Group 6 Project Proposal

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Project URL: http://flip3.engr.oregonstate.edu:28901/
Index.html: http://web.engr.oregonstate.edu/~chaissoj

Overview

Our service, Group6 Games™, will sell games for PCs online. Our database will track orders of video games and keep customer's order history. Our Games entity will include a Game ID along with title, selling price, critic rating, and a discount attribute if the game's price becomes discounted at any point. The Customers entity will have of course, a Customer ID and their credit card and home address for purchasing and shipping tasks, respectively. Carts will handle the Customer and Game ID, while also holding attributes for each game's price, item numbers, and a Cart ID. Orders entity involves order numbers, Cart IDs, taxes, and purchasing totals. Lastly, we have our Library entity which will store a collection of games customers can keep for possible future purchase and it will utilize such information as Customer and Game ID, along with game titles.

Actual customers will select games from a searchable catalog and any selected games will then be added to his/her cart for orders and payment and billing information will be displayed on invoices for orders. When customers are ready to check out, their carts will be processed into orders. Information about customers will be updatable and invoices will need to calculate total and discount. Over 9,000 video games are released each year, so the game list in the databases will need to be updated as well. All primary keys stated below will be underlined and "FK" denotes a foreign key.

Updated Database Outline:

Tables

- **gr6_games - M:M with gr6_carts (Handles video game related information such as title, price, possible discount, and their own ID numbers)**
    - game_id: PK (INT) Auto Increment Unique
    - game_title (VARCHAR)
    - sell_price (DECIMAL)
    - discount (DECIMAL)
    - critic_rating(TINYINT)
    - Info (VARCHAR)

- **gr6_customers - 1:M with gr6_carts (Stores customer information such as their credit card details and home address along with their own ID number)**
    - customer id: PK (INT) Auto Increment Unique
    - fname: (VARCHAR)
    - lname (VARCHAR)
    - handle(VARCHAR)
    - credit_card (VARCHAR)
    - state (VARCHAR)
    - city (VARCHAR)
    - street (VARCHAR)
    - street Number (INT)

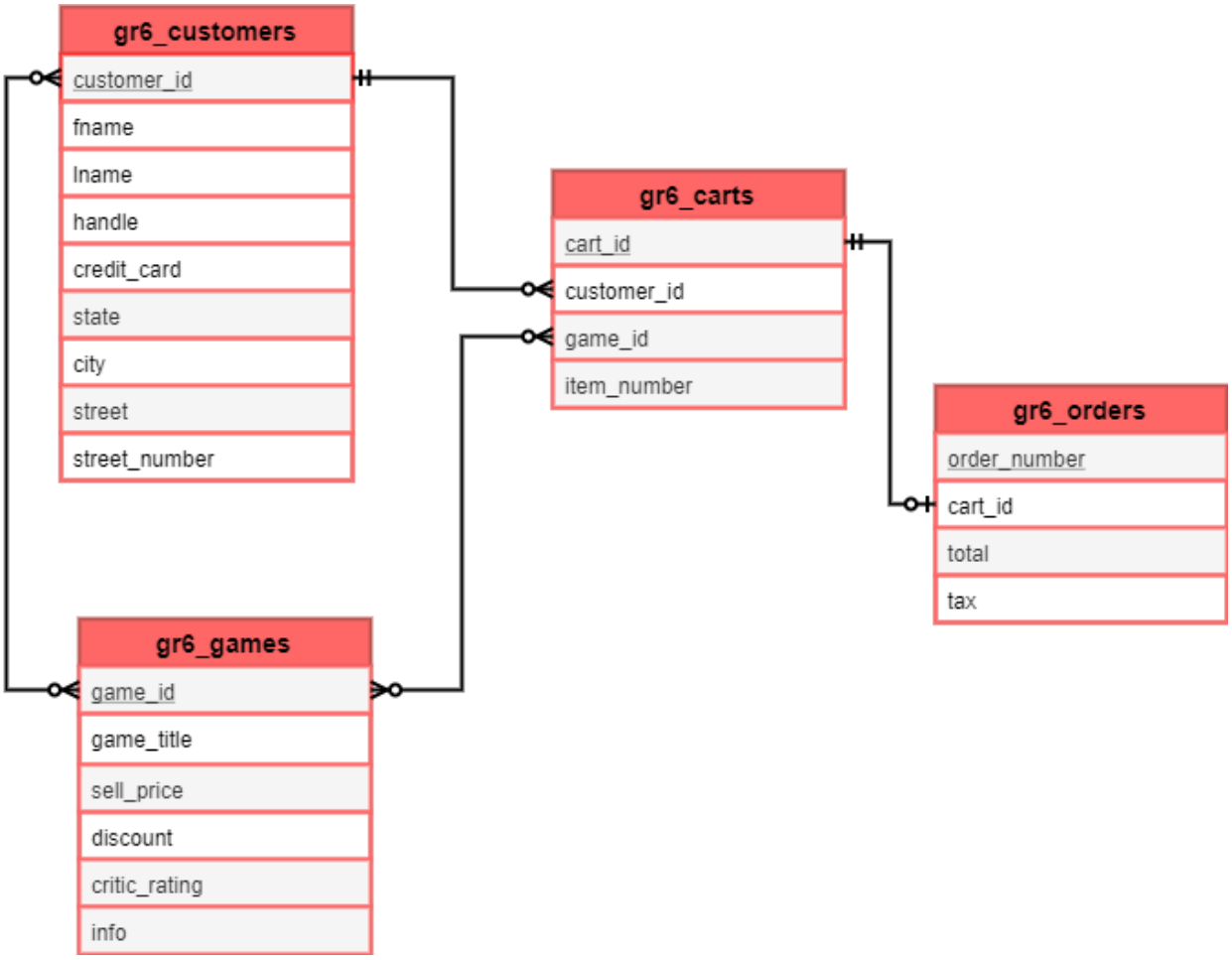
- **gr6_carts - 1:1 with gr6_orders, M:M with gr6_ames (Handles digital “Carts” that will include important information such as the customer’s ID number and it’s own Cart ID)**
    - cart_id PK (INT) Auto Increment Unique
    - customer_id :FK (INT)

