



TRIBHUVAN UNIVERSITY

Faculty of Management

Shanker Dev Campus

DATABASE MANAGEMENT SYSTEM

A LAB REPORT

Submitted To

**Department of BIM
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Putalisadak, Kathmandu**

*In partial fulfillment of the requirements for the Fourth Semester of the Bachelor of
Information Management Degree*

Submitted By

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BASIC THEORY

Data Definition Language (DDL)

Data Definition Language (DDL) is used to define the structure of database objects such as tables, views, procedures, and sequences. It is also used to restructure the existing database objects.

CREATE DATABASE:

Syntax:

```
CREATE DATABASE db-name;
```

CREATE TABLE:

Syntax:

```
CREATE TABLE Table-Name
```

```
(
```

```
Column1 datatype data constraint,
```

```
Column2 datatype data constraint,
```

```
-----
```

```
ColumnN datatype data constraint
```

```
);
```

ALTER Command:

ALTER ADD Command:

i. ADD Single Column

Syntax:

```
ALTER TABLE Table-Name
```

```
ADD Column-Name datatype data constraint;
```

ii. ADD Multiple Column

Syntax:

```
ALTER TABLE Table-Name
```

```
ADD (column1 datatype constraint, column2 datatype constraint, ...  
columnN datatype constraint);
```

iii. ADD Column in first

Syntax:

```
ALTER TABLE Table-Name
```

```
ADD column-name datatype constraint first;
```


iv. ADD Column in any position
Syntax:

```
ALTER TABLE Table-Name  
ADD column-name datatype constraint after column-name;
```

ALTER MODIFY Command:

Syntax:

```
ALTER TABLE Table-Name  
MODIFY column-name datatype;
```

ALTER CHANGE Command:

Syntax:

```
ALTER TABLE Table-Name CHANGE  
old-column-name new-column-name datatype;
```

ALTER DROP Command:

Syntax:

```
ALTER TABLE Table-Name DROP column-name;
```

Data Manipulation Language (DML)

Data Manipulation Language (DML) is used to manipulate and manage data within database objects such as tables. It deals with the retrieval, insertion, updating and deletion of data stored in the database. It allows users to perform operations on the actual records but does not change the structure of the database objects.

INSERT Command:

Syntax:

```
INSERT INTO table-name VALUES  
(value-list-1), (value-list-2), ... (value-list-n);
```

UPDATE Command:

Syntax:

```
UPDATE table-name  
SET column1 = value1, column2 = value2, ...  
WHERE condition;
```

DELETE Command:

Syntax:

```
DELETE FROM table-name WHERE condition;
```


Data Query Language (DQL)

Data Query Language (DQL) is used to fetch and query data from database objects. It is mainly concerned with retrieving data according to conditions applied by the user, without modifying the structure of the database or stored data.

SELECT Command:

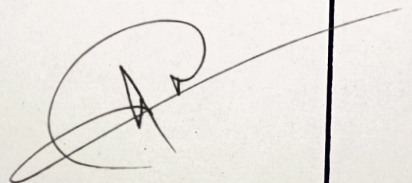
Syntax:

SELECT column1, column2

FROM table-name

WHERE condition

ORDER BY column-name ASC/DESC;

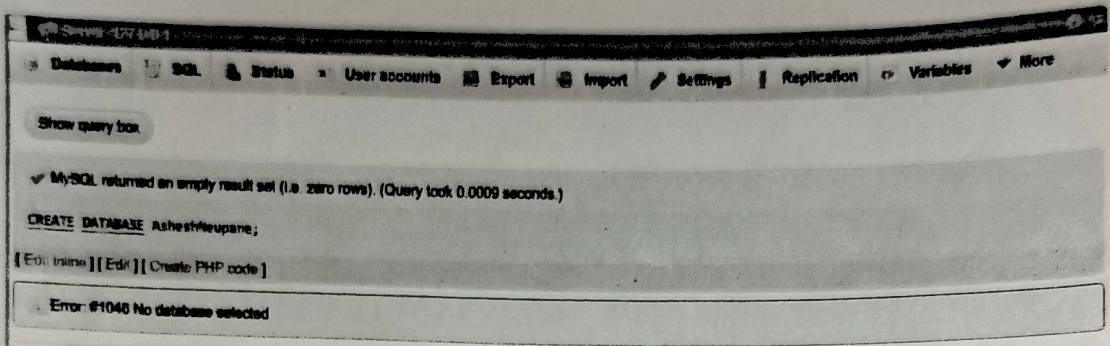


CREATE DATABASE

Query:

CREATE DATABASE AsheshNeupane;

Output:



SHOW DATABASE LIST

Query:

SHOW DATABASES;

Output:

Your SQL query has been executed successfully.

SHOW DATABASES;

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

Extra options

Database

asheshneupane
information_schema
mysql
performance_schema
phoenixadmin
test

Consider the following relation:

Actor (aid, name, age, gender, salary)

Movie (mid, title, budget)

Plays (aid, mid)

Write SQL queries:

CREATE Table Actor:

Query:

```
CREATE TABLE ACTOR(  
  aid INT PRIMARY KEY,  
  name VARCHAR(100) NOT NULL,  
  age INT,  
  gender VARCHAR(10),  
  salary DECIMAL(10,2)  
);
```

Query Result:

The screenshot shows a MySQL database interface with a menu bar (Structure, SQL, Search, Query, Export, Import, Operations, Privileges, Routines, Events, More) and a toolbar (Show query box). The main area displays a message: "MySQL returned an empty result set (i.e. zero rows). (Query took 0.0054 seconds.)". Below this, the executed SQL query is shown: "CREATE TABLE ACTOR(aid INT PRIMARY KEY, name VARCHAR(100) NOT NULL, age INT, gender VARCHAR(10), salary DECIMAL(10,2));". At the bottom, there are links for "[Edit inline]", "[Edit]", and "[Create PHP code]".

Output:

The screenshot shows a MySQL database interface with a message: "Your SQL query has been executed successfully." Below this, the executed SQL query is shown: "DESCRIBE ACTOR;". At the bottom, there are links for "[Edit inline]", "[Edit]", and "[Create PHP code]". Below the links, there is a button labeled "Extra options". Below the button, a table is displayed showing the structure of the ACTOR table.

Field	Type	Null	Key	Default	Extra
aid	int(11)	NO	PRI	NULL	
name	varchar(100)	NO		NULL	
age	int(11)	YES		NULL	
gender	varchar(10)	YES		NULL	
salary	decimal(10,2)	YES		NULL	

CREATE Table Movie:

Query:

```
CREATE TABLE MOVIE C  
mid INT PRIMARY KEY,  
title VARCHAR(200) NOT NULL,  
budget DECIMAL(12,2)  
);
```

Query Result:

Server: 127.0.0.1 Database: asheshneupane

Structure SQL Search Query Export Import Operations Privileges Routines Events More

Show query box

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0007 seconds.)

```
CREATE TABLE Movie ( mid INT PRIMARY KEY, title VARCHAR(200) NOT NULL, budget DECIMAL(12,2) );
```

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

Output:

Your SQL query has been executed successfully.

DESCRIBE MOVIE;

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

Extra options

Field	Type	Null	Key	Default	Extra
mid	int(11)	NO	PRI	NULL	
title	varchar(200)	NO		NULL	
budget	decimal(12,2)	YES		NULL	

CREATE Table Plays:

Query:

CREATE TABLE Plays (

aid INT,

mid INT,

~~PRIMARY KEY (aid, mid)~~

FOREIGN KEY (aid) REFERENCES Actor (aid),

FOREIGN KEY (mid) REFERENCES Movie (mid)

);

Query Result:

Server: 127.0.0.1 Database: ashishneupane

Structure SQL Search Query Export Import Operations Privileges Routines Events More

Show query box

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0007 seconds.)

```
CREATE TABLE Plays ( aid INT, mid INT, FOREIGN KEY (aid) REFERENCES Actor(aid), FOREIGN KEY (mid) REFERENCES Movie(mid) );
```

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

Output:

Your SQL query has been executed successfully.

