**Lesson: ERD to SQL**

**Description:** A company database needs to store information about employees (identified by ssn, with salary and phone as attributes), departments (identified by dno, with dname and budget as attributes), and children of employees (with name and age as attributes).

Employees work in departments; each department is managed by an employee; a child must be identified uniquely by name when the parent (who is an employee; assume that only one parent works for the company) is known. We are not interested in information about a child once the parent leaves the company.

1. Identify the entities and their relationships.

*Hints:*

* “Employees work in departments…”
* “…each department is managed by an employee…”
* “…a child must be identified uniquely by name when the parent (who is an employee; assume that only one parent works for the company) is known.”

1. Draw a rough ERD (using Visual Paradigm) with the information obtained from the Question 1.
2. Fill in the cardinalities in the ERD in Question 2.

*Hints:*

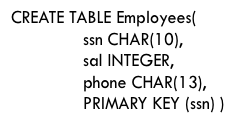
* “…each department is managed by an employee…”
* “…a child must be identified uniquely by name when the parent (who is an employee; assume that only one parent works for the company) is known. “
* “We are not interested in information about a child once the parent leaves the company.”

1. Add the primary keys and other attributes to the ERD in question 2.

The following steps will be performed using the MySQL Command Line Client tool, which is already installed in the lab machine. To install to your own machine, please follow the steps in the document titled *MySQL-Setup-Instructions.PDF* on Blackboard.

1. Write SQL statements to create the corresponding relations and capture as many of the constraints as possible. If you cannot capture some constraints, explain why.
2. First, we begin with the entities. Translating these to SQL is straightforward. Write SQL statements to create tables for each entity.

*Hints:*



Employees

1. Next, we translate the relationships. Write SQL statements to create tables for each relationship.

*Hints:* Identify the primary keys and foreign keys for these relationship tables.

1. Submit the dump file of your SQL database on Blackboard. To obtain the dump file, run the following command:

mysqldump database\_name > dump.sql

Alternative: If you fail to follow the above-mentioned step to create the dump, then alternatively, copy all your create table commands in a text file and submit it to Blackboard.