



### Relational Schema:

**User**(UserID:INT [PK], Username:VARCHAR(40), Email:VARCHAR(255), Password:VARCHAR(40), Location:VARCHAR(100))

**Game**(GameID:INT [PK], GameName:VARCHAR(225), YearReleased:INT, Price:FLOAT, Metacritic:INT)

**Review**(ReviewID:INT [PK], UserID:INT [FK to User.UserID], GameID:INT [FK to Game.GameID], Rating:INT, ReviewDate:INT)

**Purchase**(PurchaseID:INT [PK], UserID:INT [FK to User.UserID], GameID:INT [FK to Game.GameID], YearPurchased:INT, PricePaid:FLOAT)

**Recommendation**(RecommendationID:INT [PK], UserID:INT [FK to User.UserID], GameID:INT [FK to Game.GameID], RecommendationDate:INT)

**GameGenre**(GameID:INT [PK], GenreID:INT, GenreName:VARCHAR(225))

### Assumptions

- User**: This represents a person using the application. Each user has unique info and preferences.
- Game**: This represents a game available in the application. Each game has unique details and pricing information.
- Recommendation**: This represents a recommendation made to a user based on their preferences and past interactions.
- Purchase**: This represents a game purchase made by a user.
- GameGenre**: This represents the genre of a game, which helps in categorizing games and making recommendations.
- Review**: Represents user reviews for games, contributing to recommendations based on user ratings.

### --Explanations--

**User and Game as separate entities**: These represent fundamental entities with their own distinct attributes and relationships, which justify modeling them separately.

**Purchase**: Modeled as a separate entity to capture the relationship between users and games with additional attributes such as purchase date and price paid.

**Recommendation**: Separate entity to track game recommendations to users, allowing for detailed tracking and timestamping.

**Genre and GameGenre**: Since one game can have multiple genres, it is useful to have GameGenre as a separate entity. This is a many-to-many relationship.

**Review**: Separate entity to capture user reviews for games, including the review text, rating, and date.

### Relationships

- User-Game** (Many-to-Many through Purchase)  
- A user can purchase multiple games, and a game can be purchased by multiple users.
- User-Game** (Many-to-Many through Recommendation)  
- A user can receive multiple game recommendations, and a game can be recommended to multiple users.
- Game-Genre** (Many-to-Many through GameGenre)  
- A game can belong to multiple genres, and a genre can include multiple games.
- User-Game** (Many-to-Many through Review)  
- A user can review multiple games, and a game can be reviewed by multiple users.
- User-Review** (One-to-Many through UserID)  
- One user can have many reviews, but one particular review only has one user.
- User-Recommendation** (One-to-Many through UserID)  
- One user can have many recommendations, but one particular recommendation only has one user.