

DBMS Practical – 2

1. Create the following tables and specify constraints at the time of creation.

```

1 Create table department (
2 deptno number(3) primary key,
3 dname varchar2(20) unique,
4 location varchar2(20) not null check( location in ('Agra', 'Delhi', 'Pune')));
5 Create table employee (
6 empno varchar2(5) primary key check (empno like 'E%'),
7 ename varchar2(20) unique,
8 Designation varchar2(20) not null,
9 salary number(10) check (salary between 15000 and 50000),
10 dob date not null,
11 dno number(3) references department);
12 Create table candidate (
13 Candidate_ID number(6) primary key,
14 Candidate_Name varchar2(20) not null,
15 Candidate_Email varchar2(30) unique check(Candidate_Email like '%_@%_%'),
16 Candidate_Dept varchar2(2) default 'HR',
17 Manager_ID number(6) references candidate);
  
```

Table created.

Table created.

Table created.

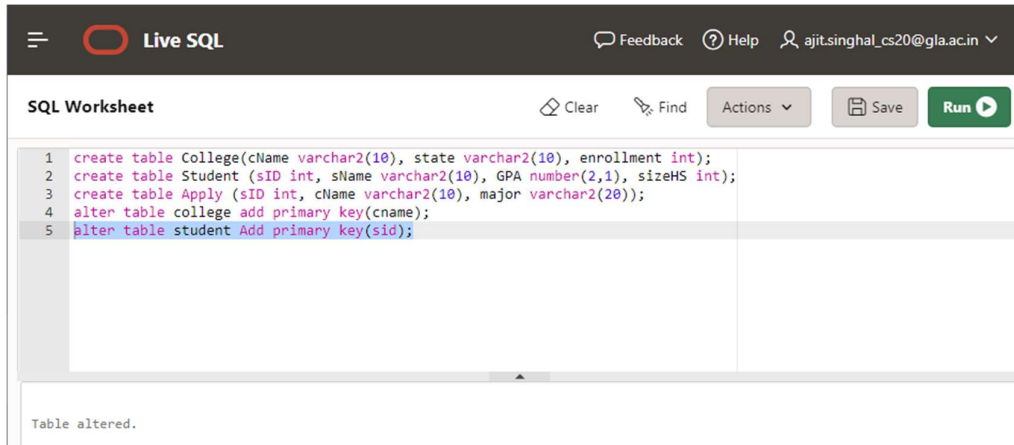
- i. Add cName as Primary key in College.

```

1 create table College(cName varchar2(10), state varchar2(10), enrollment int);
2 create table Student (sID int, sName varchar2(10), GPA number(2,1), sizeHS int);
3 create table Apply (sID int, cName varchar2(10), major varchar2(20));
4 alter table college add primary key(cname);
  
```

Table altered.

- ii. Add sID as Primarykey in Student.



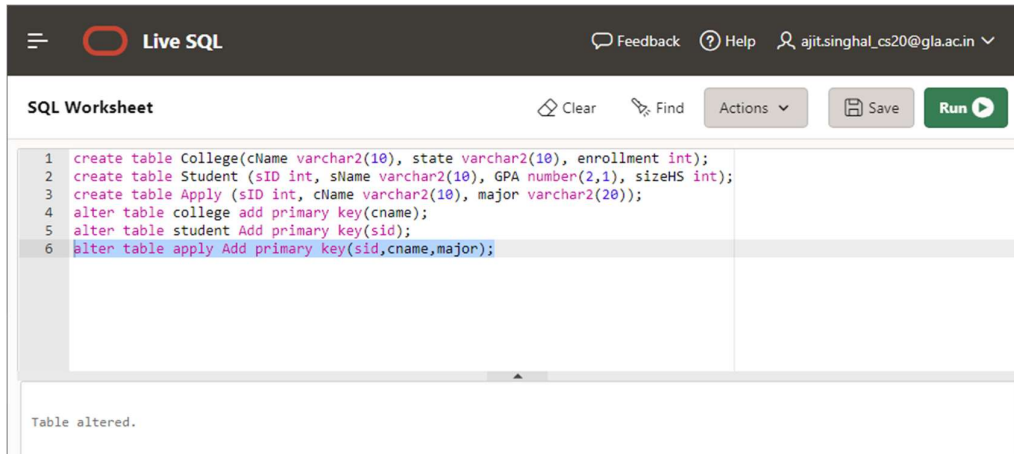
```

1 create table College(cName varchar2(10), state varchar2(10), enrollment int);
2 create table Student (sID int, sName varchar2(10), GPA number(2,1), sizeHS int);
3 create table Apply (sID int, cName varchar2(10), major varchar2(20));
4 alter table college add primary key(cname);
5 alter table student Add primary key(sid);

