

Hands-on Lab: Using Views 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 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:

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SAMPLE HR DATABASE TABLES

EMPLOYEES										
EMP_ID	F_NAME	L_NAME	SSN	B_DATE	SEX	ADDRESS	JOB_ID	SALARY	MANAGER_ID	DEP_ID
E1001	John	Thomas	123456	1976-01-09	М	5631 Rice, OakPark,IL	100	100000	30001	2
E1002	Alice	James	123457	1972-07-31	F	980 Berry In, Elgin,IL	200	80000	30002	5
E1003	Steve	Wells	123458	1980-08-10	М	291 Springs, Gary, IL	300	50000	30002	5

JOB_HISTO	DRY		JOBS	JOBS				
EMPL_ID	START_DATE	JOBS_ID	DEPT_ID	JOB_IDENT	JOB_TITLE	MIN_SALARY		
E1001	2000-01-30	100	2	100	Sr. Architect	60000		
E1002	2010-08-16	200	5	200	Sr.SoftwareDeveloper	60000		
E1003	2016-08-10	300	5	300	Jr.SoftwareDeveloper	40000		

DEPARTMEN	TS	LOCATIONS			
DEPT_ID_DEP	DEP_NAME	MANAGER_ID	LOC_ID	LOCT_ID	DEP_ID_LOC
2	Architect Group	30001	L0001	L0001	2
5	Software Development	30002	L0002	L0002	5
7	Design Team	30003	L0003	L0003	7
5	Software	30004	L0004		

Objectives

After completing this lab, you will be able to:

- Create a View and show a selection of data for a given table
- Update a View to combine two or more tables in meaningful ways
- Drop a created View

In this lab, you will learn about using views. In SQL, a view is an alternative way of representing data that exists in one or more tables. Just like a real table, it contains rows and columns. The fields in a view are fields from one or more real tables in the database. Though views can be queried like a table, views are dynamic; only the definition of the view is stored, not the data.

How does the syntax of a CREATE VIEW statement look?

```
CREATE VIEW view_name AS

SELECT column1, column2, ...

FROM table_name
WHERE condition;
```

How does the syntax of a REPLACE VIEW statement look?

```
CREATE OR REPLACE VIEW view_name AS

SELECT column1, column2, ...

FROM table_name
WHERE condition;
```

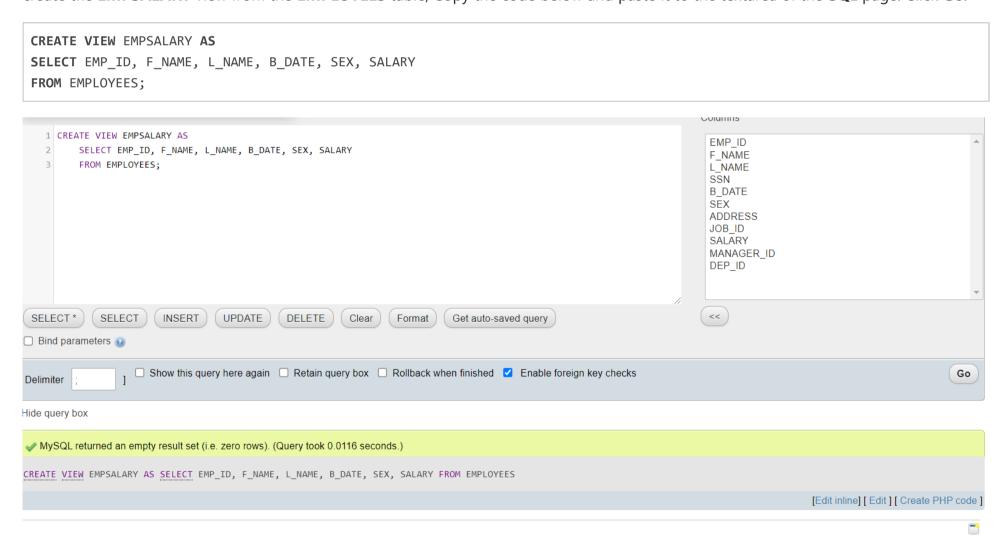
How does the syntax of a DROP VIEW statement look?

```
DROP VIEW view_name;
```

Exercise 1: Create a View

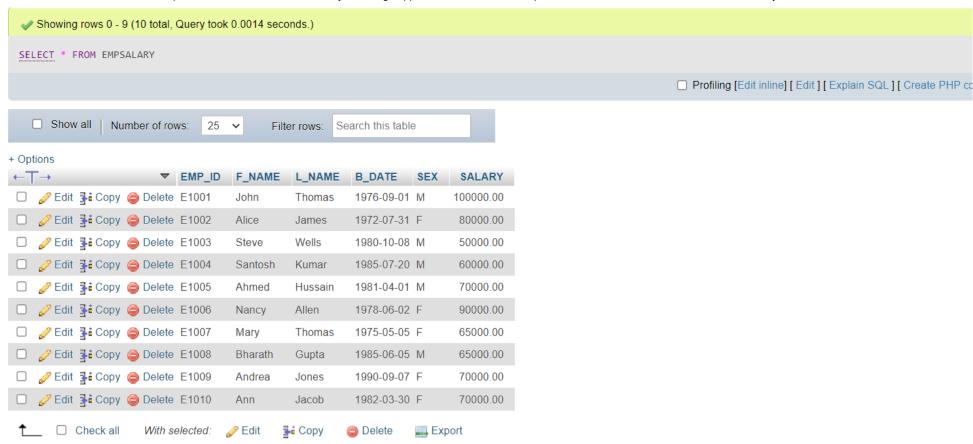
In this exercise, you will create a View and show a selection of data for a given table.

