**MISLG2: Data Analytics**
**Exam 1: Closed Internet, Open Book, Open Notes, Open Past Assignments (Time: 2 hours, 45 minutes)**
You are designing a database for modeling movies, their directors, theatres, and movie screenings with the following tables/entities: Director, Movie, Theatre, MovieScreening

The Director entity needs to have the following columns: DirID (Number), Name (Text), DateofBirth (Date).

The Movie entity needs to have the following columns: MovieID (Number), MovieName (Text), MovieType (Text - "Comedy", "Action", "Horror", etc.), GrossBudget (Currency), ReleaseDate (Date), and *a foreign key (you need to figure out what this foreign key is)*.

Theatre entity has the following columns: TheatreID (Number), Location (Text)

MovieScreening has the following columns: TheatreID (Number), MovieID (Number), Collections (Currency)

Note: Director and Movie tables should be related. Theatre and MovieScreening tables should be related. Movie and MovieScreening should be related

Unless otherwise noted, run each SQL query that you construct.

(1) Create a new database in Microsoft Access; name it as <<your-last-name.accdb>>. (suggested time: 2 minutes)
(2) In Microsoft Access, construct SQL queries to create the above four tables and run these queries. Queries need to include language for creating primary keys and foreign keys. Run these queries. (suggested time: 40 minutes)
(3) Write queries with an INSERT INTO statement that inserts two rows each into the four tables. Run these queries. (suggested time: 10 minutes)
(4) Write an INNER JOIN statement that lists each director and his/her movies with the following attributes: DirID, Name, DateofBirth, MovieName, GrossBudget, and ReleaseDate. (suggested time: 8 minutes)
(5) Add at least two more directors to the Director table and two more movies for each director to the Movie table (no need for SQL statements in this part; you can add these rows by directly typing into the table). (suggested time: 5 minutes)
(6) Add at least four more theatres and eight more rows to the MovieScreening table (no need for SQL statements in this part; you can add these rows by directly typing into the table). (suggested time: 15 minutes)
(7) Write a SQL query that finds the average gross budget across all movies. Run this query. (suggested time: 5 minutes)
(8) Write a SQL query that finds the average gross budget across movies by director id and groups them by director id. Run this query. (suggested time: 10 minutes)
(9) Write a SQL query that adds a column named Gender to the director table. Run this query. (suggested time: 5 minutes)
(10) Write a SQL query that deletes the Gender column form the table. Run this query. (suggested time: 5 minutes)
(11) Change the length of the MovieName field to 100 characters. Run this query. (suggested time: 5 minutes)
(12) Write a query that updates the name of the director to "Martin Scorsese" where the director id is 10. (suggested time: 5 minutes)
(13) Write an INNER JOIN statement that lists the following: DirID, Name, DateofBirth, MovieID, MovieName, GrossBudget, Location, Collections (suggested time: 5 minutes)
(14) Write a query that shows the MovieName, (GrossBudget-Collections) (suggested time: 10 minutes)
(15) Write a query that shows the DirID, Name, Total of Collections by director (suggested time: 10 minutes)
(16) Write a query that creates an index on the MovieName
(17) Upload your database to exam 1 dropbox in D2L. Note: The dropbox will close at 8:50 PM. Please make sure that you start uploading by 8:45 PM. (suggested time: 2 minutes)