Project Title: Movie Recommendation System Database.

Objective: To design and implement a database system that supports a movie recommendation system, including movies, users, ratings, and recommendations.

Project Description:

The Movie Recommendation System Database project aims to create a comprehensive database to manage and recommend movies based on user preferences and ratings. This system will store information about movies, users, ratings given by users, and generate recommendations based on user behavior and preferences.

Entities and Relationships:

1. **Movies:**
    - **Attributes:** MovieID **(Primary Key**), Title, Genre, ReleaseDate, Director, Duration.
    - **Description:** This table stores information about each movie.
2. **Users:**
    - **Attributes:** UserID (**Primary Key**), UserName, Email, DateOfBirth, Gender.
    - **Description:** This table contains information about the users of the system.
3. **Ratings:**
    - **Attributes:** RatingID (**Primary Key**), UserID (**Foreign Key**), MovieID (**Foreign Key**), Rating, RatingDate.
    - **Description:** This table records the ratings given by users to movies.
4. **Recommendations:**
    - **Attributes:** RecommendationID **(Primary Key**), UserID **(Foreign Key**), MovieID (**Foreign Key**), RecommendationDate.
    - **Description:** This table stores movie recommendations for users.

SQL Queries:

1. **Retrieve movie title with the given specific genre:**
   Select movieid,title from movies where genre Between 'Sci-Fi' and 'Sci-Fi';

moveid	title
1	Koi…Mil Gaya
3	Krrish
7	Ra.One

2. **Retrieving the average ratings of all the movies:**

```
with avg_rate AS (
select movieid, AVG(rating) as avg_rating from ratings group by movieid
)
Select m.movieid,m.title,a.avg_rating
from movies m
joins
avg_rate a on m.movieid=a.movieid;
```

movieid	title	avg_rating
3	Krrish	2.6
5	Simba	3.7
4	Welcome	3.0
6	Golmaal	3.0
2	Article 15	5.0
7	Ra.One	2.5
1	Koi…Mil Gaya	4.2

3. **Retrieving data using Window function:**

```
Select row_number() over(partition by genre),title,genre from movies;
```

row_number	title	genre
1	Simba	Action
1	Welcome	Comedy
2	Golmaal	Comedy
1	Article 15	Crime
1	Ra.One	Sci-Fi
2	Koi…Mil Gaya	Sci-Fi
3	Krrish	Sci-Fi

Conclusion:

This project provided hands-on experience in database design, SQL programming, and data management. It enhanced my understanding of relational database concepts and prepared me for real-world database development and administration tasks. The use of CTEs and WHERE clauses in complex queries significantly improved my ability to handle intricate data retrieval and manipulation scenarios.