

# INFO90002 Subject Revision 1

## 1. ER Modelling

The ACME Pen store sells custom design ballpoint, roller ball, fountain pen and architect pencils via their website. Customer can join ACME at any time and do not have to place an order to be a customer. Once customers place their order the delivery arrives within three days. Each customer must provide a full name, address, email. Each order can contain one or more items, and each item can be ordered in quantities up to a maximum of twenty per order. About each item we store its model 'Biltmore Blue', type 'Architect pencil', price (\$118.00) and whether it is a limited edition.

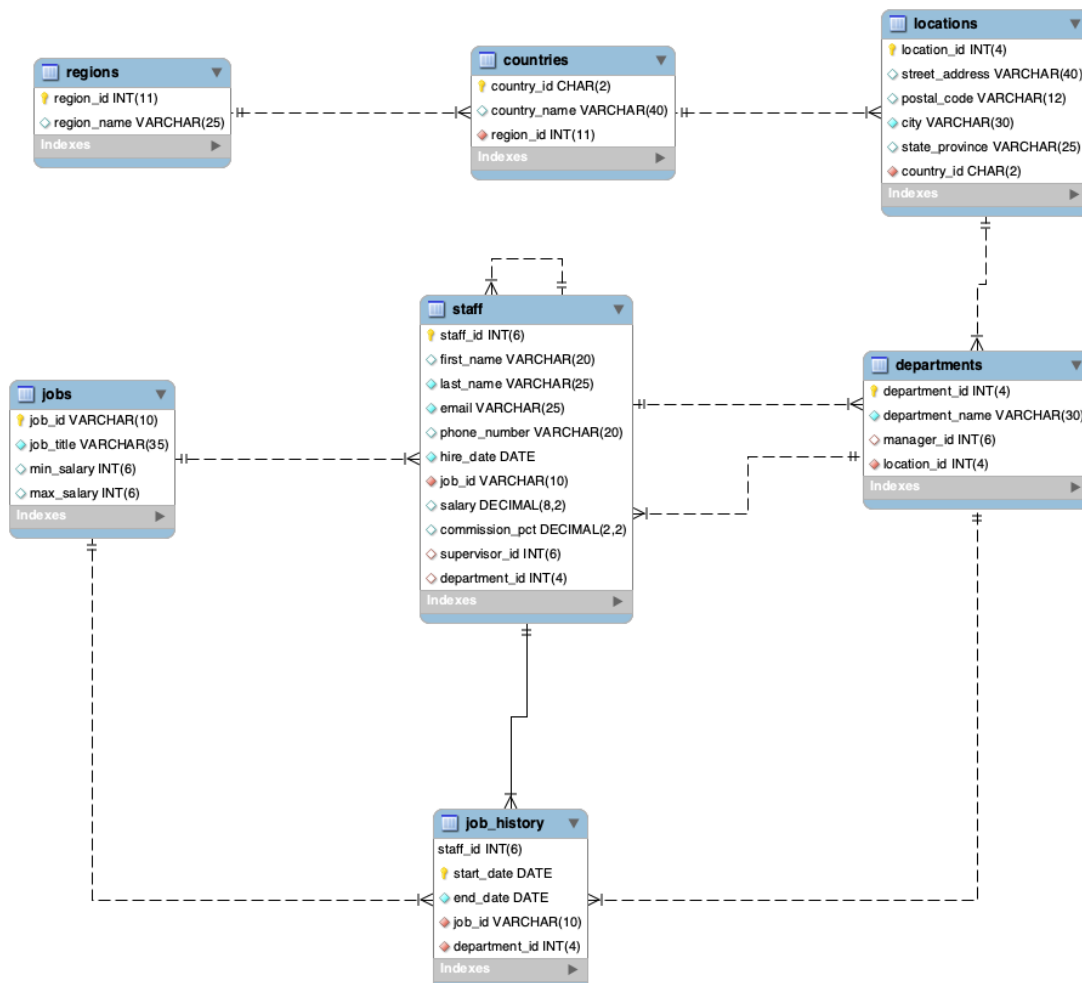
1.1 You are asked to draw a logical model for a relational database

1.2 You are asked to draw a physical model for a MySQL relational database

Please ensure you clearly identify primary and foreign keys and if required data type and precision. You do not need to indicate indexes or not null / nullable attributes

## 2. SQL

The following ER model is for the AcidBass technology company human resources database



Write the SQL for the following queries.

2.1 Print the full name and job title and salary of the employee with the lowest salary

2.2 How many staff work in each country?

2.3 List the department name, and city location of all departments currently without a manager

2.4 List the supervisor's full name and the number of staff who report to that supervisor

2.5 Which country does the employee with the highest salary work in?

2.6 List the last name of all employees and count the number of letters in their last name (e.g. Eccles 6). Order the result from highest count to lowest.

2.7 List the firstname, lastname, and hire\_date of all employees who have had two or more previous jobs (assume the job\_history table stores old jobs not current jobs)

2.8 List all departments and count the number of staff in each department. Order from the highest staff count to the lowest.

### 3. Normalisation

We will cover the key concepts of Normalisation