

## **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)

✔ MySQL returned an empty result set (i.e. zero rows). (Query took 0.1704 seconds.)

```
CREATE TABLE STUDENT ( USN VARCHAR (10) PRIMARY KEY, SNAME VARCHAR (25), ADDRESS VARCHAR (25), PHONE INT (11), GENDER CHAR (1))
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✔ MySQL returned an empty result set (i.e. zero rows). (Query took 0.2136 seconds.)

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

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✔ MySQL returned an empty result set (i.e. zero rows). (Query took 0.4516 seconds.)

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

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✔ MySQL returned an empty result set (i.e. zero rows). (Query took 0.1810 seconds.)

```
CREATE TABLE SUBJECT ( SUBCODE VARCHAR (8) PRIMARY KEY, TITLE VARCHAR (20), SEM INT(1), CREDITS INT (1) )
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✔ MySQL returned an empty result set (i.e. zero rows). (Query took 0.1800 seconds.)

```
CREATE TABLE IAMARKS ( USN VARCHAR (10), SUBCODE VARCHAR (8), SSID VARCHAR (5), TEST1 INT , TEST2 INT , TEST3 INT , FINALIA INT , FOREIGN KEY (USN) REFERENCES STUDENT (USN)ON UPDATE CASCADE ON DELETE CASCADE, FOREIGN KEY (SUBCODE) REFERENCES SUBJECT (SUBCODE)ON UPDATE CASCADE ON DELETE CASCADE, FOREIGN KEY (SSID) REFERENCES SEMSEC (SSID)ON UPDATE CASCADE ON DELETE CASCADE)
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ Your SQL query has been executed successfully.

```
ALTER TABLE `class` ADD PRIMARY KEY(`USN`);
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

	Table ▲	Action	Rows	Type	Collation	Size	Overhead
<input type="checkbox"/>	class	★  Browse  Structure  Search  Insert  Empty  Drop	0	InnoDB	utf8mb4_general_ci	48.0 KiB	-
<input type="checkbox"/>	iamarks	★  Browse  Structure  Search  Insert  Empty  Drop	0	InnoDB	utf8mb4_general_ci	64.0 KiB	-
<input type="checkbox"/>	semsec	★  Browse  Structure  Search  Insert  Empty  Drop	0	InnoDB	utf8mb4_general_ci	16.0 KiB	-
<input type="checkbox"/>	student	★  Browse  Structure  Search  Insert  Empty  Drop	0	InnoDB	utf8mb4_general_ci	16.0 KiB	-
<input type="checkbox"/>	subject	★  Browse  Structure  Search  Insert  Empty  Drop	0	InnoDB	utf8mb4_general_ci	16.0 KiB	-
5 tables		Sum	0	InnoDB	utf8mb4_general_ci	160.0 KiB	0 B



☐ Check all

With selected:



✓ 1 row inserted. (Query took 0.0306 seconds.)

```
INSERT INTO STUDENT VALUES ('1BM19CS147','SHASHANK','BENGALURU', 1877881122,'M')
```

[\[ Edit inline \]](#) [\[ Edit \]](#) [\[ Create PHP code \]](#)

✓ 1 row inserted. (Query took 0.0316 seconds.)

```
INSERT INTO STUDENT VALUES ('1BM19CS148','SAUNDARYA','BENGALURU',1722829912,'F')
```

[\[ Edit inline \]](#) [\[ Edit \]](#) [\[ Create PHP code \]](#)

✓ 1 row inserted. (Query took 0.0468 seconds.)

```
INSERT INTO STUDENT VALUES ('1BM19CS149','TINA','BENGALURU', 1712312312,'F')
```

[\[ Edit inline \]](#) [\[ Edit \]](#) [\[ Create PHP code \]](#)

✓ 1 row inserted. (Query took 0.0512 seconds.)

```
INSERT INTO STUDENT VALUES ('1BM19CS140','SUPRITA','MANGALURU',1877881122,'F')
```

