Introduction to Database Systems

PixelVault

ER Diagram Report

Team Number: 4

Team Members:

Tarek Osama 1220177

Omar Ahmed Reda 1220130

Mostafa Tamer 1220202

Mark Maged 1220191

Contact info:

Tarekelashmawy28@gmail.com

Mark.labib05@eng-st.cu.edu.eg

Mostafa.sayed04@eng-st.cu.edu.eg

Omar.kader04@eng-st.cu.edu.eg

Problem Definition:

Every gamer worldwide is struggling to search for suitable video game with reasonable price, wanted genre, with compatible console and critically acclaimed, also being able to manage his own profile to track achievements, playing progress, and gaming tournaments with recommendations has been extremely rare. Moreover, game publishers have lately descended due to under coverage and insufficient availability of data about the market trends, stores partnerships, and utilization analysis by knowing the development tools like game engines that used in successful games with certain genres. Finally, each gaming store wants to manage its partnerships and inventory by tracking the market movements and trends to maximize profits and decide the promotional offers.

By using PixelVault, every targeted user can access their desired data and find all they want in only one place in shortest time possible, with solid authorization to prevent fraud or any misleading information and to keep all the data updated in real-time.

System Users and their Privileges:

- Gamers: Each gamer will have dedicated form to modify his profile and have insights about available games with needed data
- Join in Tournaments
- Rate his played games
- Filter games based on various factors
- Search for games in stores
- Get recommendations based on his profile and activity

- Game Publishers: Each game publisher has his own dedicated form to modify his own data and published portfolio of games
- Monetization options and manage partnerships with gaming stores
- Access analytics about published games, downloads, and user ratings
- Market insights about certain games' genres and popularity metrics to decide how the next game will be developed
- Utilization Analysis: decide the platform and game engine used in development associated with popular favorable genres to ensure maximum profits and downloads

- Gaming Stores: Every store has its own dedicated form to manage his own profile with much more options
- Partnerships management with game publishers
- Promotions and offers management throughout market trends and available library
- Access insights about real-time data and trends to optimize inventory and marketing strategies
- Manage Inventory by adding, removing, updating games details

Entity Types Description:

Entities:

1. Gamers: They are the gamers who can edit their gaming profile, which they can add, delete, change gaming status and give personal ratings, and participate in tournaments.
2. Game Publishers: They are responsible for developing video games with selected genre and game engine, partnering with gaming stores
3. Reviewer: They are responsible for reviewing published video games with single rating, and rewarding the gaming awards
4. Console Manufacturer: the companies that manufacture different kinds and series of console platforms
5. Game Engine: the used tools in developing each video game, with selected programming languages and platform
6. Consoles: they are the main platforms that video games are played on
7. Awards: they are annual awards given by game reviewers to selected games of certain genres
8. Tournament: tournaments are organized by gaming stores with has specified capacity and begin date which gamers can join to boost their rankings
9. Store: the main vendor of video games to gamers and partnering with game publishers, also organizing gaming tournaments.
10. Game: the main entity of the database which played by gamers, published by game publishers, sold by gaming stores, played on certain consoles, reviewed and awarded by game reviewers.

Relationships Description:

1) Plays: Relationship between games and gamers, it shows the purchased and active games in each gamer profile with data shown like completion status, user rating, and difficulty level

2) Inventory: relationship between gaming store and games, it shows the link between store and its inventory of games with needed data like selling price

3) Participate: relationships between gamers and tournaments, it shows the data of participation of each gamer in gaming tournaments with showing the finished ranking of gamers.

4) Develop: relationship between manufacturer and console, it shows the different versions and kinds of consoles when and what manufacturer developed it.

5) On: relationship between games and consoles, it shows what platforms (consoles) that game is compatible with.

6) Use: relationship between game engine and games, it shows what game engines that are being used by each game in its development.

