Student Name: _____

Student ID: _____

CSC3170 Introduction to Database Systems (2023-24 Term 2) Assignment 2

Submission deadline: before 10 March 2023 11:59 pm

General Guidelines:

- Please submit your solutions via Blackboard.
- Do not close your browser of app before you have successfully uploaded your files. It is your own responsibility of keeping your file integrity.
- If you have any questions about this assignment, contact TA at 1155209956@link.cuhk.edu.hk.

In this assignment, we consider a movie ranking system with three tables.

Movies (mID: integer, Name: string, Year: integer, Director: string, Country: string, Rating: integer, Genre: string, Gross: integer, Producer: string).
Rating ranges from 0-100.

Actors (mID: integer, Character: string, Actor: string, Age: integer).

Awards (mID: integer, Award: string, Result: string).
The values of Award could be Oscar, Golden Globe, etc. The values of Result are 'won' or 'nominated'.

Please write down the following queries in ***standard relational algebra taught during lecture***. Note that some of them may not be expressible in standard relational algebra, and you need to explain the reason.

1. (5 marks) Find directors who directed a comedy with rating higher than 90.

2. (5 marks) Find the gross for comedy movies which won Golden Globe.

3. (5 marks) Find actor names who act in largest number of movies.

4. (10 marks) Find the actor names who are under 30 years old and participated in movies directed by Steven Spielberg.

5. (15 marks) Find actor names who only act in high grossing (more than $30 million) movies.

6. (20 marks) Find the rating of movies which have won every award available.

7. (20 marks) Find the award category whose winners have the highest rating.

8. (20 marks) Find the highest gross for movies who won an Oscar.