CS/DSA 4513 – Section 001 - Fall 2017 - Dr. Le Gruenwald

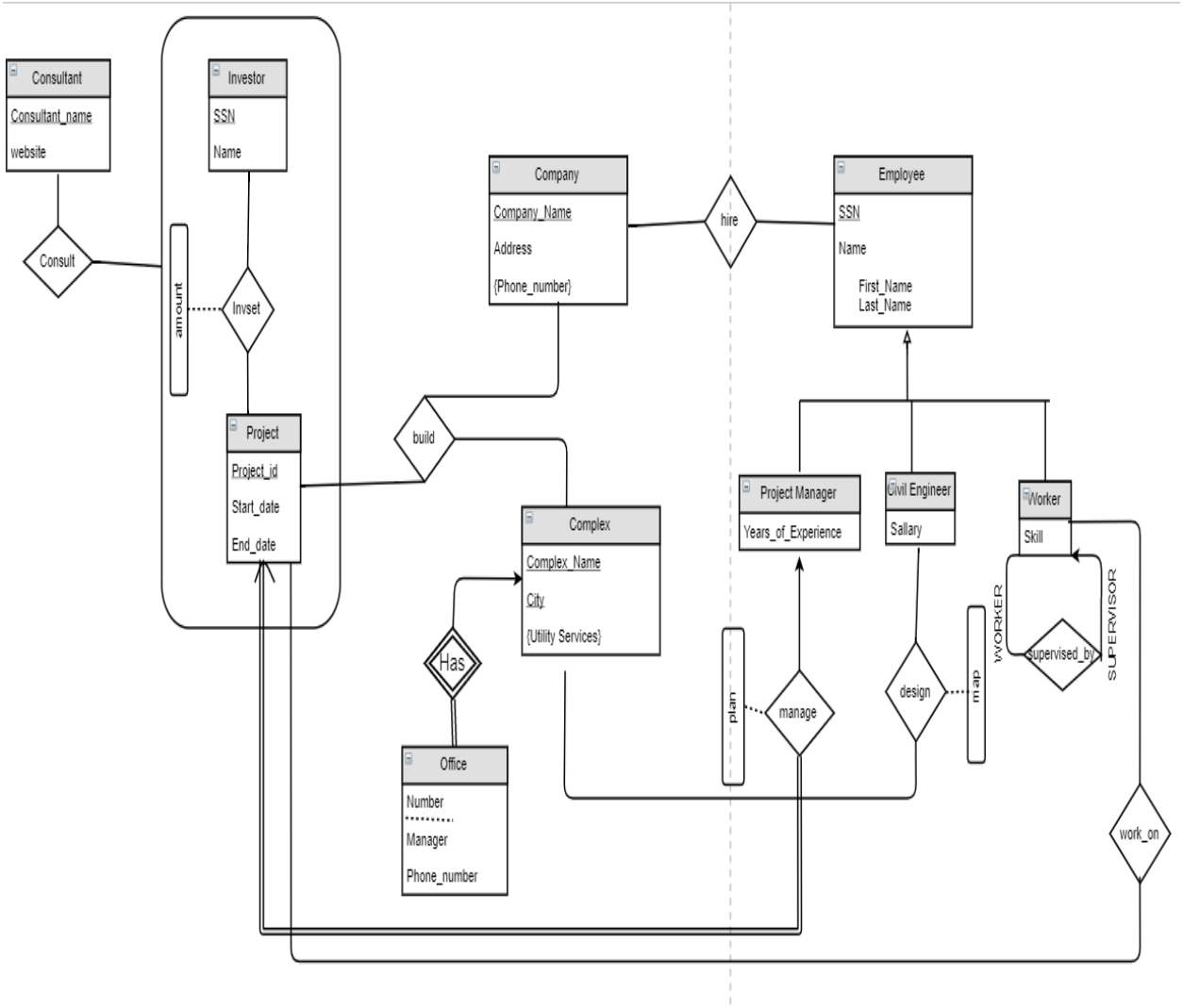
GROUP PROJECT 2

Assigned: 9/20/2017; Due: 10/02/2017 at 1:30 PM

(BOTH a Hard copy and Soft copy of your solutions need to be submitted; a hard copy is submitted in class AND a soft copy is submitted to the class website; late submission will not be accepted; read the "Group Project Grading Policy" posted on the class website).

