CIS 6300 Business Data Management

Fall 2019

Midterm Exam (Take Home Portion)
September 17, 2019

Total: 25 points

Due: Sunday, September 22, 11:30 PM

Provide all answers on a **MS Word** document named Midterm_YourName and submit on eLearning.

ER Modeling

PART A - Consider the following mini case:

ABC is a Midwestern PC assembler and a vendor that sells a variety of personal computers (PCs) to its customers by assembling parts purchased from a number of part suppliers, then sells assembled PCs to meet the orders from regional customers. To maintain a good after-sales service and control the inventory level, the PC vendor would like to hire you to design a PC Sales database. The following entities and associated information are collected:

- **Mid_PRODUCT** - is used for the PC products assembled by ABC. Its characteristics include ProdID, Name, description, and suggested retail price

- **Mid_PART** - is used for various parts used to assemble PCs (i.e., products). Its properties include PartID and Name. (**Note**: there is a many-to-many relationship between PRODUCT and PART)

- **Mid_SUPPLIER** - is for the part supplier. Its properties include SuppID, Name, and Phone.

- **Mid_INVENTORY** - is the record used to record the number of part units currently stored in the company warehouse. Its properties also include the unit cost, and manufacturer's warranty.
  (**Note:** an INVENTORY record is about the balance of a particular PC part obtained from a certain part supplier. There is a many-to-many relationship between PART and SUPPLIER)

- **Mid_CUSTOMER** - is for the customers of ABC. Its properties include CustID, Name, and Phone.

- **Mid_ORDER** - it is the order placed by a customer for certain PC products. It contains many order lines. Each line item records ProdID, Name, Description, # of units, and the unit cost.

Note that a customer may or may not place an order, but can place many orders with one or several line items.

1. Draw an ER diagram for the above PC sales database. Your ER diagram must be complete, i.e., it addresses all entities, their attributes, and relevant relationships with proper cardinalities at both ends of each relationship. You should try not to use any many-to-many relationship in your diagram. **Copy-and paste your ERD on the word document.** [**8 points**]

2. Create Tables, fields and Table relationships on the SQL Server database. If a table with the same name exists, then drop the old table from the database first. **Copy-and paste your SQL DDL code on the word document.** [**7 Points**]

PART B – SQL Queries

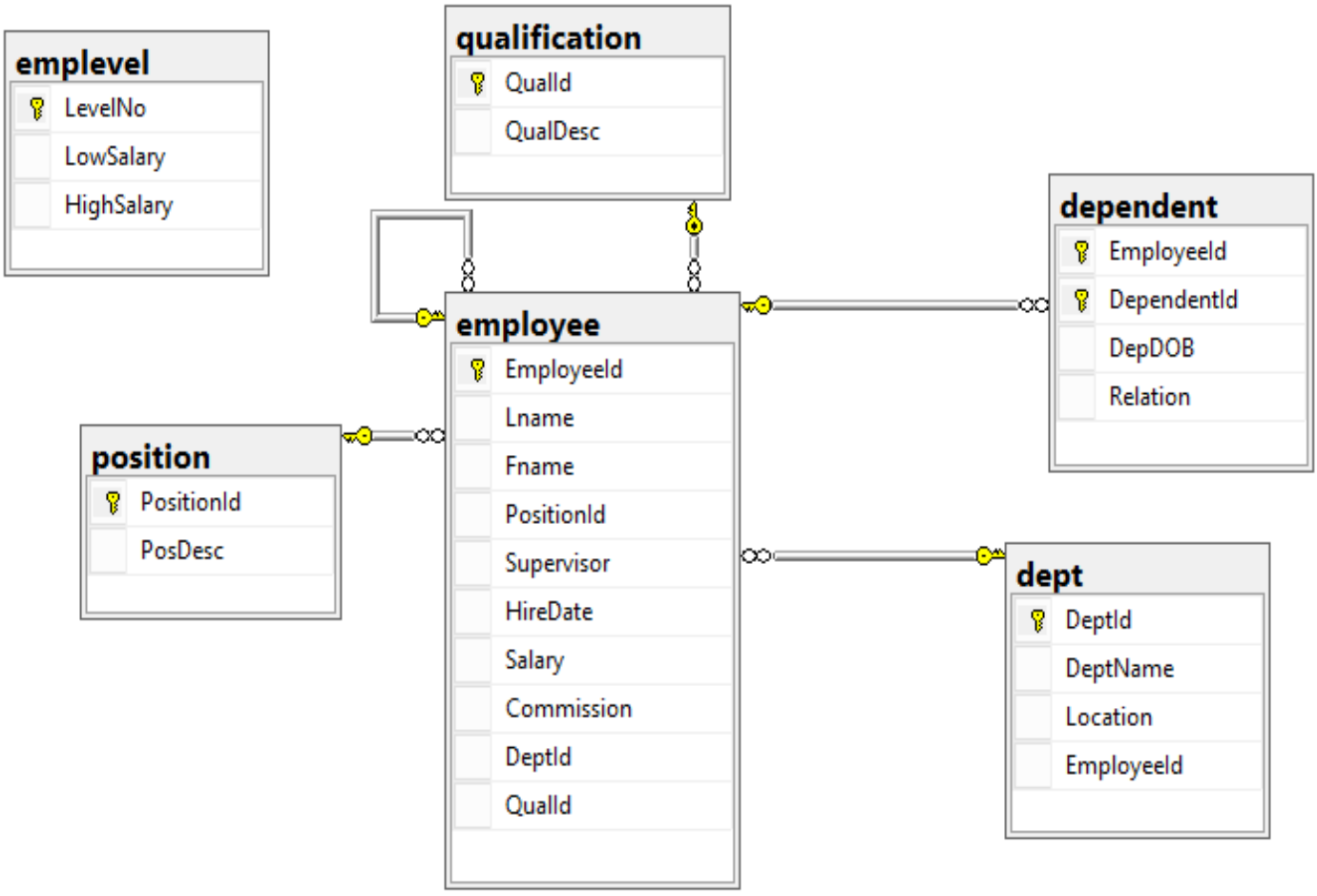
Log on to SQL Server (IP Address 141.218.104.41). Right-Click on **Employee database** and open a Query Editor. Database must be **Employee**. *Employee ERD is in next page*. Create queries based on the following requirements:

For each Query, copy and paste SQL Code and Results on the word document. [**2.5 Points/Query**]

1. Display Lname, Fname and Salary of Employees.
2. Display Lname and Fname of Employee who work for the Finance department.
3. Display Lname and Fname of Employee who has a Spouse.
4. Display Lname, Fname, DeptName, PosDesc of Employee who do not earn any commission.

BONUS QUESTION [4 Points]

Display Lname and Fname of Employee who earns a commission **between** the highest and the lowest. Highest & Lowest commissions must not be included in the result and cannot use any numeric value in the Query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position
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PosDesc
dept
DeptId
DeptName
Location
EmployeeId