

PROGRAM 10: COLLEGE DATABASE

Consider the schema for College Database:

STUDENT(USN, SName, Address, Phone, Gender)

SEMSEC(SSID, Sem, Sec)

CLASS(USN, SSID)

SUBJECT(Subcode, Title, Sem, Credits)

IAMARKS(USN, Subcode, SSID, Test1, Test2, Test3, FinalIA)

```
CREATE DATABASE college;
```

```
CREATE TABLE STUDENT(  
USN VARCHAR(10) PRIMARY KEY,  
SNAME VARCHAR(25),  
ADDRESS VARCHAR(25),  
PHONE VARCHAR(10),  
GENDER CHAR(1));
```

```
CREATE TABLE SEMSEC(  
SSID VARCHAR(5) PRIMARY KEY,  
SEM INTEGER,  
SEC CHAR(1));
```

```
CREATE TABLE CLASS(  
USN VARCHAR(10) PRIMARY KEY,  
SSID VARCHAR(5),  
FOREIGN KEY(USN) REFERENCES STUDENT(USN),  
FOREIGN KEY(SSID) REFERENCES SEMSEC(SSID));
```

```
CREATE TABLE SUBJECT(  
SUBCODE VARCHAR(8) PRIMARY KEY,  
TITLE VARCHAR(20),  
SEM INTEGER,  
CREDITS INTEGER);
```

```
CREATE TABLE IAMARKS(  
USN VARCHAR(10),  
SUBCODE VARCHAR(8),  
SSID VARCHAR(5),  
TEST1 INTEGER,  
TEST2 INTEGER,  
TEST3 INTEGER,  
FINALIA INTEGER,  
PRIMARY KEY(SUBCODE,USN,SSID),  
FOREIGN KEY(USN) REFERENCES STUDENT(USN),  
FOREIGN KEY(SUBCODE) REFERENCES SUBJECT(SUBCODE),  
FOREIGN KEY(SSID) REFERENCES SEMSEC(SSID));
```

INSERT INTO STUDENT VALUES

('1BI13CS020','ANAND','UDUPI','9449207927','M'),
('1BI13CS062','AMITA','BENGALURU','9482443852','F'),
('1BI15CS101','CHETAN','BENGALURU','7766554433','M'),
('1BI13CS066','DIVYA','MANGALURU','9482443857','F'),
('1BI14CS010','ESHA','BENGALURU','7782443857','F'),
('1BI14CS032','GANESH','MYSURU','9449009017','M'),
('1BI14CS025','HARISH','BENGALURU','9449009017','M'),
('1BI15CS011','ISHA','TUMKUR','9879009017','F'),
('1BI15CS029','JAY','DAVANGERE','7749009017','M'),
('1BI15CS045','KAVYA','BELLARY','7649009017','F'),
('1BI15CS091','MALINI','MANGALURU','9679009017','F'),
('1BI16CS045','NEEL','KALBURGI','9449780017','M'),
('1BI16CS088','PARTHA','SHIMOGA','9469009017','M'),
('1BI16CS122','REEMA','CHIKAMAGALUR','7754646789','F');

INSERT INTO SEMSEC VALUES

('CSE8A', 8,'A'),
('CSE8B', 8,'B'),
('CSE8C', 8,'C'),
('CSE7A', 7,'A'),
('CSE7B', 7,'B'),
('CSE7C', 7,'C'),
('CSE6A', 6,'A'),
('CSE6B', 6,'B'),
('CSE6C', 6,'C'),
('CSE5A', 5,'A'),
('CSE5B', 5,'B'),
('CSE5C', 5,'C'),
('CSE4A', 4,'A'),
('CSE4B', 4,'B'),
('CSE4C', 4,'C'),
('CSE3A', 3,'A'),
('CSE3B', 3,'B'),
('CSE3C', 3,'C'),
('CSE2A', 2,'A'),
('CSE2B', 2,'B'),
('CSE2C', 2,'C'),
('CSE1A', 1,'A'),
('CSE1B', 1,'B'),
('CSE1C', 1,'C');