```

Table altered.

iii. Add sID, cName, major as Primarykey in Apply.



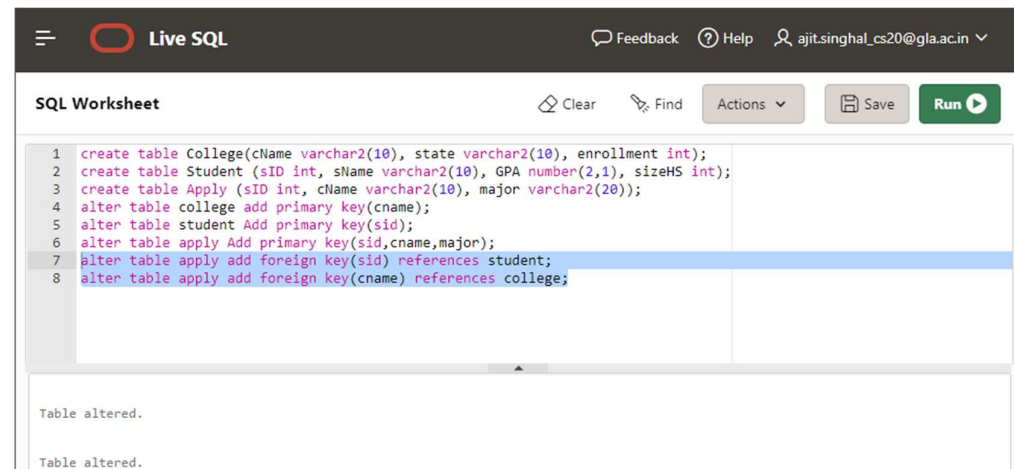
```

1 create table College(cName varchar2(10), state varchar2(10), enrollment int);
2 create table Student (sID int, sName varchar2(10), GPA number(2,1), sizeHS int);
3 create table Apply (sID int, cName varchar2(10), major varchar2(20));
4 alter table college add primary key(cname);
5 alter table student Add primary key(sid);
6 alter table apply Add primary key(sid,cname,major);

```

Table altered.

iv. Make sID in Apply foreign key referring table student and cName referring table college.



```

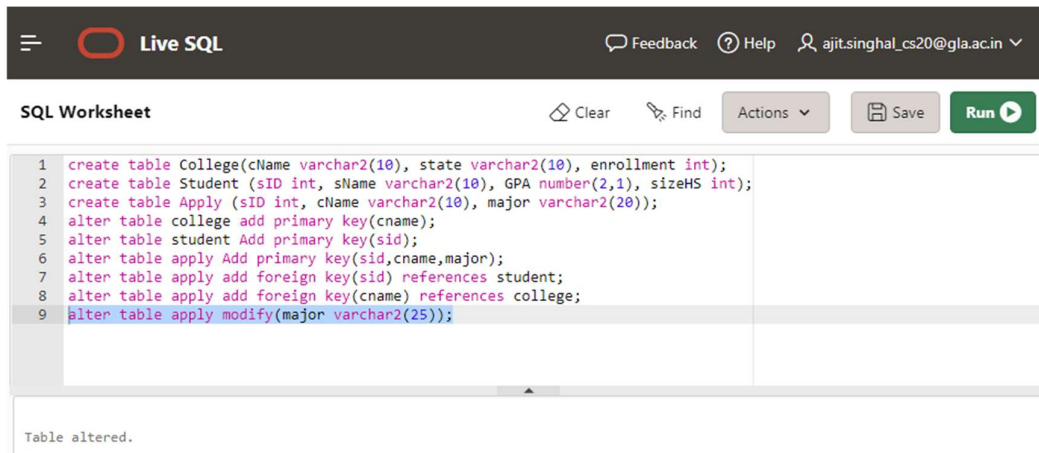
1 create table College(cName varchar2(10), state varchar2(10), enrollment int);
2 create table Student (sID int, sName varchar2(10), GPA number(2,1), sizeHS int);
3 create table Apply (sID int, cName varchar2(10), major varchar2(20));
4 alter table college add primary key(cname);
5 alter table student Add primary key(sid);
6 alter table apply Add primary key(sid,cname,major);
7 alter table apply add foreign key(sid) references student;
8 alter table apply add foreign key(cname) references college;