- **gr6_orders - 1:1 with gr6_carts (Will be created once a “cart” or its items are purchased, stores the cart ID number, taxes, and total purchasing price)**
    - order_number: PK (INT) Auto Increment Unique
    - cart_id : FK (INT)
    - total (FLOAT)
    - tax (FLOAT)

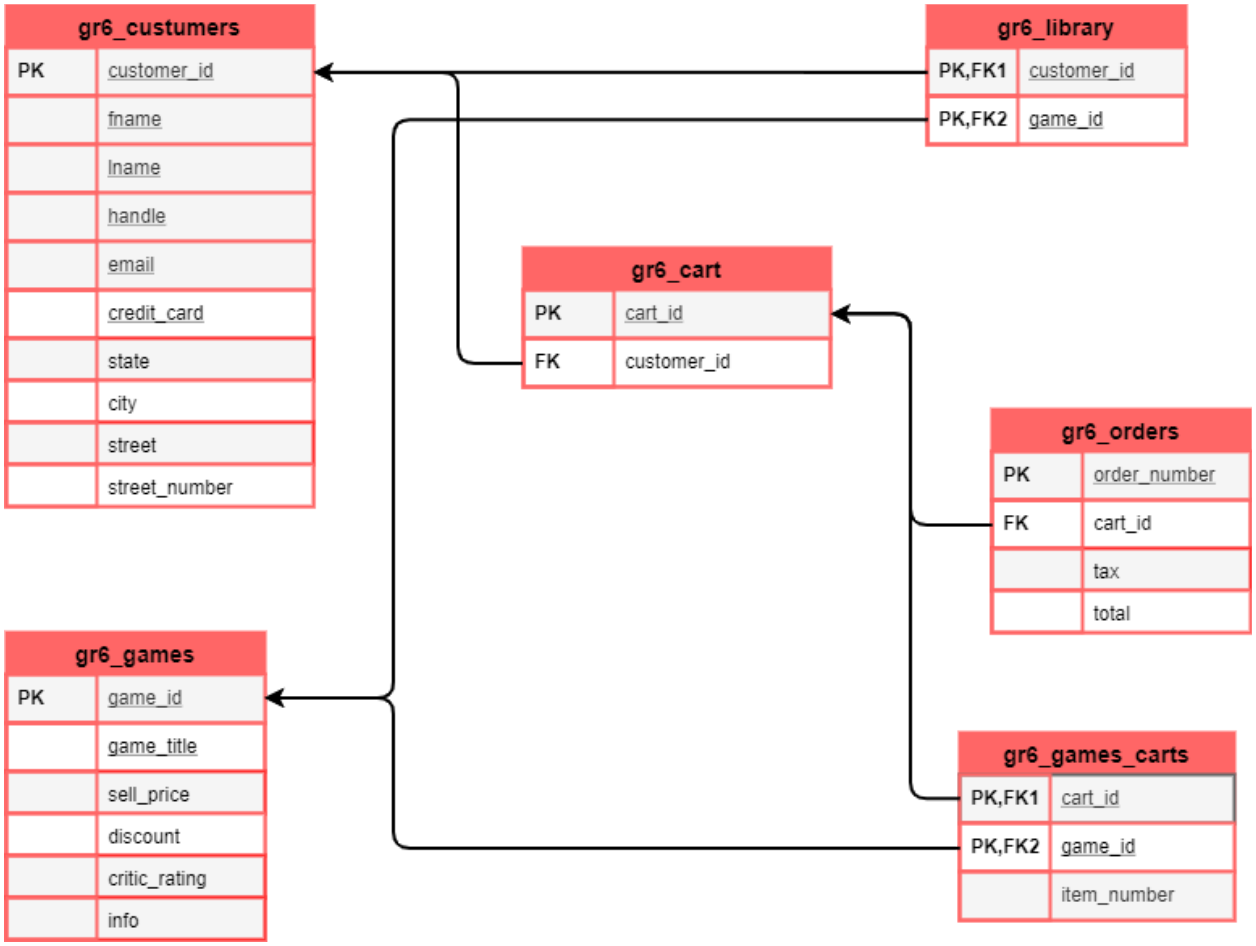
- **gr6_library - M:1 with gr6_customers (Will hold customer and game information such as Game ID, and Customer ID)**
    - customer id: PK/FK (INT)
    - game id: PK/FK (INT)

- **gr6_games_carts - 1:M with gr6_games and gr6_carts (Will also handle and include a Cart ID and Game ID like in gr6_carts but will also have item numbers and will be used to populate the “/carts” page)**
    - cart_id : PK/FK (INT)
    - game_id : PK/FK (INT)
    - item_number (INT)

ER Diagram


gr6_customers
customer_id
fname
lname
handle
credit_card
state
city
street
street_number
gr6_carts
cart_id
customer_id
game_id
item_number
gr6_orders
order_number
cart_id
total
tax
gr6_games
game_id
game_title
sell_price
discount
critic_rating
info

Schema



Step 5 Draft Version - Feedback by Peer Reviews

Jarritt Youngers

What Works:

- Website works and I can navigate between all pages.

What Doesn't Work:

- I get an error trying to update the profile
- Delete profile also doesn't work
- Searching and removing games from the library doesn't seem to work.
- Searching and removing from the cart doesn't seem to work.
- Searching and adding to cart doesn't seem to work from the game page
- Viewing orders from the orders page doesn't seem to work.
- The "Return to Cart" button is broken

- I get an error trying to add a game to the admin page
- I get an error trying to update or delete anything on the admin page

Suggestions:

- The table on the library and cart pages look a little funny, maybe there's an issue here.
- Maybe make the password entry hidden
- Keep trying to fix bugs and get the features to work. I couldn't really do much on your site besides navigate pages.

Samnang Penh

What Works:

The general layout appears to work and most pages can be navigated to.

What Doesn't Work:

- 500 Internal Server Error for /user_profile

- Search doesn't return anything (I tried searching "Zelda")

- Buttons for "remove" and "purchase" in the cart aren't actually functional buttons

- Button for "add to cart" on /gamepage isn't actually a functional button

- Adding a game in /admin_page routes to /admin which doesn't exist

Suggestions:

- We don't have trailing slashes for routes in our code and everything works fine. I suggest you leave out trailing slashes.

