

**USN:1BM19CS216**

## **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, FinallA) Write SQL queries to

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

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

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

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

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

create database college;

use college;

create table student (

usn varchar(10),

sname varchar(10),

address varchar (30),

phone varchar(10),

gender varchar(1),

constraint stu\_usn primary key (usn)

);

create table semsec (

ssid varchar(5),

sem varchar(2),

sec varchar(1),

constraint sem\_ssid primary key (ssid)

);

create table class(

usn varchar(10),

ssid varchar(5),

constraint class\_usn primary key (usn),

constraint class\_usn foreign key (usn) references student (usn) on delete cascade on

update cascade,

constraint class\_ssid foreign key (ssid) references semsec(ssid) on delete cascade on

update cascade

);

create table subjects(

```

subcode varchar(10),
title varchar (20),
sem int,
credits int,
constraint sub_sub primary key (subcode)
);
create table iamarks(
usn varchar(10),
subcode varchar(10),
ssid varchar(5),
test1 int,
test2 int,
test3 int,
finalia int,
constraint ia primary key (usn,subcode,ssid),
constraint ia_usn foreign key (usn) references student(usn) on delete cascade on
update cascade ,
constraint ia_subcode foreign key (subcode) references subjects(subcode) on delete
cascade on update cascade,
constraint ia_ssid foreign key (ssid) references semsec(ssid) on delete cascade on
update cascade
);

```

```

INSERT INTO STUDENT VALUES ('1BM19CS020','AKSHAY','BELAGAVI',
8877881122,'M');
INSERT INTO STUDENT VALUES ('1BM19CS062','SANDHYA','BENGALURU',
7722829912,'F');
INSERT INTO STUDENT VALUES ('1BM19CS091','TEESHA','BENGALURU',
7712312312,'F');
INSERT INTO STUDENT VALUES ('1BM19CS066','SUPRIYA','MANGALURU',
8877881122,'F');
INSERT INTO STUDENT VALUES ('1BM20CS010','ABHAY','BENGALURU',
9900211201,'M');
INSERT INTO STUDENT VALUES ('1BM20CS032','BHASKAR','BENGALURU',
9923211099,'M');
INSERT INTO STUDENT VALUES ('1BM20CS025','ASMI','BENGALURU',
7894737377,'F');
INSERT INTO STUDENT VALUES ('1BM20CS011','AJAY','TUMKUR', 9845091941,'M');

```

```

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 ('CSE6A', 6,'A');

```

```
INSERT INTO SEMSEC VALUES ('CSE6B', 6,'B');
INSERT INTO SEMSEC VALUES ('CSE6C', 6,'C');
INSERT INTO SEMSEC VALUES ('CSE8A', 8,'A');
INSERT INTO SEMSEC VALUES ('CSE8B', 8,'B');
INSERT INTO SEMSEC VALUES ('CSE8C', 8,'C');
```

```
INSERT INTO CLASS VALUES ('1BM19CS020','CSE8A');
INSERT INTO CLASS VALUES ('1BM19CS062','CSE4A');
INSERT INTO CLASS VALUES ('1BM19CS066','CSE8B');
INSERT INTO CLASS VALUES ('1BM19CS091','CSE8C');
INSERT INTO CLASS VALUES ('1BM20CS010','CSE4A');
INSERT INTO CLASS VALUES ('1BM20CS025','CSE4B');
INSERT INTO CLASS VALUES ('1BM20CS032','CSE4C');
```

```
INSERT INTO SUBJECTS VALUES ('10CS81','ACA', 8, 4);
INSERT INTO SUBJECTS VALUES ('10CS82','SSM', 8, 4);
INSERT INTO SUBJECTS VALUES ('10CS83','NM', 8, 4);
```

