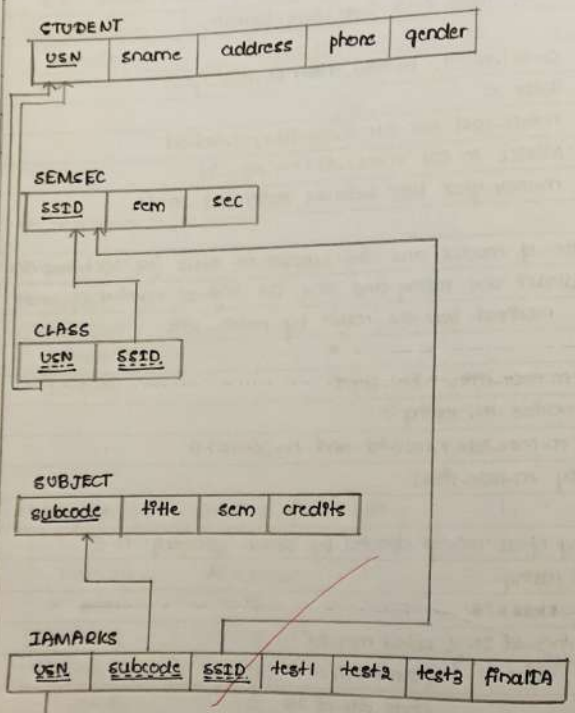
Schema Diagram



Date .....

Expt. No. 4 Page No. 20

LAB PROGRAM-04

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 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 students USN '1BI15CS101' in all subject
4. Calculate the finalIA (average of best two test marks) and update the corresponding table for all students
5. Categorize students based on following criteria If final IA = 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

Teacher's Signature : _____

Table created

Table created

Table created

Table created

Expt. No. 4 Date

Page No. 21

Table Creation:

```
create table student(
USN varchar(10) primary key,
sname varchar(20),
address varchar(20),
phone number(10),
gender char(1));

create table semsec(
SSID varchar(5) primary key,
sem number(2),
sec char(1));

create table class(
USN varchar(20),
SSID varchar(5),
primary key (USN, SSID)
foreign key (USN) references student (USN),
foreign key (SSID) references semsec (SSID));

create table subject(
subcode varchar(8) primary key,
title varchar(20),
sem number(2),
credits number(2));
```

Teacher's Signature :

Table created

USN	SNAME	ADDRESS	PHONE	G
1AI13CS020	Amith	Bng	9876543101	M
1AI13CS062	Scoth	Mng	9124567810	F
1AI13CS091	Marsh	ckm	8134568101	F
1AI13CS066	Joseph	Ask	9011567810	M
1AI14CS086	Ashwin	Del	7110567891	M
1AI14CS082	Bharath	Kol	7110667711	F
1AI15CS011	Teressa	Rai	8660667314	F
1AI15CS029	shobetha	Raj	9440447314	M
1AI15CS045	Preeola	Kad	8104771367	M
1AI15CS091	Baptist	Mum	7104901367	M
1AI16CS045	Ratsk	Tpt	9901737171	F
1AI16CS088	Siddah	Tmk	8103567844	M
1AI16CS0122	Sandy	rai	9001037844	M
1BI17CS101	Rockie	rai	9048795282	M

Expt. No. 4 Date

Page No. 22

```
create table IAMarks(
USN varchar(10),
subcode varchar(8),
SSID varchar(5),
Test1 number(2),
Test2 number(2),
Test3 number(2),
FinalIA number(2),
primary key (USN, subcode, SSID)
foreign key (USN) references student(USN),
foreign key (subcode) references subject (subcode),
foreign key (SSID) references semsec (SSID));
```

Values insertion:

```
1. Insert into student values
   ('1AI13CS020', 'Amith', 'Bng', '9876543210', 'M');
   Insert into student values
   ('1AI13CS062', 'Scoth', 'Mng', '9844026263', 'F');
   Insert into student values
   ('1AI13CS091', 'Marsh', 'ckm', '9740294653', 'F');
   Insert into student values
   ('1AI13CS066', 'Joseph', 'Ask', '8147936431', 'M');
   Insert into student values
   ('1AI14CS032', 'Ashwin', 'Del', '8147970562', 'M');
   Insert into student values
   ('1AI15CS011', 'Bharath', 'KOl', '9535648785', 'F');
   Insert into student values
```

Teacher's Signature :

```
select *
from semsec
```

SSID	SEM	SEC
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
CSE8D	8	D

Expt. No. 4

Page No. 24

```
insertsq into semsec values
('CSE6B','6','B');
insert into semsec values
('CSE6C','6','C');
insert into semsec values
('CSE5A','5','A');
insert into semsec values
('CSE5B','5','B');
insert into semsec values
('CSE5C','5','C');
insert into semsec values
('CSE4A','4','A');
insert into semsec values
('CSE4B','4','B');
insert into semsec values
('CSE4C','4','C');
insert into semsec values
('CSE3A','3','A');
insert into semsec values
('CSE3B','3','B');
insert into semsec values
('CSE3C','C','C');
insert into semsec values
('CSE2A','2','A');
insert into semsec values
('CSE2B','2','B');
insert into semsec values
('CSE2C','2','C');
```

