LAB REPORT

COURSE TITLE	:	Database Systems Lab
COURSE CODE	:	CSE 208
LAB REPORT NO.	:	01
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SUBMITTED TO

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Database Systems Lab

1. Creation of Databases

Create a database named `shahriar_408` .

```
CREATE DATABASE shahriar_408;
```

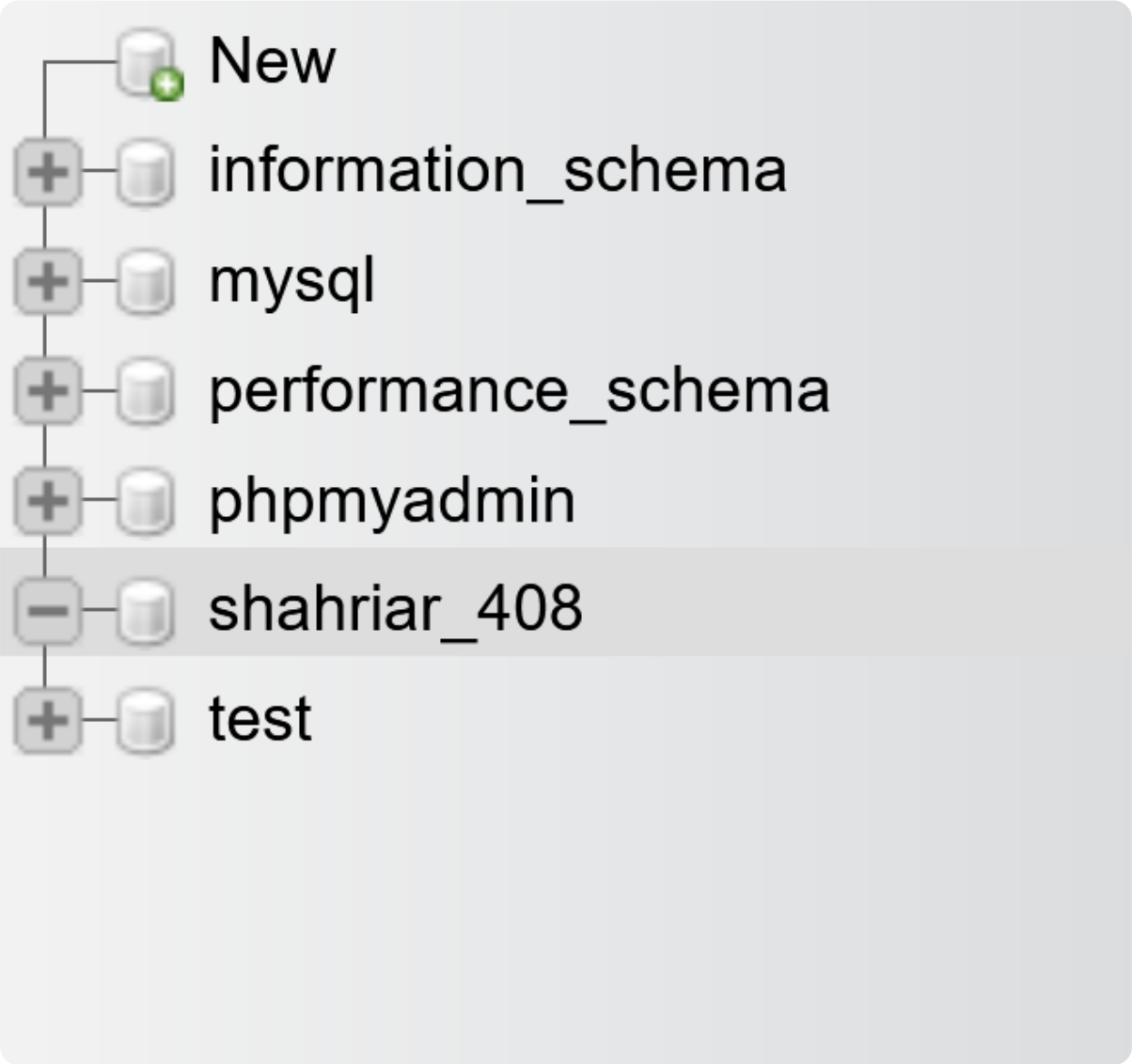

Figure - 1.1. Creating a database named shahriar_408

2A. Creation of Tables

Create three tables in this database named `student`, `faculty`, and `course`.

