

## Introduction to MySQL Workbench – LAB 2

### Scenario:

The human resources department of a company uses excel for the employee's data management, the company wants to implement a new system and hires a consultancy IT company to design the relational model of the HR database. The requirements of the department in the company are the following:

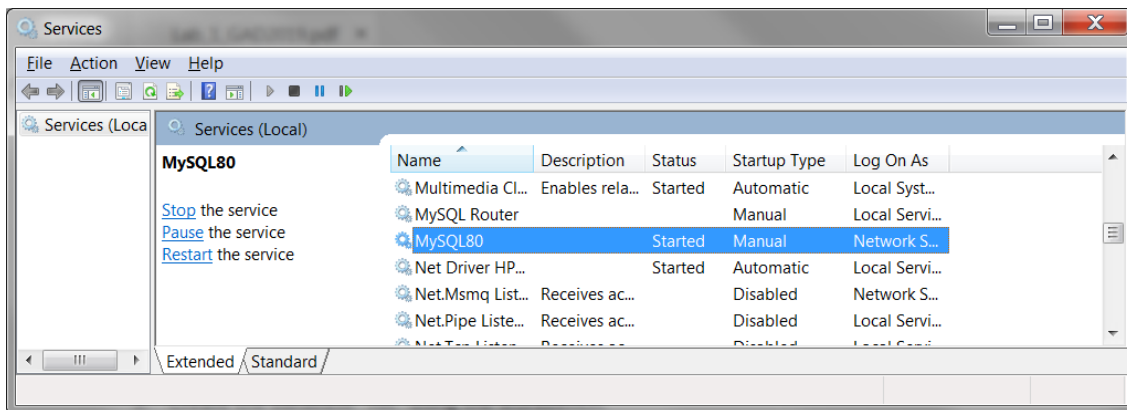
The company has locations in different countries. The company may have more than one location per country. Each location may have one or more departments of the company. Each department may have more than one employee, and each employee is assigned to one job; however, each job may be done by more than one employee. The human resources department needs to track a history of the jobs that the employees had in each of the departments. The employees may change from one job to another job. The existing jobs may have different grades/categories indicating the lowest and highest salary allowed for that job.

1. Draw an Entity-Relationship model (on paper) for the described scenario (try to use between 7 to 9 tables).

**Solution:** draw an ERD on paper. Different solutions are possible. Discuss your solution with your peers.

2. Make sure the database server is running. How to stop and start the database server from Windows services.

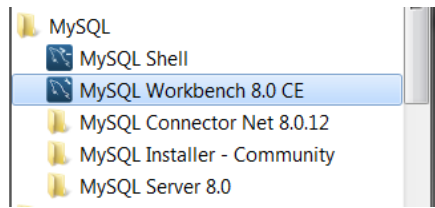
**Solution (For Windows system only):** Go to Windows services and make sure that the “MySQL80” service is running, otherwise, start the service:



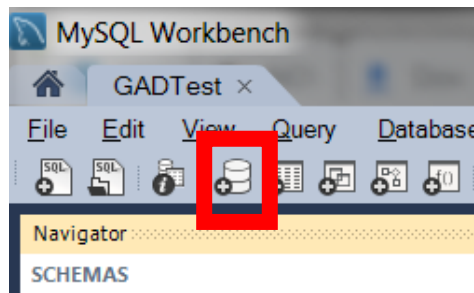
3. Create the database “hr” using the workbench.

**Solution:**

- 1) Open MySQL Workbench



- 2) Click in database icon (see figure). Then refresh the list of schemas if the new database does not appear.