DESCRIBE PLAYS;

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

Extra options

Field	Type	Null	Key	Default	Extra
aid	int(11)	YES	MUL	NULL	
mid	int(11)	YES	MUL	NULL	

INSERT SAMPLE ACTORS:

Query:

```
INSERT INTO Actor (aid, name, age, gender, salary) VALUES
(1, 'Rajesh Hamal', 50, 'Male', 7000.00),
(2, 'Aachal Sharma', 28, 'Female', 3000.00),
(3, 'Barsha Raut', 22, 'Female', 2500.00),
(4, 'Ashesh Neupane', 16, 'Male', 1000.00),
(5, 'Bishow Raj Saru Magar', 40, 'Male', 6500.00),
(6, 'Priyanka Karki', 38, 'Female', 2000.00),
(7, 'Sanyam Kothari', 36, 'Male', 4000.00),
(8, 'Rekha Thapa', 30, 'Female', 2200.00);
```

Query Result:

Server: 127.0.0.1 Database: asheshneupane

Structure SQL Search Query Export Import Operations Privileges Routines Events More

Show query box

8 rows inserted. (Query took 0.0004 seconds.)

```
INSERT INTO Actor (aid, name, age, gender, salary) VALUES (1, 'Rajesh Hamal', 50, 'Male', 7000.00), (2, 'Aachal Sharma', 28, 'Female', 3000.00), (3, 'Barsha Raut', 22, 'Female', 2500.00), (4, 'Ashesh Neupane', 16, 'Male', 1000.00), (5, 'Bishow Raj Saru Magar', 40, 'Male', 6500.00), (6, 'Priyanka Karki', 38, 'Female', 2000.00), (7, 'Sanyam Kothari', 36, 'Male', 4000.00), (8, 'Rekha Thapa', 30, 'Female', 2200.00);
```

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

Table after executing INSERT command:

Showing rows 0 - 7 (8 total, Query took 0.0003 seconds.)

SELECT * FROM ACTOR;

☐ 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

Extra options

	aid	name	age	gender	salary
☐ Edit Copy Delete	1	Rajesh Hamal	50	Male	7000.00
☐ Edit Copy Delete	2	Aachal Sharma	28	Female	3000.00
☐ Edit Copy Delete	3	Barsha Raut	22	Female	2500.00
☐ Edit Copy Delete	4	Ashesh Neupane	16	Male	1000.00
☐ Edit Copy Delete	5	Bishow Raj Saru Magar	40	Male	6500.00
☐ Edit Copy Delete	6	Priyanka Karki	38	Female	2000.00
☐ Edit Copy Delete	7	Sanyam Kothari	36	Male	4000.00
☐ Edit Copy Delete	8	Rekha Thapa	30	Female	2200.00

INSERT SAMPLE MOVIES:

Query:

```
INSERT INTO MOVIE (mid, title, budget) VALUES
(1, 'Chakka Panja', 2000.00),
(2, 'Hari', 3500.00),
(3, 'Aama', 5000.00),
(4, 'Pashupati Prasad', 1500.00),
(5, 'Kabaddi', 2500.00),
(6, 'Loot', 3200.00),
(7, 'Jatra', 1000.00),
(8, 'Unko Sweater', 4000.00);
```

Query Result:

Server: 127.0.0.1 Database: asheshineupane

Structure SQL Search Query Export Import Operations Privileges Routines Events More

Show query box

8 rows inserted. (Query took 0.0301 seconds.)

```
INSERT INTO Movie (mid, title, budget) VALUES (1, 'Chakka Panja', 2000.00), (2, 'Hari', 3500.00), (3, 'Aama', 5000.00), (4, 'Pashupati Prasad', 1500.00), (5, 'Kabaddi', 2500.00), (6, 'Loot', 3200.00), (7, 'Jatra', 1000.00), (8, 'Unko Sweater', 4000.00);
```

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

Table after executing INSERT command:

Showing rows 0 - 7 (8 total, Query took 0.0005 seconds.)

SELECT * FROM MOVIE;

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

Extra options

	mid	title	budget
☐ Edit ☐ Copy ☐ Delete	1	Chakka Panja	2000.00
☐ Edit ☐ Copy ☐ Delete	2	Hari	3500.00
☐ Edit ☐ Copy ☐ Delete	3	Aama	5000.00
☐ Edit ☐ Copy ☐ Delete	4	Pashupati Prasad	1500.00
☐ Edit ☐ Copy ☐ Delete	5	Kabaddi	2500.00
☐ Edit ☐ Copy ☐ Delete	6	Loot	3200.00
☐ Edit ☐ Copy ☐ Delete	7	Jatra	1000.00
☐ Edit ☐ Copy ☐ Delete	8	Unko Sweater	4000.00

INSERT PLAYS:

Query:

INSERT INTO PLAYS (aid, mid) VALUES

(1,2), (1,3), (1,8), (2,1), (3,4), (4,5), (5,6), (6,2), (7,3), (8,1);

Query Result:

Server: 427.0.0.1 Database: asheshneupane

Structure SQL Search Query Export Import Operations Privileges Routines Events More

Show query box

✓ 10 rows inserted. (Query took 0.0010 seconds.)

INSERT INTO Plays (aid, mid) VALUES (1,2), (1,3), (1,8), (2,1), (3,4), (4,5), (5,6), (6,2), (7,3), (8,1);

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

Table after executing INSERT command:

✓ Showing rows 0 - 9 (10 total, Query took 0.0004 seconds.)

SELECT * FROM PLAYS;

☐ 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

Extra options

aid	mid
1	2
1	3
1	8
2	1
3	4
4	5
5	6
6	2
7	3
8	1

1. Display the name of female actor with minimum salary.

SQL Query:

```
SELECT name  
FROM Actor  
WHERE gender = 'Female'  
AND salary = (SELECT MIN(salary) FROM Actor WHERE gender = 'Female');
```

Output:

✓ Showing rows 0 - 0 (1 total, Query took 0.0064 seconds.)

```
SELECT name FROM Actor WHERE gender = 'Female' AND salary = (SELECT MIN(salary) FROM Actor WHERE gender = 'Female');
```

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

☐ Show all | Number of rows: 25 | Filter rows: Search this table

Extra options

	name
☐ Edit ☐ Copy ☐ Delete	Priyanka Karki

2. Display the name of movies which name starts from "h".

SQL Query:

```
SELECT title  
FROM movie  
WHERE title LIKE "h%";
```

Output:

✓ Showing rows 0 - 0 (1 total, Query took 0.0003 seconds.)

```
SELECT title FROM movie WHERE title LIKE "h%";
```

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

☐ Show all | Number of rows: 25 | Filter rows: Search this table

Extra options

	title
☐ Edit ☐ Copy ☐ Delete	Hari

3. Delete the record of actor whose age is less than 17.

SQL Query:

~~DELETE FROM Actor~~

~~WHERE age < 17;~~

DELETE FROM Plays

WHERE aid IN (SELECT aid FROM Actor WHERE age < 17);

DELETE FROM Actor

WHERE age < 17;

Output:

Show query box

✓ 1 row deleted. (Query took 0.0004 seconds.)

DELETE FROM Plays WHERE aid IN (SELECT aid FROM Actor WHERE age < 17);

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

✓ 1 row deleted. (Query took 0.0020 seconds.)

DELETE FROM Actor WHERE age < 17;

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

Table after deletion:

✓ Showing rows 0 - 6 (7 total, Query took 0.0003 seconds.)

SELECT * FROM `actor`

☐ 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

Extra options

Extra options			▼	aid	name	age	gender	salary
←	T	→						
☐	Edit	 Copy	 Delete	1	Rajesh Hamal	50	Male	7000.00
☐	Edit	 Copy	 Delete	2	Aachal Sharma	28	Female	3000.00
☐	Edit	 Copy	 Delete	3	Barsha Raut	22	Female	2500.00
☐	Edit	 Copy	 Delete	5	Bishow Raj Saru Magar	40	Male	6500.00
☐	Edit	 Copy	 Delete	6	Priyanka Karki	38	Female	2000.00
☐	Edit	 Copy	 Delete	7	Sanyam Kothari	36	Male	4000.00
☐	Edit	 Copy	 Delete	8	Rekha Thapa	30	Female	2200.00

4. Display movie id of all movies played by "Rajesh Hamal".

SQL Query:

```
SELECT p.mid  
FROM Plays p  
JOIN Actor a ON p.aid = a.aid  
WHERE a.name = 'Rajesh Hamal';
```

Output:

Showing rows 0 - 2 (3 total, Query took 0.0014 seconds.)

SELECT p.mid FROM Plays p JOIN Actor a ON p.aid = a.aid WHERE a.name = 'Rajesh Hamal';

☐ 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

Extra options

mid
2
3
8

5. Find the name of actor and title of the movie whose budget is greater than 3000.

SQL Query:

```
SELECT a.name, m.title  
FROM Actor a  
JOIN Plays p ON a.aid = p.aid  
JOIN Movie m ON p.mid = m.mid  
WHERE m.budget > 3000;
```

Output:

Showing rows 0 - 5 (6 total, Query took 0.0018 seconds.)

SELECT a.name, m.title FROM Actor a JOIN Plays p ON a.aid = p.aid JOIN Movie m ON p.mid = m.mid WHERE m.budget > 3000;

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

☐ Show all | Number of rows: 25 | Filter rows: Search this table

Extra options

name	title
Rajesh Hamal	Hari
Rajesh Hamal	Aama
Rajesh Hamal	Unko Sweater
Bishow Raj Saru Magar	Loot
Priyanka Karki	Hari
Sanyam Kothari	Aama

6. Display the title of movie for each budget.

SQL Query:

```
SELECT budget, title
FROM Movie
ORDER BY budget;
```

Output:

Showing rows 0 - 7 (8 total, Query took 0.0003 seconds.) [budget: 1000.00... - 5000.00...]

SELECT budget, title FROM Movie ORDER BY budget;

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

Extra options

			budget	title
☐	Edit	Copy	Delete	1000.00 Jatra
☐	Edit	Copy	Delete	1500.00 Pashupati Prasad
☐	Edit	Copy	Delete	2000.00 Chakka Panja
☐	Edit	Copy	Delete	2500.00 Kabaddi
☐	Edit	Copy	Delete	3200.00 Loot
☐	Edit	Copy	Delete	3500.00 Hari
☐	Edit	Copy	Delete	4000.00 Unko Sweater
☐	Edit	Copy	Delete	5000.00 Aama

7. Find the name and age of actor whose salary is less than that of "Rajesh Hamal".

SQL Query:

```
SELECT name, age
FROM Actor
WHERE salary < (SELECT salary FROM Actor WHERE name = 'Rajesh Hamal');
```

Output:

Showing rows 0 - 5 (6 total, Query took 0.0006 seconds.)

SELECT name, age FROM Actor WHERE salary < (SELECT salary FROM Actor WHERE name = 'Rajesh Hamal');

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

Extra options

				name	age
☐	Edit	Copy	Delete	Aachal Sharma	28
☐	Edit	Copy	Delete	Barsha Raut	22
☐	Edit	Copy	Delete	Bishow Raj Saru Magar	40
☐	Edit	Copy	Delete	Priyanka Karki	38
☐	Edit	Copy	Delete	Sanyam Kothari	36
☐	Edit	Copy	Delete	Rekha Thapa	30

8. Retrieve the movie id and movie name in which movie budget is greater than average budget of the movie.

SQL Query:

```
SELECT mid, title
```

```
FROM Movie
```

```
WHERE budget > (SELECT AVG(budget) FROM Movie);
```

Output:

Showing rows 0 - 3 (4 total, Query took 0.0014 seconds.)

```
SELECT mid, title FROM Movie WHERE budget > (SELECT AVG(budget) FROM Movie);
```

☐ 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

Extra options

	mid	title
☐ Edit ☐ Copy ☐ Delete	2	Hari
☐ Edit ☐ Copy ☐ Delete	3	Aama
☐ Edit ☐ Copy ☐ Delete	6	Loot
☐ Edit ☐ Copy ☐ Delete	8	Unko Sweater

9. Display actor id and movie id whose age is greater than 35 and gender is not female.

SQL Query:

```
SELECT p.aid, p.mid
```

```
FROM Plays p
```

```
JOIN Actor a ON p.aid = a.aid
```

```
WHERE a.age > 35
```

```
AND a.gender <> 'Female';
```

Output:

Showing rows 0 - 4 (5 total, Query took 0.0003 seconds.)

```
SELECT p.aid, p.mid FROM Plays p JOIN Actor a ON p.aid = a.aid WHERE a.age > 35 AND a.gender <> 'Female';
```

☐ 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

Extra options

aid	mid
1	2
1	3
1	8
5	6
7	3

10. Calculate the total budget.

SQL Query:

```
SELECT SUM(budget) AS total - budget
FROM Movie;
```

Output:

Showing rows 0 - 0 (1 total, Query took 0.0007 seconds.)

```
SELECT SUM(budget) AS total_budget FROM Movie;
```

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

☐ Show all | Number of rows: 25 | Filter rows: Search this table

Extra options

total_budget
22700.00

11. Arrange the actor name and gender from salary.

SQL Query:

```
SELECT name, gender
FROM Actor
ORDER BY salary ASC;
```

Output:

Showing rows 0 - 6 (7 total, Query took 0.0004 seconds.)

```
SELECT name, gender FROM Actor ORDER BY salary ASC;
```

☐ 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

Extra options

	name	gender
☐ Edit ☐ Copy ☐ Delete	Priyanka Karki	Female
☐ Edit ☐ Copy ☐ Delete	Rokha Thapa	Female
☐ Edit ☐ Copy ☐ Delete	Barsha Raut	Female
☐ Edit ☐ Copy ☐ Delete	Aachal Sharma	Female
☐ Edit ☐ Copy ☐ Delete	Sanyam Kolhari	Male
☐ Edit ☐ Copy ☐ Delete	Bishow Raj Saru Magar	Male
☐ Edit ☐ Copy ☐ Delete	Rajesh Hamal	Male

12. Display the first record of the movie.

SQL Query:

```
SELECT *  
FROM Movie  
ORDER BY mid ASC  
LIMIT 1;
```

Output:

Showing rows 0 - 0 (1 total, Query took 0.0002 seconds.) [mid: 1... - 1...]
SELECT * FROM Movie ORDER BY mid ASC LIMIT 1;
☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh].
Extra options

← T →
☐ Edit ☐ Copy ☐ Delete

	mid	title	budget
1	Chakka Panja	2000.00	

13. Display the last record of the actor.

SQL Query:

```
SELECT *  
FROM Actor  
ORDER BY aid DESC  
LIMIT 1;
```

Output:

Showing rows 0 - 0 (1 total, Query took 0.0007 seconds.) [aid: 8... - 8...]

SELECT * FROM Actor ORDER BY aid DESC LIMIT 1;

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

Extra options

← T →
☐ Edit ☐ Copy ☐ Delete

	aid	name	age	gender	salary
8	Rekha Thapa	30	Female	2200.00	

14. Display the first five record of the actor.

SQL Query:

```
SELECT *  
FROM Actor  
ORDER BY aid ASC  
LIMIT 5;
```

Output:

Showing rows 0 - 4 (5 total, Query took 0.0002 seconds.) [aid: 1... - 6...]

```
SELECT * FROM Actor ORDER BY aid ASC LIMIT 5;
```

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

Extra options

		aid	name	age	gender	salary
☐	 Edit  Copy  Delete	1	Rajesh Hamal	50	Male	7000.00
☐	 Edit  Copy  Delete	2	Aachal Sharma	28	Female	3000.00
☐	 Edit  Copy  Delete	3	Barsha Raut	22	Female	2500.00
☐	 Edit  Copy  Delete	5	Bishow Raj Saru Magar	40	Male	6500.00
☐	 Edit  Copy  Delete	6	Priyanka Karki	38	Female	2000.00

15. Display the last 4 record of the actor.

SQL Query:

```
SELECT *  
FROM Actor  
ORDER BY aid DESC  
LIMIT 4;
```

Output:

Showing rows 0 - 3 (4 total, Query took 0.0002 seconds.) [aid: 8... - 5...]

```
SELECT * FROM Actor ORDER BY aid DESC LIMIT 4;
```

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

Extra options

						▼ aid	1	name	age	gender	salary
← T →											
☐		Edit		Copy		Delete	8	Rekha Thapa	30	Female	2200.00
☐		Edit		Copy		Delete	7	Sanyam Kothari	36	Male	4000.00
☐		Edit		Copy		Delete	6	Priyanka Karki	38	Female	2000.00
☐		Edit		Copy		Delete	5	Bishow Raj Saru Magar	40	Male	6500.00

16. Display the record of the movie from movie id 3 to 6.

SQL Query:

```
SELECT *  
FROM Movie  
WHERE mid BETWEEN 3 AND 6  
ORDER BY mid;
```

Output:

Showing rows 0 - 3 (4 total, Query took 0.0017 seconds.) [mid: 3... - 6...]

SELECT * FROM Movie WHERE mid BETWEEN 3 AND 6 ORDER BY mid;

☐ 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

Extra options

	mid	1	title	budget
☐ Edit Copy Delete	3		Aama	5000.00
☐ Edit Copy Delete	4		Pashupati Prasad	1500.00
☐ Edit Copy Delete	5		Kabaddi	2500.00
☐ Edit Copy Delete	6		Loot	3200.00

Consider the following relation:

Employee(E-ID, E-NAME, POST, DEPARTMENT, SALARY, ADDRESS)

PROJECT(P-ID, P-NAME, TYPE, TIME, DATE, BUDGET)

WORKS(E-NAME, P-NAME)

Write SQL queries:

CREATE Table Employee:

Query:

```
CREATE TABLE Employee(  
  E-ID INT PRIMARY KEY,  
  E-NAME VARCHAR(100),  
  POST VARCHAR(50),  
  DEPARTMENT VARCHAR(50),  
  SALARY DECIMAL(10,2),  
  ADDRESS VARCHAR(100)  
);
```

Query Result:

The screenshot shows a MySQL database interface with a menu bar (Structure, SQL, Search, Query, Export, Import, Operations, Privileges, Routines, Events, More) and a toolbar. Below the toolbar, a message states: "MySQL returned an empty result set (i.e. zero rows). (Query took 0.0024 seconds.)". The SQL query entered is: `CREATE TABLE Employee ( E_ID INT PRIMARY KEY, E_NAME VARCHAR(100), POST VARCHAR(50), DEPARTMENT VARCHAR(50), SALARY DECIMAL(10,2), ADDRESS VARCHAR(100) );`. At the bottom, there are links for "[Edit inline]", "[Edit]", and "[Create PHP code]".

Output:

The screenshot shows the output of a `DESCRIBE EMPLOYEE;` query. A message states: "Your SQL query has been executed successfully." Below this, the query `DESCRIBE EMPLOYEE;` is shown. At the bottom, there are links for "[Edit inline]", "[Edit]", and "[Create PHP code]". A table titled "Extra options" displays the table structure:

Field	Type	Null	Key	Default	Extra
E_ID	int(11)	NO	PRI	NULL	
E_NAME	varchar(100)	YES		NULL	
POST	varchar(50)	YES		NULL	
DEPARTMENT	varchar(50)	YES		NULL	
SALARY	decimal(10,2)	YES		NULL	
ADDRESS	varchar(100)	YES		NULL	

CREATE TABLE PROJECT:

Query:

```
CREATE TABLE PROJECT C
P-ID VARCHAR(10) PRIMARY KEY,
P-NAME VARCHAR(100),
TYPE VARCHAR(50),
TIME INT,
DATE DATE,
BUDGET DECIMAL(10,2)
);
```

Query Result:

Server: 127.0.0.1 Database: asheshineupane

Structure SQL Search Query Export Import Operations Privileges Routines Events More

Show query box

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0007 seconds.)

```
CREATE TABLE PROJECT ( P_ID VARCHAR(10) PRIMARY KEY, P_NAME VARCHAR(100), TYPE VARCHAR(50), TIME INT, DATE DATE, BUDGET DECIMAL(10,2) );
```

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

Output:

Your SQL query has been executed successfully.

DESCRIBE PROJECT;

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

Extra options

Field	Type	Null	Key	Default	Extra
P_ID	varchar(10)	NO	PRI	NULL	
P_NAME	varchar(100)	YES		NULL	
TYPE	varchar(50)	YES		NULL	
TIME	int(11)	YES		NULL	
DATE	date	YES		NULL	
BUDGET	decimal(10,2)	YES		NULL	

CREATE Table WORKS;

Query:

```
CREATE TABLE WORKS (  
    E_NAME VARCHAR(100),  
    P_NAME VARCHAR(100)  
);
```

Query Result:

Server: 127.0.0.1 Database: asheshneupane

Structure SQL Search Query Export Import Operations Privileges Routines Events More

Show query box

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0013 seconds.)

```
CREATE TABLE WORKS ( E_NAME VARCHAR(100), P_NAME VARCHAR(100) );
```

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

Output:

Your SQL query has been executed successfully.

DESCRIBE WORKS;

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

Extra options

Field	Type	Null	Key	Default	Extra
E_NAME	varchar(100)	YES		NULL	
P_NAME	varchar(100)	YES		NULL	

INSERT SAMPLE EMPLOYEE:

Query:

```
INSERT INTO Employee (E_ID, E_Name, POST, DEPARTMENT, SALARY, ADDRESS)
VALUES
(1, 'Ashesh Neupane', 'Manager', 'XYZ', 8000, 'Jhapa'),
(2, 'Nishant Lamichhane', 'Assistant', 'XYZ', 4500, 'Rasuwa'),
(3, 'Sanyam Kothari', 'Developer', 'IT', 5200, 'New Road'),
(4, 'Parbat Adhikari', 'Accountant', 'Finance', 7000, 'Jhapa'),
(5, 'Bishow Raj Saru Magar', 'Analyst', 'IT', 4800, 'Gulmi');
```

Query Result:

Server: 127.0.0.1 Database: asheshneupane

Structure SQL Search Query Export Import Operations Privileges Routines Events More

Show query box

✓ 5 rows inserted. (Query took 0.0008 seconds.)

```
INSERT INTO Employee (E_ID, E_NAME, POST, DEPARTMENT, SALARY, ADDRESS) VALUES (1, 'Ashesh Neupane', 'Manager', 'XYZ', 8000, 'Jhapa'), (2, 'Nishant Lamichhane', 'Assistant', 'XYZ', 4500, 'Rasuwa'), (3, 'Sanyam Kothari', 'Developer', 'IT', 5200, 'New Road'), (4, 'Parbat Adhikari', 'Accountant', 'Finance', 7000, 'Jhapa'), (5, 'Bishow Raj Saru Magar', 'Analyst', 'IT', 4800, 'Gulmi');
```

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

Table after executing INSERT command:

✓ Showing rows 0 - 4 (5 total). Query took 0.0005 seconds.)

SELECT * FROM EMPLOYEE;

☐ 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

Extra options

	E_ID	E_NAME	POST	DEPARTMENT	SALARY	ADDRESS
☐ Edit ☐ Copy ☐ Delete	1	Ashesh Neupane	Manager	XYZ	8000.00	Jhapa
☐ Edit ☐ Copy ☐ Delete	2	Nishant Lamichhane	Assistant	XYZ	4500.00	Rasuwa
☐ Edit ☐ Copy ☐ Delete	3	Sanyam Kothari	Developer	IT	5200.00	New Road
☐ Edit ☐ Copy ☐ Delete	4	Parbat Adhikari	Accountant	Finance	7000.00	Jhapa
☐ Edit ☐ Copy ☐ Delete	5	Bishow Raj Saru Magar	Analyst	IT	4800.00	Gulmi

INSERT SAMPLE PROJECT:

Query:

```
INSERT INTO PROJECT (P_ID, P_NAME, TYPE, TIME, DATE, BUDGET)
VALUES
(1, 'Sales Project', 'National Project', 10, '2020-10-10', 1000),
(2, 'E-Government', 'International Project', 15, '2021-05-15', 4000),
(3, 'Online Billing', 'Local Project', 8, '2019-09-09', 1200),
(4, 'Inventory System', 'National Project', 20, '2022-01-12', 6000),
(5, 'Education Portal', 'International Project', 12, '2020-11-11', 800);
```

Query Result:

Server: 127.0.0.1 Database: ashreshineupane

Structure SQL Search Query Export Import Operations Privileges Routines Events More

Show query box

✓ 5 rows inserted. (Query took 0.0006 seconds.)

```
INSERT INTO Project (P_ID, P_NAME, TYPE, TIME, date, BUDGET) VALUES (1, 'Sales Project', 'National Project', 10, '2020-10-10', 1000), (2, 'E-Government', 'International Project', 15, '2021-05-15', 4000), (3, 'Online Billing', 'Local Project', 8, '2019-09-09', 1200), (4, 'Inventory System', 'National Project', 20, '2022-01-12', 6000), (5, 'Education Portal', 'International Project', 12, '2020-11-11', 800);
```

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

Table after executing INSERT command:

Showing rows 0 - 4 (5 total, Query took 0.0004 seconds.)

SELECT * FROM PROJECT;

☐ 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

Extra options

	P_ID	P_NAME	TYPE	TIME	DATE	BUDGET
☐ Edit ☐ Copy ☐ Delete	1	Sales Project	National Project	10	2020-10-10	1000.00
☐ Edit ☐ Copy ☐ Delete	2	E-Government	International Project	15	2021-05-15	4000.00
☐ Edit ☐ Copy ☐ Delete	3	Online Billing	Local Project	8	2019-09-09	1200.00
☐ Edit ☐ Copy ☐ Delete	4	Inventory System	National Project	20	2022-01-12	6000.00
☐ Edit ☐ Copy ☐ Delete	5	Education Portal	International Project	12	2020-11-11	800.00

INSERT SAMPLE WORKS:

Query:

```
INSERT INTO WORKS (E_NAME, P_NAME)
VALUES
('Ashesh Neupane', 'Sales Project'),
('Nishant Lamichhane', 'Online Billing'),
('Sanyam Kothari', 'E-Government'),
('Parbat Adhikari', 'Inventory System'),
('Bishow Raj Saru Magar', 'Education Portal');
```

Query Result:

Server: 127.0.0.1 Database: asheshneupane

Structure SQL Search Query Export Import Operations Privileges Routines Events More

Show query box

5 rows inserted. (Query took 0.0007 seconds.)

```
INSERT INTO WORKS (E_NAME, P_NAME) VALUES ('Ashesh Neupane', 'Sales Project'), ('Nishant Lamichhane', 'Online Billing'), ('Sanyam Kothari', 'E-Government'), ('Parbat Adhikari', 'Inventory System'), ('Bishow Raj Saru Magar', 'Education Portal');
```

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

Table after executing INSERT command:

Showing rows 0 - 4 (5 total, Query took 0.0003 seconds.)

SELECT * FROM WORKS;

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

☐ Show all | Number of rows: 25 | Filter rows: Search this table

Extra options

E_NAME	P_NAME
Ashesh Neupane	Sales Project
Nishant Lamichhane	Online Billing
Sanyam Kothari	E-Government
Parbat Adhikari	Inventory System
Bishow Raj Saru Magar	Education Portal

1. Display the employee name and total amount of salary where total amount is greater than 5000 and display by each employee name.

SQL Query:

```
SELECT E-NAME, SUM(SALARY) AS Total-Salary
FROM EMPLOYEE
GROUP BY E-NAME
HAVING SUM(SALARY) > 5000;
```

Output:

Showing rows 0 - 2 (3 total, Query took 0.0026 seconds.)

```
SELECT E_NAME, SUM(SALARY) AS Total_Salary FROM Employee GROUP BY E_NAME HAVING SUM(SALARY) > 5000;
```

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

☐ Show all | Number of rows: 25 | Filter rows: Search this table

Extra options

	E_NAME	Total_Salary
☐ Edit ☐ Copy ☐ Delete	Ashesh Neupane	6000.00
☐ Edit ☐ Copy ☐ Delete	Parbat Adhikari	7000.00
☐ Edit ☐ Copy ☐ Delete	Sanyam Kothari	5200.00

2. Display e-id and department and count the number of employee with each department.

SQL Query:

```
SELECT e1.E-ID,
e1.DEPARTMENT,
(SELECT COUNT(*)
FROM Employee e2
WHERE e2.DEPARTMENT = e1.DEPARTMENT) AS Total - Employees
FROM Employee e1;
```

Output:

Showing rows 0 - 4 (5 total, Query took 0.0072 seconds.)

```
SELECT e1.E_ID, e1.DEPARTMENT, (SELECT COUNT(*) FROM Employee e2 WHERE e2.DEPARTMENT = e1.DEPARTMENT) AS Total_Employees FROM Employee e1;
```

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

☐ Show all | Number of rows: 25 | Filter rows: Search this table

Extra options

E_ID	DEPARTMENT	Total_Employees
1	XYZ	2
2	XYZ	2
3	IT	1
4	Finance	2
5	IT	

3. Display employee name and project name who works on xyz department.
SQL query:

```
SELECT w.E-NAME, w.P-NAME
FROM WORKS w
JOIN Employee e ON w.E-NAME = e.E-NAME
WHERE e.DEPARTMENT = 'XYZ';
```

Output:

Showing rows 0 - 1 (2 total, Query took 0.0007 seconds.)
SELECT w.E-NAME, w.P-NAME FROM WORKS w JOIN Employee e ON w.E-NAME = e.E-NAME WHERE e.DEPARTMENT = 'XYZ';

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

☐ Show all Number of rows: 25 Filter rows: Search this table

Extra options

E-NAME	P-NAME
Ashesh Neupane	Sales Project
Nishant Lamichhane	Online Billing

4. Count the number of project budget in which budget is in between 500 and 1500.

SQL query:

```
SELECT COUNT(*) AS Project_Count
FROM Project
WHERE BUDGET BETWEEN 500 AND 1500;
```

Output:

Your SQL query has been executed successfully.

SELECT COUNT(*) AS Project_Count FROM Project WHERE BUDGET BETWEEN 500 AND 1500;

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

Extra options

Project_Count

3

5. Calculate the average salary of employee as "EMP-SALARY".

SQL Query:

```
SELECT AVG(SALARY) AS EMP-SALARY  
FROM Employee;
```

Output:

Showing rows 0 - 0 (1 total, Query took 0.0007 seconds.)

```
SELECT AVG(SALARY) AS EMP-SALARY FROM Employee;
```

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

☐ Show all | Number of rows: 25 | Filter rows: Search this table

Extra options

EMP-SALARY

5500.000000

6. Calculate the time of project.

SQL Query:

```
SELECT SUM(TIME) AS Total-Project-Time  
FROM Project;
```

Output:

Showing rows 0 - 0 (1 total, Query took 0.0005 seconds.)

```
SELECT SUM(TIME) AS Total-Project-Time FROM Project;
```

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

☐ Show all | Number of rows: 25 | Filter rows: Search this table

Extra options

Total-Project-Time

65

7. Display the project name in which project is held before "12/12/2020".
SQL Query:

```
SELECT P-NAME
FROM Project
WHERE date < '2020-12-12';
```

Output:

Showing rows 0 - 2 (3 total, Query took 0.0030 seconds.)

```
SELECT P_NAME FROM Project WHERE date < '2020-12-12';
```

☐ 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

Extra options

	P_NAME
☐ Edit ☐ Copy ☐ Delete	Sales Project
☐ Edit ☐ Copy ☐ Delete	Online Billing
☐ Edit ☐ Copy ☐ Delete	Education Portal

8. Write SQL to give 25% salary increment to all employees.

SQL Query:

```
UPDATE Employee
SET SALARY = SALARY * 1.25;
```

Query Result:

Server: 127.0.0.1 Database: asheshneupane

Structure SQL Search Query Export Import Operations Privileges Routines Events More

Show query box

5 rows affected. (Query took 0.0026 seconds.)

```
UPDATE Employee SET SALARY = SALARY * 1.25;
```

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

Showing rows 0 - 4 (5 total, Query took 0.0005 seconds.)

```
SELECT E_NAME, SALARY FROM EMPLOYEE;
```

☐ 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

Extra options

	E_NAME	SALARY
☐ Edit ☐ Copy ☐ Delete	Ashesh Neupane	7500.00
☐ Edit ☐ Copy ☐ Delete	Nishant Lamichhane	5625.00
☐ Edit ☐ Copy ☐ Delete	Sanyam Kothari	6500.00
☐ Edit ☐ Copy ☐ Delete	Parbat Adhikari	8750.00
☐ Edit ☐ Copy ☐ Delete	Bishow Raj Saru Magar	6000.00

g. Insert a new project as ("6", "sales project", "national project", "\$5000")

SQL Query:

```
INSERT INTO Project (P_ID, P_NAME, TYPE, TIME, DATE, BUDGET)
VALUES ('6', 'Sales Project', 'National Project', 10, '2024-01-01', 5000);
```

Query Result:

Server: 127.0.0.1 Database: asheshneupane

Structure SQL Search Query Export Import Operations Privileges Routines Events More

Show query box

✓ 1 row inserted. (Query took 0.0004 seconds.)

```
INSERT INTO Project (P_ID, P_NAME, TYPE, TIME, DATE, BUDGET) VALUES ('6', 'Sales Project', 'National Project', 10, '2024-01-01', 5000);
```

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

Output:

Extra options

			P_ID	P_NAME	TYPE	TIME	DATE	BUDGET	
☐	 Edit	 Copy	 Delete	1	Sales Project	National Project	10	2020-10-10	1000.00
☐	 Edit	 Copy	 Delete	2	E-Government	International Project	15	2021-05-15	4000.00
☐	 Edit	 Copy	 Delete	3	Online Billing	Local Project	8	2019-09-09	1200.00
☐	 Edit	 Copy	 Delete	4	Inventory System	National Project	20	2022-01-12	6000.00
☐	 Edit	 Copy	 Delete	5	Education Portal	International Project	12	2020-11-11	800.00
☐	 Edit	 Copy	 Delete	6	Sales Project	National Project	10	2024-01-01	5000.00

10. Update the type of project "national project" with "international project"

SQL Query:

```
UPDATE Project
SET TYPE = 'International Project'
WHERE TYPE = 'National Project';
```

Query Result:

Server: 127.0.0.1 Database: asheshneupane

Structure SQL Search Query Export Import Operations Privileges Routines Events More

Show query box

✓ 3 rows affected. (Query took 0.0006 seconds.)

```
UPDATE Project SET TYPE = 'International Project' WHERE TYPE = 'National Project';
```

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

Output:

✓ Showing rows 0 - 5 (6 total, Query took 0.0002 seconds.)

SELECT * FROM PROJECT;

☐ 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

Extra options

		P_ID	P_NAME	TYPE	TIME	DATE	BUDGET
☐	☐	1	Sales Project	International Project	10	2020-10-10	1000.00
☐	☐	2	E-Government	International Project	15	2021-05-15	4000.00
☐	☐	3	Online Billing	Local Project	8	2019-09-09	1200.00
☐	☐	4	Inventory System	International Project	20	2022-01-12	6000.00
☐	☐	5	Education Portal	International Project	12	2020-11-11	800.00
☐	☐	6	Sales Project	International Project	10	2024-01-01	5000.00

Consider the following relation:

Businesses (PAN, business_name, registered_date)

Business_address (PAN, address_type, district, VDC-MUN, tole)

Transactions (PAN, tranno, fiscalyear, amount)

Write SQL queries:

CREATE Table Businesses:

Query:

CREATE TABLE Businesses (

PAN INT PRIMARY KEY,

business_name VARCHAR(100),

registered_date DATE

);

Query Result:

Server: 127.0.0.1 Database: asheshneupane

Structure SQL Search Query Export Import Operations Privileges Routines Events More

Show query box

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0004 seconds.)

```
CREATE TABLE Businesses ( PAN INT PRIMARY KEY, business_name VARCHAR(100), registered_date DATE );
```

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

Output:

Your SQL query has been executed successfully.

```
DESCRIBE BUSINESSES;
```

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

Extra options

Field	Type	Null	Key	Default	Extra
PAN	int(11)	NO	PRI	NULL	
business_name	varchar(100)	YES		NULL	
registered_date	date	YES		NULL	

CREATE Table Business-address:

Query:

```
CREATE Table Business-address  
PAN INT,  
address-type VARCHAR(50),  
district VARCHAR(50),  
VDC-MUN VARCHAR(100),  
tole VARCHAR(100),  
FOREIGN KEY (PAN) REFERENCES Businesses (PAN)  
);
```

Query Result:

Server: 127.0.0.1 Database: asheshneupane

Structure SQL Search Query Export Import Operations Privileges Routines Events More

Show query box

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0005 seconds.)

```
CREATE TABLE Business_address ( PAN INT, address_type VARCHAR(50), district VARCHAR(50), VDC_MUN VARCHAR(100), tole VARCHAR(100), FOREIGN  
KEY (PAN) REFERENCES Businesses(PAN) );
```

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

Output:

Your SQL query has been executed successfully.

```
DESCRIBE Business_address;
```

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

Extra options

Field	Type	Null	Key	Default	Extra
PAN	int(11)	YES	MUL	NULL	
address_type	varchar(50)	YES		NULL	
district	varchar(50)	YES		NULL	
VDC_MUN	varchar(100)	YES		NULL	
tole	varchar(100)	YES		NULL	

CREATE Table Transactions:

Query:

```
CREATE TABLE Transactions (  
  PAN INT,  
  tranno INT PRIMARY KEY,  
  fiscal_year VARCHAR(20),  
  amount DECIMAL(10,2),  
  FOREIGN KEY (PAN) REFERENCES Businesses (PAN)  
);
```

Query Result:

Server: 127.0.0.1 Database: asheshneupane

Structure SQL Search Query Export Import Operations Privileges Routines Events More

Show query box

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0003 seconds.)

```
CREATE TABLE Transactions ( PAN INT, tranno INT PRIMARY KEY, fiscal_year VARCHAR(20), amount DECIMAL(10,2), FOREIGN KEY (PAN) REFERENCES  
Businesses(PAN) );
```

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

Output:

Your SQL query has been executed successfully.

```
DESCRIBE TRANSACTIONS;
```

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

Extra options

Field	Type	Null	Key	Default	Extra
PAN	int(11)	YES	MUL	NULL	
tranno	int(11)	NO	PRI	NULL	
fiscal_year	varchar(20)	YES		NULL	
amount	decimal(10,2)	YES		NULL	

INSERT INTO BUSINESSES!

Query:

```
INSERT INTO Businesses (PAN, business_name, registered_date)
VALUES
```

```
(101, 'HighTech Solutions', '2066-05-12'),
```

```
(102, 'Momo Business', '2064-11-05'),
```

```
(103, 'SmartTech Nepal', '2068-02-20'),
```

```
(104, 'Creative Minds', '2069-04-10'),
```

```
(105, 'Kathmandu Marketing', '2071-01-01');
```

Query Result:

Server: 127.0.0.1 Database: asheshneupane

Structure SQL Search Query Export Import Operations Privileges Routines Events More

Show query box

5 rows inserted. (Query took 0.0026 seconds.)

```
INSERT INTO Businesses (PAN, business_name, registered_date) VALUES (101, 'HighTech Solutions', '2066-05-12'), (102, 'Momo Business', '2064-11-05'), (103, 'SmartTech Nepal', '2068-02-20'), (104, 'Creative Minds', '2069-04-10'), (105, 'Kathmandu Marketing', '2071-01-01');
```

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

Table after executing INSERT Command:

Showing rows 0 - 4 (5 total, Query took 0.0002 seconds.)

SELECT * FROM BUSINESSES;

☐ 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

Extra options

	PAN	business_name	registered_date
☐ Edit ☐ Copy ☐ Delete	101	HighTech Solutions	2066-05-12
☐ Edit ☐ Copy ☐ Delete	102	Momo Business	2064-11-05
☐ Edit ☐ Copy ☐ Delete	103	SmartTech Nepal	2068-02-20
☐ Edit ☐ Copy ☐ Delete	104	Creative Minds	2069-04-10
☐ Edit ☐ Copy ☐ Delete	105	Kathmandu Marketing	2071-01-01

INSERT INTO Business_address:

Query:

INSERT INTO Business_address (PAN, address_type, district, VDC_MUN, tole)
VALUES

(101, 'Head Office', 'Kathmandu', 'KMC', 'Baneshwor'),

(102, 'Branch', 'Pokhara', 'PMC', 'Lakeside'),

(103, 'Head Office', 'Kathmandu', 'KMC', 'Putalisadak'),

(104, 'Head Office', 'Lalitpur', ~~KMC~~ 'LMC', 'Jawalakhel'),

(105, 'Head Office', 'Kathmandu', 'KMC', 'Kalanki');

Query Result:

Server: 127.0.0.1 Database: asheshneupane

Structure SQL Search Query Export Import Operations Privileges Routines Events More

Show query box

5 rows inserted. (Query took 0.0004 seconds.)

```
INSERT INTO Business_address (PAN, address_type, district, VDC_MUN, tole) VALUES (101, 'Head Office', 'Kathmandu', 'KMC', 'Baneshwor'),  
(102, 'Branch', 'Pokhara', 'PMC', 'Lakeside'), (103, 'Head Office', 'Kathmandu', 'KMC', 'Putalisadak'), (104, 'Head Office', 'Lalitpur',  
'LMC', 'Jawalakhel'), (105, 'Head Office', 'Kathmandu', 'KMC', 'Kalanki');
```

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

Table after executing INSERT Command:

Showing rows 0 - 4 (5 total, Query took 0.0004 seconds.)

SELECT * FROM business_address;

☐ 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

Extra options

PAN	address_type	district	VDC_MUN	tole
101	Head Office	Kathmandu	KMC	Baneshwor
102	Branch	Pokhara	PMC	Lakeside
103	Head Office	Kathmandu	KMC	Putalisadak
104	Head Office	Lalitpur	LMC	Jawalakhel
105	Head Office	Kathmandu	KMC	Kalanki

INSERT INTO TRANSACTIONS:

Query:

INSERT INTO Transactions (PAN, tranno, fiscal_year, amount)
VALUES

(101, 1, '2065-11-23', 90000),
(102, 2, '2066-01-15', 60000),
(103, 3, '2065-11-23', 75000),
(104, 4, '2068-03-19', 120000),
(105, 5, '2065-11-23', 50000);

Query Result:

Server: 127.0.0.1 Database: asheshneupane

Structure SQL Search Query Export Import Operations Privileges Routines Events More

Show query box

5 rows inserted. (Query took 0.0006 seconds.)

INSERT INTO Transactions (PAN, tranno, fiscal_year, amount) VALUES (101, 1, '2065-11-23', 90000), (102, 2, '2066-01-15', 60000), (103, 3, '2065-11-23', 75000), (104, 4, '2068-03-19', 120000), (105, 5, '2065-11-23', 50000);

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

Table after executing INSERT command:

Showing rows 0 - 4 (5 total, Query took 0.0003 seconds.)

SELECT * FROM TRANSACTIONS;

☐ 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

Extra options

	PAN	tranno	fiscal_year	amount
☐ Edit ☐ Copy ☐ Delete	101	1	2065-11-23	90000.00
☐ Edit ☐ Copy ☐ Delete	102	2	2066-01-15	60000.00
☐ Edit ☐ Copy ☐ Delete	103	3	2065-11-23	75000.00
☐ Edit ☐ Copy ☐ Delete	104	4	2068-03-19	120000.00
☐ Edit ☐ Copy ☐ Delete	105	5	2065-11-23	50000.00

1. Find PAN and business name of businesses that has word "tech" somewhere.

SQL Query:

```
SELECT PAN, business_name  
FROM Businesses  
WHERE business_name LIKE '%tech%';
```

Output:

Showing rows 0 - 1 (2 total, Query took 0.0002 seconds.)

```
SELECT PAN, business_name FROM Businesses WHERE business_name LIKE '%tech%';
```

☐ 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

Extra options

			PAN	business_name
☐	Edit	Copy	Delete	101 HighTech Solutions
☐	Edit	Copy	Delete	103 SmartTech Nepal

2. Retrieve PAN, business name, registration date of the companies that is registered between "2065-03-11" and "2070-05-25" in Kathmandu.

SQL Query:

```
SELECT b.PAN, b.business_name, b.registered_date  
FROM Businesses b  
JOIN Business_address a ON b.PAN = a.PAN  
WHERE a.district = 'Kathmandu'  
AND b.registered_date BETWEEN '2065-03-11' AND '2070-05-25';
```

Output:

Showing rows 0 - 1 (2 total, Query took 0.0030 seconds.)

```
SELECT b.PAN, b.business_name, b.registered_date FROM Businesses b JOIN Business_address a ON b.PAN = a.PAN WHERE a.district = 'Kathmandu' AND b.registered_date BETWEEN '2065-03-11' AND '2070-05-25';
```

☐ 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

Extra options

PAN	business_name	registered_date
101	HighTech Solutions	2066-05-12
103	SmartTech Nepal	2068-02-20

3. Find PAN, business name and total amount of the business for the fiscal year "2065-11-23".

SQL Query:

```
SELECT b.PAN, b.business_name, SUM(t.amount) AS Total_Amount
FROM Businesses b
JOIN Transactions t ON b.PAN = t.PAN
WHERE t.fiscal_year = '2065-11-23'
GROUP BY b.PAN, b.business_name;
```

Output:

Showing rows 0 - 2 (3 total, Query took 0.0028 seconds.)

```
SELECT b.PAN, b.business_name, SUM(t.amount) AS Total_Amount FROM Businesses b JOIN Transactions t ON b.PAN = t.PAN WHERE t.fiscal_year = '2065-11-23' GROUP BY b.PAN, b.business_name;
```

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

☐ Show all | Number of rows: 25 | Filter rows: Search this table

Extra options

PAN	business_name	Total_Amount
101	HighTech Solutions	90000.00
103	SmartTech Nepal	75000.00
105	Kathmandu Marketing	50000.00

4. Display the sum of all transactions.

SQL Query:

```
SELECT SUM(amount) AS Total_Transactions
FROM Transactions;
```

Output:

Showing rows 0 - 0 (1 total, Query took 0.0007 seconds.)

```
SELECT SUM(amount) AS Total_Transactions FROM Transactions;
```

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

☐ Show all | Number of rows: 25 | Filter rows: Search this table

Extra options

Total_Transactions
395000.00

5. change the name of business "momo business" which pan is 102.

SQL Query:

UPDATE Businesses

SET business_name = 'Momo Express Pvt. Ltd.'

WHERE PAN = 102;

Query Result:

Server: 427.0.0.1 Database: asheshneupane

Structure SQL Search Query Export Import Operations Privileges Routines Events More

Show query box

✓ 1 row affected. (Query took 0.0016 seconds.)

UPDATE Businesses SET business_name = 'Momo Express Pvt. Ltd.' WHERE PAN = 102;

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

Output:

✓ Showing rows 0 - 4 (5 total, Query took 0.0003 seconds.)