1. Let's create a view called **EMPSALARY** to display salary along with some basic sensitive data of employees from the HR database. To create the **EMPSALARY** view from the **EMPLOYEES** table, Copy the code below and paste it to the textarea of the **SQL** page. Click **Go**.



2. Using SELECT, query the **EMPSALARY** view to retrieve all the records. Copy the code below and paste it to the textarea of the **SQL** page. Click **Go**.

```
SELECT * FROM EMPSALARY;
```



Exercise 2: Update a View

In this exercise, you will update a View to combine two or more tables in meaningful ways.

- 1. It now seems that the **EMPSALARY** view we created in exercise 1 doesn't contain enough salary information, such as max/min salary and the job title of the employees. Let's update the **EMPSALARY** view:
 - o combining two tables **EMPLOYEES** and **JOBS** so that we can display our desired information from the HR database.
 - including the columns JOB_TITLE, MIN_SALARY, MAX_SALARY of the JOBS table as well as excluding the SALARY column of the EMPLOYEES table.

Copy the code below and paste it to the textarea of the SQL page. Click Go..

```
CREATE OR REPLACE VIEW EMPSALARY AS

SELECT EMP_ID, F_NAME, L_NAME, B_DATE, SEX, JOB_TITLE, MIN_SALARY, MAX_SALARY

FROM EMPLOYEES, JOBS

WHERE EMPLOYEES.JOB_ID = JOBS.JOB_IDENT;
```

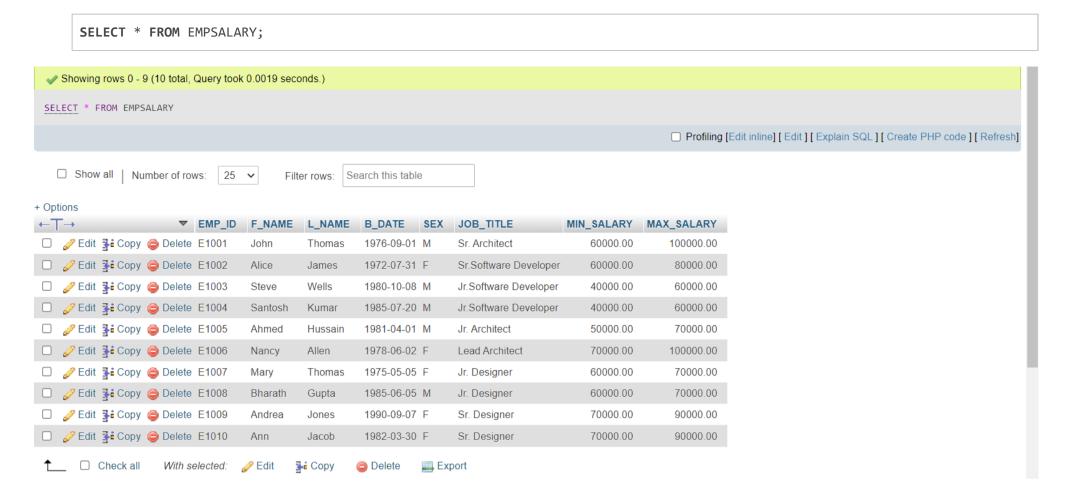
NOTE: Don't worry if you don't understand how to combine to two tables using implicit inner join. You will learn more about joins later on. For now, just think you are combining the data of two different tables, **EMPLOYEES** and **JOBS** by connecting their respective columns **JOB_ID** and **JOB_IDENT** since both the columns contain common unique data. You can have a look at the diagram (at the beginning of the lab) showing the tables for the HR database to observe how the **JOB_ID** and **JOB_IDENT** columns from the **EMPLOYEES** and **JOBS** tables respectively contain common unique data.

```
Run SQL query/queries on table HR.EMPLOYEES: (a)
                                                                                                                                  Columns
                                                                                                                                   FMP ID
           SELECT EMP_ID, F_NAME, L_NAME, B_DATE, SEX, JOB_TITLE, MIN_SALARY, MAX_SALARY
                                                                                                                                   F_NAME
           FROM EMPLOYEES, JOBS
                                                                                                                                   L_NAME
           WHERE EMPLOYEES.JOB_ID = JOBS.JOB_IDENT;
                                                                                                                                   B_DATE
                                                                                                                                   ADDRESS
                                                                                                                                   JOB_ID
                                                                                                                                   SALARY
                                                                                                                                   MANAGER_ID
                                                                                                                                   DEP_ID
  SELECT* SELECT
                           INSERT
                                      UPDATE
                                                  DELETE
                                                                                  Get auto-saved query
                                                                                                                                  <<
                                                              Clear

    Bind parameters @

                      □ Show this query here again □ Retain query box □ Rollback when finished ☑ Enable foreign key checks
                                                                                                                                                                                  Go
[ Delimiter
Hide query box
 MySQL returned an empty result set (i.e. zero rows). (Query took 0.0461 seconds.)
 CREATE OR REPLACE VIEW EMPSALARY AS SELECT EMP_ID, F_NAME, L_NAME, B_DATE, SEX, JOB_TITLE, MIN_SALARY, MAX_SALARY FROM EMPLOYEES, JOBS WHERE EMPLOYEES.JOB_ID = JOBS.JOB_IDENT
                                                                                                                                                       [Edit inline] [ Edit ] [ Create PHP code ]
```