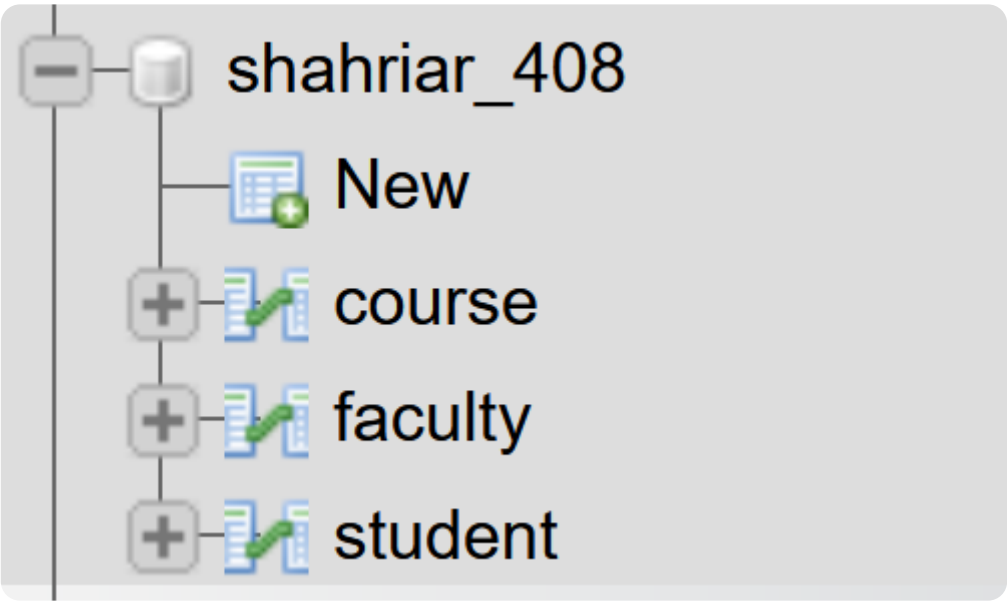

Figure - 1.2. Creating three tables

```
CREATE TABLE student (Name varchar(32), ID int(8), NID
int(9), Intake int(2), Section int(2), CGPA float(3.2));
```

Name	ID	NID	Intake	Section	CGPA

Figure - 1.3. Creating the student table

```
CREATE TABLE faculty (Name varchar(32), Short_Code char(4),
Course_Code char(8), Conduct_Semester varchar(16));
```

Name	Short_Code	Course_Code	Conduct_Semester

Figure - 1.4. Creating the faculty table

```
CREATE TABLE course (Course_Title varchar(32), Course_Code
char(8));
```

Figure - 1.5. Creating the course table

2B. Data Insertion

Add data to these three tables.

Student

```
INSERT INTO student VALUES("Ashraful", 1, 102, 44, 1,
3.30);
INSERT INTO student VALUES("Tonny", 2, 101, 44, 1, 3.50);
INSERT INTO student VALUES("Zakir", 33, 103, 35, 2, 3.98);
INSERT INTO student VALUES("Urmi", 6, 104, 35, 1, 3.96);
INSERT INTO student VALUES("Minu", 23, 105, 44, 1, 3.50);
```

Name	ID	NID	Intake	Section	CGPA
Ashraful	1	102	44	1	3.3
Tonny	2	101	44	1	3.5
Tonny	2	101	44	1	3.5
Zakir	33	103	35	2	3.98
Urmi	6	104	35	1	3.96
Minu	23	105	44	1	3.5

Figure - 1.6. Inserting data to the student table

Faculty

```
INSERT INTO faculty VALUES("Farha Akhter Munmun", "FAM",
"CSE 319", "Summer 2019");
INSERT INTO faculty VALUES("Sweety Lima", "SWL", "CSE 209",
"Fall 2019-20");
INSERT INTO faculty VALUES("Shumi Khatun", "SKL", NULL,
```

```
"Summer 2019");
INSERT INTO faculty VALUES("Nadia Afrin Ritu", NULL, "CSE
351", NULL);
```

Name	Short_Code	Course_Code	Conduct_Semester
Farha Akhter Munmun	FAM	CSE 319	Summer 2019
Sweety Lima	SWL	CSE 209	Fall 2019-20
Shumi Khatun	SKL	*NULL*	Summer 2019
Nadia Afrin Ritu	*NULL*	CSE 351	*NULL*

Figure - 1.7. Inserting data to the faculty table

Course

```
INSERT INTO course VALUES("Database Systems", "CSE 207");
INSERT INTO course VALUES("Computer Networks", "CSE 319");
INSERT INTO course VALUES("Data Communication", "CSE 209");
INSERT INTO course VALUES("System Analysis Design", NULL);
```

Course_Title	Course_Code
Database Systems	CSE 207
Computer Networks	CSE 319
Data Communication	CSE 209
System Analysis Design	*NULL*

Figure - 1.8. Inserting data to the course table

3. Query Operations

a. Update the `NULL` Short Code

```
UPDATE faculty SET Short_Code="NAR" WHERE Name="Nadia Afrin
Ritu";
```

Name	Short_Code	Course_Code	Conduct_Semester
Farha Akhter Munmun	FAM	CSE 319	Summer 2019
Sweety Lima	SWL	CSE 209	Fall 2019-20
Shumi Khatun	SKL	*NULL*	Summer 2019
Nadia Afrin Ritu	NAR	CSE 351	*NULL*

Figure - 1.9. Operating 3(a)

b. Update the `NULL` Course Code

```
UPDATE faculty SET Course_Code="CSE 212" WHERE Name="Shumi
Khatun";
```