[\[ Edit inline \]](#) [\[ Edit \]](#) [\[ Create PHP code \]](#)

✓ 1 row inserted. (Query took 0.0322 seconds.)

```
INSERT INTO STUDENT VALUES ('1BM19CS141','ABHAY','BENGALURU', 1900211201,'M')
```

[\[ Edit inline \]](#) [\[ Edit \]](#) [\[ Create PHP code \]](#)

✓ 1 row inserted. (Query took 0.0310 seconds.)

```
INSERT INTO STUDENT VALUES ('1BM19CS142','BHASKARA','BENGALURU',1923211099,'M')
```

[\[ Edit inline \]](#) [\[ Edit \]](#) [\[ Create PHP code \]](#)

✓ 1 row inserted. (Query took 0.0312 seconds.)

```
INSERT INTO STUDENT VALUES ('1BM19CS143','ASMITA','BENGALURU', 1894737377,'F')
```

[\[ Edit inline \]](#) [\[ Edit \]](#) [\[ Create PHP code \]](#)



✓ Showing rows 0 - 6 (7 total, Query took 0.0020 seconds.)

`SELECT * FROM `student``

☐ Profiling [ [Edit inline](#) ] [ [Edit](#) ] [ [Explain SQL](#) ] [ [Create PHP code](#) ] [ [Refresh](#) ]

☐ Show all

Number of rows:

25

Filter rows:

Search this table

Sort by key:

None

+ Options

				USN▼	SNAME	ADDRESS	PHONE	GENDER
<input type="checkbox"/>	 Edit	 Copy	 Delete	1BM19CS140	SUPRITA	MANGALURU	1877881122	F
<input type="checkbox"/>	 Edit	 Copy	 Delete	1BM19CS141	ABHAY	BENGALURU	1900211201	M
<input type="checkbox"/>	 Edit	 Copy	 Delete	1BM19CS142	BHASKARA	BENGALURU	1923211099	M
<input type="checkbox"/>	 Edit	 Copy	 Delete	1BM19CS143	ASMITA	BENGALURU	1894737377	F
<input type="checkbox"/>	 Edit	 Copy	 Delete	1BM19CS147	SHASHANK	BENGALURU	1877881122	M
<input type="checkbox"/>	 Edit	 Copy	 Delete	1BM19CS148	SAUNDARYA	BENGALURU	1722829912	F
<input type="checkbox"/>	 Edit	 Copy	 Delete	1BM19CS149	TINA	BENGALURU	1712312312	F



☐ Check all

With selected:

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✔ 1 row inserted. (Query took 0.0690 seconds.)

```
INSERT INTO SEMSEC VALUES ('CSE8A', 8, 'A')
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✔ 1 row inserted. (Query took 0.1488 seconds.)

```
INSERT INTO SEMSEC VALUES ('CSE8B', 8, 'B')
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✔ 1 row inserted. (Query took 0.0532 seconds.)

```
INSERT INTO SEMSEC VALUES ('CSE8C', 8, 'C')
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✔ 1 row inserted. (Query took 0.0442 seconds.)

```
INSERT INTO SEMSEC VALUES ('CSE7A', 7, 'A')
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✔ 1 row inserted. (Query took 0.0410 seconds.)

```
INSERT INTO SEMSEC VALUES ('CSE7B', 7, 'B')
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ Showing rows 0 - 4 (5 total, Query took 0.0020 seconds.)

`SELECT * FROM `semsec``

☐ Profiling [ [Edit inline](#) ] [ [Edit](#) ] [ [Explain SQL](#) ] [ [Create PHP code](#) ] [ [Refresh](#) ]

☐ Show all

Number of rows: 25 ▼

Filter rows:

Sort by key: None ▼

+ Options

				SSID	SEM	SEC
<input type="checkbox"/>	 Edit	 Copy	 Delete	CSE7A	7	A
<input type="checkbox"/>	 Edit	 Copy	 Delete	CSE7B	7	B
<input type="checkbox"/>	 Edit	 Copy	 Delete	CSE8A	8	A
<input type="checkbox"/>	 Edit	 Copy	 Delete	CSE8B	8	B
<input type="checkbox"/>	 Edit	 Copy	 Delete	CSE8C	8	C



☐ Check all

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✓ 1 row inserted. (Query took 0.0552 seconds.)

