Assignment 3
ENSF 608 Winter 2023
Department of Electrical and Software Engineering
Schulich School of Engineering

Due : March 19, 2023 (11:59 PM)

The objective of this assignment is to apply your understanding of SQL syntax and programming on a practical database application.

Submission: This is an individual assignment. Your submission must be your own original work. Please upload your solutions to the 'Assignment#3' D2L dropbox folder.
There are two components to this assignment. Your submission should be two files:
- A single .pdf file with your relational model (in .pdf format)
- A single .sql file with your query solutions (in .sql format)

Weighting: This assignment is out of 25 marks and is worth 12.5% of your overall grade.

Grading:
The relational data model should follow the formatting conventions outlined in the lecture notes. Your solution may be computer generated or hand drawn but must be legible.
All relations should have a name, primary key, attribute(s) as necessary, and foreign key(s) as necessary. Use arrows to represent foreign keys (referential integrity).
Your SQL solutions will be run through MySQL Workbench. All statements must compile and execute correctly to receive marks.
Marks will be deducted for incorrect or missing information. Solutions must be neat and organized.

Question Narrative

You will be working with a database that summarizes the results of the archery events at the Tokyo 2020 Olympic Games. This data is adapted from the official results provided by the IOC. Only the top archery performers are included in the database. For more information, see https://olympics.com/en/olympic-games/tokyo-2020.
There are two types of registered participants: athletes and coaches. Each is assigned an Olympic ID number. When registering, athletes provide their year of birth, sex, and the first games that they competed in. Coaches do not provide the same information but must complete an orientation workshop. Their workshop completion is recorded as "Complete" or "Pending".
There are five events scheduled across five different days. All female participants are registered to compete in the "Women" individual event, all male participants are registered to compete in the "Men" individual event. Some countries have also entered teams in the three different team events ("Men's Team", "Women's Team", "Mixed Team"). Teams vary from 3 to 6 members.
Medal results are included for all individual and team events. Participants may earn bronze, silver, or gold. An additional table is used to summarize the total archery medals won by each country since the modern version of the sport began in 1972.

A file called olympicarchery.sql has been provided for your use in this assignment. Execute this file in MySQL Workbench to build and populate the schema.

PART 1 (5 marks)
Based on the file provided, create the relational model for the competition schema. Include all primary keys and referential integrity constraints.

PART 2 (20 marks)
Create a new .sql script to write your solutions to the questions below. Each question contains 2 marks.

1. Write a query to list all coach names (first and last), name of the country that they represent and the numbers of gold, silver, bronze medals won by that country.
2. Write a query to list the names of all countries that have won at least three medals in archery overall until 2010.
3. Write a query to count how many coaches belong to each country. Order your list with alphabetical order of country names.
4. Write a query to list the Olympic ID number, name (first and last), and birth year of all athletes. Order your list from youngest to oldest.
5. Write a query to list all athlete names (first and last)
6. Write a query to retrieve the first games in which the individual bronze medalists competed.
7. Write a query to list the team IDs of all teams that have at least one member who is participating in the Olympic Games for the first time.
8. Write a query to list the names of all countries that have more than two athletes and more than one coach from the same country listed in the database.
9. Write a query to list the names (first and last) and countries of any coaches who have not yet completed their orientation workshop.
10. Write a query to retrieve a list of the countries that did not win any gold medals in this Olympics.