- I suggest starting with the Flask starter code provided to us as the foundation for routing. The starter code is accurate and I have confirmed that it works well.

- A "submit" button next to the search box in /game_library would be nice.

- Indication that a search returned nothing is recommended.

John Lebens

What works:

- Most of the navigation links work except for profile link.

- The overall aesthetics of the page are nice

What doesn't work:

- Profile link results in internal server error
- The INSERT and UPDATE functionalities seem to not be updating

Overall Impressions:

This website has a nice feel to it though it needs maybe a little more work. I like how the hello section has all the metadata for the work you've put in. Maybe don't try to implement a full on search bar and just use drop down queries instead of searching.

Steven Owens

First off, kudos on picking up Python for your back-end language, we stuck with NodeJS and didn't try to be adventurous. Second, this is my first time reviewing your work and I love the website theme and concept. Well done.

What doesn't work:

Ability to create a new user for the website, default is logged in as Jamie already. Noted by the authors that INSERT for new users does not yet work.

Search function for a Game appears to just send a get and refresh the page. Noted that queries do not update the HTML, I assume the search function is also not sending back data to the page.

Remove button do not remove titles from the library page, I assume DELETE functionality is not yet updated either based on author's comments.

View order history buttons do not render a previous order page. Understand queries are not yet linked but is there going to be an order history template html page that is populated from the database?

Admin page update and delete buttons attempt to redirect to an unknown URL on the server. This may be intended since the admin page is incomplete and the data is pre-populated but you may want to just redirect to the same page until those routes are built or functionality added.

I went through each tab testing buttons and links and when I tried to go back to the profile page after being on admin it resulted in an Internal Server Error. All other navbar links still worked, but profile breaks the application.

Recommendations

Recommend changing the form data type for the password to 'password' to hide the characters.

The color scheme on a low res computer (my cheap ThinkPad) is very difficult to distinguish between the purples and the grey. Might want to consider a more complimentary color pallet for low resolution users.

Actions Based on Step 5 Feedback

- We didn't make any sweeping changes based on any particular feedback since most feedback was basic functionality problems we already had on our list of "things to do".
- A couple pieces of feedback are being considered for future work to the site, but nothing as of yet
- Are implementing error and exception handling into the site

Upgrades From Step 5 Version

- Got many pages running such as all profile pages and new user profile page
- Admin page has most functions running properly, more being currently added
- Refined tables and routes to various pages
- Nearly all additions and updates are to general functionality and backend operation

Step 4 Draft Version - Feedback by Peer Reviews

Kally Tang

Data Manipulation Language

Are the queries syntactically correct? Disregard the part where input will be substituted as shown in the sample_data_manipulation_queries.sql

- Not sure if these queries are all syntactically correct. The UPDATE statement for updating profile doesn't have a WHERE statement.

Are there queries providing all functionalities as required by the CS340 Project Guide? What query is missing ? What needs to be fixed?

- They have a search option, but I don't think there's a search query created.

Do the queries cover the relationships as required by the CS340 Project Guide?

- There's at least one insert to every table, at least one many to many relationship. There's delete and update queries, however there's going to be a potential issue with that some of the foreign keys are NOT NULL, therefore it might not be deleted because of a foreign key constraint. Each table does have a select query.

Data Definition Language

Is the SQL file syntactically correct? This can be easily verified by importing/copy-pasting it in phpmyadmin. (Do not forget to take backup of your own database before you do this!)

- Yes the data is syntactically correct, there aren't any error messages, however if I try to reupload the DDL, it gives me the error:

- DROP TABLE IF EXISTS `gr6_carts`
- #1451 - Cannot delete or update a parent row: a foreign key constraint fails
- This order works:
- DROP TABLE IF EXISTS `gr6_orders`;
- DROP TABLE IF EXISTS `gr6_library`;
- DROP TABLE IF EXISTS `gr6_games_carts`;
- DROP TABLE IF EXISTS `gr6_games`;
- DROP TABLE IF EXISTS `gr6_carts`;
- DROP TABLE IF EXISTS `gr6_customers`;
-
- Instead of having the drop table if exits right above the tables, it could be a line of code above that drops everything. But that is just a suggestion, it makes it easier to figure out what needs to be ordered where when dropping tables.