```
INSERT INTO CLASS VALUES ('1BM19CS147','CSE8A')
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.0814 seconds.)

```
INSERT INTO CLASS VALUES ('1BM19CS148','CSE8A')
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.0300 seconds.)

```
INSERT INTO CLASS VALUES ('1BM19CS149','CSE8B')
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.0482 seconds.)

```
INSERT INTO CLASS VALUES ('1BM19CS140','CSE8C')
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.1624 seconds.)

```
INSERT INTO CLASS VALUES ('1BM19CS141','CSE7A')
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.0312 seconds.)

```
INSERT INTO CLASS VALUES ('1BM19CS142','CSE7A')
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.0312 seconds.)

```
INSERT INTO CLASS VALUES ('1BM19CS143','CSE7A')
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]



✓ Showing rows 0 - 6 (7 total, Query took 0.0030 seconds.)

`SELECT * FROM `class``

☐ Profiling [ [Edit inline](#) ] [ [Edit](#) ] [ [Explain SQL](#) ] [ [Create PHP code](#) ] [ [Refresh](#) ]

☐ Show all

Number of rows:

25

Filter rows:

Search this table

Sort by key:

None

+ Options



USN

SSID

☐

Edit

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1BM19CS141

CSE7A

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1BM19CS142

CSE7A

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1BM19CS143

CSE7A

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1BM19CS147

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1BM19CS148

CSE8A

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1BM19CS149

CSE8B

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Delete

1BM19CS140

CSE8C



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✓ 1 row inserted. (Query took 0.0488 seconds.)

```
INSERT INTO SUBJECT VALUES ('10CS81','ACA', 8, 4)
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.0780 seconds.)

```
INSERT INTO SUBJECT VALUES ('10CS82','SSM', 8, 4)
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.0150 seconds.)

```
INSERT INTO SUBJECT VALUES ('10CS83','NM', 8, 4)
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.1682 seconds.)

```
INSERT INTO SUBJECT VALUES ('10CS73','PTW', 7, 4)
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.0340 seconds.)

```
INSERT INTO SUBJECT VALUES ('10CS74','DwDM', 7, 4)
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ 1 row inserted. (Query took 0.0276 seconds.)

```
INSERT INTO SUBJECT VALUES ('10CS75','JAVA', 7, 4)
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

✓ Showing rows 0 - 5 (6 total, Query took 0.0030 seconds.)

`SELECT * FROM `subject``

☐ Profiling [ [Edit inline](#) ] [ [Edit](#) ] [ [Explain SQL](#) ] [ [Create PHP code](#) ] [ [Refresh](#) ]

☐ Show all

Number of rows: 25 ▼

Filter rows:

Sort by key: None ▼

+ Options

← T →				SUBCODE	TITLE	SEM	CREDITS
<input type="checkbox"/>	 Edit	 Copy	 Delete	10CS73	PTW	7	4
<input type="checkbox"/>	 Edit	 Copy	 Delete	10CS74	DWDM	7	4
<input type="checkbox"/>	 Edit	 Copy	 Delete	10CS75	JAVA	7	4
<input type="checkbox"/>	 Edit	 Copy	 Delete	10CS81	ACA	8	4
<input type="checkbox"/>	 Edit	 Copy	 Delete	10CS82	SSM	8	4
<input type="checkbox"/>	 Edit	 Copy	 Delete	10CS83	NM	8	4



☐ Check all

With selected:

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✓ 9 rows inserted. (Query took 0.0850 seconds.)

```
INSERT INTO `iamarks` (`USN`, `SUBCODE`, `SSID`, `TEST1`, `TEST2`, `TEST3`) VALUES ('1BM19CS147', '10CS81', 'CSE8A', 15, 16, 18), ('1BM19CS148', '10CS82', 'CSE8A', 12, 19, 14), ('1BM19CS149', '10CS83', 'CSE8B', 19, 15, 20), ('1BM19CS140', '10CS81', 'CSE8C', 20, 16, 19), ('1BM19CS141', '10CS75', 'CSE7A', 15, 15, 12), ('1BM19CS142', '10CS75', 'CSE7A', 15, 15, 12), ('1BM19CS143', '10CS75', 'CSE7A', 15, 15, 12), ('1BM19CS143', '10CS73', 'CSE7A', 30, 30, 40), ('1BM19CS149', '10CS81', 'CSE8B', 40, 40, 0)
```

[ Edit inline ] [ Edit ] [ Create PHP code ]

✓ Showing rows 0 - 8 (9 total, Query took 0.0020 seconds.)

```
SELECT * FROM `iamarks`
```

☐ Profiling [ Edit inline ] [ Edit ] [ Explain SQL ] [ Create PHP code ] [ Refresh ]

☐ Show all | Number of rows: 25 ▼ Filter rows: Search this table Sort by key: None ▼

+ Options

USN	SUBCODE	SSID	TEST1	TEST2	TEST3	FINALIA
1BM19CS147	10CS81	CSE8A	15	16	18	NULL
1BM19CS148	10CS82	CSE8A	12	19	14	NULL
1BM19CS149	10CS83	CSE8B	19	15	20	NULL
1BM19CS140	10CS81	CSE8C	20	16	19	NULL
1BM19CS141	10CS75	CSE7A	15	15	12	NULL
1BM19CS142	10CS75	CSE7A	15	15	12	NULL
1BM19CS143	10CS75	CSE7A	15	15	12	NULL
1BM19CS143	10CS73	CSE7A	30	30	40	NULL
1BM19CS149	10CS81	CSE8B	40	40	0	NULL

Write SQL queries to

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

✓ Showing rows 0 - 0 (1 total, Query took 0.0156 seconds.)

```
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 = 8 AND SS.SEC='C'
```

☐ Profiling [ [Edit inline](#) ] [ [Edit](#) ] [ [Explain SQL](#) ] [ [Create PHP code](#) ] [ [Refresh](#) ]

☐ Show all

Number of rows: 25 ▼

Filter rows:

+ Options

USN	SNAME	ADDRESS	PHONE	GENDER	SEM	SEC
1BM19CS140	SUPRITA	MANGALURU	1877881122	F	8	C



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

✓ Showing rows 0 - 5 (6 total, Query took 0.0000 seconds.)

```
SELECT SS.SEM, SS.SEC, S.GENDER, COUNT(S.GENDER) 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
```

☐ Profiling [ [Edit inline](#) ] [ [Edit](#) ] [ [Explain SQL](#) ] [ [Create PHP code](#) ] [ [Refresh](#) ]

☐ Show all | Number of rows: 25 ▼ Filter rows:

+ Options

SEM	SEC	GENDER	COUNT(S.GENDER)
7	A	F	1
7	A	M	2
8	A	F	1
8	A	M	1
8	B	F	1
8	C	F	1

iii. Create a view of Test1 marks of student USN '1BI15CS101' in all subjects.(USN **1BM19CS149** USED IN THIS CASE)

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0206 seconds.)

```
CREATE VIEW view_marks AS SELECT TEST1, SUBCODE FROM IAMARKS WHERE USN = '1BM19CS149'
```

[ [Edit inline](#) ] [ [Edit](#) ] [ [Create PHP code](#) ]

⚠ Current selection does not contain a unique column. Grid edit, Edit, Copy and Delete features may result in undesired behavior. ⓘ

✓ Showing rows 0 - 1 (2 total, Query took 0.0000 seconds.)

```
select * from view_marks
```