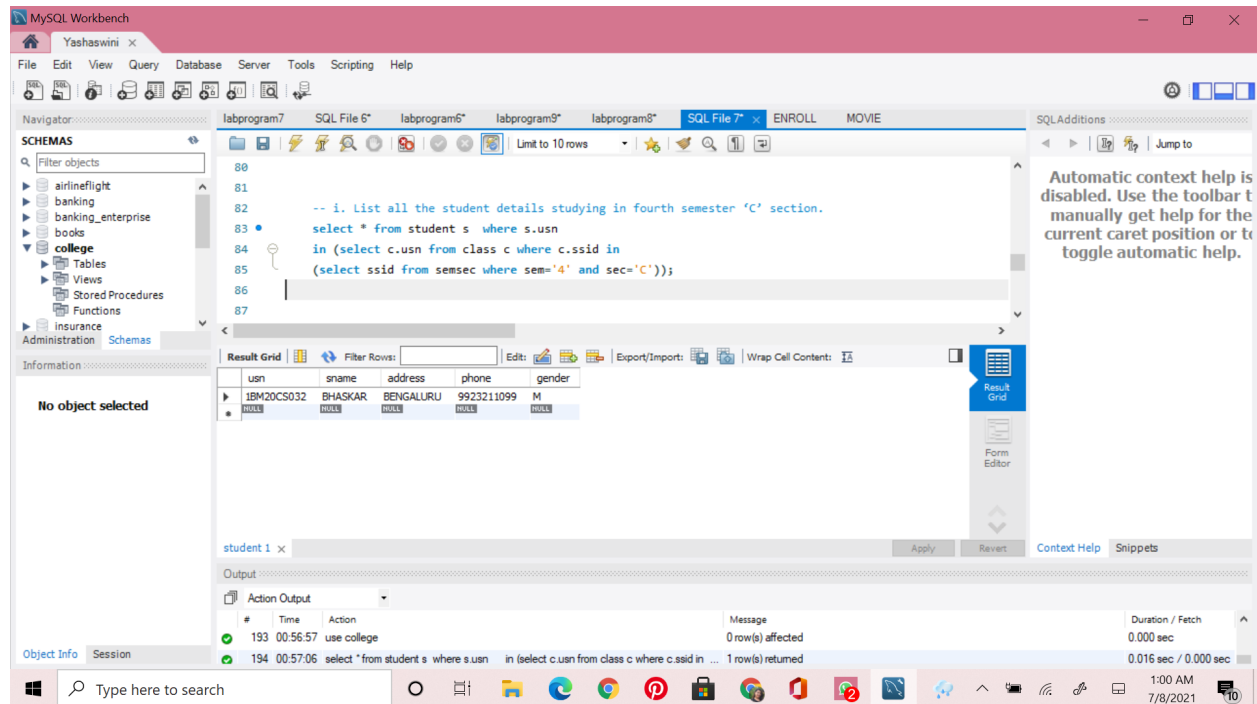
```
INSERT INTO IAMARKS (USN, SUBCODE, SSID, TEST1, TEST2, TEST3) VALUES
('1BM19CS091','10CS81','CSE8C', 15, 16, 18);
```

```
INSERT INTO IAMARKS (USN, SUBCODE, SSID, TEST1, TEST2, TEST3) VALUES
('1BM19CS091','10CS82','CSE8C', 12, 19, 14);
```

```
INSERT INTO IAMARKS (USN, SUBCODE, SSID, TEST1, TEST2, TEST3) VALUES
('1BM19CS091','10CS83','CSE8C', 19, 15, 20);
```

