Yeyland Wutani

Description

The company Yeyland Wutani wants you to create a database model for their needs.

They already have an idea of **some** of the tables it needs with a few primary key examples:

Employee(eID, lname, fname, address, phone)
department(<u>depnum</u>, depname)
course(<u>courseID</u>, coursename)
position(<u>positioncode</u>, description)
location(location<u>code</u>, location)

In addition to these tables, the company also wants to be able to register which of its employees have taken which courses (historical data).

Assignment

It is your job to complete the model of their database. You will have to make a model in Mysql Workbench which fulfill the following requirements.

- The database must be completely normalized (3. normal form)

- All tables must be connected with the correct relationships/cardinality (foreign/primary keys)

The following requirements for the information stored in the database must also be fulfilled

- Every employee should be able to participate the same course multiple times (at different times)
- Every course can be taken by no or multiple employees
- Course information (when, where, about what, course lecturer, who has taken a course,etc...)
- A department can have many employees
- Every employee can only work in one department
- An employee can only have one position type
- There can be many employees with the same position type
- A position doesn't have to have an employee (doesn't need to be filled)
- You must be able to find the location of an employee

You have to decide the necessary attributes, tables, relations and primary/foreign keys that you think will fulfil these requirements.

Database data

The company already have some information they want to insert into the database. They haven't written down everything, so you have to fill in some of the blanks for this to work in your database.

Employees
Ola Henriksen - manager
Zaphod Beeblebrox - president
Thomas Anderson - data entry specialist
Leon Reno - professional
Tyler Durden - manager
Hanne Larsen - accountant

Course participation
Tyler Durden, Ola Henriksen and Hanne Larsen has taken the course "Artisan soap making 101" on June 3rd 2017 and the course "Advanced anger management" on October 14th 2017.

Tyler Durden was so pleased with the "Artisan soap making 101" course that he took it again on July 18th 2017.

Zaphod Beeblebrox and Thomas Anderson has taken the course "Artisan tea making 101" on June 3rd 2017 and "Spoon bending for beginners" on March 22nd 2017.

Thomas Anderson turned out to be a natural at spoon bending so he took the course 3 times more. They were held on the 1st, 8th and 22nd of April 2017.

Ola Henriksen wanted to attend the "Artisan soap making 101" course, but got confused with the names and ended up taking the "Artisan soup making 101" course instead. This was held on 2nd of January 2017.

There was a course held called "Building better worlds" on January 1st 2017 and December 12th 2017, but no one bothered to show up.

There was also a course held in "Alien ecology" on February 11th, but everyone who was supposed to attend mysteriously got sick.

Departments
Accounting
Production
Development
Research
Education
Management
IT

The database that you have modelled must support the information that they want you to insert.

Delivery

1. A workbench file (.mwb) containing the model
2. An SQL script containing all the neccesary SQL codes to generate the database with INSERTS of required data.
3. A report (pdf) which contains the following:

- A description and evaluation of the modelling process where you explain the choices you make
- Assessment of each table and their relations
  - How do they fulfil the requirements set?
  - Potential problems and considerations when expanding the model in the future
- An image of the final model
- SQL queries where you get the following:

- List of all the departments (names) and the number of employees with 1 or more employees
- Name and time of all courses that have been held
- List of all employees and which courses they have taken (even those who haven't taken any)

Hints

Workbench
Create a new model with file>new model (ctrl + N)

Save the model so you don't lose progress if something crashes with file>save model (ctrl+s). The model is saved in a .mwb file which can be opened by workbench (remember where you save it).

Note that the default name of the database (schema) when you create a model in workbench is Mydb. This should be changed to "Yeyland_Wutani" otherwise the name of your database will be Mydb.

To create a new diagram to model on double click the "add diagram" button. This will open up a new tab where you can place tables, edit tables and manage the relationships.

Once you are done with the model you can export it as a image file with file>export>export as PNG

To get the .sql script use file>export>Forward engineer SQL create script. Select where you wish to save the sql file on the top. If you want to run the file multiple times, check the box next to "generate DROP statements before each create statement".

Testing
Fill inn some data in your database and write some sql queries to check that your database fulfills the requirements set in the assignment once you have a model