Are the data types appropriate considering the description of the attribute in the database outline?

- The data types look appropriate for their database, just that NOT NULL has been added to many of the attributes when there weren't any on the outline.

Are the foreign keys correctly defined when compared to the Schema?

- The foreign keys reflect the schema/outline. However there's an issue of the foreign keys all being NOT NULL, when the outline did not define them as NOT NULL.

Are relationship tables present when compared to the ERD/Schema?

- The relationships are present in the ERD schema however the 0 to many or 0 or 1 relationships are not reflected in the table.

Yuxi Zhang

Are the queries syntactically correct?

- No, there is one error.

Are there queries providing all functionalities as required by the CS340 Project Guide?

- There are INSERT, SELECT, UPDATE, DELETE

Do the queries cover the relationships as required by the CS340 Project Guide?

- YES, all covered

Data Definition Queries:

Is the SQL file syntactically correct?

- The sql file can be imported correctly.

Are the data types appropriate considering the description of the attribute in the database outline?

- Yes, games_carts for cart_id, game_id, item_number
- library for customer_id, game_id
- order for cart_id, order_number, but I am a little bit confused why use oder_number and cart_id, I think they are related, one-to-one, is it possible that only use one of them?
- game: game title, price

Are the foreign keys correctly defined when compared to the Schema?

- yes, customer_id, cart_id, game_id

Are relationship tables present when compared to the ERD/Schema?

- The relationship tables present. I am still confused why use both cart and order entity.

Jonah Dubbs-Nadeau

DDL:

I was able to import the data successfully. The tables and data types match what is in the entity outline. I do wonder if the ALTER TABLE statements need to be separate from the time of table creation, or if they can be merged into the CREATE TABLE statements.

DML:

As others have mentioned, the UPDATE queries appear to be missing a WHERE clause, which would most likely be needed to update the correct record. Otherwise, the queries are all syntactically correct and cover all necessary operations and all relationships.

Alex Smith

DMQ

Are the queries syntactically correct? Disregard the part where input will be substituted as shown in the sample_data_manipulation_queries.sql

- The update query is missing a WHERE, The game and order pages will also need a WHERE.

Are there queries providing all functionalities as required by the CS340 Project Guide ? What query is missing ? What needs to be fixed?

- It doesn't look like there are any queries for inserting carts or orders.

Do the queries cover the relationships as required by the CS340 Project Guide?

- All the relationships appear to be covered.

DDQ

Is the SQL file syntactically correct?

- I do not see any errors in the definition queries.

Are the data types appropriate considering the description of the attribute in the database outline?

- Critic Rating in the outline is a decimal, and its a tinyint in the DDQ. Street number is an int in the outline and a varchar in the DDQ, street number and street probably don't need to be two separate values.

Are the foreign keys correctly defined when compared to the Schema?

- Foreign Keys all look correct.

Are relationship tables present when compared to the ERD/Schema?

- The relationship tables match the schema.

Actions Based on Step 4 Feedback

- Included a “WHERE” in the UPDATE statement for the “Profile” page that was previously missing
- Fixed discrepancy between “critic_rating” being a “decimal” in the outline and “tinyint” in the DDL. Both now have “tinyint”
- Street is now a varchar in the DDL.sql
- To answer a question, orders and carts are separated because a cart can be canceled and updated anytime. An order once created is a permanent record although its contents can be updated by updating the original cart.

Upgrades to Step 4 Draft Version

- Refined and debugged DDL queries
- Refined and debugged DML queries
- Added “gr6_games_carts” table with appropriate attributes to better handle interactions between “gr6_carts” and “gr6_games” tables and to better retrieve information
- Refined and updated html files

Step 3 Draft Version - Feedback by Peer Reviews

Luis Renteria

Does the UI utilize a SELECT for every table in the schema? In other words, data from each table in the schema should be displayed on the UI. Note: it is generally not acceptable for just a single query to join all tables and display them.

