

Hands-on Lab: Using Views

Estimated time needed: 10 minutes

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;

DROP VIEW view name;

How does the syntax of a DROP VIEW statement look?

Software Used in this Lab

In this lab, you will use IBM Db2 Database. Db2 is a Relational Database Management System (RDBMS) from IBM, designed to store, analyze and retrieve the data efficiently.

To complete this lab you will utilize a Db2 database service on IBM Cloud. If you did not already complete this lab task earlier in this module, you will not yet have access to Db2 on IBM Cloud, and you will need to follow the lab below first:

Database Used in this Lab

Hands-on Lab: Sign up for IBM Cloud, Create Db2 service instance and Get started with the Db2 console

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:

L_NAME

SSN

EMPLOYEES

F_NAME

John

EMP_ID

E1001

SAMPLE HR DATABASE TABLES

2

MANAGER_ID | DEP_ID

30001

SALARY

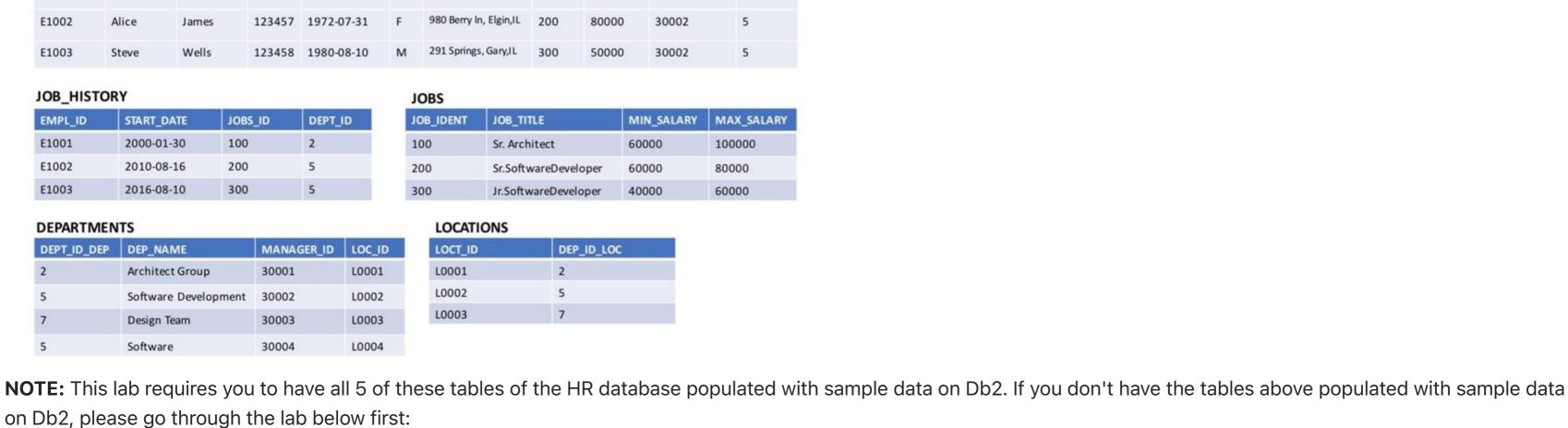
100000

JOB_ID

5631 Rice, Oak Park, IL 100 123456 1976-01-09 Thomas

SEX ADDRESS

B_DATE



Hands-on Lab: Create tables using SQL scripts and Load data into tables

Objectives

 Update a View to combine two or more tables in meaningful ways Drop a created View

After completing this lab, you will be able to:

- When you approach the exercises in this lab, follow the instructions to run the gueries on Db2:
- Instructions

• Create a View and show a selection of data for a given table

• Go to the Resource List of IBM Cloud by logging in where you can find the Db2 service instance that you created in a previous lab under Services section. Click on the Db2-xx service. Next, open the Db2 Console by clicking on Open Console button. Click on the 3-bar menu icon in the top left corner and go to the Run SQL page. The

- If needed, follow Hands-on Lab: Sign up for IBM Cloud, Create Db2 service instance and Get started with the Db2 console
- **Exercise 1: Create a View**

