Question 1 Restaurant Database

Design a database for maintaining book reviews. The database should contain details about each book: name (unique), author, genre, publisher and year. The database should also capture the details of each reader: name (unique), address and age. The reader can rate any book on a scale of 1-10 and provide comments (text). A reader can review a particular book more than once, i.e. on different dates.

Part A:

1.Draw an ER diagram for the system. Make sure to indicate primary keys, cardinality constraints, weak entities (if any) and any constraints. List any assumptions you make in the process. Note that you may need to define more attributes in order to be able to represent the given requirements.

2. Based on the ER diagram, design a well normalised (3NF) relational database to store the information. Make sure that the translation captures key constraints (primary keys, foreign keys, etc). You must provide the relational schema for this database and then implement it in a DBMS such as MySQL.

Part B:

Write SQL queries to implement the following functionalities.

3. Find the number of books by genre.
4. Find the top-rated books. Top rated books are defined as the ones with the highest average rating.
5. List details of each reader, along with the number of reviews that customer has submitted.
6. For each book, list its name, author, publisher, year, along with details of each review. Review details should include: the name of the customer who submitted the review, the date of the review, and the rating given.
7. List the top ten books by genre that have a rating of 8 or more, published between 2018 and 2019, with at least 10 reviews.

Deliverables:

- ERD and relational database schema should be submitted in a PDF or Word document.
- You must submit a backup of your database (schema and data) in a .sql file, named db.sql. Populate the database appropriately to show the queries you have implemented.
- SQL queries must be submitted in a separate .sql file, named queries.sql.
- All files must be zipped into a single file for submission to Moodle. The zip file must contain your name and student id.

To achieve passing grade, students must complete both parts of the assignment.