- There are some pages that do display a table from a select query such orders, cart, and library. However, there are other pages that display some comment outlining what the developers plan to create, such as profile (which will display customer information) and the game page (which will display information about the game.I would recommend that even though it doesn't have to be functional, that you still create the UI features such as "search" or "drop down" features or images that will display a game. This can be dummy data, but it will help us better envision what you're wanting to design.If you wanted, you can also create an "admin page" which would display each table (can be a dummy table).

Does at least one SELECT utilize a search/filter with a dynamically populated list of properties?

- Yes the "Game Page" has a comment that outlines a plan to implement a feature that will allow users to search for a game. However, the UI HTML front end for the feature still needs to be implemented.

Does the UI implement an INSERT for every table in the schema? In other words, there should be UI input fields that correspond to each table and attribute in that table.

- There are two pages, the "Profile" and the "Game" page will allow the user to insert information about the Customer and Cart table. However, the UI seems a little unfinished here (forms or buttons created using HTML.)Also, there doesn't appear to be an insert function for several tables such as Games, Library, or Game_Cart. This was probably excluded because the design of the website looks like it's from the user end. To overcome this, you may want to create an admin page (as mentioned above) which will allow an admin person to insert information into these tables (similar to an inventory page)

Does each INSERT also add the corresponding FK attributes, including at least one M:M relationship? In other words if there is a M:M relationship between Orders and Products, INSERTing a new Order (e.g. orderID, customerID, date, total), should also INSERT row(s) in the intersection table, e.g. OrderDetails (orderID, productID, qty, price and line_total).

- This will be easier to tell once the group members create more insertion features for other tables.

Is there at least one DELETE and does at least one DELETE remove things from a M:M relationship? In other words, if an order is deleted from the Orders table, it should also delete the corresponding rows from the OrderDetails table, BUT it should not delete any Products or Customers.

- Yes, there is one page where users will be able to delete items from their cart. It also does delete from an M:M relationship between carts and games. The front-end HTML for this feature still needs to be implemented (e.g. remove/delete).

Is there at least one UPDATE for any one entity? In other words, in the case of Products, can productName, listPrice, qtyOnHand, e.g. be updated for a single ProductID record?

- Yes, there is a page where users will be able to update their own user profile. front-end HTML for this feature still needs to be implemented (e.g. update button or link to an update page with forms.

Is at least one relationship NULLable? In other words, there should be at least one optional relationship, e.g. having an Employee might be optional for any Order. Thus it should be feasible to edit an Order and change the value of Employee to be empty.

- I didn't see this feature, but I imagine that this could be applied in either the user's profile page where one can leave the credit card field empty. Another suggestion is if you choose to update game information, you can update the field "Discount" to null.

Do you have any other suggestions for the team to help with their HTML UI?

- Most of my suggestions have already been covered by the previous comments.

Andrew Clos

I really like that you included a copy of the PDF on the website itself, it really helps for referencing. In fact, I liked the idea so much, I have now included our PDF in our own project website, thank you for the inspiration.

Does the UI utilize a SELECT for every table in the schema?

- Yes it appears that each of the main pages, which correspond to tables in your database, has a way to view the data.

Does at least one SELECT utilize a search/filter with a dynamically populated list of properties?

- I am not sure if it explicitly states where the dynamically populated list of properties will be present, but perhaps I missed it. If you haven't decided where to add this feature yet, maybe you could have the user's library contain dynamic properties. For example, if the user's library contained one game and that game was not available for download, the "download" property would disappear.

Does the UI implement an INSERT for every table in the schema?

- It looks like items can be added to the cart and profile tables, but items would get added to a library or an order indirectly (which is how it would work in the real world). If you need to be able to just create an order or a library out of thin air, you could add a manager or administration page where entries to these tables can be made directly. It would be implied that this page would only be accessible to a store manager, but would help make it more obvious that you'd fulfilled this requirement.

Does each INSERT also add the corresponding FK attributes, including at least one M:M relationship?

- From the documentation, I see that you have library and games_carts intersection tables that handle your many to many relationships. I know it is difficult to show this on the website right now and I am currently considering how to add this to my own site. One idea might be to add an additional table below the game and cart tables that shows "games_carts" and the associated foreign keys.