Problem 1: You do not need ORACLE for this problem. Do the following:

a) Write a description for the attached ER diagram.
b) Convert the attached ER diagram to a Relational Database.
c) Draw a Schema Diagram for the relational database.



Problem 2: Given a relational database that consists of the following relations:

Author (aid: integer, aname: string, age: integer, number_of_publication:integer)
Book (btitle: string, category: string, release_year: integer, edition: integer, tid: integer)
Wrote (aid: integer, btitle: string)
Translator (tid: integer, tname: string, salary: real)
Customer (cid, cname, number of orders, level)
Purchased (cid,btitle)

Do the following using ORACLE SQL Developer 17.2:
a) Create the relations.
b) Populate the relations with SQL Insert statements using the given data posted on the class website and ORACLE SQL Developer 17.2.
c) Implement the following queries in SQL using ORACLE SQL Developer 17.2:

1. Display all the data you store in the database to verify that you have populated the relations correctly.
2. Find the levels and names of all customers who have purchased a book written by the author named 'Adams'.
3. Find the category and name of the oldest book that has more than 10 editions and was translated by 'Mark'.
4. Find the Authors' names of all books, each of which has more than 2 authors.
5. Find the names of the translators for whom the combined number of authors for all books that they translated is equal to or more than 2.
6. Find the categories which have exactly 2 translators.
7. Find the names and aids of all authors who wrote two books that are in the same category.
8. For each category, display the category and the average number of editions for that category.
9. Increase the salary of all translators who translated the book titled “Beautiful Mind” by 10%.
10. Delete all cutomers with the children level.

You will need to create a SQL file to store your SQL statements. This SQL file must have *sql* as its extension. You must also use ORACLE SQL Developer to save your output to a text file with *txt* as its extension.

Problem 3: Do the following using the ER diagram that you have developed for the application of your choice (Problem 2 in Group Project 1) and using ORACLE SQL Developer 17.2:

a) Create the relations.
b) Populate the relations using your own data.
c) Implement the SQL queries to display all the data you store in the database to verify that you have populated the relations correctly.
d) Give the English descriptions of six queries and implement them (one query must involve more than one relation; one query must involve an aggregation function; one query must involve a “group by”

clause; one query must involve a nested SQL query; one query must cause a violation of a primary key constraint; and one query must cause a violation of a foreign key constraint).

You will need to create a SQL file to store your SQL statements. This SQL file must have *sql* as its extension. You must also use ORACLE SQL Developer 4.2.0 to save your output to a text file with *txt* as its extension.

SUBMISSION:

- All your text and graphics solutions must be generated using computer. No hand-written descriptions or hand-drawn diagrams will be accepted.
- Submit your solutions for Problem 1 in ONE single PDF file to the class website using the file name convention GP2_Problem1_Group X where X is your group number.
- Submit your solutions for Problem 2 in TWO files: one SQL file (extension *sql*) containing all your DDL and DML SQL statements and one TEXT file (extension *txt*) containing the execution results of your SQL statements. Use the file name convention GP2_Problem2_Group X where X is your group number. Similarly are the submission requirements for Problem 3 (the English descriptions of the queries should be given as comments to the corresponding SQL queries in the SQL file). We will be using your submitted SQL files to test your solutions.
- Within 24 hours after the due time, you must submit the grades you give to your group members in a text file (file extention .txt; file name GP2_Group Grading_Your First name_Your Last name) to the Dropbox of Group Project 2 (do not use Email). In this file, include your name, your group number, the names of your group members and the grades you give to them. If you do not submit your member grades by that time, we will assume that you give equal points to all your group members (i.e. 10 points to each of your group members). **Read the "Group Project Grading Policy" posted on the class website.**

NOTES:

- Instructions for accessing Oracle SQL Developer 17.2 are available on the class website.
- If you have questions concerning your Oracle account, contact Mr. James M. Cassidy (jmcassidy@ou.edu).
- If you have questions concerning this homework or Oracle SQL Developer 17.2, see your TAs, Zahra Sadri and Venkat Tummala, during their office hours or email them at Zahra.sadri@ou.edu, or tummala.ramcharran@ou.edu.
- Start this project early to avoid last minute system problems.