

INFO20003 Semester 1, 2018

Assignment 2 – SQL

Due: 11.59pm 20th April 2018

Submission: Via LMS <https://lms.unimelb.edu.au>

Weighting: 10% of your total assessment. The assignment will be graded out of 20 marks.

The Human Resources Database

The Human Resources (HR) database stores information about staff that work in a global technology company. Departments are located in cities in countries that belong to one of four business regions.

Within the database, staff must have a current job and they may have held jobs in other departments and locations as part of their job history. Staff may belong to a department and may manage one or more departments. Staff may supervise other staff, but not all staff have a supervisor.

The HR database stores staff first and last names, email and phone number, the day they were hired for their current job role as well as their current salary and a commission percentage for those staff that are eligible.

The Data Model

The following is a physical ER model of the database:

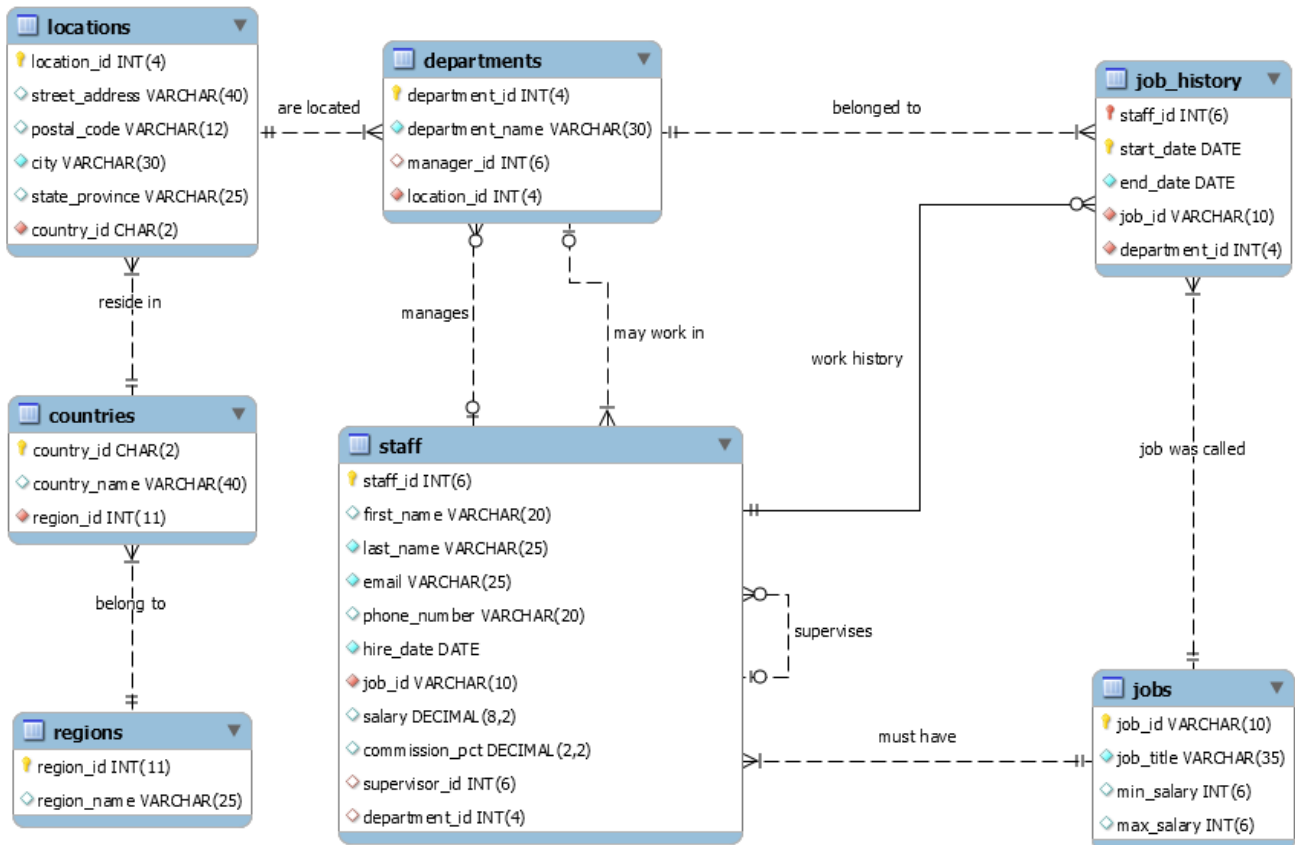


Figure 1: The HR ER Model

Assignment 2 SET UP

To set up the database in your MySQL server, download the file *staff.sql* from the Assignment folder on LMS and run it in Workbench. This script creates the schema and database tables and populates them with data.

