ASSIGNMENT #3

Due: October 23 by midnight 11:59 PM

Exercise #1

Consider the Flight database below:

Airport (airportCode, city, state)

FlightLeg (legNum, flightID)

Flights {flightID, flightName)

FlightAgents (agentID, flightID, Fare)

Orders (orderID, agentID, flightID, num_of_tickets)

Details (airportCode, legNum, bookedDate, duration)

Agents (agentID, agentName)

Express the following queries in SQL. State any assumption you make in case you feel there is any ambiguity in the question.

1. Agents Tom and Jerry takes care of which flights? **Select** Flights.flightName

2. Which flight has the longest duration? **Select Distinct** Flights.flightName, MAX(Details.duration)

3. Which agents can take care of all the flights mentioned in the inventory? **Select** Agents.agentID, Agents.agentName

4. Determine for each flight agent, the number of flights booked, present in the inventory? **Select** Agents.agentName, COUNT(FlightAgents.flightID), COUNT(FlightLeg.flightID)

5. For which flights, there have been more than 100 tickets ordered? **Select** Orders.flightID, Flight.flightName, SUM(Orders.Num_of_tickets)

6. Which flights booked Air Canada or booked a flight managed by Tom? **Select Distinct** Airport.city

7. Which flights booked flights for a duration of at least 10 days? **Select** Airport.airportCode, Airport.city, Airport.state

8. Which flights were booked exactly twice to any flight(s)? Do not use aggregate function count for this query. **Select** Flights.flightName

Exercise #2

Consider the following relational schema. An employee can work in more than one department; the pct_time filed of the Works relation shows the percentage of time that a given employee works in a given department.

Emp (<u>eid</u>: integer, ename: string, age: integer, salary: real)

Works (eid: integer, did: integer, pct_time: integer)

Dept (<u>did</u>: integer, dname: string, budget: real, managerid: integer)

Write the following queries in SQL:

1. Print the names and ages of each employee who works in both the Hardware department and the Software department. **Select** Emp.ename, Emp.age

2. For each department with more than 20 full-time-equivalent employees (i.e., where the part-time and full-time employees add up to at least that many full-time employees), print the "did" together with the number of employees that work in that department. **Select** Works.did, COUNT (Works.eid)

3. Print the name of each employee whose salary exceeds the budget of all of the departments that he or she works in. **Select** Emp.ename

4. Find the "managerids" of managers who manage only departments with budgets greater than $1 million. **Select Distinct** Dept.managerid

5. Find the "enames" of managers who manage the departments with the largest budgets. **Select** Emp.ename

6. If a manager manages more than one department, he or she controls the sum of all the budgets for those departments. Find the "managerids" of managers who control more than $5 million. **Select** Dept.managerid

7. Find the "managerids" of managers who control the largest amounts.
   Here you can create a view as follows:
      CREATE VIEW **Manager** AS
        SELECT DISTINCT D.managerid, SUM (D.budget) AS tempBudget
        FROM Dept D
        GROUP BY D.managerid;
   *And then you can use the view **Manager** in the query*

      Select Distinct managerid
      FROM Manager
      WHERE tempBudget =

8. Find the "enames" of managers who manage only departments with budgets larger than $1 million, but at least one department with budget less than $5 million. **Select** Emp.Eid, Emp.ename

Submitting Assignment #3

- Naming convention for Notepad++ file: Create *one .sql file*, containing your solution file for your assignment using the following naming convention:

  The file *.sql* should be called *A3_Team_Name*, where *Team_Name* is your student group name.

- Submit your file *.sql* in the appropriate assignment folder <mark>via ENCS Website. The deadline is not respected would be discarded and no replacement submission will be allowed.</mark>

- Submit only **ONE version** of an assignment **for each team**. It is not an individual submission. If more than one version is submitted the last one, before the deadline date, will be graded and all others will be disregarded.

Evaluation Criteria of Assignment #3 (100 points)

Activities	Points
Exercise #1: 50 pts.	
Q1, Q2, Q3, Q4, Q5, Q6, Q7, Q8	50 pts.
Exercise #2: 50 pts.	
Q1, Q2, Q3, Q4, Q5, Q6, Q7, Q8	50 pts.