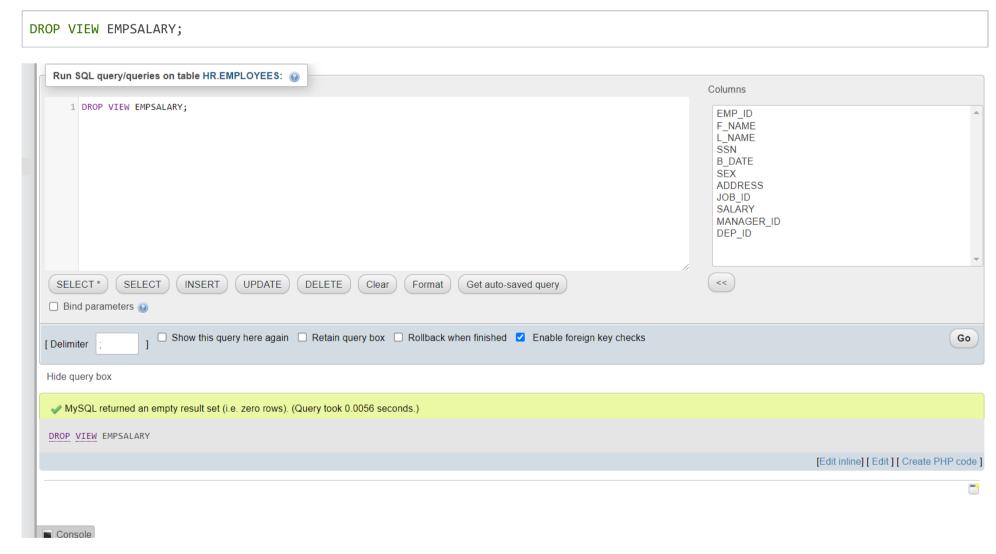
2. Using SELECT, query the updated **EMPSALARY** view to retrieve all the records. Copy the code below and paste it to the textarea of the **SQL** page. Click **Go**.



Exercise 3: Drop a View

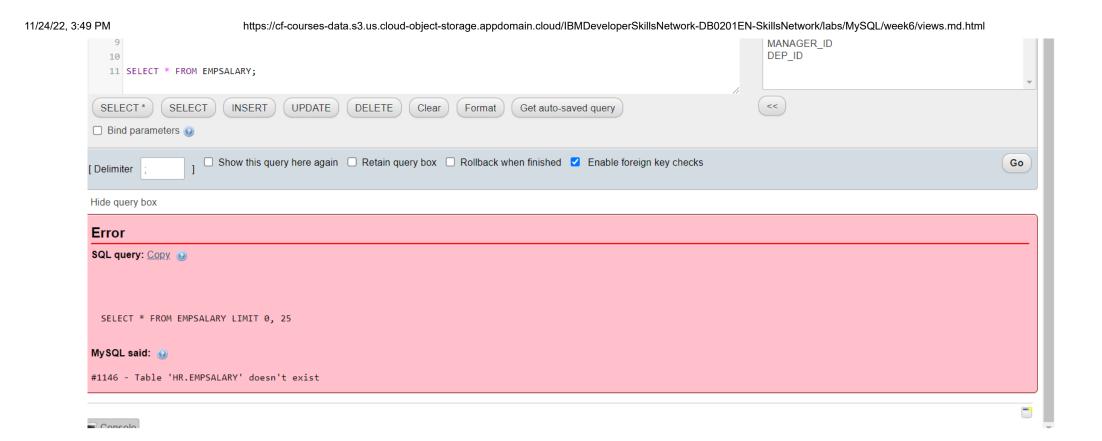
In this exercise, you will drop a created View.

1. Let's delete the created **EMPSALARY** view. Copy the code below and paste it to the paste it to the textarea of the **SQL** page. Click **Go**..



2. Using SELECT, you can verify whether the **EMPSALARY** view has been deleted or not. Copy the code below and paste it to the textarea of the **SQL** page. Click **Go**..

```
SELECT * FROM EMPSALARY;
```



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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