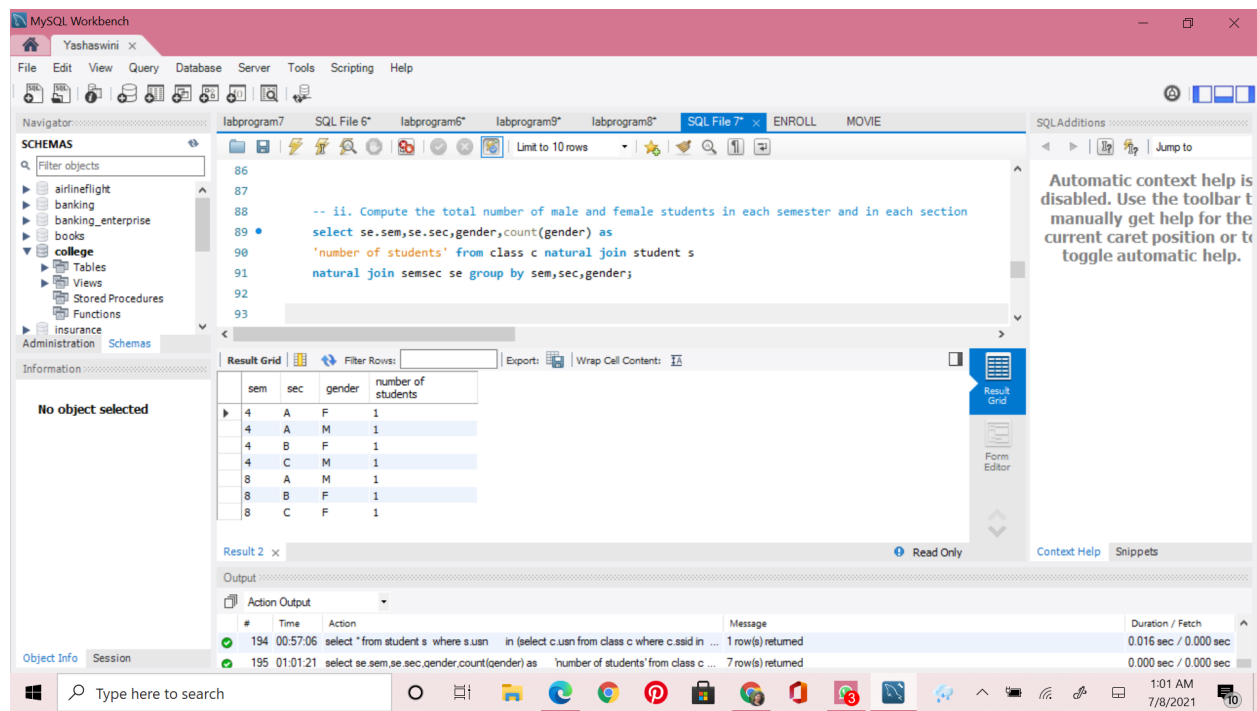
**-- i. List all the student details studying in fourth semester 'C' section.**

```
select * from student s where s.usn
in (select c.usn from class c where c.ssid in
(select ssid from semsec where sem='4' and sec='C'));
```



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

```
select se.sem,se.sec,gender,count(gender) as 'number of students' from class c natural
join student s natural join semsec se group by sem,sec,gender;
```

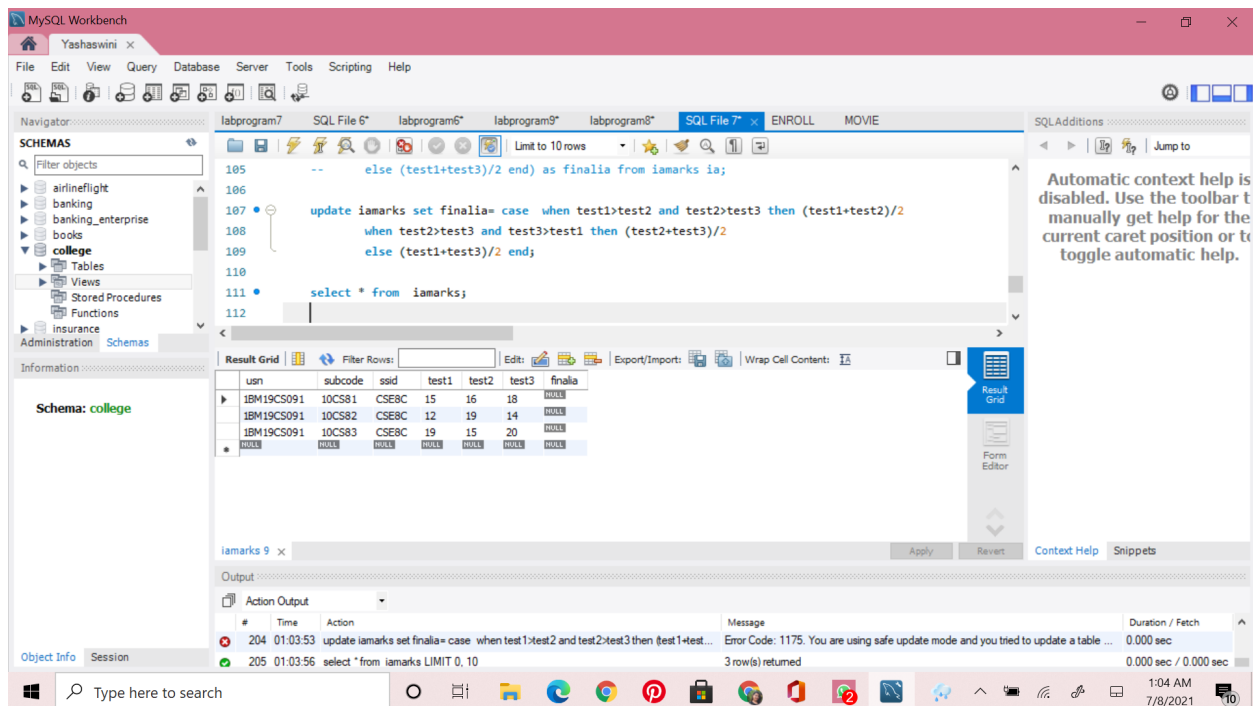


-- iii. Create a view of Test1 marks of student USN '1BI15CS101' in all subjects.  
create view marks(test1) as select i.test1 from iamarks i where i.usn='1BM19CS091';

-- iv.calculate finalia marks and update the respective column for all student;  
-- select ia.usn,test1,test2,test3,(case  
-- when test1>test3 and test2>test3 then (test1+test2)/2  
-- when test2>test1 and test3>test1 then (test2+test3)/2  
-- else (test1+test3)/2 end) as finalia from iamarks ia;

update iamarks set finalia= case when test1>test2 and test2>test3 then (test1+test2)/2  
when test2>test3 and test3>test1 then (test2+test3)/2  
else (test1+test3)/2 end;

select \* from iamarks;



-- v. 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.finalia between 17 and 20 then 'outstanding'

```

when ia.finaia between 12 and 16 then 'average'
else 'weak'
end) as cat from iamarks ia,student s where s.usn=ia.usn and ia.ssid in (select ss.ssid
from semsec ss where sem='8');
select test1,test2,test3,finaia,subcode from iamarks group by subcode;
select s.usn,s.sname,s.address,s.phone,s.gender from student s,iamarks i where i.finaia
>45;
create view subject as (select test1,test2,test3,finaia,subcode from iamarks group by subcode);
select avg(test1),avg(test2),avg(test3) from iamarks group by subcode;

```

The screenshot shows the MySQL Workbench interface with the following components:

- Navigator:** Shows a tree view of schemas including 'college'.
- SQL Editor:** Contains the SQL queries from the previous block, with line numbers 121 to 128.
- Result Grid:** Displays the results of the queries. The first query returns three rows of average values for subcodes 15.0000, 12.0000, and 19.0000.
- Output:** Shows the execution log with two entries:
 

#	Time	Action	Message	Duration / Fetch
207	01:04:32	create view subject as (select test1,test2,test3,finaia,subcode from iamarks group by subcode);	0 row(s) affected	0.031 sec
208	01:04:35	select avg(test1),avg(test2),avg(test3) from iamarks group by subcode LIMIT 0, 10	3 row(s) returned	0.000 sec / 0.000 sec

MySQL Workbench

Yashaswini x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

- airlineflight
- banking
- banking\_enterprise
- books
- college
  - Tables
  - Views
  - Stored Procedures
  - Functions
- insurance

Administration Schemas

Information

Schema: college

labprogram7 SQL File 6\* labprogram6\* labprogram9\* labprogram8\* SQL File 7\* ENROLL MOVIE

Limit to 10 rows

```
121 when ia_finalia between 17 and 20 then 'outstanding'
122 | Execute the statement under the keyboard cursor
123 |
124 else 'weak'
125 end) as cat from iamarks ia, student s where s.usn=ia.usn and ia.ssid in (select ss.ssid from semsec ss
126 select test1,test2,test3,finalia,subcode from iamarks group by subcode;
127 select s.usn,s.sname,s.address,s.phone,s.gender from student s,iamarks i where i.finalia >45;
128 create view subject as (select test1,test2,test3,finalia,subcode from iamarks group by subcode);
129 select avg(test1),avg(test2),avg(test3) from iamarks group by subcode;
```

Result Grid

usn	sname	address	phone	gender	cat
IBM19CS091	TEESHA	BENGALURU	7712312312	F	weak
IBM19CS091	TEESHA	BENGALURU	7712312312	F	weak
IBM19CS091	TEESHA	BENGALURU	7712312312	F	weak

Result 12 x

Output

Action Output

#	Time	Action	Message	Duration / Fetch
208	01:04:35	select avg(test1),avg(test2),avg(test3) from iamarks group by subcode LIMIT 0, 10	3 row(s) returned	0.000 sec / 0.000 sec
209	01:05:06	select s.usn,s.sname,s.address,s.phone,s.gender, (case when ia_finalia between 1...	3 row(s) returned	0.000 sec / 0.000 sec

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.