COEN 280   **Database Systems**   **Spring 2023**

Assignment 2 (75 pts)   **Due: 1ˢᵗ May (10 PM)**

This assignment will require queries to be written and implemented using **SQL on Oracle database,**

Question 1 (15 pts)

Define SQL tables using schemas of the relations below. These tables will be used in assignment 3 as well.

Use the Primary Keys (as underlined), Foreign Keys and other constraints as described.

Unless specified, you are free to choose the data types for the attributes, making them meaningful for the relations given.

Employee (EmpName, **SSN,** PhoneNo, Salary, *DNO,* SupervisorSSN)

DNO is the foreign key referencing the DeptNo in Department table.

Salary cannot be a negative number or a zero.

*SupervisorSS*N is the foreign key referencing the SSN in Employee table.

PhoneNo cannot be null and must be unique.

Department (DeptName, **DeptNo,** ManagerSSN)

ManagerSSN is the foreign key referencing the SSN in Employee table.

DeptLocations (**DeptNumber,location**)

*DeptNumbe*r is the foreign key referencing the DeptNo in Department table.

Project (ProjectName,**ProjNumber,**location,*DeptNum*)

DeptNum is the foreign key referencing the DeptNo in Department table.

Works_On(**EmpSSN,ProjNumber,**start_date,Hours)

Assume that an employee can work on multiple projects.

*EmpSS*N is the foreign key referencing the SSN in the Employee table.

P*rojNumber* is the foreign key referencing the ProjNumber in Project table.

Start_date should be of Date data type.

Question 2 (10 pts)

Insert at least 5 tuples into each of the tables you have defined.

This is a 10- point question that takes into account that you have inserted suitable data to show that your queries work correctly.

Note: Before you show the results of your query, do a Select * From the tables you will be using for your query. This shows the current state of the data in your input tables of your query.

Questions 3 to 7 carry 10 pts each.

Question 3

Show the name, phoneNo and Supervisor name of all employees who work for Department with DeptName,"R&D", sorted by EmpName.

Question 4

Show, for every project located in "Santa Clara", the project number, projectName, controlling Department Number, the name of the manager of that department and her/his phone number.

Question 5

Show the Department Number, department name, SSN and name of the manager of departments with more than 1 location.

Question 6

Show the project name, project number and location of the project which has the earliest start date in the **Works_On** table.

Question 7

Show the names of employee(s) with the most hours of project work (from WorksOn table). This should include the total number of hours an employee works on possibly multiple projects.

What to submit:

Create a **zip file** (assign2_*your lastname*) with files from steps 1 and 2 below:
1. Capture the session (queries and output) into a .log file for each question (include only the correct runs).
2. Include the source code (SQL code for your queries) for all your commands as .sql files.

Submit the zip file on Camino.