```

Table altered.

Table altered.

v. Increase data type size of major from 20 to 25.



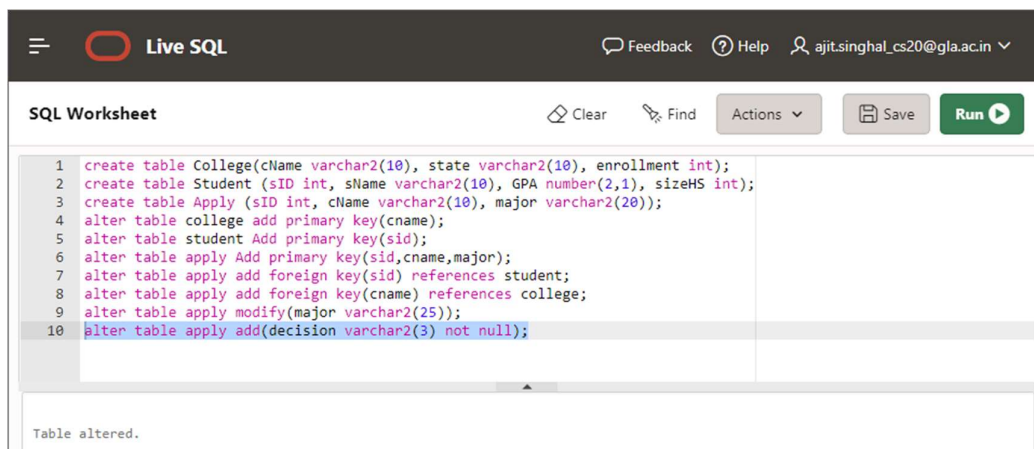
```

1 create table College(cName varchar2(10), state varchar2(10), enrollment int);
2 create table Student (sID int, sName varchar2(10), GPA number(2,1), sizeHS int);
3 create table Apply (sID int, cName varchar2(10), major varchar2(20));
4 alter table college add primary key(cname);
5 alter table student Add primary key(sid);
6 alter table apply Add primary key(sid,cname,major);
7 alter table apply add foreign key(sid) references student;
8 alter table apply add foreign key(cname) references college;
9 alter table apply modify(major varchar2(25));

```

Table altered.

- vi. Add a new column decision in the Apply table keeping a constraint of not null for this column with data type varchar2(3).