SELECT * FROM BUSINESSES;

☐ 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

Extra options

	PAN	business_name	registered_date
☐ Edit Copy Delete	101	HighTech Solutions	2066-05-12
☐ Edit Copy Delete	102	Momo Express Pvt. Ltd.	2064-11-05
☐ Edit Copy Delete	103	SmartTech Nepal	2068-02-20
☐ Edit Copy Delete	104	Creative Minds	2069-04-10
☐ Edit Copy Delete	105	Kathmandu Marketing	2071-01-01

AP

6. Add the new attribute for businesses.

Name of attribute	Datatype	Constraint
Business_category	Text	Either sales or marketing
Assets	Floating	>=50000 and <=100000

SQL Query:

ALTER TABLE Businesses

ADD COLUMN Business_category TEXT CHECK (Business_category IN ('sales', 'marketing'));

ADD COLUMN Assets FLOAT CHECK (Assets >= 50000 AND Assets <= 100000);

Query Result:

Server: 127.0.0.1 Database: asheshneupane

Structure SQL Search Query Export Import Operations Privileges Routines Events More

Show query box

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0004 seconds.)

ALTER TABLE Businesses ADD COLUMN Business_category TEXT CHECK (Business_category IN ('sales', 'marketing')), ADD COLUMN Assets FLOAT CHECK (Assets >= 50000 AND Assets <= 100000);

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

Output:

Showing rows 0 - 4 (5 total, Query took 0.0017 seconds.)

SELECT * FROM `businesses`

[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

Extra options

	PAN	business_name	registered_date	Business_category	Assets
☐ Edit Copy Delete	101	HighTech Solutions	2068-05-12	NULL	NULL
☐ Edit Copy Delete	102	Momo Express Pvt. Ltd.	2064-11-05	NULL	NULL
☐ Edit Copy Delete	103	SmartTech Nepal	2068-02-20	NULL	NULL
☐ Edit Copy Delete	104	Creative Minds	2069-04-10	NULL	NULL
☐ Edit Copy Delete	105	Kathmandu Marketing	2071-01-01	NULL	NULL

7. Add two new attributes to the Business table:
- Business - category (Text) - either 'sales' or 'marketing'
 - Assets (Floating) - value between 50000 and 100000.

SQL Query:

ALTER TABLE Businesses

ADD COLUMN Business - category TEXT CHECK (Business - category IN ('sales', 'marketing'));

ADD COLUMN Assets FLOAT CHECK (Assets >= 50000 AND Assets <= 100000);

Query Result:

Server: 127.0.0.1 Database: asheshineupane

Structure SQL Search Query Export Import Operations Privileges Routines Events More

Show query box

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0011 seconds.)

ALTER TABLE Businesses CHANGE Business_category Category TEXT CHECK (Category IN ('sales', 'marketing'));

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

Output:

Showing rows 0 - 4 (5 total, Query took 0.0003 seconds.)

SELECT * FROM BUSINESSES;

☐ 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

Extra options

	PAN	business_name	registered_date	Category	Assets
☐ Edit Copy Delete	101	HighTech Solutions	2066-05-12	NULL	NULL
☐ Edit Copy Delete	102	Momo Express Pvt. Ltd.	2064-11-05	NULL	NULL
☐ Edit Copy Delete	103	SmartTech Nepal	2068-02-20	NULL	NULL
☐ Edit Copy Delete	104	Creative Minds	2069-04-10	NULL	NULL
☐ Edit Copy Delete	105	Kathmandu Marketing	2071-01-01	NULL	NULL

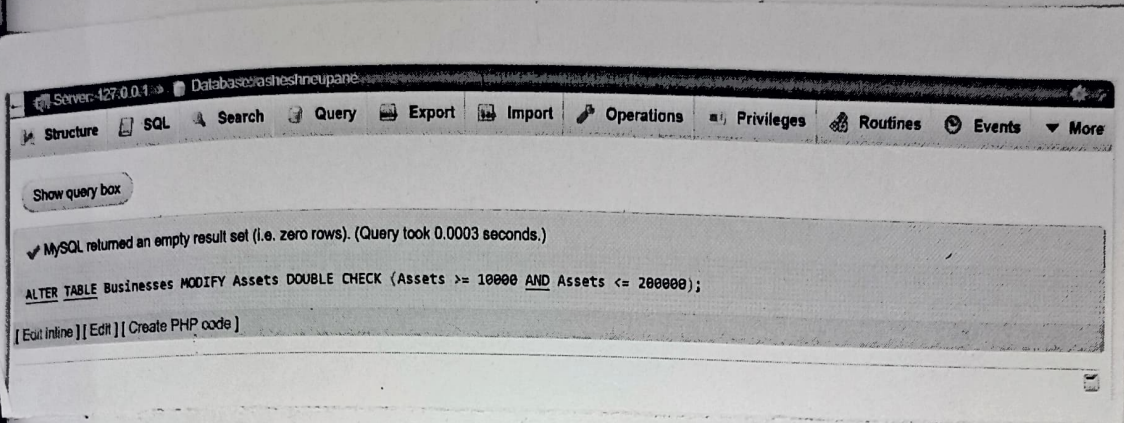
5. change the column name Business-category to category while keeping the same constraint.

SQL query:

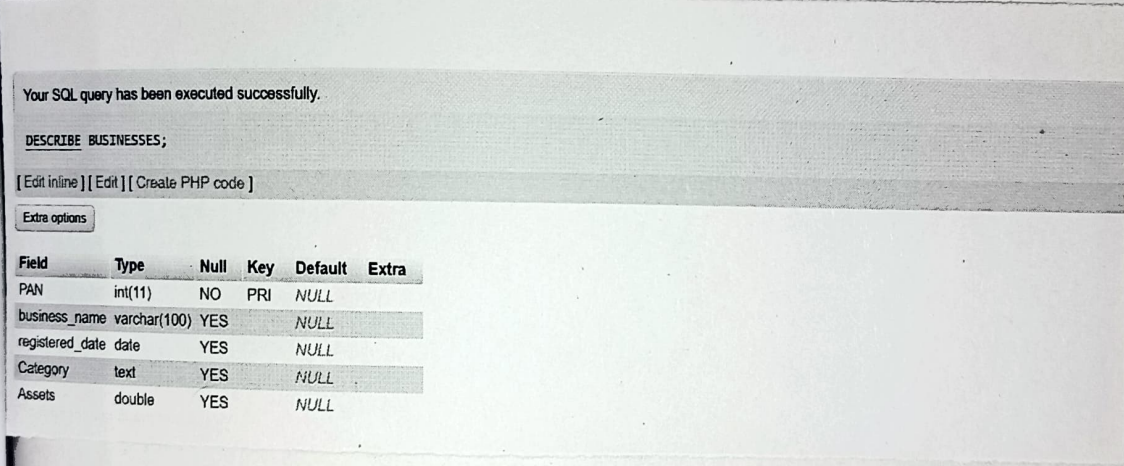
ALTER TABLE Businesses

CHANGE Business-category category TEXT CHECK (category IN ('sales', 'marketing'));

Query Result:



Output:



10. Delete the Assets column from the Businesses table.

SQL Query:

```
ALTER TABLE Businesses  
DROP COLUMN Assets;
```

Query Result:

Database: asheshnupano

Server: 127.0.0.1

Structure SQL Search Query Export Import Operations Privileges Routines Events More

Show query box

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0003 seconds.)

```
ALTER TABLE Businesses DROP COLUMN Assets;
```

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

Output:

Showing rows 0 - 4 (5 total, Query took 0.0004 seconds.)

SELECT * FROM `businesses`

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

Extra options

	PAN	business_name	registered_date	Category
☐ Edit ☐ Copy ☐ Delete	101	HighTech Solutions	2066-05-12	NULL
☐ Edit ☐ Copy ☐ Delete	102	Momo Express Pvt. Ltd.	2064-11-05	NULL
☐ Edit ☐ Copy ☐ Delete	103	SmartTech Nepal	2068-02-20	NULL
☐ Edit ☐ Copy ☐ Delete	104	Creative Minds	2069-04-10	NULL
☐ Edit ☐ Copy ☐ Delete	105	Kathmandu Marketing	2071-01-01	NULL