7) Partner: relationship between gaming store and game publishers which game publishers supply each store with gaming inventory

8) Organize: relationship between gaming stores and tournaments, it shows that gaming stores are responsible for organizing tournaments and selecting its data (begin Date, capacity..etc)

9) Reward: relationship between game reviewer and awards, it shows that game reviewers are responsible for giving awards to selected games

10) Publish: relationship between games and game publishers, it shows that game publishers are responsible for making the games and supplying its data (name, genre..etc)

11) Rate: relationship between game reviewers and games, it shows that game reviewers are responsible for giving games main ratings.
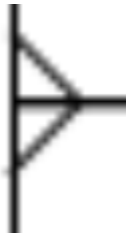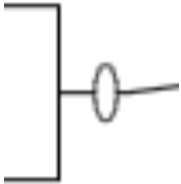
ER Diagram (Without entities attributes):
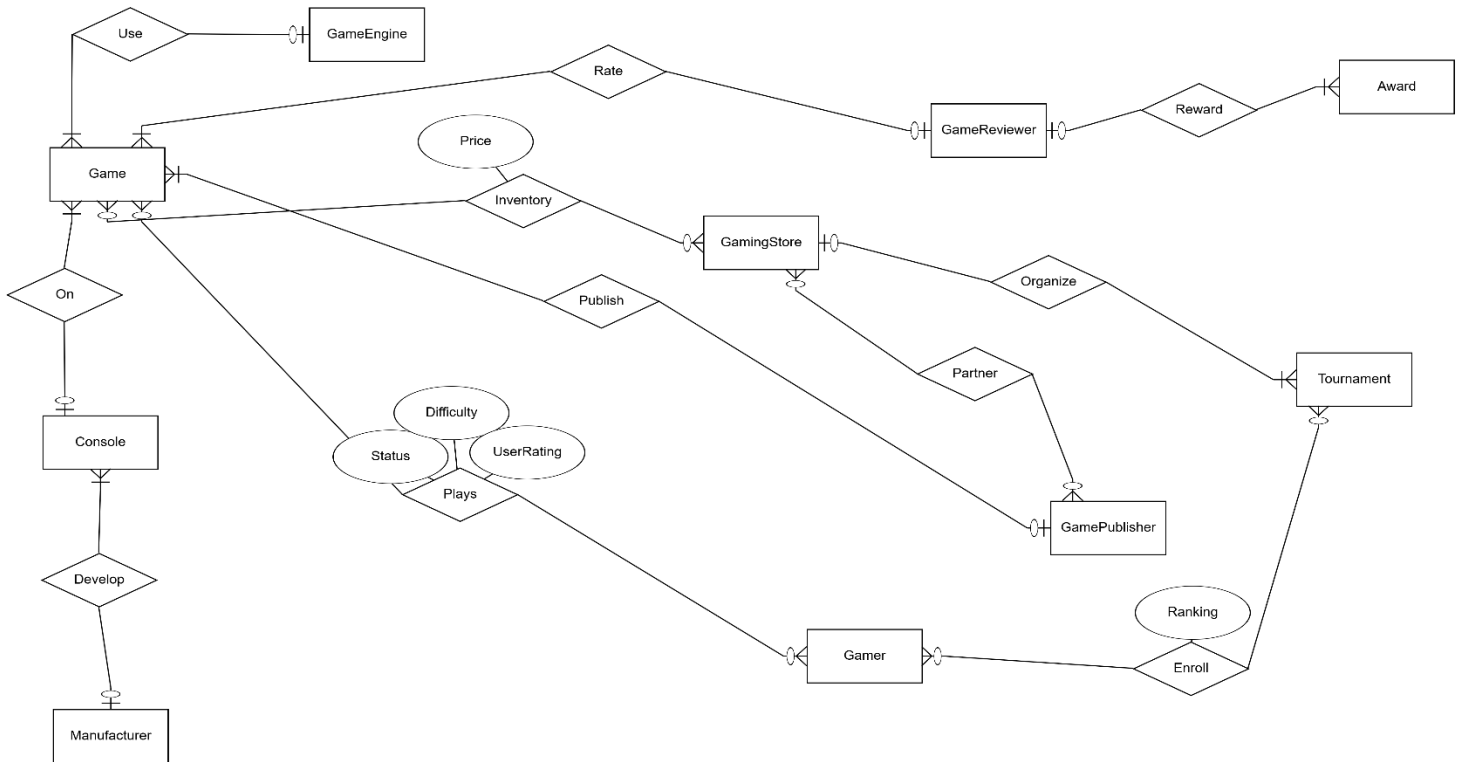
Complete ER Diagram:
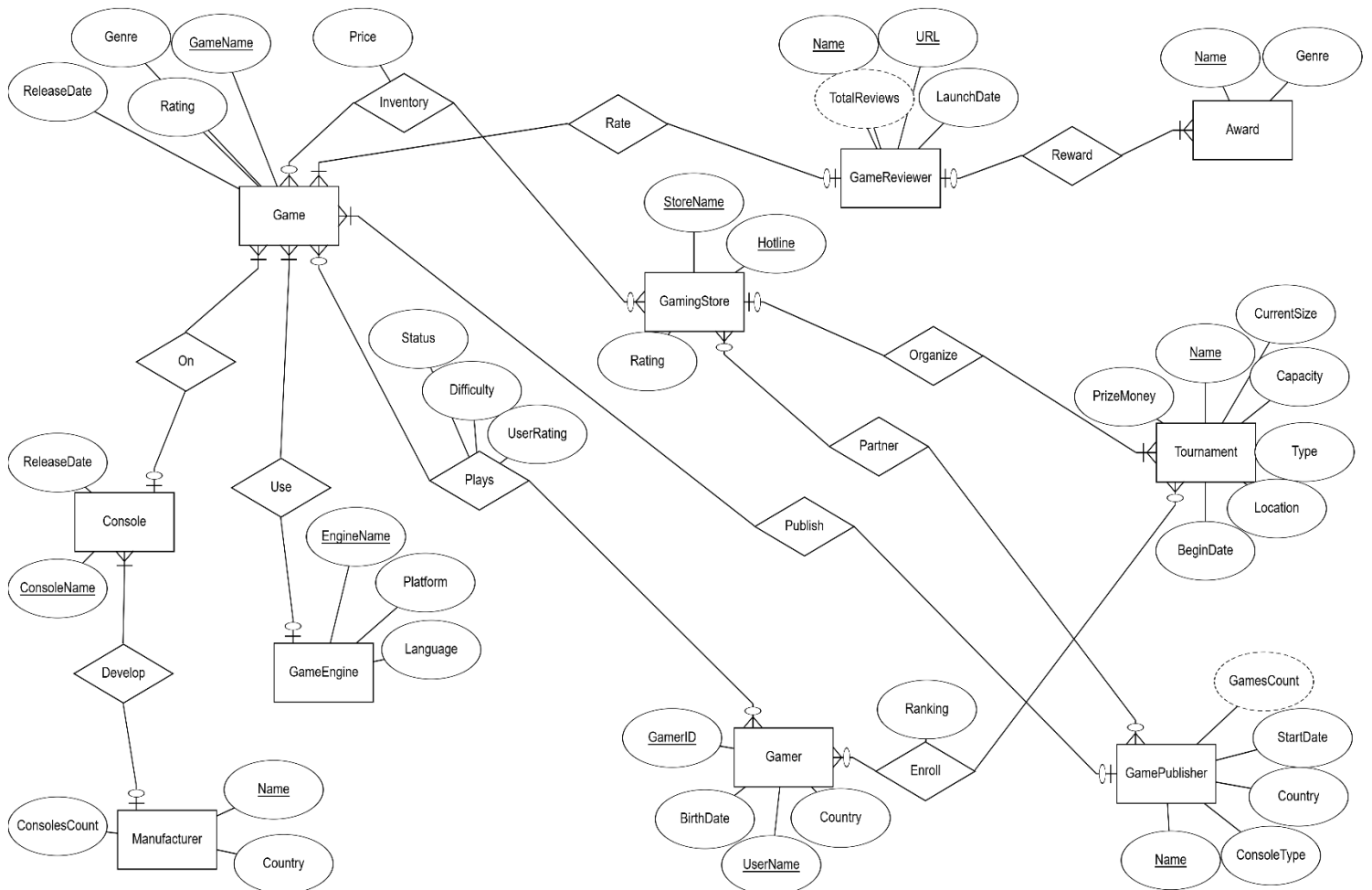
Key:

Many

One

Optional Existence

Mandatory Existence