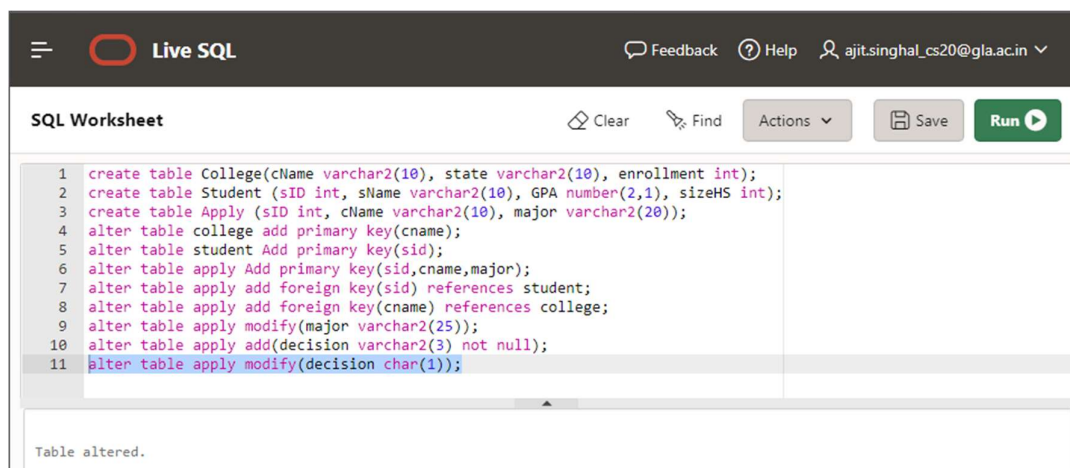
```

1 create table College(cName varchar2(10), state varchar2(10), enrollment int);
2 create table Student (sID int, sName varchar2(10), GPA number(2,1), sizeHS int);
3 create table Apply (sID int, cName varchar2(10), major varchar2(20));
4 alter table college add primary key(cname);
5 alter table student Add primary key(sid);
6 alter table apply Add primary key(sid,cname,major);
7 alter table apply add foreign key(sid) references student;
8 alter table apply add foreign key(cname) references college;
9 alter table apply modify(major varchar2(25));
10 alter table apply add(decision varchar2(3) not null);

```

Table altered.

- vii. Change data type of decision in Apply to char(1).



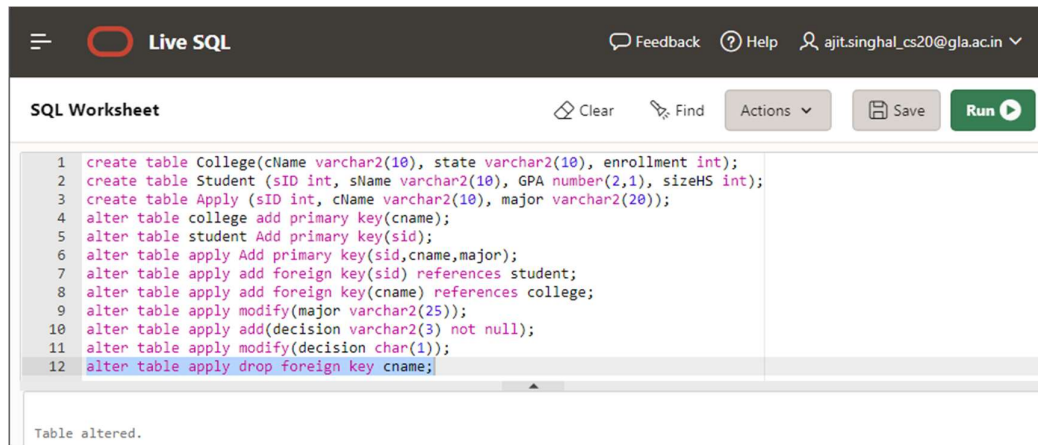
```

1 create table College(cName varchar2(10), state varchar2(10), enrollment int);
2 create table Student (sID int, sName varchar2(10), GPA number(2,1), sizeHS int);
3 create table Apply (sID int, cName varchar2(10), major varchar2(20));
4 alter table college add primary key(cname);
5 alter table student Add primary key(sid);
6 alter table apply Add primary key(sid,cname,major);
7 alter table apply add foreign key(sid) references student;
8 alter table apply add foreign key(cname) references college;
9 alter table apply modify(major varchar2(25));
10 alter table apply add(decision varchar2(3) not null);
11 alter table apply modify(decision char(1));

```

Table altered.

- viii. Drop foreign key on column name cName from Apply table.