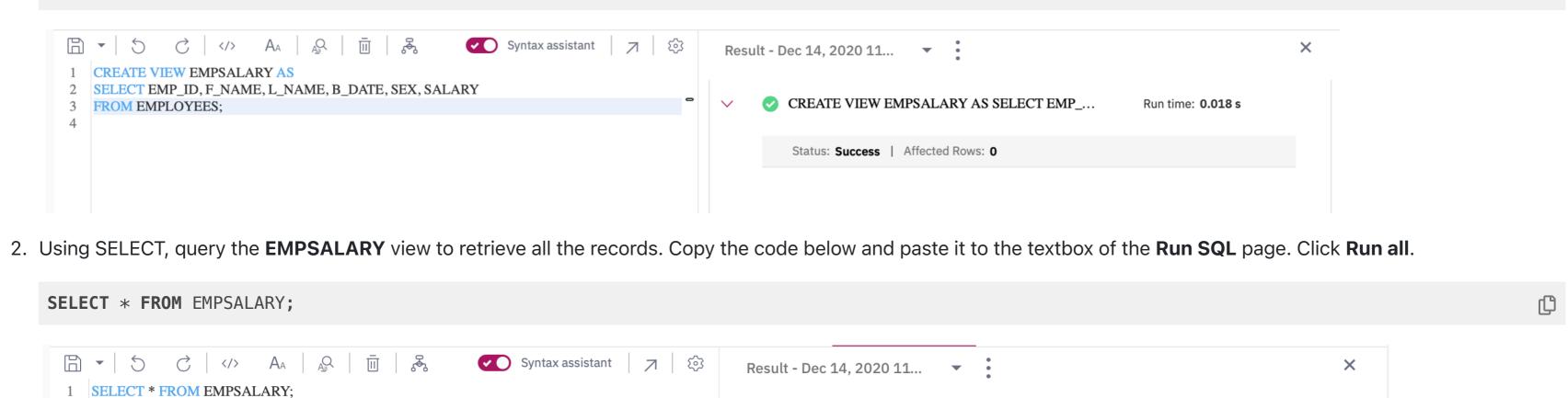
1. Let's create a view called EMPSALARY to display salary along with some basic sensitive data of employees from the HR database. To create the EMPSALARY view from the EMPLOYEES table, copy the code below and paste it to the textbox of the Run SQL page. Click Run all.

Run SQL tool enables you to run SQL statements.