Name	Short_Code	Course_Code	Conduct_Semester
Farha Akhter Munmun	FAM	CSE 319	Summer 2019
Sweety Lima	SWL	CSE 209	Fall 2019-20
Shumi Khatun	SKL	CSE 212	Summer 2019
Nadia Afrin Ritu	NAR	CSE 351	*NULL*

Figure - 1.10. Operating 3(b)

c. Update the `NULL` Conduct Semester

```
UPDATE faculty SET Conduct_Semester="Spring 2026" WHERE
Name="Nadia Afrin Ritu";
```

Name	Short_Code	Course_Code	Conduct_Semester
Farha Akhter Munmun	FAM	CSE 319	Summer 2019
Sweety Lima	SWL	CSE 209	Fall 2019-20
Shumi Khatun	SKL	CSE 212	Summer 2019
Nadia Afrin Ritu	NAR	CSE 351	Spring 2026

Figure - 1.11. Operating 3(c)

d. Add a new column `Age` in the `student` table

```
ALTER TABLE student
ADD Age int(5);
```

Name	ID	NID	Intake	Section	CGPA	Age
Ashraful	1	102	44	1	3.3	*NULL*
Tonny	2	101	44	1	3.5	*NULL*
Tonny	2	101	44	1	3.5	*NULL*
Zakir	33	103	35	2	3.98	*NULL*
Urmi	6	104	35	1	3.96	*NULL*
Minu	23	105	44	1	3.5	*NULL*

Figure - 1.12. Operating 3(d)

e. Update the age of each student

```
UPDATE student SET Age=21 WHERE ID=1;
UPDATE student SET Age=22 WHERE ID=2;
UPDATE student SET Age=19 WHERE ID=33;
UPDATE student SET Age=21 WHERE ID=6;
UPDATE student SET Age=19 WHERE ID=23;
```

Name	ID	NID	Intake	Section	CGPA	Age
Ashraful	1	102	44	1	3.3	21
Tonny	2	101	44	1	3.5	22
Tonny	2	101	44	1	3.5	22
Zakir	33	103	35	2	3.98	19
Urmi	6	104	35	1	3.96	21
Minu	23	105	44	1	3.5	19

Figure - 1.13. Operating 3(e)

f. Find the names of all courses in the `course` table

```
SELECT Course_Title from course;
```

Course_Title
Database Systems
Computer Networks
Data Communication
System Analysis Design

Figure - 1.14. Operating 3(f)

g. Find the names of all teachers who have conducted in summer 2019

```
SELECT Name FROM faculty WHERE Conduct_Semester="Summer
2019";
SELECT Name, Short_Code FROM faculty WHERE
Conduct_Semester="Summer 2019";
```

Name	Short_Code
Farha Akhter Munmun	FAM
Shumi Khatun	SKL

Figure - 1.15. Operating 3(g)

h. Find the names of all students whose CGPA is greater than 3.50

```
SELECT Name FROM Student WHERE CGPA > 3.50;
```

Name
Zakir
Urmi

Figure - 1.16. Operating 3(h)

i. Add a new column `Offered Semester` after the column `Course Title`

```
ALTER table course
ADD column Offered_Semester varchar(32) AFTER Course_Title;
```

Course_Title	Offered_Semester	Course_Code
Database Systems	*NULL*	CSE 207
Computer Networks	*NULL*	CSE 319
Data Communication	*NULL*	CSE 209
System Analysis Design	*NULL*	*NULL*

Figure - 1.17. Operating 3(i)

j. Find the name and CGPA of each student and order them by CGPA

```
SELECT Name, CGPA FROM student ORDER BY CGPA DESC;
SELECT Name, CGPA FROM student ORDER BY CGPA ASC;
```

Name	CGPA 1
Zakir	3.98
Urmi	3.96
Tonny	3.5
Tonny	3.5
Minu	3.5
Ashraful	3.3

Name	CGPA 1
Ashraful	3.3
Tonny	3.5
Tonny	3.5
Minu	3.5
Urmi	3.96
Zakir	3.98

Figure - 1.18. Operating 3(j)

k. Find the name of all students whose age is greater than 19 and CGPA is greater than 3.50

```
SELECT Name FROM Student WHERE Age > 19 AND CGPA > 3.50;
```

Name
Urmi

Figure - 1.19. Operating 3(k)

l. Find the ID of all those students who are from 44 intake or have CGPA less than 3.40

```
SELECT ID FROM Student WHERE Intake = 44 OR CGPA < 3.4;
```

ID
1
23
2

Figure - 1.20. Operating 3(l)

m. Find the ID of all those students whose CGPA is either 3.50, 3.60, or 3.96

```
Select ID FROM Student WHERE CGPA IN(3.5, 3.6, 3.96);
Select ID FROM Student WHERE CGPA NOT IN(3.5, 3.6, 3.96);
```

ID
23
2

ID
1
33
6

Figure - 1.21. Operating 3(m)