

# ECE 356 Winter 2019: Tutorial 1

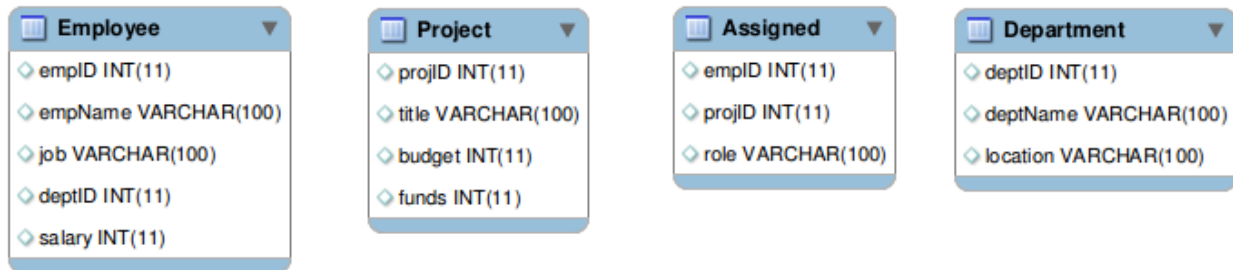
You should already have installed a Virtual Machine running some version of Linux on your laptop, and installed MySQL on that machine. If you have not yet done so, do so now. If you do not know how to do this, ask a question on Piazza.

Basic SQL with few tables and a small quantity of data:

- (1) Create a database and connect to that database. If you do not know how to do this, either read the MySQL documentation (<https://dev.mysql.com/doc/>) or ask a question on Piazza.
- (2) Using the `createTables.sql` code, create four tables with a small amount of data in them. To execute the `createTables.sql` code, use the following CLI command:

```
source createTables.sql;
```

The schema for the set of tables is as follows:



Single-Table Queries: Create SQL queries to answer the following:

- (a) Which departments are located in Waterloo?
- (b) How many people are employed in each job type in the company, ordered by job type?
- (c) What are the names and salaries of the engineers?
- (d) What is the average salary by job type?
- (e) What is the ID of the department with the most engineers?
- (f) What is the deptID where the greatest percentage of employees in the department are engineers?

Multi-Table Queries: Create SQL queries to answer the following:

- (a) What are the names and IDs of employees who are currently not assigned to any project?
- (b) What is the name, job and role of all employees whose role is different than their job?
- (c) What is the number of employees, by job, whose role is identical to their job?
- (d) What is the total of the salaries of all employees assigned to each project?
- (e) Repeat (d) but include a row for the total of the salaries of all employees not assigned to any project.
- (f) Identify any employees (if any), by name and ID, who are assigned to more than one project.