Teacher's Signature :

Expt. No. 4 Date

Page No. 23

```
('1AI15CS029', 'Terrea', 'Raj', '8106386281', 'M');
insert into student values
('1AI15CS045', 'Shwetha', 'Raj', '9945152883', 'M');
insert into student values
('1AI15CS091', 'Preeta', 'Kad', '8834231221', 'M');
insert into student values
('1AI16CS045', 'Baptist', 'Mum', '9841621531', 'F');
insert into student values
('1AI16CS088', 'Raiks', 'Tpt', '9870421502', 'M');
insert into student values
('1AI16CS022', 'Swapdch', 'tmk', '9823016163', 'M');
insert into student values
('1BI17CS101', 'Sandy', 'ral', '9015795282', 'M');
```

2. insert into semsec values

```
('CSE8A', '8', 'A');
insert into semsec values
('CSE8B', '8', 'B');
insert into semsec values
('CSE8C', '8', 'C');
insert into semsec values
('CSE7A', '7', 'A');
insert into semsec values
('CSE7B', '7', 'B');
insert into semsec values
('CSE7C', '7', 'C');
insert into semsec values
('CS56A', '6', 'A');
```

Teacher's Signature :

select *
from class;

USN	SSID
1AI13CS020	CSE8A
1AI18CS062	CSE8A
1AI13CS066	CSE8B
1AI13CS091	CSE8C
1AI14CS082	CSE7A
1AI15CS011	CSE4A
1AI15CS029	CSE4A
1AI15CS045	CSE4B
1AI15CS091	CSE4C
1AI16CS045	CSE3A
1AI16CS088	CSE3B
1AI16CS122	CSE3C
1BI17CS101	CSE3D

Expt. No. 4 Date

Page No. 25

```
Insert into semsec values
('CSE1A', '1', 'A');
Insert into semsec values
('CSE3B', '1', 'B');
Insert into semsec values
('CSEC', '1', 'C');
Insert into semsec values
('CSE8D', '8', 'D');
```

3. Insert into class values
('1AI13CS020', 'CSE8A');
Insert into class values
('1AI13CS062', 'CSE8A');
Insert into class values
('1AI13CS066', 'CSE8B');
Insert into class values
('1AI13CS091', 'CSE8C');
Insert into class values
('1AI14CS032', 'CSE7A');
Insert into class values
('1AI14CS011', 'CSE4A');
Insert into class values
('1AI14CS029', 'CSE4A');
Insert into class values
('1AI15CS045', 'CSE4B');
Insert into class values
('1AI15CS091', 'CSE4B');
Insert into class values

Teacher's Signature :

Expt. No. 4 Date

Page No. 26

('1AI15CS091', 'CSE4C');
insert into class values
('1AI15CS015', 'CSE4C');
insert into class values
('1BI17CS101', 'CSE8D');

4. insert into subject values
('10CS81', 'ACA', '8', '4');
insert into subject values
('10CS82', 'SSM', '8', '4');
insert into subject values
('10CS83', 'NM', '8', '4');
insert into subject values
('10CS84', 'CC', '8', '4');
insert into subject values
('10CS85', 'PW', '8', '4');
insert into subject values
('10CS71', 'OOAD', '7', '4');
insert into subject values
('10CS72', 'ECS', '7', '4');
insert into subject values
('10CS73', 'PTW', '7', '4');
insert into subject values
('10CS74', 'DUDM', '7', '4');
insert into subject values
('10CS75', 'Java', '7', '4');
insert into subject values
('10CS51', 'ME', '5', '4');

Teacher's Signature :

```
select * from subject;
```

SUBCODE	TITLE	SEM	CREDITS
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	3
10CS55	Java	5	3
10CS41	AI	4	4
10CS42	M4	4	4
10CS43	SE	4	4
10CS44	DAA	4	4
10CS45	MPMC	4	4
10CS46	OOC	4	3
10CS31	DC	3	3
10CS32	M3	3	4
10CS33	ADE	3	4
10CS34	CO	3	4

Expt. No. 4 Date

Page No. 27

```
insert into subject values
('10CS52','CN','5','4');
insert into subject values
('10CS53','DBMS','5','4');
insert into subject values
('10CS54','ATC','5','3');
insert into subject values
('10CS554','JAVA','5','3');
insert into subject values
('10CS556','AI','5','3');
insert into subject values
('10CS56','M4','4','4');
insert into subject values
('10CS42','SE','4','4');
insert into subject values
('10CS43','DAA','4','4');
insert into subject values
('10CS44','MPMC','4','4');
insert into subject values
('10CS45','OOC','4','3');
insert into subject values
('10CS46','DC','4','3');
insert into subject values
('10CS31','M3','4','4');
insert into subject values
('10CS32','ADE','4','4');
insert into subject values
('10CS33','DSA','4','4');
```

Teacher's Signature :

SUBCODE	TITLE	SEM	CREDITS
10CS85	USP	3	3
10CS36	DMS	3	3

select *
from IAMarks;