Is there at least one DELETE and does at least one DELETE remove things from a M:M relationship?

- Yes, removing an item from a cart fulfills this requirement.

Is there at least one UPDATE for any one entity?

- Yes, the user's profile can be updated.

Is at least one relationship NULLable?

- Yes, it seems that a game can be removed from the system, but the associated games_carts FK of gameID would be nulled while the cart/order lived on.

Do you have any other suggestions for the team to help with their HTML UI?

- This looks like a great start and I think it would come alive once data is added. I think it might be a good idea to start envisioning how your tables might look with some "dummy" data added to them.

Great work and thank you for sharing,

Andrew

Will Dang

Does the UI utilize a SELECT for every table in the schema? In other words, data from each table in the schema should be displayed on the UI.

- Yes, the UI does utilize a SELECT for every table as outlined in the schema, and does so in accordance with the project documentation provided.

Does at least one SELECT utilize a search/filter with a dynamically populated list of properties?

- Not at the moment (html still needs to be implemented), but there is a comment on the Game Page which details a plan to implement a search function for the games.

Does the UI implement an INSERT for every table in the schema? In other words, there should be UI input fields that correspond to each table and attribute in that table.

- Games, Library, or Game_Cart don't have an insert so it may be a good idea to make an admin page to insert needed data in these tables. The UI implements an INSERT for Cart and Profile tables and Game pages, but it seems to be incomplete (missing form/button).

Does each INSERT also add the corresponding FK attributes, including at least one M:M relationship? In other words if there is a M:M relationship between Orders and Products, INSERTing a new Order (e.g. orderID, customerID, date, total), should also INSERT row(s) in the intersection table, e.g. OrderDetails (orderID, productID, qty, price and line_total).

- I did not notice this when checking it, but according to your documentation, you plan to implement this so I am assuming that will be done sometime in the future. It will also probably be easier when the implementation is more complete considering the other INSERT functions needed for other tables.

Is there at least one DELETE and does at least one DELETE remove things from a M:M relationship? In other words, if an order is deleted from the Orders table, it should also delete the corresponding rows from the OrderDetails table, BUT it should not delete any Products or Customers.

- Yes, able to delete item from the cart and it removes from a M:M relationship between games and carts.

Is there at least one UPDATE for any one entity? In other words, in the case of Products, can productName, listPrice, qtyOnHand, e.g. be updated for a single ProductID record?

- Yes, users can update profiles.

Is at least one relationship NULLable? In other words, there should be at least one optional relationship, e.g. having an Employee might be optional for any Order. Thus it should be feasible to edit an Order and change the value of Employee to be empty.

- There is at least one NULLable relationship according to the provided draft. For instance, game can be removed and the games_carts FK becomes null while the order is still in process.

Do you have any other suggestions for the team to help with their HTML UI?

- I think that your website looks easy to read and very clear, and is off to a good start so far but needs a bit more complete implementation. Maybe add more stylistic components to make it more interesting visually as well (add a picture or two, etc), and consider changing spacing/font based on how sample data would look inside the tables that did not have INSERT implemented yet.

<u>Chasen Yamashita</u>

Does the UI utilize a SELECT for every table in the schema? In other words, data from each table in the schema should be displayed on the UI. Note: it is generally not acceptable for just a single query to join all tables and displays them.

- It appears for Carts, Libraries, Orders, that there is a SELECT in use-- while it is still in progress for Games and Customers.

Does at least one SELECT utilize a search/filter with a dynamically populated list of properties?

- It seems the Games page would have this feature, with a filter for genres.

Does the UI implement an INSERT for every table in the schema? In other words, there should be UI input fields that correspond to each table and attribute in that table.

- Profile and Cart may have the UI for INSERT. but it does not appear to be implemented for other tables.

Does each INSERT also add the corresponding FK attributes, including at least one M:M relationship? In other words if there is a M:M relationship between Orders and Products, INSERTing a new Order (e.g. orderID, customerID, date, total), should also INSERT row(s) in the intersection table, e.g. OrderDetails (orderID, productID, qty, price and line_total).

