DBMS Project Report on Game Database Management System

GZone

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Introduction

GZone is a social platform for the gaming community which allows users to purchase games, play games online and connect to each other via streaming. This system is meant to resemble the social gaming platform Steam. The fundamental idea is to have a database where several users can make clans/channels and can search and purchase games, along with giving reviews and ratings for the game. Moreover, the users using the system can also participate in championships, workshops and some training programs and the winners will be awarded on the basis of their gameplay.

The social aspect of the system will even allow users to play games with one another and allow them to add other users as ‘friends’ on the system and see the ‘friends’ that have a certain game. The social platform of the system also will allow the users to livestream their gameplay so that their viewers can watch and comment on the streams and the content created.

Furthermore, when considering the games specifically, the gaming products on the system will be categorized according to various aspects. These aspects include release, popularity, etc. These categorizations will hence make the games easier to search as filters can be applied. This will also help with sorting the games and how they will be displayed.

The developers can also publish games developed by them on this platform and can interact with the players via comments and get direct feedback from them.

Problem Statement

Gzone provides a common platform for both users and developers. This can benefit users who want to buy new games digitally and want to livestream and participate in various tournaments, workshops and training programs. For developers, those who want to release their games worldwide can put up their work/games on this platform.

Functional Requirements

- Users must be registered on the GZone database with their username, unique user id and password to be able to stream content.
- Customers must be registered in the database with their unique customer id, customer name and phone number to buy games in Gzone.
- Users and customers must have a minimum balance in their wallet to stream and buy games in GZone.
- Users and customers must add their bank account details and card number to add money in the wallet.
- After registration in the GZone, users can access n no. of games but can stream one at a time.
- Customers must qualify certain software and hardware requirements of the game to be able to install and run on their personal computers.
- Every game must have a Developer with a unique developer id.
- Every game must have a specific discount period with starting and ending date.
- Games listed on the trending chart in a particular year must be based on their country wise rank and world rank.
- Every clan must be associated with one game.

Entities, Relationships and Attributes

1. GZone

a. Game_id: Each game has unique ID given in the GZone Platform which is assigned while a new game is registered.

2. Games

a. Game_name: Each game has a name given by the developer.
b. Size: Each game has a particular size .
c. Release_date: Each game has a release date which is the date when it was released.
d. Price: Each game has some price which the customer will have to pay while buying.

3. Customers

a. Customer_ID : While creating the account, the system provides an identity number to each customer.
b. Customer_name: Customer name is the name entered by the customer while registering in the database.
c. Phone_no: It is the 10 digit integer value added by the customer as their contact number.

4. Hardware

a. Req_graphics: Each hardware has a graphic card.
b. Min_RAM: Each hardware has some minimum amount of RAM required.
c. Req_RAM: Each hardware has a requirement of RAM.

d. Min_graphics: Each hardware has a graphic card of some minimum specifications.
e. OS: Each hardware has a requirement of an Operating System.

5. Software

a. Software_name: Each software has a name.
b. Software_size: Each software has some size which it occupies.
c. Price: Each software has some price.

6. Clan

a. Clan_name: It is the name of the team in a particular gaming community.
b. No._of_members: It is the number of members in a particular team.

7. Developer

a. Developer_id : It is the unique id (integer) given to a developer.
b. Developer_name: It is the name of the developer entered by the GZone.
c. Developer_country: It gives the details about the county from which game developers belongs.

8. Discount

a. Starting_date: Each game has a starting date on which the discount offer starts for GZone's customers.
b. Ending_date: Each game has a ending date on which the discount offer ends

c. Price: Price is the actual price assigned to a game by developer
d. Discounted_price : It is the discounted price offered by the GZone in Discount section.

9.Trending Games

a. Country_wise_rank: It is the trending rank of a game in a particular country.
b. Worldwide_rank: It is the trending rank of a game in a particular country.
c. Year: It is the year in which game has been ranked.
d. Country: It is the country in which game is ranked in trending charts.

