Program 10

Consider the schema for College Database:

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

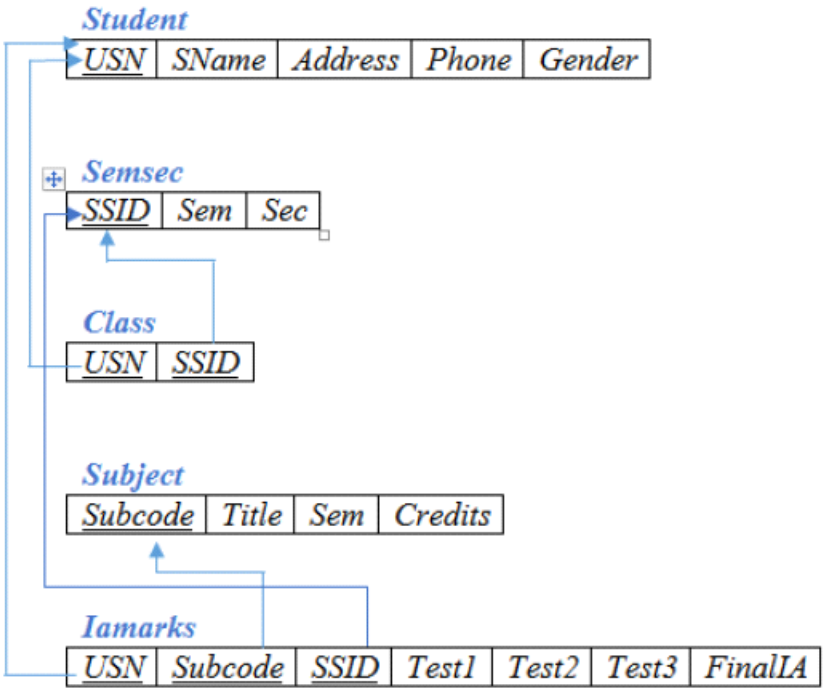
SEMSEC (SSID, Sem, Sec)

CLASS (USN, SSID)

SUBJECT (Subcode, Title, Sem, Credits)

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

Schema Diagram




```
create database Lab10;

use Lab10;

create table student(

  usn varchar(30),

  sname varchar(30),
```

```
address varchar(30),
phone real,
gender varchar(30),
primary key(usn)
);
desc student;
```

	Field	Type	Null	Key	Default	Extra
▶	usn	varchar(30)	NO	PRI	NULL	
	sname	varchar(30)	YES		NULL	
	address	varchar(30)	YES		NULL	
	phone	double	YES		NULL	
	gender	varchar(30)	YES		NULL	

```
create table semsec(
ssid varchar(30),
sem int,
sec varchar(30),
primary key(ssid)
);
desc semsec;
```

	Field	Type	Null	Key	Default	Extra
▶	ssid	varchar(30)	NO	PRI	NULL	
	sem	int	YES		NULL	
	sec	varchar(30)	YES		NULL	

```
create table class(
        usn varchar(30),
        ssid varchar(30),
        primary key(usn,ssid),
        foreign key(usn) REFERENCES student(usn),
```

```
        foreign key(ssid) REFERENCES semsec(ssid)
 );
desc class;
```

	Field	Type	Null	Key	Default	Extra
▶	usn	varchar(30)	NO	PRI	NULL	
	ssid	varchar(30)	NO	PRI	NULL	

```
create table subject(
 code varchar(30),
 title varchar(30),
 sem int,
 credits int,
 primary key(code)
 );
desc subject;
```

	Field	Type	Null	Key	Default	Extra
▶	code	varchar(30)	NO	PRI	NULL	
	title	varchar(30)	YES		NULL	
	sem	int	YES		NULL	
	credits	int	YES		NULL	

```
create table marks(
        usn varchar(30),code varchar(30),
        ssid varchar(30),
        test1 real, test2 real, test3 real, final real,
        primary key(usn,code,ssid),
        foreign key(usn) REFERENCES student(usn),
        foreign key(code) REFERENCES subject(code),
```

```
        foreign key(ssid) REFERENCES semsec(ssid)
  );
```

desc marks;

	Field	Type	Null	Key	Default	Extra
▶	usn	varchar(30)	NO	PRI	NULL	
	code	varchar(30)	NO	PRI	NULL	
	ssid	varchar(30)	NO	PRI	NULL	
	test1	double	YES		NULL	
	test2	double	YES		NULL	
	test3	double	YES		NULL	
	final	double	YES		NULL	

insert into student values('1RN13CS020','akshay','belagavi',8877881122,'m'),

('1RN13CS062','sandhya','bengaluru',7722829912,'f'),

('1RN13CS091','teesha','bengaluru',7712312312,'f'),

('1RN13CS066','supriya','mangaluru',8877881122,'f'),

('1RN14CS010','abhay','bengaluru',9900211201,'m'),

('1RN14CS032','bhaskar','bengaluru',9923211099,'m'),

('1RN14CS025','asmi','bengaluru',7894737377,'f'),

('1RN15CS011','ajay','tumkur',98545091341,'m'),

('1RN15CS029','chitra','davangere',7696772121,'f'),

('1RN15CS045','jeeva','bellary',9944850121,'m'),

('1RN15CS091','santosh','mangaluru',8812332201,'m'),

('1RN16CS045','ismail','kalburgi',9900232201,'m'),

('1RN16CS088','sameera','shimoga',9905542212,'f'),

('1RN16CS122','vinayaka','chikamagaluru',8800880011,'m');

select * from student;

