COMP 1100 Homework – 02 ER Models

Name	Date

1. *(10 points)* A small local bookstore with a few locations in Columbus needs a database to keep track of the employees, and inventory at their stores. Give the ER model that meets the following requirements.

   a.) Each store is uniquely identified by a store number. Each store is also uniquely identified by its full street address (number & street, city, state and zip code). Each store also has two or more phone numbers associated with it.

   b.) Every employee has a unique employee number. In addition, each employee has a full name (first, middle and last), a date of birth, a home address, a contact phone number, and an hourly rate of pay. Each employee also has a date when they started working for the company (a "hire date"), and an employment grade (a letter in the range A through K, with A being high and K being low).

   c.) Some employees are managers. Each store must have exactly one manager, but a single employee may manage more than one store. Managers must have an employment grade E or higher.

   d.) Employees that are not managers are not assigned to particular stores. Instead each employee can work hours at different stores. Employees can work for different hours at different stores on different days, and the number of hours each employee works at each store and the date worked there must be tracked by the system.

   e.) Each store has its own stock of books. Each book is uniquely identified by an ISBN (international standard book number). In addition, each book has a name, one or more authors (or editors), a publisher, a format (hardcover, paperback, etc.) and a year of publication. Each book also has a wholesale and a retail price. Each store is responsible for tracking the quantity of each book it has currently in stock.

   f.) Each publisher has a unique name. In addition, each publisher has a unique full street address for orders and payments (number & street, city, state and zip). Each publisher also has a sales contact phone number and a contact name for sales.

2. *(5 points)* Given the data requirements outlined in question 1 above:
   a.) Identify two informal queries that users might expect to be able to perform on this database. For each query, indicate which of the entities/relationships described in your ER Model will need to be examined to resolve the query.
   b.) Identify two computed attributes that are not mentioned in the requirements, but that would be useful and could be determined from attributes that were identified.