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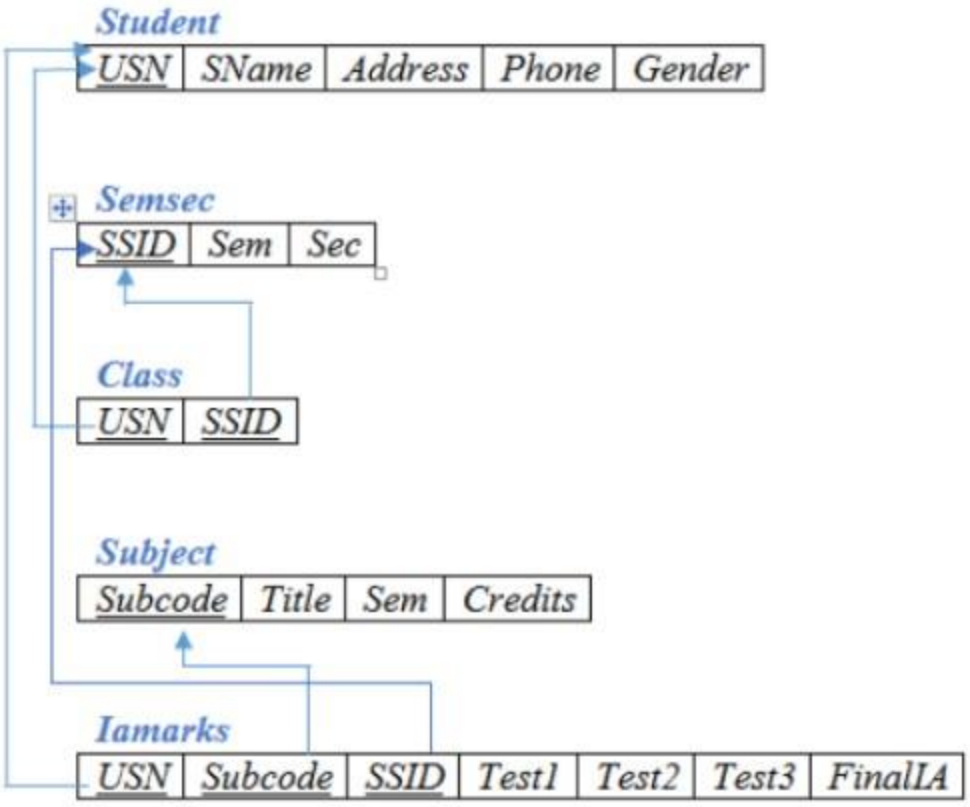
Program 10 - College Database

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*) Write SQL queries to

1. List all the student details studying in fourth semester 'C' section.
2. Compute the total number of male and female students in each semester and in each section.
3. Create a view of Test1 marks of student USN '1BI15CS101' in all subjects.
4. Categorize students based on the following criterion: If FinalIA = 17 to 20 then CAT = 'Outstanding'
If FinalIA = 12 to 16 then CAT = 'Average' If FinalIA< 12 then CAT = 'Weak'
Give these details only for 8th semester A, B, and C section students.



Creating tables and entering tuple values:

```
create database
collegeDB; use
collegeDB;

create table Student(
```

```
        usn varchar(10) not null,
        sname varchar(20) not null,
        address varchar(20) not null,
        phone varchar(10) not null,
        gender varchar(1) not null,
        primary key(usn)
);


create table SemSec(
        ssid varchar(5) not
        null, sem int not null,
        section varchar(1) not
        null, primary key(ssid)
);

create table Class(
        usn varchar(10) not null,
        ssid varchar(5) not null,
        primary key(usn,ssid),
        foreign key(usn) references Student(usn) on delete
        cascade, foreign key(ssid) references SemSec(ssid) on
        delete cascade
);

create table Subject(
        subcode varchar(6) not
        null, title varchar(10) not
        null, sem int not null,
        credits int not null,
        primary key(subcode)
);

create table IAMarks(
        usn varchar(10) not null,
        subcode varchar(6) not
        null, ssid varchar(5) not
        null, test1 int not null,
        test2 int not null,
        test3 int not null,
        final double not null default ((test1 + test2 +
        test3)/3), primary key(usn,subcode,ssid),
        foreign key(usn) references Student(usn) on delete cascade,
        foreign key(subcode) references Subject(subcode) on delete cascade,
        foreign key(ssid) references SemSec(ssid) on delete cascade
);

insert into Student
        values ('1RN13CS020','Akshay','Belagavi','8877881122','M'),
```

('1RN13CS052','Sandhya','Bengaluru','7722829912','F'),
('1RN13CS091','Teesha','Bengaluru','7712312312','F'),
('1RN13CS066','Supriya','Mangaluru','8877881122','F'),
('1RN14CS010','Abhay','Bengaluru','9900211201','M'),
('1RN14CS032','Bhaskar','Bengaluru','9923211099','M'),
('1RN15CS011','Ajay','Tumkur','9845091341','M'),
('1RN15CS029','Chitra','Davangere','7696772121','F'),
('1RN15CS045','Jeeva','Bellary','9944850121','M'),
('1RN15CS091','Santhosh','Mangaluru','8812332201','M'),
('1RN16CS045','Ismail','Kalburgi','9900232201','M'),
('1RN16CS088','Sameera','Shimoga','9905542212','F'),
('1RN16CS122','Vinayaka','Chikmagalur','8800880011','M'),
('1RN14CS025','Asmi','Bengaluru','7894737377','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,'C'),
('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
('1RN13CS020','CSE8A'),
('1RN13CS052','CSE8A'),
('1RN13CS066','CSE8B'),
('1RN13CS091','CSE8C'),
('1RN14CS010','CSE7A'),
('1RN14CS032','CSE7A'),

```
        ('1RN15CS011','CSE4A'),
        ('1RN15CS029','CSE4A'),
        ('1RN15CS045','CSE4B'),
        ('1RN15CS091','CSE4C'),
        ('1RN16CS045','CSE3A'),
        ('1RN16CS088','CSE3B'),
        ('1RN16CS122','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','DWDM',7,4),
        ('10CS75','JAVA',7,4),
        ('10CS76','SAN',7,4),
        ('15CS51','ME',5,4),
        ('15CS52','CN',5,4),
        ('15CS53','DBMS',5,4),
        ('15CS54','ATS',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
        ('1RN13CS091','10CS81','CSE8C',15,16,18),
        ('1RN13CS091','10CS82','CSE8C',12,19,14),
        ('1RN13CS091','10CS83','CSE8C',19,15,20),
        ('1RN13CS091','10CS84','CSE8C',20,16,19),
        ('1RN13CS091','10CS85','CSE8C',15,15,12);

select * from IAMarks;
```

1) **List all the student details studying in fourth semester 'C' section.**

```
select s.usn,s.sname from Student s,Class
c where s.usn = c.usn and ssid = 'CSE4C';
```

	usn	sname
▶	1RN15CS091	Santhosh

2) **Compute the total number of male and female students in each semester and in each section.**

```
select c.ssid,s.gender,count(s.gender) from Student s,Class c
where s.usn = c.usn
group by c.ssid,s.gender;
```

	ssid	gender	count(s.gender)
▶	CSE3A	M	1
	CSE3B	F	1
	CSE3C	M	1
	CSE4A	M	1
	CSE4A	F	1
	CSE4B	M	1
	CSE4C	M	1
	CSE7A	M	2
	CSE8A	M	1
	CSE8A	F	1
	CSE8B	F	1
	CSE8C	F	1

3) **Create a view of Test1 marks of student USN '1BI15CS101' in all subjects.**

```
create view student_details_view as
select * from IAMarks where usn = '1RN13CS091';

select * from student_details_view;
```

	usn	subcode	ssid	test1	test2	test3	final
▶	1RN13CS091	10CS81	CSE8C	15	16	18	16.333333333
	1RN13CS091	10CS82	CSE8C	12	19	14	15
	1RN13CS091	10CS83	CSE8C	19	15	20	18
	1RN13CS091	10CS84	CSE8C	20	16	19	18.333333333
	1RN13CS091	10CS85	CSE8C	15	15	12	14

4) Categorize students based on the following criterion:
FinalIA = 17 to 20 then CAT = 'Outstanding'
FinalIA = 12 to 16 then CAT = 'Average'
FinalIA< 12 then CAT = 'Weak'
Give these details only for 8th semester A, B, and C section students.

```
select iam.usn,iam.final,'Outstanding'
from IAMarks iam,Student s,Class c
where iam.usn = s.usn and c.usn =
s.usn
and final between 17 and 20 and c.ssid like
'CSE8_' union
select iam.usn,iam.final,'Average'
from IAMarks iam,Student s,Class
c
where iam.usn = s.usn and c.usn = s.usn
and final between 12 and 17 and c.ssid like
'CSE8_' union
select iam.usn,iam.final,'Average'
from IAMarks iam,Student s,Class
c
where iam.usn = s.usn and c.usn =
s.usn and final < 12 and c.ssid like
'CSE8_';
```

usn	final	Outstanding
1RN13CS091	18.333333333	Outstanding
1RN13CS091	18	Outstanding
1RN13CS091	14	Average
1RN13CS091	15	Average
1RN13CS091	16.333333333	Average