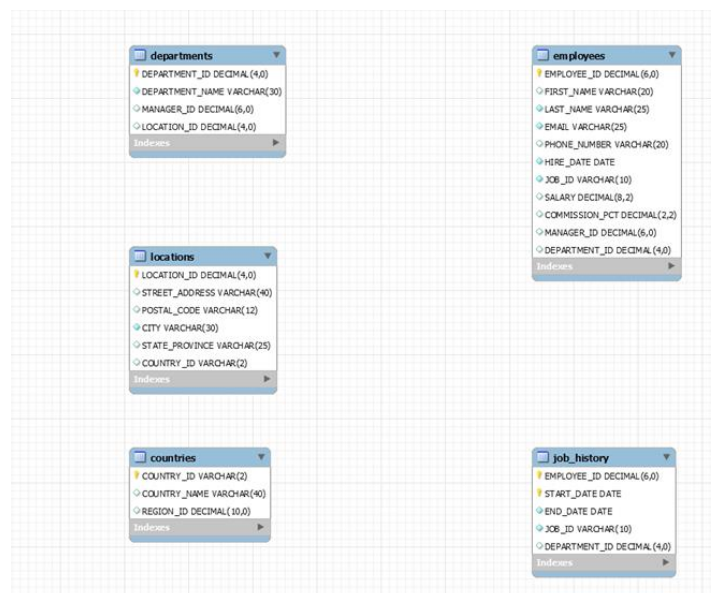
4. Using the “HR” database, upload and run the script provided in Moodle. The script will create the tables, the relationships are not yet created. Take a look to the code of the script. Are the primary keys defined? Are the foreign keys defined?

**Solution:** Right-click the “hr” database created and select “*set up as default schema*”  
Run the CreateTables.sql script (*File → Run SQL script*)

5. The database is now created, use the reverse engineering option to visualize the entity-relation diagram (ERD) in workbench (see the annex 1 “LabSupplement-ReverseEngineeringHR\_DB.pdf”). Explain what reverse engineering is.

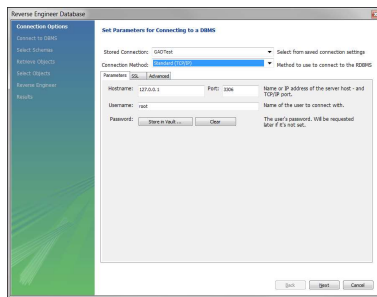
**Solution:** see the annex 1 “LabSupplement-ReverseEngineeringHR\_DB.pdf”

6. Compare the tables from the initial diagram that you drew in step 1 with the tables displayed in the ERD from the class solution. How similar is your diagram?.

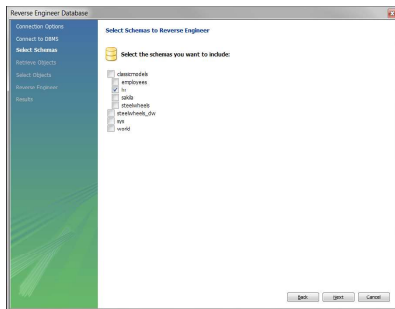


### Supplement for Lab 2 – Reverse Engineering (from the existing database to the model diagram)

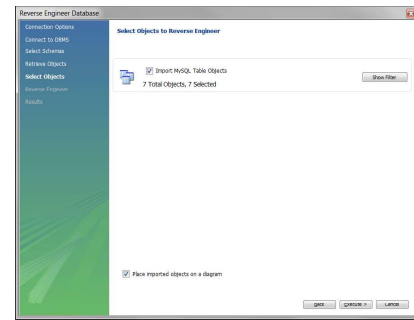
1. Go to Database → Reverse Engineering. The following screen will appear.



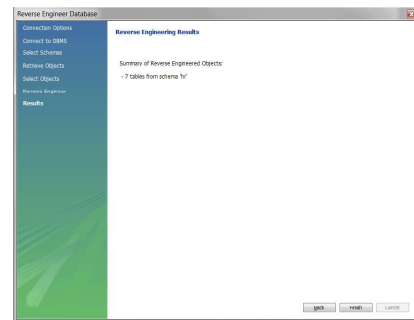
2. Make sure you select the stored connection you created. Click Next.
3. In the next screen select HR database and click Next. And then Next again.



4. In the following screen make sure you checked the boxes and click Execute.



5. After the process click Finish.



Finally, you will have a diagram with the tables of the database. Now you will create the relationships between these tables.