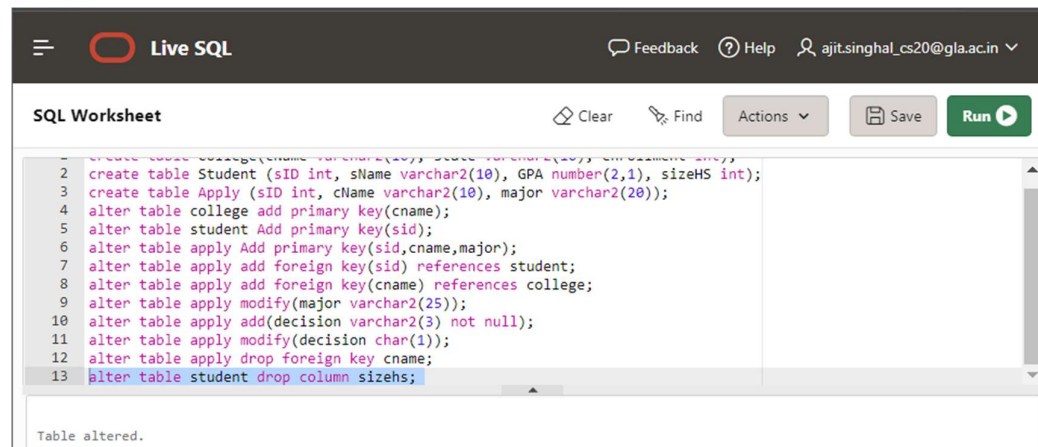
```

1 create table College(cName varchar2(10), state varchar2(10), enrollment int);
2 create table Student (sID int, sName varchar2(10), GPA number(2,1), sizeHS int);
3 create table Apply (sID int, cName varchar2(10), major varchar2(20));
4 alter table college add primary key(cname);
5 alter table student Add primary key(sid);
6 alter table apply Add primary key(sid,cname,major);
7 alter table apply add foreign key(sid) references student;
8 alter table apply add foreign key(cname) references college;
9 alter table apply modify(major varchar2(25));
10 alter table apply add(decision varchar2(3) not null);
11 alter table apply modify(decision char(1));
12 alter table apply drop foreign key cname;

```

Table altered.

ix. Remove column sizeHS from Student table.



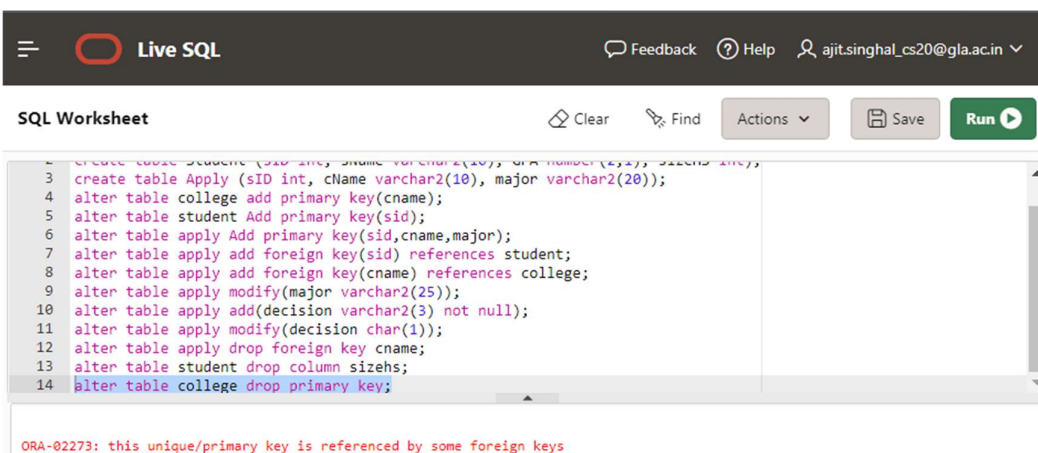
```

1 create table College(cName varchar2(10), state varchar2(10), enrollment int);
2 create table Student (sID int, sName varchar2(10), GPA number(2,1), sizeHS int);
3 create table Apply (sID int, cName varchar2(10), major varchar2(20));
4 alter table college add primary key(cname);
5 alter table student Add primary key(sid);
6 alter table apply Add primary key(sid,cname,major);
7 alter table apply add foreign key(sid) references student;
8 alter table apply add foreign key(cname) references college;
9 alter table apply modify(major varchar2(25));
10 alter table apply add(decision varchar2(3) not null);
11 alter table apply modify(decision char(1));
12 alter table apply drop foreign key cname;
13 alter table student drop column sizehs;

```

Table altered.

x. Drop primary key from College.



```

1 create table College(cName varchar2(10), state varchar2(10), enrollment int);
2 create table Student (sID int, sName varchar2(10), GPA number(2,1), sizeHS int);
3 create table Apply (sID int, cName varchar2(10), major varchar2(20));
4 alter table college add primary key(cname);
5 alter table student Add primary key(sid);
6 alter table apply Add primary key(sid,cname,major);
7 alter table apply add foreign key(sid) references student;
8 alter table apply add foreign key(cname) references college;
9 alter table apply modify(major varchar2(25));
10 alter table apply add(decision varchar2(3) not null);
11 alter table apply modify(decision char(1));
12 alter table apply drop foreign key cname;
13 alter table student drop column sizehs;
14 alter table college drop primary key;

```

ORA-02273: this unique/primary key is referenced by some foreign keys

xi. Make cName, major unique pairwise such as Stanford CS, Stanford EE.

```

1 create table apply (sid int, cname varchar(25), major varchar(25));
4 alter table college add primary key(cname);
5 alter table student Add primary key(sid);
6 alter table apply Add primary key(sid,cname,major);
7 alter table apply add foreign key(sid) references student;
8 alter table apply add foreign key(cname) references college;
9 alter table apply modify(major varchar(25));
10 alter table apply add(decision varchar(3) not null);
11 alter table apply modify(decision char(1));
12 alter table apply drop foreign key cname;
13 alter table student drop column sizehs;
14 alter table college drop primary key;
15 alter table apply add constraint abc unique(cname,major);

```

Table altered.

- xii. Add cName as Foreign Key in Apply table referring table College using on delete cascade.

```

1 create table college add primary key(cname);
5 alter table student Add primary key(sid);
6 alter table apply Add primary key(sid,cname,major);
7 alter table apply add foreign key(sid) references student;
8 alter table apply add foreign key(cname) references college;
9 alter table apply modify(major varchar(25));
10 alter table apply add(decision varchar(3) not null);
11 alter table apply modify(decision char(1));
12 alter table apply drop foreign key cname;
13 alter table student drop column sizehs;
14 alter table college drop primary key;
15 alter table apply add constraint abc unique(cname,major);
16 alter table apply add constraint foreign key(cname) references college(cname) on delete cascade;

```

Table altered.

- xiii. Modify foreign key on sID in Apply table to foreign key on delete set null.

Live SQL

Feedback ? Help ajit.singhal_cs20@gla.ac.in

SQL Worksheet Clear Find Actions Save Run

```

6 alter table apply Add primary key(sid,cname,major);
7 alter table apply add foreign key(sid) references student;
8 alter table apply add foreign key(cname) references college;
9 alter table apply modify(major varchar2(25));
10 alter table apply add(decision varchar2(3) not null);
11 alter table apply modify(decision char(1));
12 alter table apply drop foreign key cname;
13 alter table student drop column sizehs;
14 alter table college drop primary key;
15 alter table apply add constraint abc unique(cname,major);
16 alter table apply add constraint foreign key(cname) references college(cname) on delete cascade;
17 alter table apply add constraint fk foreign key(sid) references student on delete set null;

```

Table altered.

xiv. Rename column enrollment to enroll in College Table.

Live SQL

Feedback ? Help ajit.singhal_cs20@gla.ac.in

SQL Worksheet Clear Find Actions Save Run

```

7 alter table apply add foreign key(sid) references student;
8 alter table apply add foreign key(cname) references college;
9 alter table apply modify(major varchar2(25));
10 alter table apply add(decision varchar2(3) not null);
11 alter table apply modify(decision char(1));
12 alter table apply drop foreign key cname;
13 alter table student drop column sizehs;
14 alter table college drop primary key;
15 alter table apply add constraint abc unique(cname,major);
16 alter table apply add constraint foreign key(cname) references college(cname) on delete cascade;
17 alter table apply add constraint fk foreign key(sid) references student on delete set null;
18 alter table college rename column enrollment to enroll;

```

Table altered.