NOTE: The script is designed to run against your account on the Engineering IT server. Uncomment the BYOD section at the beginning of the script if you want to install the schema on your own device.

The SQL Tasks

In this section are listed 10 questions for you to answer. Write one (single) SQL statement per question. Subqueries and nesting is allowed within a single SQL statement. DO NOT USE VIEWS to answer questions.

1. List the first name, last name, department name and current job title of all staff. **(1 mark)**
2. List every country name and the number of staff in each country. Order the result by country name. **(1 mark)**
3. Who has spent the shortest amount of time in a job? Print their name (first and last name), how long the job lasted in days and the job title. **(1 mark)**
4. For all supervisors who supervise five or more staff, list their first name, last name, job title, and the number of staff members they supervise. **(2 marks)**
5. Print department names of departments that currently have neither a manager nor any staff. **(2 marks)**
6. Which region has the most locations? Print the region name, as well as the total number of locations in that region. **(2 marks)**
7. Some staff members are eligible for a commission. Find the names of staff who will exceed the maximum salary for their job title if they achieve their commission. The calculation of a staff member's total income if the commission is achieved is their salary multiplied by the commission percent and added onto their original salary. List the staff member's first name, last name and the amount by which they will exceed the maximum salary for their current job role. Order the results from the highest amount to lowest. **(2 marks)**
8. List the cities, country names and region names for cities outside the United States of America and Europe where no staff work. **(3 marks)**
9. Print job titles, the date the jobs ended, and the current manager's first and last name for all jobs that ended in 2006 which are currently not managed by Steven King. **(3 marks)**
10. Print the first name, last name and current salary for all staff who held more than one job position prior to their current position, and whose current salary is below the

average value of maximum salaries for all positions they held in the past prior to their current position. **(3 marks)**

Submission Details:

Submit a single PDF showing your answers to all questions to the Assessment page on LMS by midnight on the due date of Friday 20th of April. Name your file 987654.pdf, where 987654 corresponds to YOUR student id. Other formatting requirements are listed below.

Formatting requirements for your submission

For each question, present an answer in the following format:

- Show the question number and question in **black** text.
- Show your answer (the SQL statement) in **blue** text (**not a screen shot**)
- Show a screenshot from Workbench showing output of 10 or fewer lines.
- Show how many rows were actually returned, in **red** text.
- Show each query on a separate page.

Example:

Qxx. List the first name, last name and salary of all staff. Order the result by the department id, salary and last name.

```
SELECT first_name, last_name, salary
```

```
FROM staff
```

```
ORDER BY department_id, salary, last_name;
```

	first_name	last_name	salary
	Kimberely	Grant	70000.00
	Jennifer	Whalen	44000.00
	Pat	Fav	60000.00
	Michael	Hartstein	130000.00
	Guv	Himuro	26000.00
	Sigal	Tobias	28000.00
	Shelli	Baida	29000.00
	Alexander	Khoo	31000.00
	Karen	Colmenares	35000.00
	Den	Raphaely	110000.00

107 Rows returned

Requesting a submission deadline extension:

If you need an extension due to a valid (medical) reason, you will need to provide evidence to support your request. Medical certificates need to be at least 2 days in length.

To request an extension:

1. Email the Subject Coordinator (deccles@unimelb.edu.au) with your student id, your name and your university email with the extension request and supporting evidence.
2. If your submission deadline extension is granted you will receive an email reply granting the new submission date. Do not lose this email!

Reminder: INFO20003 Hurdle Requirements

To pass INFO20003 you must pass two hurdles:

- Hurdle 1: Obtain at least 50% (15/30) or higher for the three individual assignments (each worth 10%)
- Hurdle 2: Obtain a grade of 50% (35/70) or higher for the MST Mid Semester Test (10) and the End of Semester Exam (60)

Therefore, it is our recommendation to students that you attempt every assignment and every question in the MST and exam.

GOOD LUCK!