10. Winner

a. Tournament_name**:** It is the name of the tournament of a game.
b. Team/Player_name: It is the name of the team player of a game.
c. Country: It is the name of the team country.
d. Prize: It is the amount of money won by the Team.

11. User

a. User_id: Each user has some ID assigned to them while creating an account in GZone.
b. Hours_played: Each user has a record of how many hours the user has played.
c. Password: Each user has some password which will be necessary to enter while logging in to their account.
d. User_name: Each user has a user name associated to them.

e. No._of_games_owned: Each user has some number of games owned by them which they buy.

12. Workshop

a. Date: It is the Date in which the workshop is conducted.
b. Workshop_Topic_name: It is the topic of the workshop conducted by the user.

13. Training

a. Game_name : It is the name of the game on which a training session is conducted.
b. No._of_users: It is the number of users attending the workshop.
c. Fees: It is the amount of fees for the training session.

14. Feedback

a. Feedback_no.: Every user has a unique number which generates when they enter a feedback
b. Rating: No. of stars users give to a particular game.
c. revReviews: Thoughts of user for a particular game of GZone.

15.Wallet

a. Card_No.: User has a unique card number.
b. Bank: It is the name of the bank.
c. Money**:** It is the amount of money in a wallet.

16.Streaming:

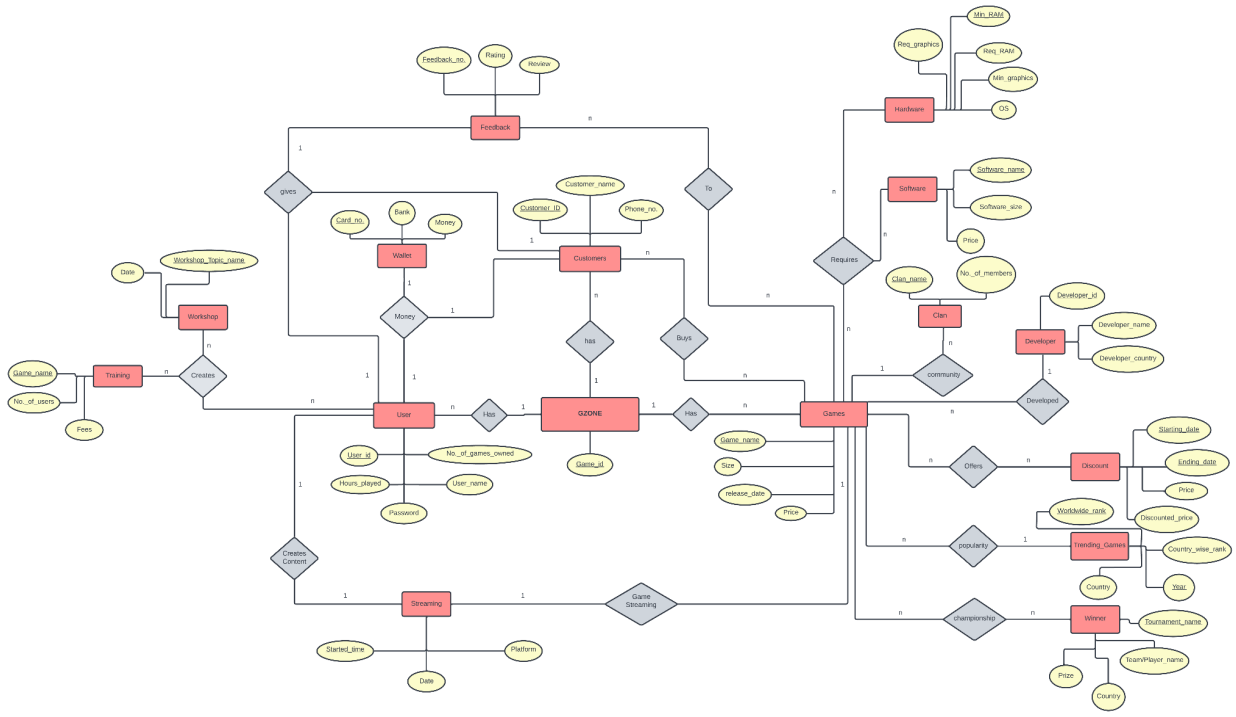
a. Started_time: It is the time when users start streaming

b. Date: It is the date when the user streams the content.
c. Platform: It is the name of the platform where users stream the game like youtube.

