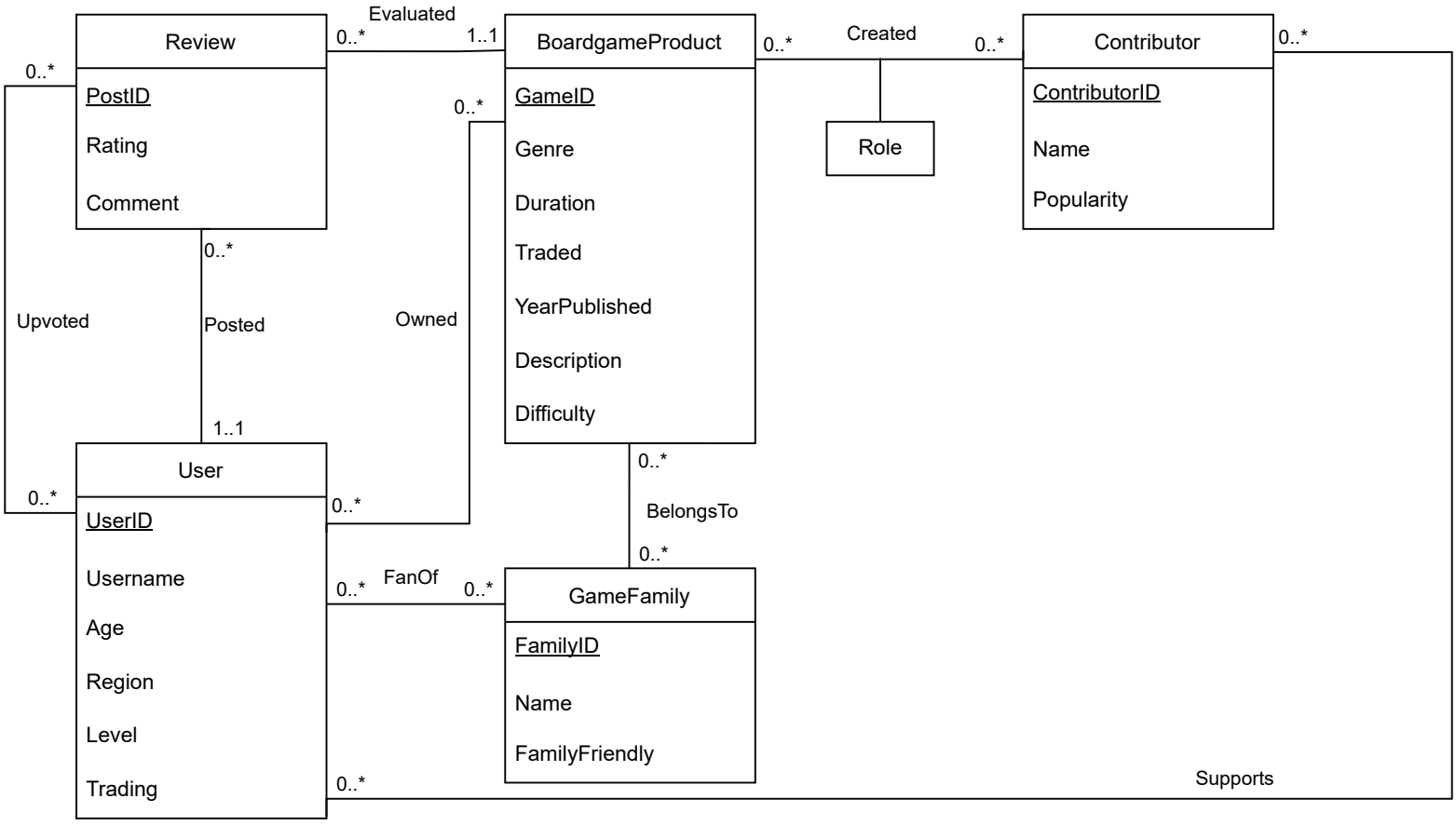
Ace_DB: Project Track 1 - Stage 2

UML Diagram



We initially planned to use real data for all the entities in stage1. As we further developed this project, we found it would be helpful to generate some data regarding users, games and those involved in their creation.

