

GameShop Management System

URL: <http://classwork.engr.oregonstate.edu:9005/>

Executive Summary of Feedback and Changes

Our group tended to be a little behind on Draft versions, meaning the majority of feedback we received was to fully implement the required functionalities. Since the initial version of our project, we have added a back-end SQL database accompanied by a front-end nodeJS + Handlebars powered website. Each entry of every table in the GameShop database can be viewed, updated, and deleted, and additional entries can be easily created. We also implemented a version of the ON DELETE CASCADE, as we decided to go with ON DELETE SET NULL instead as it better fit the purposes of our database. If a customer would like their entry to be removed from the database, the record of the purchase also need not be expunged, as that could cause issues with tracking our sales and performance. This change meant we needed to modify the constraints for the games table, as we needed to remove the NOT NULL constraint from the foreign keys genreID and esrbID. Some of the pages will dynamically update the displayed tables upon deletion and creation of table entries (genres, esrbs, and studios), whereas for an unknown reason, others require the page be refreshed before changes are visible. There were also occasional errors that were helpfully pointed out to us through peer feedback, such as the Data Definition Queries having incorrect variable types and constraints.

Project Outline

GameShop New and Used Video Games sell a myriad of new and used video games that should be logged locally to maintain internal consistency. Some games may be sold at different prices at different locations depending on a number of factors such as rarity and condition. GameShop will benefit from tracking repeat customers as offering incentives such as a punch card discount could positively impact sales. The computer should be able to easily store and retrieve information such as the ESRB rating and game developer for each individual title for easier cataloging. Keeping a transaction log will also help in-store employees recommend similar titles to repeat customers in order to increase sales.

Database Outline

customers: records the details of customers we do business with

memberID: int, auto_increment, unique, not NULL, PK

firstName: varchar, not NULL

lastName: varchar, not NULL

email: varchar, not NULL

Relationships: 1:M relationship between customers and purchases is implemented with memberID as a foreign key inside of purchases.

purchases: records the details of individual purchases (single items only)

memberID: int, FK from customers

gameID: int, auto_increment, FK from games

price: float, not NULL

purchaseDate: datetime, not NULL

warrantyEndDate: datetime

Relationships: 1:M relationship between customer and purchases, 1:M relationship between purchases and games, as each purchase includes exactly 1 game via the PK gameID from games, but each game can be purchased multiple times.

games: stores information about individual titles

gameID: int, auto_increment, unique, not NULL, PK

item: varchar, not NULL

genreID: int, FK from genres

esrbID: int, FK from esrbs

//NOTE: ESRB is video game rating organization, i.e E for Everyone, T for Teens, M for Mature

Relationships: M:1 relationship from games to purchases, as each game can be purchased multiple times. 1:M relationship from games to esrbs as each game can only have one Rating,

but each ESRB rating may be applied to many games. 1:M relationship from games to genres as each game can be related to a single (possibly combination category) genre, and each genre can be related to many games. M:M relationship between games and studios, as each studio can be related to multiple games and each game can be co-created by multiple studios.

//NOTE: For the purposes of this assignment I am asserting that each game is limited to one genre or a combination of genres such as FPS + Adventure that makes its own single genre. I couldn't figure out how to make an intersection table to make games to genres an M:M.

releases: stores information about a games release, intersection table for games and game studios.

gameID: int, auto_increment, FK from games

studioID: int, auto_increment, FK from studios

publishDate: datetime, not NULL

Relationships: Intersection table between games and studios. 1:M relationship between releases and studios, as each release can be collaborated on by multiple studios. 1:M relationship between games and releases as each game can have multiple releases/versions of the same game. This allows for an M:N relationship between games and studios.

studios: stores information about game development studios

studioID: int, auto_increment, unique, not NULL, PK

studioDescription: varchar, not NULL

Relationships: M:1 relationship between studios and releases, as each release can be collaborated on by multiple studios.