usn	sname	address	phone	gender
1RN13CS020	akshay	belagavi	8877881122	m
1RN13CS062	sandhya	bengaluru	7722829912	f
1RN13CS066	supriya	mangaluru	8877881122	f
1RN13CS091	teesha	bengaluru	7712312312	f
1RN14CS010	abhay	bengaluru	9900211201	m
1RN14CS025	asmi	bengaluru	7894737377	f
1RN14CS032	bhaskar	bengaluru	9923211099	m
1RN15CS011	ajay	tumkur	98545091341	m
1RN15CS029	chitra	davangere	7696772121	f
1RN15CS045	jeeva	bellary	9944850121	m
1RN15CS091	santosh	mangaluru	8812332201	m
1RN16CS045	ismail	kalburgi	9900232201	m
1RN16CS088	sameera	shimoga	9905542212	f
1RN16CS122	vinayaka	chikamag...	8800880011	m
NULL	NULL	NULL	NULL	NULL

```
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');

select * from semsec;
```

	ssid	sem	sec
▶	CSE1A	1	A
	CSE1B	1	B
	CSE1C	1	C
	CSE2A	2	A
	CSE2B	2	B
	CSE2C	2	C
	CSE3A	3	A
	CSE3B	3	B
	CSE3C	3	C
	CSE4A	4	A
	CSE4B	4	B
	CSE4C	4	C
	CSE5A	5	A
	CSE5B	5	B
	CSE5C	5	C
	CSE6A	6	A
	CSE6B	6	B
	CSE6C	6	C
	CSE7A	7	A
	CSE7B	7	B
	CSE7C	7	C
	CSE8A	8	A
	CSE8B	8	B
	CSE8C	8	C
*	NULL	NULL	NULL

insert into class values('1RN13CS020','CSE8A'),

('1RN13CS062','CSE8A'),('1RN13CS066','CSE8B'),('1RN13CS091','CSE8C'),

('1RN14CS010','CSE7A'),('1RN14CS025','CSE7A'),('1RN14CS032','CSE7A'),

('1RN15CS011','CSE4A'),('1RN15CS029','CSE4A'),('1RN15CS045','CSE4B'),

('1RN15CS091','CSE4C'),('1RN16CS045','CSE3A'),('1RN16CS088','CSE3B'),

('1RN16CS122','CSE3C');

select * from class;

usn	ssid
1RN16CS045	CSE3A
1RN16CS088	CSE3B
1RN16CS122	CSE3C
1RN15CS011	CSE4A
1RN15CS029	CSE4A
1RN15CS045	CSE4B
1RN15CS091	CSE4C
1RN14CS010	CSE7A
1RN14CS025	CSE7A
1RN14CS032	CSE7A
1RN13CS020	CSE8A
1RN13CS062	CSE8A
1RN13CS066	CSE8B
1RN13CS091	CSE8C
NULL	NULL

```
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),
('10CS51','ME',5,4),('10CS52','CN',5,4),
('10CS53','DBMS',5,4),('10CS54','ATC',5,4),
('10CS55','JAVA',5,3),('10CS56','AI',5,3),
('10CS41','M4',4,4),('10CS42','SE',4,4),
('10CS43','DAA',4,4),('10CS44','MPMC',4,4),
('10CS45','OOC',4,3),('10CS46','DC',4,3),
('10CS31','M3',3,4),('10CS32','ADE',3,4),
('10CS33','DSA',3,4),('10CS34','CO',3,4),
('10CS35','USP',3,3),('10CS36','DMS',3,3);
select * from subject;
```

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

insert into marks(usn,code,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 marks;

usn	code	ssid	test1	test2	test3	final
1RN13CS091	10CS81	CSE8C	15	16	18	NULL
1RN13CS091	10CS82	CSE8C	12	19	14	NULL
1RN13CS091	10CS83	CSE8C	19	15	20	NULL
1RN13CS091	10CS84	CSE8C	20	16	19	NULL
1RN13CS091	10CS85	CSE8C	15	15	12	NULL
NULL	NULL	NULL	NULL	NULL	NULL	NULL

1. 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
1RN15CS091	santosh	mangaluru	8812332201	m	4	C

2. 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	f	1
3	C	m	1
4	A	f	1
4	A	m	1
4	B	m	1
4	C	m	1
7	A	f	1
7	A	m	2
8	A	f	1
8	A	m	1
8	B	f	1
8	C	f	1

3. Create a view of Test1 marks of student USN ‘1BI15CS101’ in all subjects.

```
create view STU_test1_marks_view as

select test1, code
```

```
from marks

where usn = '1RN13CS091';

select * from STU_test1_marks_view;
```

	test1	code
▶	15	10CS81
	12	10CS82
	19	10CS83
	20	10CS84
	15	10CS85

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.

```
select S.usn, S.sname, S.address, S.phone, S.gender,

(CASE

when IA.final between 17 and 20 then 'outstanding'

when IA.final between 12 and 16 then 'average'

else 'weak' end) AS CAT

from student S, semsec SS, marks IA, subject sub

where S.usn = IA.usn AND SS.ssid = IA.ssid AND sub.code = IA.code AND sub.sem = 8;
```

	usn	sname	address	phone	gender	CAT
▶	1RN13CS091	teesha	bengaluru	7712312312	f	weak
	1RN13CS091	teesha	bengaluru	7712312312	f	weak
	1RN13CS091	teesha	bengaluru	7712312312	f	weak
	1RN13CS091	teesha	bengaluru	7712312312	f	weak
	1RN13CS091	teesha	bengaluru	7712312312	f	weak