

Database Systems Class Project

The project for this class, which is worth 40% of your final grade, will consist of three parts. Information about each part of the project will be posted below. The due date for each part of the project is Thursday, December 5 at the beginning of class. Projects may be submitted by Tuesday, December 10 at the beginning of class for a 10% penalty. I recommend that you submit each part of your project early in order to receive feedback before continuing on to the next part but that is not required. All project submissions will be considered final.

Academic Honesty: I expect you to complete this project individually. Collaboration with another student in this class or with a person not enrolled in this class will be considered cheating. In accordance with the CUNY academic integrity policy, if I suspect an incident of cheating, I will review the facts of the suspected violation with the student if feasible before reporting it to QC for potential academic or disciplinary sanctions.

Project Scenario:

A [chess](#) club has asked you to create a database for them to keep track of member, game, and tournament information.

Each member of the club has a member ID, first name, last name, numerical rank (starting at 1200 for new members), and join date. Each member may give one phone number and/or one email address to the club as well.

Each game takes place between one member playing as black and one member playing as white. Each game has a date and starting time (which can be combined into a single attribute) as well as a result. No club member will participate in more than one game at a time. Not every game is part of a tournament.

The club occasionally holds tournaments in which its members participate. Each tournament has a name uniquely identifying that tournament. The database must track which members are registered for each tournament. Members may register for multiple tournaments in advance. Each tournament consists of some number of games, which may be zero if the tournament hasn't started yet. Once each tournament has been completed, one participant is declared the winner.

Part 1: Create an ER-model and database schema for the scenario. You may hand this in via email or as a hard copy. Please remember to include your name on your work.

Part 2: On MySQL Workbench, set up the tables for the schema you created in part 1. Be sure to pay attention to data types, foreign keys, nullability, and default values. Hand in the data-definition language (the code used to create the tables) by hard copy or email.

Part 3: Generate and enter data into your database as described below. Then write and execute the following queries. Turn in the code for each query by email or by hard copy; hand in the results of each query by email in the form of an excel (preferred) or csv document. Please note that I will give partial credit for incomplete queries so turn in the code for your queries even if you couldn't run them.

Reminder: If you want to join two tables but the columns don't have the same names, you can use "table1 INNER JOIN table2 ON column1 = column2" to do the same thing as

NATURAL JOIN except both columns will appear in your result table.

Fill your database with the following data (you may include additional data if you choose):

- nine player records
- two completed tournaments each including at least four players and three rounds in which each player plays in each round
- two tournaments that haven't started yet with three and eight registrants respectively
- two games not part of any tournament

Run queries to display the following data:

- a) all the data in each table (one query per table)
- b) name, rank, and join date of each member in order from highest to lowest rank, with ties broken in order of longest to shortest tenure in the club
- c) name of each member that has not provided any contact information
- d) tournament name and winner's name for each tournament
- e) tournament name and number of registrants ranked at 1600 or over for each tournament
- f) average number of games per tournament with at least one game
- g) name, rank, total wins, total losses, and total draws for each player