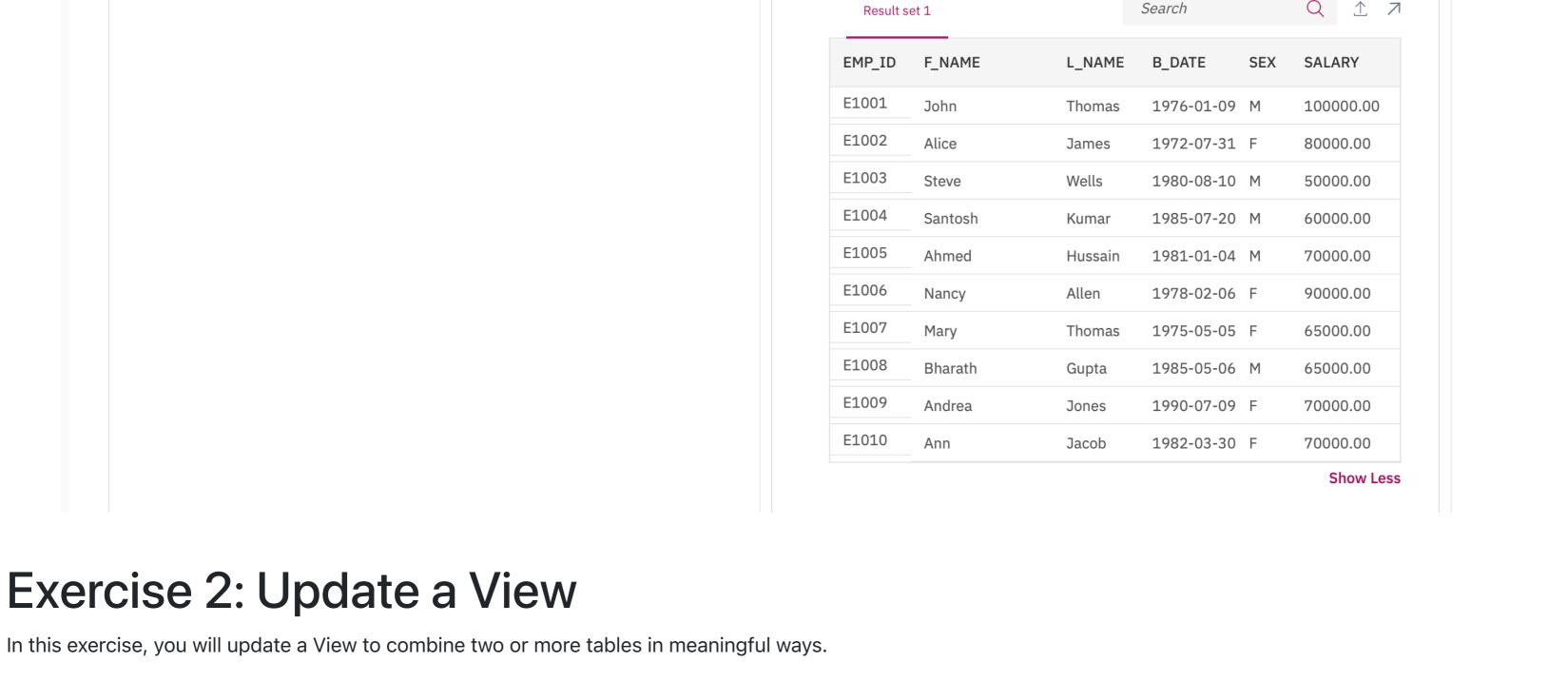
CREATE VIEW EMPSALARY AS

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

SELECT EMP_ID, F_NAME, L_NAME, B_DATE, SEX, SALARY FROM EMPLOYEES;



 SELECT * FROM EMPSALARY Run time: 0.008 s



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.

• including the columns JOB_TITLE, MIN_SALARY, MAX_SALARY of the JOBS table as well as excluding the SALARY column of the EMPLOYEES table.

o combining two tables **EMPLOYEES** and **JOBS** so that we can display our desired information from the HR database.

JOB_IDENT columns from the EMPLOYEES and JOBS tables respectively contain common unique data.

Syntax assistant

B_DATE

1976-01-09

1972-07-31

1980-08-10

1978-02-06

1975-05-05

1985-05-06

Copy the code below and paste it to the textbox of the Run SQL page. Click Run all. CREATE OR REPLACE VIEW EMPSALARY AS

WHERE EMPLOYEES.JOB_ID = JOBS.JOB_IDENT;

F_NAME

John

Alice

Steve

Nancy

Mary

Bharath

Let's update the **EMPSALARY** view:

EMP_ID

E1001

E1002

E1003

E1006

E1007

E1008

SELECT EMP_ID, F_NAME, L_NAME, B_DATE, SEX, JOB_TITLE, MIN_SALARY, MAX_SALARY FROM EMPLOYEES, JOBS

L_NAME

Thomas

James

Wells

Allen

Thomas

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

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

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

Result - Dec 14, 2020 11...

JOB_TITLE

Sr. Architect

Sr.Software Dev

Jr.Software Dev

Lead Architect

Jr. Designer

Jr. Designer

×

MAX SALARY

100000.00

80000.00

60000.00

100000.00

70000.00

70000.00

X

MIN_SALARY

60000.00

60000.00

40000.00

70000.00

60000.00

60000.00

"ZJH17769.EMPSALARY" is an undefined name.. SQLCODE=-204, SQLSTATE=42704,

Û

CREATE OR REPLACE VIEW EMPSALARY AS SELECT EMP_ID, F_NAME, L_NAME, B_DATE, SEX, JOB_TITLE, MIN_SALARY, MAX_SALAR CREATE OR REPLACE VIEW EMPSALARY AS ... Run time: 0.022 s FROM EMPLOYEES, JOBS WHERE EMPLOYEES.JOB_ID = JOBS.JOB_IDENT; Status: Success | Affected Rows: 0 2. Using SELECT, query the updated EMPSALARY view to retrieve all the records. Copy the code below and paste it to the textbox of the Run SQL page. Click Run all. **SELECT** * **FROM** EMPSALARY; Search Result set 1

E1004 1985-07-20 Jr.Software Dev 60000.00 Santosh Kumar Μ 40000.00 E1005 Ahmed Hussain 1981-01-04 Μ Jr. Architect 50000.00 70000.00

SEX

Μ

F

Μ

F

F

Μ

Gupta E1009 Andrea 1990-07-09 F Sr. Designer 70000.00 90000.00 Jones E1010 1982-03-30 F Sr. Designer 70000.00 90000.00 Ann Jacob 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 textbox of the Run SQL page. Click Run all. DROP VIEW EMPSALARY; Syntax assistant X Result - Dec 14, 2020 11... **DROP VIEW EMPSALARY;** DROP VIEW EMPSALARY Run time: 0.010 s Status: Success | Affected Rows: 0

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

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Result - Dec 14, 2020 11...

DRIVER=4.26.14

Learn more about this error

SELECT * FROM EMPSALARY; SELECT * FROM EMPSALARY Run time: 0.008 s Status: Failed

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

Author(s) Sandip Saha Joy

Other Contributor(s)

Date

Changelog

Version

Changed by

SELECT * **FROM** EMPSALARY;

2020-12-14 Sandip Saha Joy Created initial version 1.0

Steve Ryan 2020-12-24 1.1 **ID** reviewed

Change Description