INSERT INTO CLASS VALUES

('1BI13CS020','CSE8A'),
('1BI13CS062','CSE8A'),
('1BI13CS066','CSE8B'),
('1BI15CS101','CSE8C'),
('1BI14CS010','CSE7A'),
('1BI14CS025','CSE7A'),

('1BI14CS032','CSE7A'),
('1BI15CS011','CSE4A'),
('1BI15CS029','CSE4A'),
('1BI15CS045','CSE4B'),
('1BI15CS091','CSE4C'),
('1BI16CS045','CSE3A'),
('1BI16CS088','CSE3B'),
('1BI16CS122','CSE3C');

INSERT INTO SUBJECT VALUES

('10CS81','ACA', 8, 4),
('10CS82','SSM', 8, 4),
('10CS83','NM', 8, 4),
('10CS84','CC', 8, 4),
('10CS85','PW', 8, 4),
('10CS71','OOAD', 7, 4),
('10CS72','ECS', 7, 4),
('10CS73','PTW', 7, 4),
('10CS74','DWDW', 7, 4),
('10CS75','JAVA', 7, 4),
('10CS76','SAN', 7, 4),
('15CS51','ME', 5, 4),
('15CS52','CN', 5, 4),
('15CS53','DBMS', 5, 4),
('15CS54','ATC', 5, 4),
('15CS55','JAVA', 5, 3),
('15CS56','AI', 5, 3),
('15CS41','M4', 4, 4),
('15CS42','SE', 4, 4),
('15CS43','DAA', 4, 4),
('15CS44','MPMC', 4, 4),
('15CS45','OOC', 4, 3),
('15CS46','DC', 4, 3),
('15CS31','M3', 3, 4),
('15CS32','ADE', 3, 4),
('15CS33','DSA', 3, 4),
('15CS34','CO', 3, 4),
('15CS35','USP', 3, 3),
('15CS36','DMS', 3, 3);

INSERT INTO IAMARKS (USN, SUBCODE, SSID, TEST1, TEST2, TEST3) VALUES

('1BI15CS101','10CS81','CSE8C', 15, 16, 18),
('1BI15CS101','10CS82','CSE8C', 12, 19, 14),
('1BI15CS101','10CS83','CSE8C', 19, 15, 20),
('1BI15CS101','10CS84','CSE8C', 20, 16, 19),
('1BI15CS101','10CS85','CSE8C', 15, 15, 12);

Write SQL queries to

i. List all the student details studying in fourth semester 'C' section.

```
SELECT S.*, SS.SEM, SS.SEC FROM STUDENT S, SEMSEC SS, CLASS C
WHERE S.USN = C.USN AND SS.SSID = C.SSID AND
SS.SEM = 4 AND SS.SEC='C';
```

USN	SNAME	ADDRESS	PHONE	GENDER	SEM	SEC
1BI15CS091	MALINI	MANGALURU	9679009017	F	4	C

ii. Compute the total number of male and female students in each semester and in each section.

```
SELECT SS.SEM, SS.SEC, S.GENDER, COUNT(S.GENDER) AS COUNT
FROM STUDENT S, SEMSEC SS, CLASS C
WHERE S.USN = C.USN AND SS.SSID = C.SSID
GROUP BY SS.SEM, SS.SEC, S.GENDER
ORDER BY SEM;
```

SEM	SEC	GENDER	COUNT
3	A	M	1
3	B	M	1
3	C	F	1
4	A	F	1
4	A	M	1
4	B	F	1
4	C	F	1
7	A	F	1
7	A	M	2
8	A	F	1
8	A	M	1
8	B	F	1
8	C	M	1

iii. Create a view of Test1 marks of student USN '1BI15CS101' in all subjects.

```
CREATE VIEW STUDENT_TEST1_MARKS_V AS
SELECT TEST1, SUBCODE FROM IAMARKS
WHERE USN = '1BI15CS101';
```

				TEST1	SUBCODE
<input type="checkbox"/>	Edit	Copy	Delete	15	10CS81
<input type="checkbox"/>	Edit	Copy	Delete	12	10CS82
<input type="checkbox"/>	Edit	Copy	Delete	19	10CS83
<input type="checkbox"/>	Edit	Copy	Delete	20	10CS84
<input type="checkbox"/>	Edit	Copy	Delete	15	10CS85