USN	SUBCODE	SSID	Test1	Test2	Test3	FinalIA
1AI13CS091	10CS81	CSE8C	15	16	18	
1AI13CS091	10CS82	CSE8C	12	19	14	
1AI13CS091	10CS83	CSE8C	19	15	20	
1AI13CS091	10CS84	CSE8C	20	16	19	
1AI13CS091	10CS85	CSE8C	15	15	12	

Page No. 28

```
insert into subject values
('10CS34', 'CO', '4', '4');
insert into subject values
('10CS35', 'USP', '4', '3');
insert into subject values
('10CS36', 'DMS', '4', '3');

5. insert into IAMarks values
('1AI13CS091', '10CS81', 'CSE8C', '15', '16', '18');
insert into IAMarks values
('1AI13CS091', '10CS82', 'CSE8C', '12', '19', '14');
insert into IAMarks values
('1AI13CS091', '10CS83', 'CSE8C', '19', '15', '20');
insert into IAMarks values
('1AI13CS091', '10CS84', 'CSE8C', '20', '16', '19');
insert into IAMarks values
('1AI13CS091', '10CS85', 'CSE8C', '15', '15', '12');
insert into IAMarks values
```

Output:

USN	SNAME	ADDRESS	PHONE	G	SEM	S
1AP15CS091	Pfeola	Kad	8834281221	M	4	C

SEM	S	G	COUNT
3	a	f	1
3	b	m	1
4	a	f	1
4	a	m	1
4	b	m	1
4	c	m	1
7	a	m	1
8	a	f	1

view created select * from test1_view;

TEST1	SUBCODE
15	10CS81
12	10CS82
19	10CS83
20	10CS84
15	10CS85

Expt. No. 4 Date

Page No. 29

Queries:

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

```
select S.*, E.sem, E.sec
from student S, semsec E, class C
where S.usn=C.usn and E.SSID=C.SSID and E.sem=4 and
                                        E.sec='C';
```

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

```
select E.sem, E.sec, S.gender, count(S.gender) as count
from student S, semsec E, class C
where S.usn=C.usn and E.ssid=C.ssid
group by E.sem, E.sec, S.gender
order by sem;
```

3. Create a view of test1 marks of student USN '1BI15CS101' in all subjects

```
create view test1_view as
select test1, subcode
from IAMarks,
where usn='1BI15CS101';
```

Teacher's Signature :

USN	NAME	ADDRESS	PHONE	G	CAT
1a913cs091	Marsh	ckm	9740215710	f	outstanding
1a913cs091	Marsh	ckm	9740815710	f	outstanding
1a913cs091	Marsh	ckm	9740215710	f	outstanding
1a913cs091	Marsh	ckm	9740215710	f	outstanding
1a913cs091	Marsh	ckm	9740215710	f	outstanding

Expt. No. 4

Page No. 31

```
--DBMS_output.put_line('sum = '||C_SM);
--DBMS_output.put_line('Average = '||C_AV);
update IAMarks set finalIA = C_AV where current of C_IAMarks;
C_IAMarks;
end loop;
close C_IAMarks;
end;
/
```

5. Categorize students based on the following criteria
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 sections students.

```
select s.usn, s.sname, s.address, s.phone, s.gender,
(case.
 when IA.finalIA between 17 and 20 then 'outstanding'
 when IA.finalIA between 12 and 16 then 'Average'
 else 'weak'
 End) as CAT
 from student s, semsec E, IAMarks IA, subject sub
 where s.usn = IA.usn and E.ssid = IA.ssid and
 sub.subcode = IA.subcode and sub.sem = 8;
```

Teacher's Signature :

Procedure created

execute avgmarks;
PL/SQL procedure successfully completed

set serveroutput on;
select * from iamarks;

USN	SUBCODE	SSID	Test1	Test2	Test3	FinalIA
1QF13CS091	10CS81	CSE8C	15	16	18	17
1QF13CS091	10CS82	CSE8C	12	19	14	17
1QF13CS091	10CS83	CSE8C	19	15	20	20
1QF13CS091	10CS84	CSE8C	20	16	19	20
1QF13CS091	10CS85	CSE8C	15	15	12	15

Expt. No. 4 Date

Page No. 30

1. Calculate the finalIA (average of best two test marks) and update the corresponding table for all students

```
create or replace procedure avgmarks
is
cursor c_IAMarks is
select greatest(Test1, Test2) as A, greatest(Test1, Test3) as B,
greatest(Test3, Test2) as C
from IAMarks
where finalIA is null
for update;
c_A number;
c_B number;
c_C number;
c_SM number;
c_AV number;
Begin
open c_IAMarks;
Loop
fetch c_IAMarks into c_A, c_B, c_C;
exit when c_IAMarks%.Notfound;
--DBMS_output.put_line(c_A||' '||c_B||' '||c_C);
If (c_A!=c_B) then
c_SM:= c_A+c_B;
else
c_SM:=c_A+c_C;
end if;
c_AV = c_SM/2;
```

Teacher's Signature :