Exercise 6
Date: 12/10/2020

Question1:
Consider the following schema:
Movie (mID, title, year, director)
Reviewer (rID, name)
Rating (rID, mID, stars, ratingDate)

1. Set the following Key Constraints
   a. mID is a key for Movie
   b. (title,year) is a key for Movie
   c. rID is a key for Reviewer
   d. (rID,mID,ratingDate) is a key for Rating but with null values allowed
   e. Reviewer.name may not be NULL
   f. Rating.stars may not be NULL
   g. Movie.year must be after 1900
   h. Rating.stars must be in{1,2, 3, 4,5}
   i. Rating.ratingDate must be after 2000
   j. "Steven Spielberg" movies must be before 1990 and "James Cameron" movies must be after 1990
   k. Add Rating.rID and Rating.mID as foreign key
2. Insert 5 rows in each table
3. Try to insert into reviewer able with null value for name
4. Try to insert into rating table with stars value as null
5. Try to insert into rating table with stars greater than 5
6. Try to insert into rating table with ratingdate less than year 2000
7. Try to insert into movies table with director name James Cameron and year less than year 1990
8. Try to insert into rating table with rID not in review table
9. Try to insert into rating table with mID not in Movie table
10. Drop the foreign key constraint on Rating.rID and Rating.mID

Question2:
Consider the following schema:
Book (**BID**, title, Publisher)
Book_Author (**AID**, BID, Author_Name)
Borrower (**CardNo**, Name, Address, Phone)
Book_Loans(**TransID**, BID, CardNo, Date_out, Due_date)

1. Create tables with underlined attributes as primary key following referential integrity constraints
   - BOOK_Author.BID as foreign key
   - Use commands to ensure the foreign key is set
2. Insert into BOOK and Book_Author tables with 5 records
3. Try to update the Book.BID for a particular book
4. Drop the foreign key constraint on Book_Author.BID foreign key
5. Alter the table Book_Author with foreign Key constraint with update cascade
6. Now repeat step 3 show the entries of Book table and Book_author table
7. Try to delete particular book.BID
8. Alter the table Book_Author by adding foreign Key constraint with delete cascade
9. Now repeat step 7 show the entries of Book table and Book_author table
10. Add Book_Loans.BID, Book_Loans.CardNo as foreign Key with Restricted Constraint for update and Set Null for delete
11. Insert some records into book_loan and borrower table
12. Delete some records from borrower table
    - CardNo available in Book_Loans
    - CardNo not available in Book_Loans
13. Update some records in Book table
    - With BID available in Book_Author and Book_Loans
    - With BID not available in Book_Author and Book_Loans

Question 3:
Convert ER-diagram into relational database and to create the table for the relation by properly specifying the primary keys and foreign keys.