Homework Due 2017-10-25 by 11:55 pm

1 General Instructions

Please read these instructions carefully for each assignment, though they are generally do not vary between the assignments.

1. You need to follow carefully the specific instructions for the assignment as written below.
2. If you have questions concerning this homework email Guang Yang, mailto:gy552@nyu.edu. The course assistant is ready to help you understand the assignment but cannot modify the assignment in any way unless a change is posted on NYU Classes.

   If you still need to follow up and communicate with the course instructor please email Zvi Kedem *in the way specified in the course description.*

   Of course, Zvi is available to help you understand the course material as you need it, so you should meet him if you need help. Meeting in person is more effective for this than communicating by email.
3. Submit your homework in electronic form by uploading it to NYU Classes by the due date and time. Use only permitted software and format. E.g., if you are asked for a Visio diagram produced using Visio 2016, that is what you must submit.
4. If you submit a scanned, handwritten assignment, it has to be written neatly, that is, it should be neatly divided into lines just as a typeset document, etc.
5. Show *all* your applicable work (other than for reading assignments, if any).
6. If you want to refer to a specific line in this document, refer to the small numbers in the left margin.
7. Your solution should be uploaded as a single `zip` file. Assuming that your N-number is 12345678 and you are submitting your solution to Homework due 2034-02-15, your zip file should be named `20340215N12345678.zip`, of course you need to specify the correct date.
8. **Be sure to follow the academic integrity rules listed in the course description posted on NYU Classes**. The department and the GSAS treat academic integrity very seriously and I am required to report all possible violations.

2 Assignments

1. **Instructions**:

   First review the instruction about how to use Oracle that have been previously uploaded.

   Then look at the database depicted in Homework03Relation.pdf. It describes tables of **Person**, **Member**, **Manager**, **Coach**, **Course**, **Project**, **Prize**, **Equipment**, **Teaches**, **Borrows**. The database is very similar to the one in Homework 2.

   Please also read the script `N12345678_Homework03Script.sql` carefully. It defines and creates the sample database and has placeholders for putting in your solutions. You need to produce the queries listed in item 3 below; put your solutions in `N12345678_Homework03Script.sql` and rename the file as `yourNnumber_Homework03Script.sql`. You also need to change the name of the spool file from `N12345678_Homework03Spool.txt` to `yourNnumber_Homework03Spool.txt`, towards the end of the script file.

   For each query listed in item 3 below, *unless stated otherwise,*

   (a) *Explicitly* sort the results in ascending order

   (b) *Explicitly* remove duplicates from the answer

   Do not rely on the system to do it for you, even if it does so.

   So assuming you are going to select a and b, you should actually use:

   ```
   SELECT DISTINCT a, b
   ...
   ORDER BY a ASC, b ASC;
   ```

   Please use only those SQL operations that are listed in the class presentations.

   You may use intermediate tables while producing your answers. In order to run your queries without getting errors, please use TEMP1, TEMP2, . . . , TEMP20 as your intermediate table names. There is no assumption that you will need that many intermediate tables or even one. If you do use such tables, start use them in order, that is first TEMP1, then TEMP2, etc. The temporary tables will be explicitly DROPped them before your queries so that their old values, if any, will not create problems.

   After filling your solutions in `yourNnumber_Homework03Script.sql`, you need then run your script on Oracle and it will automatically save the spool records in a file called `yourNnumber_Homework03Spool.txt`. You need to hand in both `yourNnumber_Homework03Script.sql` and `yourNnumber_Homework03Spool.txt`, in a way stated in item 4 below.

2. **Files in this zip archive**:

   (a) The file you are reading.

   (b) `Homework03Relation.pdf`, an SQL Power Architect implementation of the database as described before.

(c) `N12345678_Homework03Script.sql`, a script that will produce the database in Oracle and also contains placeholder to put your solutions to item 3.

3. **Queries**: Produce queries for the following questions and put your answer into `Homework03Script.sql`.

   (a) Produce table Answer01 (Person_IDnumber, Person_Name) which contains all the persons who are both a manager and a member.

   (b) Produce table Answer02 (Person_Name) which contains all the coaches who don't have a supervisor.

   (c) Produce table Answer03 (Person_Name) which contains all the persons who don't teach any courses.

   (d) Produce table Answer04 (Person_IDnumber, Num_of_Courses) with the number of courses a person teaches.

   (e) Produce table Answer05 (Person_Name, Course_Name, Num_of_Students) which contains all the coaches and the name and maximum students of each the course that they teach.

   (f) Produce table Answer06 (Person_IDnumber, Prize_ID) which contains all the members with 'planA' membership type and the prizeID of the projects that they lead.

   (g) Assume that in Course, the minimum level of a course represents the required level for this course. Produce table Answer07 (Course_Name, Required_Level) which contains the required level for each course.

   (h) Produce table Answer08 (Person_Name) which contains all the persons who used at least one equipment with use amount over 10.

4. **What to Submit**: A file as described in item 7 of section 1 containing

   (a) `yourNnumber_Homework03Script.sql`

   (b) `yourNnumber_Homework03Spool.txt`