genres: stores the corresponding genre information for the genreID

genreID: int, auto_increment, unique, not NULL, PK

genreDescription: varchar, not NULL

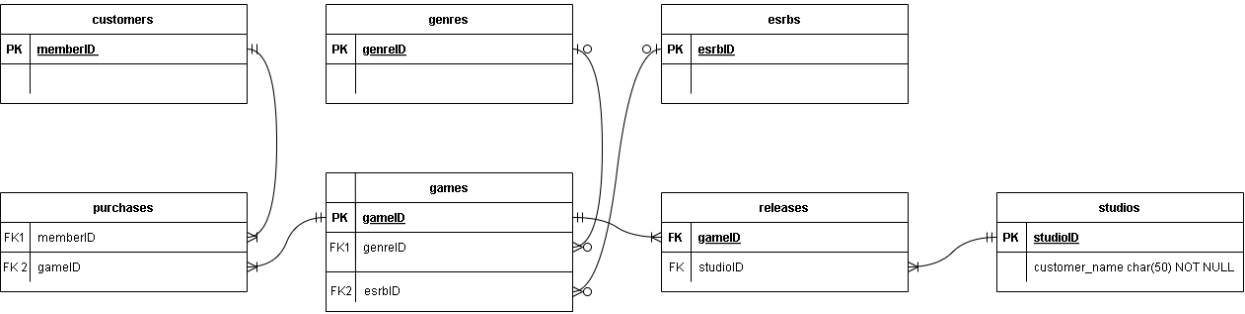
esrbs: stores the corresponding esrb rating information for the esrbID

esrbID: int, auto_increment, unique, not NULL, PK

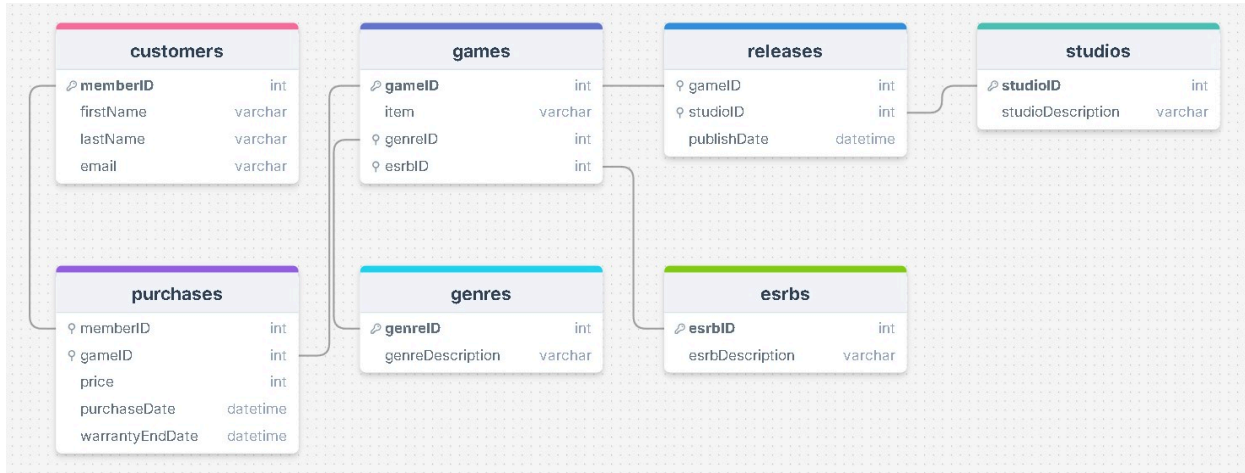
esrbDescription: varchar, not NULL

Relationships: M:1 relationship between games - genres and games - esrbs by using a FK in the games table from each respective table of origin.

Entity-Relationship Diagram:



Schema:



Sample Data:

memberID	firstName	lastName	email
1	Sara	Smith	smiths@hello.com
2	Miguel	Cabrera	mc@hello.com
3	Bo	Chan'g	bochang@hello.com

gameID	item	genreID	esrbID
1	RPG Example Game	1	0
2	Minecraft	3	0
3	Call of Duty	2	0

