

EXTRA LAB PRACTISE FOR DATABASE CONCEPTS

1. Introduction to SQL LAB EXERCISES:

Lab 3: Create a database called library_db and a table books with columns: book_id, title, author, publisher, year_of_publication, and price. Insert five records into the table.

SELECT * FROM books;

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

	book_id	title	author	publisher	year_of_publisher	price
<input type="checkbox"/>	1	Introduction to SQL	C.J. Date	TechPress	2019	550.00
<input type="checkbox"/>	2	Database Management Systems	Raghu Ramakrishnan	McGraw Hill	2020	720.00
<input type="checkbox"/>	3	Learning Python	Mark Lutz	O'Reilly	2021	890.00
<input type="checkbox"/>	4	Web Development with PHP	Robin Nixon	O'Reilly	2018	650.00
<input type="checkbox"/>	5	Data Structures in C	Reema Thareja	Oxford University Press	2022	780.00

Lab 4: Create a table members in library_db with columns: member_id, member_name, date_of_membership, and email. Insert five records into this table.

SELECT * FROM members;

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

	member_id	member_name	date_of_membership	email
<input type="checkbox"/>	1	Amit Shah	2022-01-15	amit.shah@gmail.com
<input type="checkbox"/>	2	Riya Patel	2022-03-10	riya.patel@gmail.com
<input type="checkbox"/>	3	Karan Mehta	2022-06-05	karan.mehta@yahoo.com
<input type="checkbox"/>	4	Neha Joshi	2022-09-20	neha.joshi@gmail.com
<input type="checkbox"/>	5	Priya Singh	2023-02-12	priya.singh@hotmail.com

2. SQL Syntax LAB EXERCISES:

Lab 3: Retrieve all members who joined the library before 2022. Use appropriate SQL syntax with WHERE and ORDER BY.

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0019 seconds.)

USE library_db;

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

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0008 seconds.)

SELECT member_id, member_name, date_of_membership, email FROM members WHERE date_of_membership < '2022-01-01' ORDER BY date_of_membership ASC;

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

member_id	member_name	date_of_membership	email
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3. SQL Constraints

LAB EXERCISES:

Lab 3: Add a CHECK constraint to ensure that the price of books in the books table is greater than 0.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1 book_id	int(11)			No	None		AUTO_INCREMENT	Change Drop More
<input type="checkbox"/>	2 title	varchar(50)	utf8mb4_general_ci		Yes	NULL			Change Drop More
<input type="checkbox"/>	3 author	varchar(50)	utf8mb4_general_ci		Yes	NULL			Change Drop More
<input type="checkbox"/>	4 publisher	varchar(50)	utf8mb4_general_ci		Yes	NULL			Change Drop More
<input type="checkbox"/>	5 year_of_publisher	year(4)			Yes	NULL			Change Drop More
<input type="checkbox"/>	6 price	decimal(10,2)			Yes	NULL			Change Drop More

Lab 4: Modify the members table to add a UNIQUE constraint on the email column, ensuring that each member has a unique email address.

Your SQL query has been executed successfully.

```
SHOW CREATE TABLE books;
```

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

[Extra options](#)

[Table](#) [Create Table](#)

books CREATE TABLE `books` (
 `book_id` int(11) NOT NUL...

4. Main SQL Commands and Sub-commands (DDL)

LAB EXERCISES:

Lab 3: Create a table authors with the following columns: author_id, first_name, last_name, and country. Set author_id as the primary key.

MySQL returned an empty result set (i.e. zero rows). (Query took 0.0002 seconds.)

```
SELECT * FROM `authors`
```

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

[author_id](#) [first_name](#) [last_name](#) [country](#)

Lab 4: Create a table publishers with columns: publisher_id, publisher_name, contact_number, and address. Set publisher_id as the primary key and contact_number as unique.

```
DESC authors;
```

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

Extra options

Field	Type	Null	Key	Default	Extra
author_id	int(11)	NO	PRI	NULL	
first_name	varchar(50)	YES		NULL	
last_name	varchar(50)	YES		NULL	
country	varchar(50)	YES		NULL	

Query results operations

Print Copy to clipboard Create view

Your SQL query has been executed successfully.

```
DESC publishers;
```

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

Extra options

Field	Type	Null	Key	Default	Extra
publisher_id	int(11)	NO	PRI	NULL	
publisher_name	varchar(100)	YES		NULL	
contact_number	varchar(15)	YES	UNI	NULL	
address	varchar(100)	YES		NULL	

5. ALTER Command

LAB EXERCISES:

Lab 3: Add a new column genre to the books table. Update the genre for all existing records.

