

Hands-on Lab: Working with Joins in MySQL using phpMyAdmin

Estimated time needed: 20 minutes

In this lab, you will learn how to create tables and load data in the MySQL database service using the phpMyAdmin graphical user interface (GUI) tool.

Software Used in this Lab

In this lab, you will use MySQL. MySQL is a Relational Database Management System (RDBMS) designed to efficiently store, manipulate, and retrieve data.



To complete this lab you will utilize MySQL relational database service available as part of IBM Skills Network Labs (SN Labs) Cloud IDE. SN Labs is a virtual lab environment used in this course.

Database Used in this Lab

The database used in this lab is an internal database. You will be working on a sample HR database. This HR database schema consists of 5 tables called **EMPLOYEES**, **JOB_HISTORY**, **JOBS**, **DEPARTMENTS** and **LOCATIONS**. Each table has a few rows of sample data. The following diagram shows the tables for the HR database:

SAMPLE HR DATABASE TABLES

EMPLOYEE	S														
EMP_ID	F_NAME	ME L_NAME SSN		SN	B_DATE		SEX	ADDRESS		JOB_ID	SALARY		MANAGER_ID		DEP_ID
E1001	John	Thomas	Thomas 1234		1976-0	1-09	М	5631 Rice, C	5631 Rice, OakPark,IL 1		10000	00 3	30001		2
E1002	Alice	James	1	23457	1972-0	7-31	F	980 Berry In	, Elgin,IL	200	80000	0 3	30002		5
E1003	Steve	teve Wells		23458	1980-0	8-10	М	291 Springs, Gary,IL		300	50000 30002		30002		5
JOB_HISTO	DRY						J	OBS							
EMPL_ID	START_D	START_DATE JOBS		_ID DEPT_I		D	10	JOB_IDENT JO		TITLE		MIN_SALARY		MA	X_SALARY
E1001	2000-01	2000-01-30 100			2		1	100 Sr. Arch		itect 6		60000	60000 100		000
E1002	2010-08	2010-08-16 200		5			2	00 Sr.Softw		vareDeveloper 6		60000	60000 80		00
E1003	2016-08	2016-08-10 300			5		3	00 Jr.Softw		vareDeveloper 4		40000	40000 600		00
DEPARTME	NTS							LOCATIO	ONS						
DEPT_ID_DE	P DEP_NA	DEP_NAME		MANAGER_ID		LOC_ID		LOCT_ID		DEP_ID_LOC					
2	Architec	Architect Group		30001		L0001		L0001		2					
5	Softwar	Software Development		30002		L0002		L0002		5					
7	Design 1	Design Team		30003		L0003		L0003		7	7				
5	Softwar	Software		30004 L		L0004									

In this lab, you will run through some SQL practice problems that will provide hands-on experience with the different kinds of join operations.

```
SELECT column_name(s)
FROM table1
CROSS JOIN table2;
```

How does an INNER JOIN statement syntax look?

```
SELECT column_name(s)
FROM table1
INNER JOIN table2
ON table1.column_name = table2.column_name;
WHERE condition;
```

How does a LEFT OUTER JOIN statement syntax look?

```
SELECT column_name(s)
FROM table1
LEFT OUTER JOIN table2
ON table1.column_name = table2.column_name
WHERE condition;
```

How does a RIGHT OUTER JOIN statement syntax look?

```
SELECT column_name(s)
FROM table1
RIGHT OUTER JOIN table2
ON table1.column_name = table2.column_name
WHERE condition;
```

How does a FULL OUTER JOIN statement syntax look?

```
SELECT column_name(s)

FROM table1

LEFT OUTER JOIN table2

ON table1.column_name = table2.column_name

WHERE condition

UNION

SELECT column_name(s)

FROM table1

RIGHT OUTER JOIN table2

ON table1.column_name = table2.column_name

WHERE condition
```

Union operator

The UNION operator is used to combine the result-set of two or more SELECT statements.

Every SELECT statement within UNION must have the same number of columns The columns must also have similar data types The columns in every SELECT statement must also be in the same order

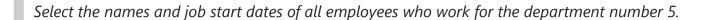
```
SELECT column_name(s) FROM table1
UNION
SELECT column_name(s) FROM table2;
```

How does a SELF JOIN statement syntax look?

```
SELECT column_name(s)
FROM table1 T1, table1 T2
WHERE condition;
```

Exercise

1. Problem:



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- ► Solution
- ▶ Output
- 2. Problem:

Select the names, job start dates, and job titles of all employees who work for the department number 5.

- ▶ Hint
- ► Solution
- ► Output
- 3. Problem:

Perform a Left Outer Join on the EMPLOYEES and DEPARTMENT tables and select employee id, last name, department id and department name for all employees.

- ► Hint
- ► Solution
- ► Output
- 4. Problem:

Re-write the previous query but limit the result set to include only the rows for employees born before 1980.

- ► Hint
- ► Solution
- ► Output
- 5. Problem:

Re-write the previous query but have the result set include all the employees but department names for only the employees who were born before 1980.

- ► Hint
- ► Solution
- ► Output
- 6. Problem:

Perform a Full Join on the EMPLOYEES and DEPARTMENT tables and select the First name, Last name and Department name of all employees.

- ► Hint
- ► Solution
- ▶ Output
- 7. Problem:

Re-write the previous query but have the result set include all employee names but department id and department names only for male employees.

- ▶ Hint
- ► Solution
- ► Output

Solution Script

If you would like to run all the solution queries of the SQL problems of this lab with a script, download the script below. Import the script to mysql phpadmin interface. Follow Hands-on Lab : Create tables using SQL scripts and Load data into tables on how to import a script to mysql phpadmin interface.

• JOIN Solution Script.sql

Congratulations! You have completed this lab, and you are ready for the next topic.

Author(s)

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Changelog

Date	Version	Changed by	Change Description
2021-11-01	0.1	Lakshmi Holla, Malika Singla	Initial Version

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