We plan to generate some data based on the existing dataset(s):

- in the User table, Age, Region, Level and Trading will be generated;
- in the GameFamily table, the data for FamilyFriendly will be generated;
- in the Contributor table, the data for Popularity will be generated based on our existing data.

Relational Schema

Legend: Blue - Relational Table; Black - Entity Table

Review(PostID: INT [PK], UserID:INT [FK to User.UserID], GameID:INT [FK to BoardgameProduct.gameID], Rating: FLOAT, Comment: VARCHAR(1000))

Upvoted(PostID: INT [PK][FK to Review.PostID], UserID:INT [PK][FK to User.UserID])

User(UserID: INT [PK], Username: VARCHAR(25), Age: INT, Region: VARCHAR(30), Level: INT, Traded: INT)

Owned(GameID:INT [PK][FK to BoardgameProduct.GameID], UserID:INT [PK][FK to User.UserID])

FanOf(UserID:INT [PK][FK to User.UserID], FamilyID:INT [PK][FK to GameFamily.FamilyID])

Supports(UserID:INT [PK][FK to User.UserID], ContributorID:INT [PK][FK to Contributor.ContributorID])

BoardgameProduct(GameID:INT [PK], Genre:VARCHAR[25], Duration:INT, Trading:INT, Difficulty:INT, YearPublished:INT)

Contributor(ContributorID:INT [PK], Name:VARCHAR(255), Popularity:INT)

GameFamily(FamilyID:INT [PK], Name:VARCHAR(255), FamilyFriendly:INT)

BelongsTo(FamilyID:INT [PK][FK to GameFamily.FamilyID], GameID:INT [PK][FK to BoardgameProduct.GameID])

Created(GameID:INT [PK][FK to BoardgameProduct.GameID], ContributorID:INT [PK][FK to Contributor.ContributorID], Role: VARCHAR(30))

Note: In the relationship tables specified (blue), foreign keys combined create a single primary key. The format used is to adhere to the relational schema syntax specified in the assignment's rubric.

Descriptions and Assumptions

We have five entities: Review, BoardgameProduct, Contributor, User and GameFamily. The descriptions for each entity are as below:

Review: We collected three attributes in this entity. Users post the reviews on the platform. Each review posted by one user corresponds to a unique PostID. Each review includes one rating and one comment for a specific game.

BoardgameProduct: This entity contains all board games and their other features on the platform. Each game is identified uniquely by GameID. Duration means the estimated time for a certain game. Traded means the number of trades for the game, which indicates how popular the game is. In addition, we have Genre, published year, description and the degree of difficulty for the game in the entity. These attributes will help users know more about a boardgame before their potential purchase(s).

Contributor: The contributor(s) means the important people who contribute to a certain game. For example, designer(s) and the publisher of the game. Each contributor is identified by a unique ContributorID. The popularity means how popular this contributor is, which is represented by a score number. These information will help our website application's users have a clear idea about the produce background of their target game products.

User: This entity includes user information. A unique UserID identifies each user. Other features--Username, Age, Region, Level, and Trading--are also recorded in this entity. Level reflects the experience score of the user, partly based on their engagement with the boardgamegeek website. Trading means the number of trades in games involved by the user. This data, combined, can help our website application users acquire necessary information to evaluate the other players' reviews.

GameFamily: Each board game can belong to zero or a certain number of families based on their features. Each family has a unique FamilyID. FamilyFriendly is an integer between 1-5, with 1 indicating the least family-friendly level. These GameFamily's information will help the website application users get more clear about their target game products.

In addition, our assumptions for the relationships and cardinalities are as below:

1. A user can post zero or many reviews. A review can be posted by exactly one user.
2. A user can upvote zero or many reviews. A review can be upvoted by zero or many users.
3. A user can own zero or many games. A game can be owned by zero or many users.
4. A review can evaluate exactly one game. A game can be evaluated by zero or a number of reviews.
5. A user can be a fan of zero or a number of families and contributors. A game family or a contributor can have zero or a number of fans.
6. A game can belong to zero or a number of families. A game family can contain zero or a number of games.
7. A game can be created by zero or a number of contributors. A contributor can create zero or a number of games in different roles.
8. Each user can support zero or many game contributors. One contributor can be supported by zero or many users.