☐ Profiling [ [Edit inline](#) ] [ [Edit](#) ] [ [Explain SQL](#) ] [ [Create PHP code](#) ] [ [Refresh](#) ]

☐ Show all | Number of rows: 25 ▼ Filter rows:

+ Options

← T →				TEST1	SUBCODE
<input type="checkbox"/>	Edit	Copy	Delete	19	10CS83
<input type="checkbox"/>	Edit	Copy	Delete	40	10CS81

⬆ ☐ Check all With selected: Edit Copy Delete Export

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

✓ From database: (Query) Test Scores Summary

```
UPDATE `iamarks` SET FINALIA= CASE WHEN TEST1>=TEST3 AND TEST2>=TEST3 THEN (TEST1+TEST2)/2 WHEN TEST2>=TEST1 AND TEST3>=TEST1 THEN (TEST2+TEST3)/2 WHEN TEST1>=TEST2 AND TEST3>=TEST2 THEN (TEST1+TEST3)/2 end
```

[ Edit inline ] [ Edit ] [ Create PHP code ]

✓ Showing rows 0 - 8 (9 total, Query took 0.0020 seconds.)

```
SELECT * FROM `iamarks`
```

☐ Profiling [ Edit inline ] [ Edit ] [ Explain SQL ] [ Create PHP code ] [ Refresh ]

☐ Show all | Number of rows: 25 ▾ | Filter rows:  | Sort by key: None ▾

+ Options

USN	SUBCODE	SSID	TEST1	TEST2	TEST3	FINALIA
1BM19CS147	10CS81	CSE8A	15	16	18	17
1BM19CS148	10CS82	CSE8A	12	19	14	17
1BM19CS149	10CS83	CSE8B	19	15	20	20
1BM19CS140	10CS81	CSE8C	20	16	19	20
1BM19CS141	10CS75	CSE7A	15	15	12	15
1BM19CS142	10CS75	CSE7A	15	15	12	15
1BM19CS143	10CS75	CSE7A	15	15	12	15
1BM19CS143	10CS73	CSE7A	30	30	40	35
1BM19CS149	10CS81	CSE8B	40	40	0	40

v. Categorize students based on the following criterion:

RANGE TAKEN AS

If FinalIA = 17 to 20 then CAT = 'Outstanding' **(34 TO 40)**

If FinalIA = 12 to 16 then CAT = 'Average' **(24 TO 32)**

If FinalIA < 12 then CAT = 'Weak' **(<24)**

Due to finalIA in range(0 to 40)

Give these details only for 8th semester A, B, and C section students.

✓ Showing rows 0 - 4 (5 total, Query took 0.0156 seconds.)

```
SELECT S.usn,S.SNAME,SUB.SUBCODE,IA.FINALIA, (CASE WHEN IA.FINALIA BETWEEN 34 AND 40 THEN 'OUTSTANDING' WHEN IA.FINALIA BETWEEN 24 AND 32 THEN 'AVERAGE' ELSE 'WEAK' END) AS CATEGORY FROM STUDENT S, SEMSEC SS, IAMARKS IA, SUBJECT SUB WHERE S.USN = IA.USN AND SS.SSID = IA.SSID AND SUB.SUBCODE = IA.SUBCODE AND SUB.SEM = 8
```

☐ Profiling [ [Edit inline](#) ] [ [Edit](#) ] [ [Explain SQL](#) ] [ [Create PHP code](#) ] [ [Refresh](#) ]

☐ Show all | Number of rows: 25 ▼ Filter rows:

+ Options

usn	SNAME	SUBCODE	FINALIA	CATEGORY
1BM19CS147	SHASHANK	10CS81	17	WEAK
1BM19CS148	SAUNDARYA	10CS82	17	WEAK
1BM19CS149	TINA	10CS83	20	WEAK
1BM19CS140	SUPRITA	10CS81	20	WEAK
1BM19CS149	TINA	10CS81	40	OUTSTANDING

☐ Show all | Number of rows: 25 ▼ Filter rows: