**Programming Lab 4**

**You can earn up to 1.6 bonus points after completing this lab.**

**Hard Deadline: 4/24 Before the Class.**

**No late submission to be accepted**

Make sure you create a new database (schema) for this lab before loading the data. Do not use the same database of your lab3.

In this programming lab, we consider a Mail Order Database with 8 tables.

ZIPCODES(zip, city)

EMPLOYEES(eno, ename, zip, hdate)

PARTS(pno, pname, qoh, price, olevel)

CUSTOMERS(cno, cname, street, zip, phone)

ORDERS(ono, cno, eno, received, shipped)

ODETAILS(ono, pno, qty)

RESTOCK(res\_date, pno)

ORDERS\_ERRORS(Error\_Date, ono, Error\_Msg)

The **eno, pno, cno, ono** are the employee number, part number, customer number, and order number respectively.

**hdate** of in **EMPLOYEES** table means the hiring date of an employee.

**qoh** in the **PARTS** table is the quantity of the part on hold.

**olevel** in the **PARTS** table is the number that determines when to restock a part. For example, given **olevel**=20, we need to restock this part to 2\*olevel when its qoh < 20.

The **received** and **shipped** are the dates that the order is received and shipped.

**qty** in the **ODETAILS** table is the quantity for the product for an order.

In the **RESTOCK** table, **res\_date** is the date when a restock is requested.

**ORDERS\_ERRORS** is a table to log order related error messages.

**Programming Tasks**

**Task0:** Create tables with scripts provided in ‘Create-Table.sql’ and load data into these tables with scripts provided in ‘Load-Data.sql’. Make sure you create a new database (schema) for this lab before loading the data. Do not use the same database of your lab3.

**Task1(**20 points**):** Create a new user with user name “lab4” and password “lab4pass”. Grant the SELECT and permission to “lab4” on table EMPLOYEES and PARTS.

**What to submit**:

* Your scripts to create the new user
* Your scripts to grant permission

**Task2(**40 points**):** Now user lab4 needs to insert new part into the table PARTS. However, he does not have the permission to INSERT. In this task, you need to create a **procedure** with part name, quantity on hold, and price as inputs. This procedure will insert a new part record into the PARTS table, in which the pno is set as the (current maximum pno +1) and the order level is set as 20. After creating the procedure, you shall grant the execution permission to lab4 for this procedure.

**What to submit**:

* Your scripts of the procedure
* Your scripts to grant permission
* Screenshots of using user lab4 to call the procedure with inputs (‘sofa’, 20, 500).
  + Login as user lab4
  + Scripts of procedure call
  + Results of “Select \* from PARTS” after calling the procedure.
* **Task3(**10 points**):** Remove user lab4’s permission to SELECT the table PARTS and EMPLOYEES.

**What to submit**:

Your scripts to remove the permission

* **Task4(**10 points**):** Delete the user lab4

**What to submit**:

Your scripts to delete the user lab4