Entities	**Relationship**	**Entities**	**Degree of Relationship**
GZONE	GZone is a gaming platform having n number of users.	User	(1:N)
GZONE	GZone has n number of games.	Games	(1:N)
GZONE	GZone has n number of game buyers/customers.	Customers	(1:N)
Games	Every game in the championships has n number of winners.	Winner	(N:N)
Games	There can be n number of trending games.	Trending_Games	(N:N)
Games	Every game has discount offers for every customers.	Discount	(N:N)
Games	Every game has 1 developer.	Developer	(N:1)
Games	Each game has a clan.	Clan	(1:N)
Games	Every game has n number of softwares.	Software	(N:N)
Games	Every game has n number of hardwares.	Hardware	(N:N)
Games	Every game has n number of	Customer	(N:N)

	customers.		
Games	Every game will get n number of feedback.	Feedback	(N:N)
Games	A person can stream only 1 game at a time.	Streaming	(1:1)
Customers	Each customer can give 1 feedback.	Feedback	(1:1)
Customers	Each customer has a wallet.	Wallet	(1:1)
User	n number of users can attend n number of workshops.	Workshop	(N:N)
User	1 user can stream 1 game at a time.	Streaming	(1:1)
User	n number of users can attend n number of trainings.:	Training	(N:N)
User	Each user has a wallet.	Wallet	(1:1)
User	Each user can give 1 feedback.	Feedback	(1:1)
User	A user becomes a customer when they buy a game.	Customer	(1:1)

Entity-Relationship (ER) diagram



Link:

https://lucid.app/lucidchart/83ff6432-fe3e-4ea4-afb7-2b5e60a711fb/edit?viewport_loc=-1764%2C-772%2C4033%2C1685%2C0_0&invitationId=inv_a06234c9-2a7f-4c31-ac57-f759afd2fecf#

Relational Schema

- **Gzone(**Game_id**)**
- **user(**user_id , ,Hours_played , User_name , No._of_games_owned **, Game_id)**
- **Workshop(** User_id , Workshop_topic_name , Date**)**
- **Training(** Game_name , No._of_users , Fees**)**
- **Creates(Creates_id , User_id , Workshop_topic_name , Game_name)**
- **Games(**Game_name, Size , release_date , Price, **Game_id , Developer_id , Worldwide_rank , Year)**
- **Winner(**Tournament_name , Team/Player_name, Prize , Country**)**
- **championship(**championship_id , **Game_name , Tournament_name**)
- **Trending_Games**(Worldwide_rank ,Year , Country_wise_rank, Country)
- **Offers(**Offers_id **, Game_name , Starting_date , Ending_date)**
- **Discount(** Game_name , Starting_date , Ending_date , Price , Discounted_price**)**

- **Developer(**Developer_id , Developer_name , Developer_country**)**
- **Clan(**Clan_name, No_of_members, **Game_name**)
- **Hardware(**Min_RAM , Game_name , Req_graphics, Req_RAM, Min_graphics , OS **)**
- **Software**(Game_name , Software_name , Software_size , Price)
- **Requires**(Requires_id , **Min_RAM , Game_name , Software_name**)
- **Feedback**(Feedback_no., Rating, Review, **User_id)**
- **Wallet(**Card_no., Bank, Money, **User_id)**
- **Streaming(**User_id, Started_time, Platform, Date, FK-User_id**)**
- **Customers(**Customer-id, Customer_name, Phone_no, **Game_name)**