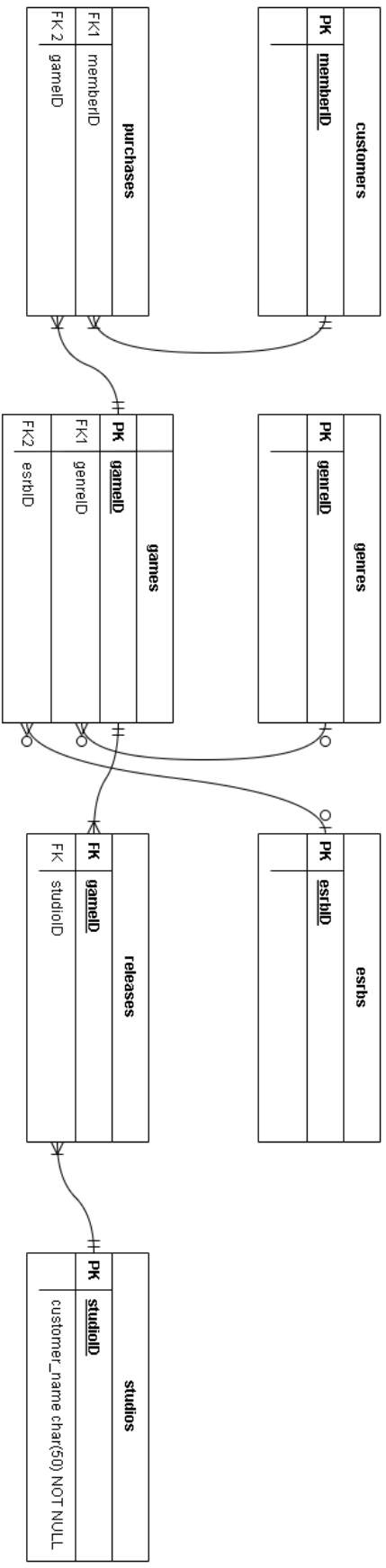
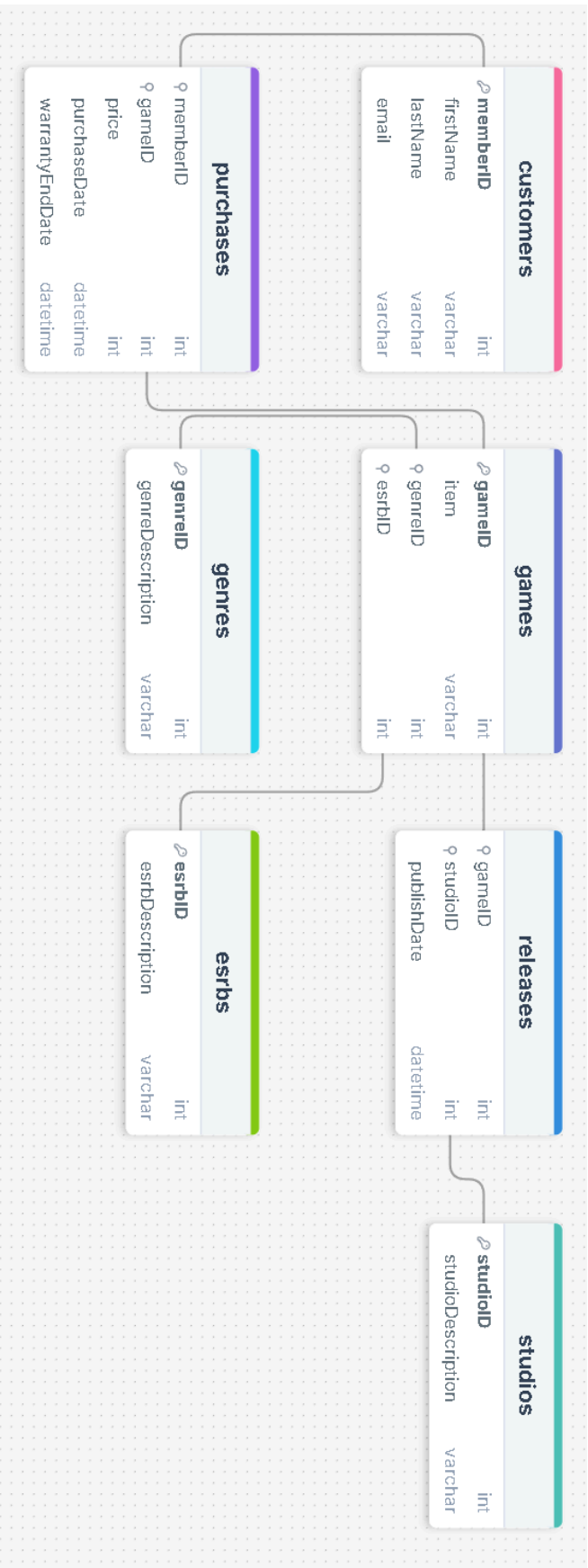
memberID	gameID	price	purchaseDate	warrantyEndDate
1	3	60	2024-02-02 00:00:00	2024-03-02 00:00:00
2	2	30	2024-01-11 00:00:00	2024-02-11 00:00:00
3	1	20	2023-11-26 00:00:00	2024-12-26 00:00:00

genreID	genreDescription
1	Action RPG
2	First Person Shooter
3	Adventure Survival

studioID	studioDescription
1	Gearbox
2	Mojang
3	Treyarch

gameID	studioID	publishDate
1	1	2018-01-01 00:00:00
2	2	2012-05-05 00:00:00
3	3	2024-10-01 00:00:00

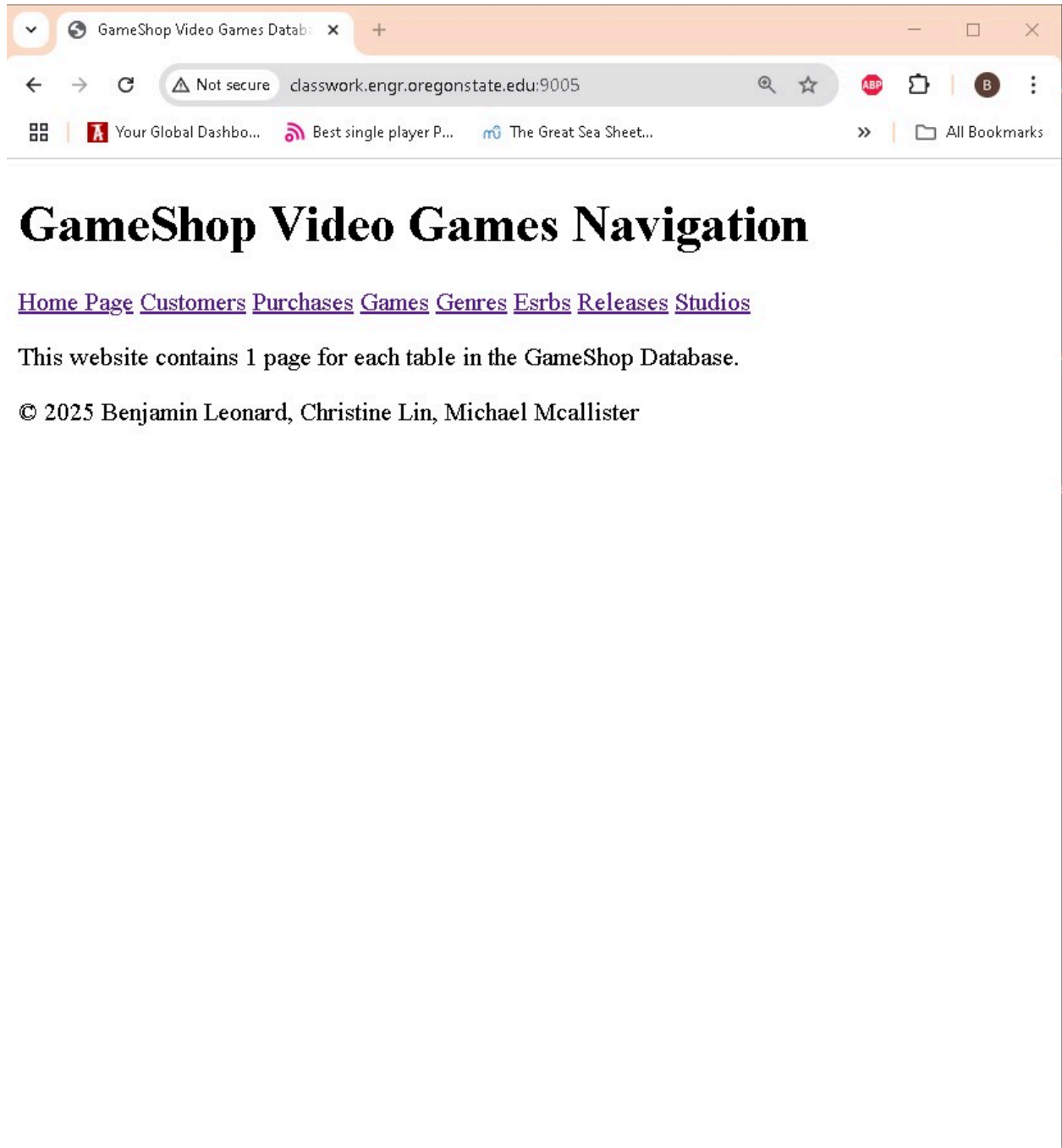
esrbID	esrbDescription
1	E for Everyone
2	T for Teens
3	M for Mature



Enlarged versions of ERD and Schema.

Screen Captures of each UI Page:

GameShop Home Page



CREATE/READ/UPDATE/DELETE Customers Page

GameShop Video Games Datab...

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Not secure

ABP

B

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memberID	firstName	lastName	email	delete
1	Sara	Smith	smiths@hello.com	<input type="button" value="Delete"/>
2	Miguel	Cabrera	mc@hello.com	<input type="button" value="Delete"/>
3	Bo	Chan'g	bochang@hello.com	<input type="button" value="Delete"/>

Adding Data with AJAX

To add a new customer, please enter their information below and click 'Submit'!

first name: last name: email:

Updating A Customer Form

To update a specific customer, select their name from the drop down form

fullName: email:

CREATE/READ/UPDATE/DELETE Purchases Page

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memberID	gameID	price	purchaseDate	warrantyEndDate	delete
1	3	59.99	Fri Feb 02 2024 00:00:00 GMT-0800 (Pacific Standard Time)	Sat Mar 02 2024 00:00:00 GMT-0800 (Pacific Standard Time)	<button>Delete</button>
2	2	29.99	Thu Jan 11 2024 00:00:00 GMT-0800 (Pacific Standard Time)	Sun Feb 11 2024 00:00:00 GMT-0800 (Pacific Standard Time)	<button>Delete</button>
3	1	19.99	Sun Nov 26 2023 00:00:00 GMT-0800 (Pacific Standard Time)	Thu Dec 26 2024 00:00:00 GMT-0800 (Pacific Standard Time)	<button>Delete</button>

Adding Data with AJAX

To add a new purchase, please enter their information below and click 'Submit'!

memberID:

Select a Customer

gameID:

Select a Game

price:

purchaseDate:

mm/dd/yyyy

warrantyEndDate:

mm/dd/yyyy

Submit

Updating A User's Purchase Form

To update a specific user's homeworld select their name from the drop-down menu on the left and their desired homeworld from the drop down menu on the right

fullName:

Select a Member

gameID:

Select a Game

price:

purchaseDate:

mm/dd/yyyy

warrantyEndDate:

mm/dd/yyyy

Submit

CREATE/READ/UPDATE/DELETE Games Page

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gameID	item	genreID	esrbID	delete
1	RPG Example Game 1	2		Delete
2	Minecraft	3	1	Delete
3	Call of Duty	2	3	Delete

Adding Game with AJAX

To add a new game, please enter their information below and click 'Submit'!

item title:

genreID:

Select a Genre

esrbID:

Select a Rating

Submit

Updating A Game Form

To update a specific game, select their name from the drop down form

Title:

Select a Game Title

Genre:

Select a Game Genre:

ESRB Rating:

Select a Game Rating:

Submit

CREATE/READ/UPDATE/DELETE Genres Page

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ABP

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genreID	genreDescription	delete
1	Action RPG	<input type="button" value="Delete"/>
2	First Person Shooter	<input type="button" value="Delete"/>
3	Adventure Survival	<input type="button" value="Delete"/>

Adding Genre with AJAX

To add a new genre, please enter their information below and click 'Submit'!

Genre Description:

Updating A Genre Form

To update a specific genre, select their name from the drop down form

Genre Description: Genre Description:

CREATE/READ/UPDATE/DELETE Esrbs Page

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esrbID	esrbDescription	delete
1	E for Everyone	Delete
2	T for Teens	Delete
3	M for Mature	Delete

Adding ESRB with AJAX

To add a new esrb, please enter their information below and click 'Submit'!

ESRB Description:

Updating A ESRB Form

To update a specific ESRB, select their name from the drop down form

ESRB Description: ESRB Description:

CREATE/READ/UPDATE/DELETE Releases Page

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gameID	studioID	publishDate	delete
1	1	Mon Jan 01 2018 00:00:00 GMT-0800 (Pacific Standard Time)	<button>Delete</button>
2	2	Sat May 05 2012 00:00:00 GMT-0700 (Pacific Daylight Time)	<button>Delete</button>
3	3	Tue Oct 01 2024 00:00:00 GMT-0700 (Pacific Daylight Time)	<button>Delete</button>

Adding Release with AJAX

To add a new release, please enter the information below and click 'Submit'!

gameID:

Select a Game

studioID:

Select a Studio

publishDate:

mm/dd/yyyy

Submit

Updating A Release Form

gameID:

Select a Game:

studioID:

Select a Studio:

publishDate:

mm/dd/yyyy

Submit

CREATE/READ/UPDATE/DELETE Studios Page

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studioID	studioDescription	delete
1	Gearbox	<input type="button" value="Delete"/>
2	Mojang	<input type="button" value="Delete"/>
3	Treyarch	<input type="button" value="Delete"/>

Adding Studio with AJAX

To add a new studio, please enter their information below and click 'Submit'!

Studio Description:

Updating A Studio Form

To update a specific studio, select their name from the drop down form

Studio Description: Studio Description: