

Group 119
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World of Databases

Summary

From our initial outline, we decided that a number of attributes were unnecessary. `numberOfCurrentPlayers`, `numberOfQuests`, `itemRewarded`, and `numberOfCompleteQuests` were either redundant, unneeded or required a lot of updating.

Our initial design had a many to many relationship between Players and Quests as well as Players and Items. Since the project only required one many to many relationship to be implemented, we changed Players and Quests to be one to many.

Based on feedback from peers and graders, we adjusted our plan to allow for more NULL values in foreign keys.

Finally, we had intended to have the Complete Quest button to check if player stats matched or exceeded the stat for the quest. However, due to difficulties this was not implemented in favor of focusing on implementing the SQL queries.

Project Outline

The website will be based on a simple multiplayer RPG game. The website database will keep track of the game server which allows for 100 Players at a time. The database will keep track of all stats of Players and which quest a Player is doing. players will have stats, current location, current quest and items. Player stats and location will be set to a default upon creation and will be updated based on gameplay.

Players will have one quest at a time to finish and each quest can reward the player with a unique item. Each quest will have a specific location and reward item. Quests are completed via the complete quest button. On completion, the quest is removed from the player and, if there is a reward item, it is added to the Player. Players can repeat quests and when a quest is completed, it is removed from the player.

There will be various items in the game that can modify the values of player stats. Multiple players can do the same quest as well as owning the same items. Players can only be in one location at a time but a location can have multiple players. Each location can have multiple quests but each quest can only have one location.

Database Outline

Entities

Players: represents the user's player character

- playerId: int, auto_increment, unique, not NULL, primary key
- playerName: varchar, unique, not NULL
- currentQuest: int, foreign key
- currentLocationID: int, not NULL, foreign key
- numberOfItemsInInventory: int
- playerHealth: int
- playerMagic: int
- strengthStat: int
- intelligenceStat: int
- defenceStat: int
- Relationships:

Players and Items: M:M, Players can have zero or many items and items can be owned by zero or many players

Players and Quests: 1:M, Players can have zero or one quest at a time and quests can be taken by zero or many players

Players and Locations: 1:M, A player must be in one and only one location but a location can have multiple players

Items: stat boosting rewards given from Quests

- itemID: int, auto_increment, unique, not NULL, primary key
- itemName: varchar, unique, not NULL
- statBoosted: varchar
- statBoostAmount: int
- questRewardedFrom: int, unique, not NULL, foreign key
- Relationships:

Items and Players: M:M, Players can have zero or many items and items can be owned by zero or many players

Items and Quests: 1:1, Items must be rewarded by a quest, but a quest can have zero or one item rewards

Quests: events which the Player can complete

- questID: int, auto_increment, unique, not NULL, primary key
- questName: varchar, unique, not NULL
- questLocation: int, not NULL, foreign key
- statRequired: varchar, not NULL
- statMinimumToComplete: int, not NULL
- Relationships:

Quests and Players: 1:M, Players can have zero or one quest at a time and quests can be taken by zero or many players

Quests and Items: 1:1, Items must be rewarded by a quest, but a quest can have zero or one item rewards

Quests and Locations: 1:M, A quest must have a location and locations can have zero or many quests

Locations: places the Player can go to

- locationID: int, auto_increment, unique, not NULL, primary key
- locationName: varchar, unique, not NULL
- Relationships:

Locations and Players: 1:M, A player must be in one and only one location but a location can have multiple players

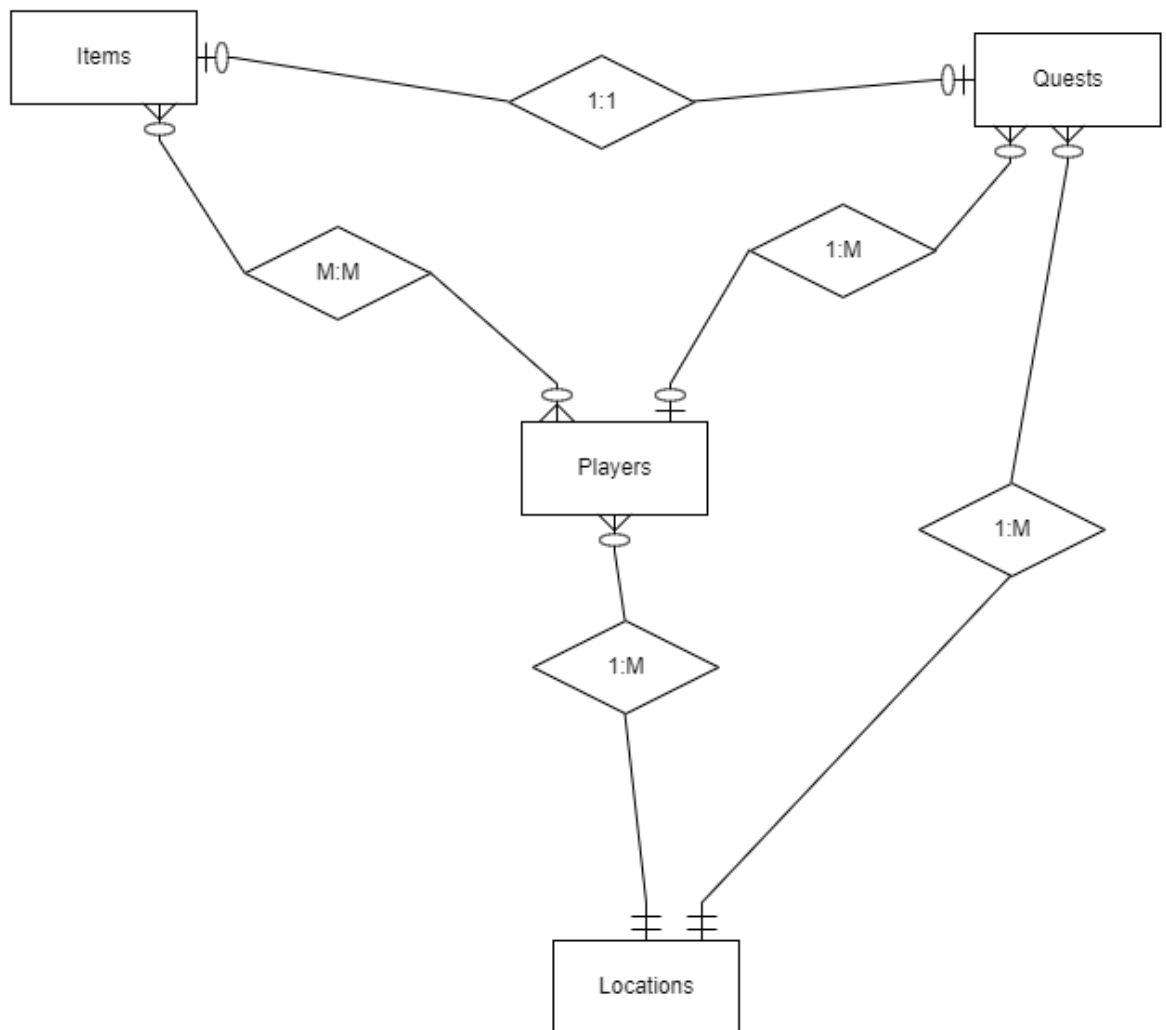
Locations and Quests: 1:M, A quest must have a location and locations can have zero or many quests

PlayersItems: tracks what Items each Player owns

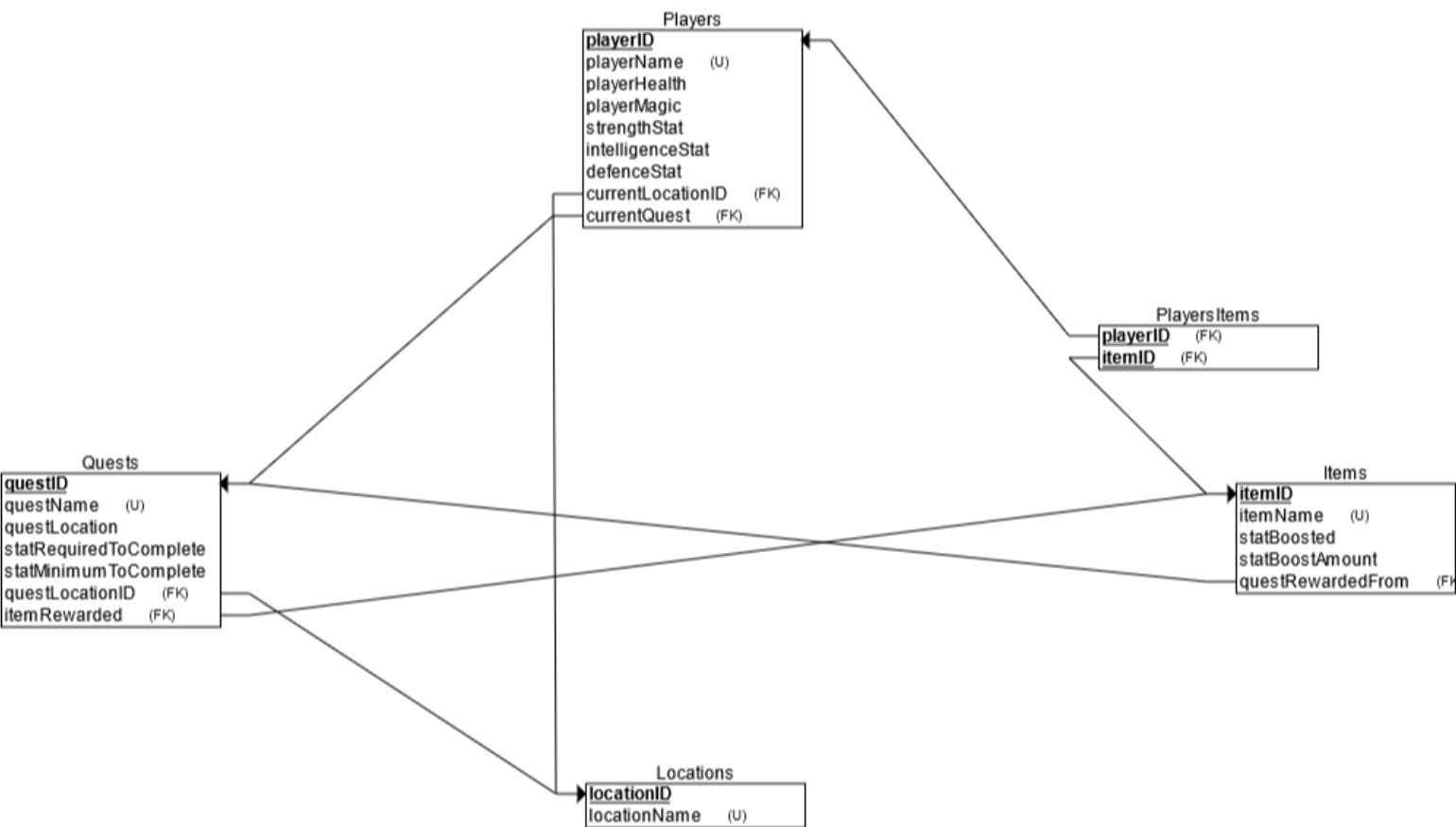
- playerId: int, not NULL, foreign key

- itemID: int, not NULL, foreign key

ERD



Schema



UI Screenshots
DISPLAY ALL PLAYERS PAGE

World of Databases

Developer View

Play Game Search Player Manager Content Creator

Player	Location	Items	Quests	
Player 1	Starting Area	Strength +1	Quest 1	Update
Player 2	Location 2	Strength +1	Quest 2	Update
Default Player	Location 2	Strength +1	Flavor Quest	Update
new player	Starting Area	Cursed Item		Update

DISPLAY SEARCH PAGE

World of Databases

Developer View

[Play Game](#) [Search](#) [Player Manager](#) [Content Creator](#)

Hover over table entries for tooltips

Filter by Quest..

Quest	Items
Quest 1	Defence Booster
Quest 2	Strength +1
Quest 3	Cursed Item

Filter by Player..

Player	Location
Default Player	Location 2
Player 1	Starting Area
Player 2	Location 2
new player	Starting Area

UPDATE PAGE

World of Databases

Developer View

[Play Game](#) [Search](#) [Player Manager](#) [Content Creator](#)

Update Player 1

Current Location	Starting Area	Change Location: <div>Location 1</div>
Current Quest	Quest 1	Complete quest and add reward item to inventory
Items	Strength +1	
Add Quest	<div>Add Quest: <div>Flavor Quest</div></div>	
Health	5	
Magic	5	
Strength	6	
Intelligence	5	
Defence	7	

INSERT AND DELETE PAGE

World of Databases

Developer View

Play Game Search Player Manager Content Creator

Create a Player

Create a new player with the default starting stats

Player Name*

Delete a Player

Deleting a player will remove all player data including records of what items the player owned. This data cannot be retrieved once deleted. This should only be used when a player ban has been issued or a player requests a data deletion.

Player Name*

Remove an Item

Players	Items
Default Player	<input type="button" value="Strength +1"/> <input type="button" value="Delete"/>
new player	<input type="button" value="Cursed Item"/> <input type="button" value="Delete"/>
Player 1	<input type="button" value="Strength +1"/> <input type="button" value="Delete"/>
Player 2	<input type="button" value="Strength +1"/> <input type="button" value="Delete"/>

CREATE PAGE 1/2

World of Databases

Developer View

Play Game Search Player Manager Content Creator

Create a Location

Location Name*

Create a Quest

Quest Name*

Location of Quest*

Stat Type Required to Complete

Stat Amount Required to Complete

Create an Item

Item Name*

Quest Rewarded From (Only lists Quests without Items)*

CREATE PAGE 2/2

Stat Amount Required to Complete

Create Quest

Create an Item

Item Name*

Quest Rewarded From (Only lists Quests without Items)*

NULL

Stat Type Boosted

Intelligence

Stat Boost Amount

Create Item

Delete a Location

Deleting a location will change the location of all players and quests currently at the location to NULL. Players and quests will have to have new location values set. This data cannot be retrieved once deleted.

Location Name*

Location 1

Delete

Delete a Quest

Deleting a quest will set it to NULL for any player who is currently on the quest and the item rewarded from the quest. Players and items will have to have new quests set. This data cannot be retrieved once deleted.

Quest Name*

Flavor Quest

Delete

Delete an Item

Deleting an item will remove it from the quest it is rewarded from and any player's inventory. Players and items will have to have new quests set. This data cannot be retrieved once deleted.

Item Name*

Cursed Item

Delete