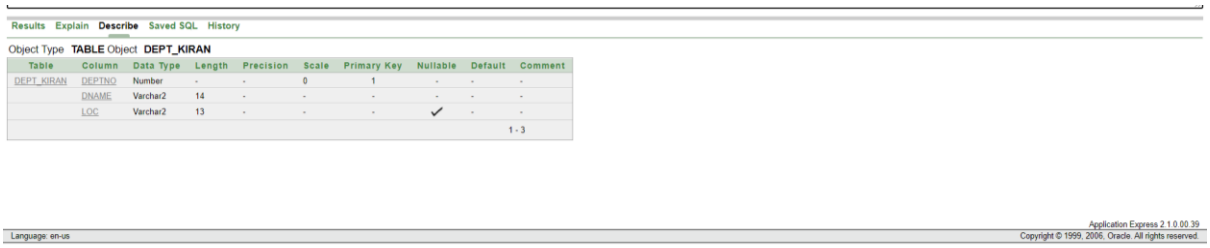

Results Explain Describe Saved SQL History

Object Type TABLE Object DEPT_KIRAN

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
DEPT_KIRAN	DEPTNO	Number	-	-	0	1	-	-	-
	DNAME	Varchar2	14	-	-	-	-	-	-
	LOC	Varchar2	13	-	-	-	✓	-	-

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