5 rows affected. (Query took 0.0209 seconds.)

```
UPDATE books SET genre = 'Fiction';
```

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

Lab 4: Modify the members table to increase the length of the email column to 100 characters.

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

Field	Type	Null	Key	Default	Extra
book_id	int(11)	NO	PRI	NULL	auto_increment
title	varchar(50)	YES		NULL	
author	varchar(50)	YES		NULL	
publisher	varchar(50)	YES		NULL	
year_of_publisher	year(4)	YES		NULL	
price	decimal(10,2)	YES		NULL	
genre	varchar(50)	YES		NULL	

Your SQL query has been executed successfully.

DESC members;

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

Field	Type	Null	Key	Default	Extra
member_id	int(11)	NO	PRI	NULL	
member_name	varchar(100)	YES		NULL	
date_of_membership	date	YES		NULL	
email	varchar(100)	YES	UNI	NULL	

6. DROP Command

LAB EXERCISES:

Lab 3: Drop the publishers table from the database after verifying its structure.

Your SQL query has been executed successfully.

SHOW CREATE TABLE publishers;

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

Table	Create Table
publishers	CREATE TABLE `publishers` (`publisher_id` int(1...

Lab 4: Create a backup of the members table and then drop the original members table.

Showing rows 0 - 4 (5 total, Query took 0.0014 seconds.)

SELECT * FROM `members`

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

Show all | Number of rows: 25

member_id	member_name	date_of_membership	email
1	Amit Shah	2022-01-15	amit.shah@gmail.com
2	Riya Patel	2022-03-10	riya.patel@gmail.com
3	Karan Mehta	2022-06-05	karan.mehta@yahoo.com
4	Neha Joshi	2022-09-20	neha.joshi@gmail.com
5	Priya Singh	2023-02-12	priya.singh@hotmail.com

7. Data Manipulation Language (DML)

LAB EXERCISES:

Lab 4: Insert three new authors into the authors table, then update the last name of one of the authors.

Showing rows 0 - 2 (3 total, Query took 0.0003 seconds.)

```
SELECT * FROM authors;
```

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

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

Extra options

	author_id	first_name	last_name	country
<input type="checkbox"/>  Edit  Copy  Delete	1	Mark	Twain	USA
<input type="checkbox"/>  Edit  Copy  Delete	2	Jane	Austen	UK
<input type="checkbox"/>  Edit  Copy  Delete	3	Ravinder	Smith	India

Lab 5: Delete a book from the books table where the price is higher than \$100.

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

```
SELECT * FROM books;
```

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

book_id	title	author	publisher	year_of_publisher	price	genre
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9. DELETE Command

LAB EXERCISES:

Lab 3: Remove all members who joined before 2020 from the members table.

0 rows deleted. (Query took 0.0021 seconds.)

```
DELETE FROM members WHERE date_of_membership < 2020;
```

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

Lab 4: Delete all books that have a NULL value in the author column.

0 rows deleted. (Query took 0.0009 seconds.)

```
DELETE FROM books WHERE author IS NULL;
```

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

10. Data Query Language (DQL)

LAB EXERCISES:

Lab 4: Write a query to retrieve all books with price between \$50 and \$100.

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0002 seconds.)

```
SELECT * FROM books WHERE price BETWEEN 50 AND 100;
```

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

book_id	title	author	publisher	year_of_publisher	price	genre
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Lab 5: Retrieve the list of books sorted by author in ascending order and limit the results to the top 3 entries.

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0002 seconds.)

```
SELECT * FROM books ORDER BY author ASC LIMIT 3;
```

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

book_id	title	author	publisher	year_of_publisher	price	genre
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11. Data Control Language (DCL)

LAB EXERCISES:

Lab 3: Grant SELECT permission to a user named librarian on the books table.

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0045 seconds.)

```
GRANT SELECT ON books TO 'librarian'@'localhost';
```

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

Lab 4: Grant INSERT and UPDATE permissions to the user admin on the members table.

✓ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0010 seconds.)

```
GRANT INSERT, UPDATE ON members TO 'admin'@'localhost';
```

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

12. REVOKE Command

LAB EXERCISES:

Lab 3: Revoke the INSERT privilege from the user librarian on the books table.

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

```
REVOKE INSERT ON books FROM 'librarian'@'localhost';
```

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

Lab 4: Revoke all permissions from user admin on the members table.

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

```
REVOKE ALL PRIVILEGES ON members FROM 'admin'@'localhost';
```

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