

Database Conceptual Design

Ray Dela Cruz

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CSC 600

Prof Ortiz

Functional Requirements

1. User
 - A. User can create a User Profile
 - B. User will have a unique email.
 - C. User can create a password.
 - D. User will have a role (Player, Moderator, Parent)
 - E. User will have a unique userID
 - F. User will have date of birth
2. UserProfile
 - A. UserProfile will have a unique ProfileID
 - B. UserProfile will be owned by one and only one user.
 - C. UserProfile will have one avatar.
 - D. UserProfile will have FreeTime available to play.
 - E. UserProfile will have MultiplayerPreference for games.
 - F. UserProfile will have SocialPreference for games.
 - G. UserProfile will have a Firstname
 - H. UserProfile will have a Lastname
 - I. UserProfile will have age of User based on date of birth
3. Game
 - A. Game will have a unique GameID.
 - B. Game will have a title
 - C. Game will have complexity level
 - D. Game will have FocusLevel required
 - E. Game will have prevalence of MicroTransactions
 - F. Game will have LearningTime needed to play
 - G. Game will have PlatformID it is available for.
 - H. Game will be either Multiplayer or Single-player
4. Genre
 - A. Genre will have a unique GenreID
 - B. Genre will have a unique name.
5. Platform
 - A. Platform will have a unique PlatformID
 - B. Platform will have a unique name
 - C. Platform will have PlatformSpecificFeatures listed
6. Review
 - A. Review will have a unique ReviewID
 - B. Review will use a unique GameID for reviews
 - C. Review will have a unique UserID for reviews
 - D. Review will have a rating for reviews
 - E. Review will have ReviewText explaining reviews
 - F. Review will have TimeSpent on game for reviews
7. Event
 - A. Event will have a unique EventID
 - B. Event will have GameID for game events
 - C. Event will have EventDate for game events
 - D. Event will have Description of game events
8. Achievement
 - A. Achievement will have unique AchievementID
 - B. Achievement will have GameID for achievements earned
 - C. Achievement will have UserID for achievements earned by users
 - D. Achievement will have AchievementDetails for achievements
9. UserGame
 - A. UserGame will use UserID for user's owned games

- B. UserGame will have GameID for game owned by users
 - C. UserGame will have OwnershipStatus of games for users
 - D. UserGame will have WishlistStatus of game titles for users
10. GameGenre
- A. GameGenre will use GameID
 - B. GameGenre will use GenreID
11. UserGenrePreference
- A. UserGenrePreference will use UserID for users genre preference for games
 - B. UserGenrePreference will use GenreID for users chosen genres
12. GameUpdate
- A. GameUpdate will have a unique UpdateID
 - B. GameUpdate will use GameID for title that has updates
 - C. GameUpdate will have UpdateDescription for updates
 - D. GameUpdate will have ReleaseDate for updates
13. ContentModeration
- A. ContentModeration will have a unique ContentID
 - B. ContentModeration will use UserID for moderation
 - C. ContentModeration will have Approval for moderation
 - D. ContentModeration will have ApprovalDate for moderation
 - E. ContentModeration will have ContentType for content moderated
14. UserReward
- A. UserReward has a unique RewardID
 - B. UserReward will use UserID for user's rewards
 - C. UserReward will have RewardType for rewards
 - D. UserReward will have EarnedDate for rewards
15. SocialNetwork
- A. SocialNetwork will have a unique SocialNetworkID for social networks
 - B. SocialNetwork will use UserID for social networks tied to user
 - C. SocialNetwork will have SocialNetworkType for social networks.
 - D. SocialNetwork will have AccountDetails for social networks.
16. TechSupportTicket
- A. TechSupportTicket will have TicketID
 - B. TechSupportTicket will use UserID for user requesting tech support
 - C. TechSupportTicket will have Issue
 - D. TechSupportTicket will have Status of tech support

Non Functional Requirements

Database Scalability

- The database should be able to accommodate user and game list growth.
- Performance should be consistent depending on the load.

Database Performance

- The database should be high speed in searching and recommendations.
- There should be regular optimizations to the database performance.

Data Integrity

- The information on the database should be validated regularly to maintain accuracy to recommendations.

User Experience

- The response times should be quick with data entry or retrieval.
- The experience should be similar across different devices and screen sizes.

Data Privacy

- Users have control of their data and privacy settings.
- Two factor authentication is provided.

Entities and Attributes

1. UserProfile (Weak Entity)
 - A. ProfileID: PK, numeric
 - B. UserID: FK, numeric
 - C. Avatar: alphanumeric
 - D. FreeTime: numeric
 - E. MultiplayerPreference: Enum, alphanumeric
 - F. SocialPlayPreference: Boolean
2. User (Strong Entity)
 - A. UserID: PK, numeric
 - B. Email: Key, alphanumeric
 - C. Password: alphanumeric
 - D. Role: Enum, alphanumeric
 - E. D.O.B.: date
3. Game (Strong Entity)
 - A. GameID: PK, numeric
 - B. Title: alphanumeric
 - C. Complexity: numeric
 - D. FocusLevel: numeric
 - E. PlayMode: Enum, alphanumeric
 - F. MicroTransactions: Boolean
4. Genre (Strong Entity)
 - A. GenreID: PK, numeric
 - B. GenreName: alphanumeric
5. Platform (Strong Entity)
 - A. PlatformID: PK, numeric
 - B. PlatformName: alphanumeric
 - C. PlatformSpecificFeatures: alphanumeric
6. Review (Weak Entity)
 - A. ReviewID: PK, numeric
 - B. GameID: FK, numeric
 - C. UserID: FK, numeric
 - D. Rating: numeric
 - E. ReviewText: alphanumeric
 - F. TimeSpent: int
7. Event (Strong Entity)
 - A. EventID: PK, numeric
 - B. GameID: FK, numeric
 - C. EventDate: Date/Time
 - D. Description: alphanumeric
8. Achievement (Weak Entity)
 - A. AchievementID: PK, numeric
 - B. GameID: FK, numeric
 - C. UserID: FK, numeric
 - D. AchievementDetails: alphanumeric
9. UserGame (Associative Entity)
 - A. UserID: FK, numeric
 - B. GameID: FK, numeric
 - C. OwnershipStatus: Boolean
 - D. WishlistStatus: Boolean
10. GameGenre (Associative Entity)
 - A. GameID : FK, numeric
 - B. GenreID: FK, numeric

11. UserGenrePreference (Associative Entity)
 - A. UserID: FK, numeric
 - B. GenreID: FK, numeric
12. GameUpdate (Strong Entity)
 - A. UpdateID: PK, numeric
 - B. GameID: FK, numeric
 - C. UpdateDescription: alphanumeric
 - D. ReleaseDate: Date/Time
13. ContentModeration (Strong Entity)
 - A. ContentID: PK, numeric
 - B. UserID: FK, numeric
 - C. Approval: Enum, alphanumeric
 - D. ApprovalDate: Date/Time
 - E. ContentType: Enum, alphanumeric
14. UserReward (Strong Entity)
 - A. RewardID: PK, numeric
 - B. UserID: FK, numeric
 - C. RewardType: alphanumeric
 - D. EarnedDate: Date/Time
15. SocialNetwork (Strong Entity)
 - A. SocialNetworkID: PK, numeric
 - B. UserID: FK, numeric
 - C. SocialNetworkType: Enum, alphanumeric
 - D. AccountDetails: alphanumeric
16. TechSupportTicket (Strong Entity)
 - A. TicketID: PK, numeric
 - B. UserID: FK, numeric
 - C. Issue: alphanumeric
 - D. Status: enum, alphanumeric

Non Functional
Scalability Performance Data Integrity User Experience Data Privacy