- Insert forms do not appear to be specific for attributes yet.

Is there at least one DELETE and does at least one DELETE remove things from a M:M relationship? In other words, if an order is deleted from the Orders table, it should also delete the corresponding rows from the OrderDetails table, BUT it should not delete any Products or Customers.

- The Cart page will allow users to delete items they don't want to purchase, likely for orders.

Is there at least one UPDATE for any one entity? In other words, in the case of Products, can productName, listPrice, qtyOnHand, e.g. be updated for a single ProductID record?

- The Profile page allows for updates to a customer's attributes.

Is at least one relationship NULLable? In other words, there should be at least one optional relationship, e.g. having an Employee might be optional for any Order. Thus it should be feasible to edit an Order and change the value of Employee to be empty.

- If a game is sold out the amount for it might be a null value, as well as certain attributes for the profile of a customer (if they don't want to give their phone number or such).

Actions Based on Step 3 Draft Feedback

- Added “Admin” page to site as per many suggestions and within group’s plans
- Added tables and forms to appropriate pages as per most other peer suggestions

Upgrades to Step 3 Draft Version

Using current and previous peer reviews, instructor feedback, and group meetings, the entire site received an overhaul, save for a few minor things that were already in progress after the Step 3 Draft submission

- Updated “Home” page with “Login” form at top of page
- Created and added a “Featured Game” aspect to “Home” page complete with a table displaying a featured game with its title, price, rating based on stars, and other information. Also added button to “Add to Cart”
- Moved “Create New Profile” feature and its associated forms from the “Profile” page to its own specific page for simplicity
- Updated “Profile” page to display current profile information and added forms to update profile information
- Refined the “Library” page with appropriate headers and added a “Remove” option to all games in the Library. Also added a search option to the “Library” page as well as a “Results” section just below.
- Added table to “Cart” page to show what a working cart would look like. Table displays game title, price, and total with a “Purchase” button and an option to remove games from cart. Also added search and results features to the bottom of the page.
- Added table to “Game” page that displays a game’s information such as an image, game title, price, rating based on stars, and other information. Included an “Add to Cart” button within table as well. Search and results feature added to page as well.

- Updated “Order” page from previous version by adding a “Return to Cart” button and a new table called “Order History” that includes the user’s order history and an option to “View” previous orders.
- Added “Admin” page that allows one to complete all features generally found on a real life admin page with appropriate forms and tables
    - Added feature to add, update, and delete Games
    - Added feature to update and delete Customers
    - Added ability to update and delete Libraries
    - Added feature to update and delete Carts
    - Added ability to update and delete Orders

Step 2 Draft Feedback By Peer Reviews

Jacob Anderson

- **Does the overview describe what problem is to be solved by a website with DB back end?**
    - Yes, the problem description is succinct and easy to follow. One potential idea for this section would be to describe which entities the site will use to accomplish the problems.

- **Does the overview list specific facts?**
    - Yes, the overview lists that over 9000 video games are released each year.

- **Are at least four entities described and does each one represent a single idea to be stored as a list?**
    - Yes, each of the four entities represents a singular idea and is easy to imagine as a list.

- **Does the outline of entity details describe the purpose of each, list attribute datatypes and constraints and describe relationships between entities?**
    - Yes, however, as mentioned in the problem overview, the relationship between Carts and Orders should be (1) to (0 or 1) rather than 1:1 as shown on the ER diagram. Unfortunately, only three relationships are described when the project guidelines call for four.

- **Are 1:M relationships correctly formulated? Is there at least one M:M relationship?**
    - Yes, the 1:M relationship is formulated correctly and there is 1 M:M relationship. See above about project guidelines calling for four relationships.

- **Is there consistency in a) naming between overview and entity/attributes b) entities plural, attributes singular c) use of capitalization for naming?**
    - a) Yes b) Yes c) Yes
      I would caution against using spaces in attribute names as it makes writing SQL queries significantly more difficult. I would also caution against capitalizing both entities and attributes, as this can make it hard to distinguish which is which.

Esther Park

- **Does the overview describe what problem is to be solved by a website with DB back end?**
    - Yes, I understand that the program will track orders and will keep order history, will have a catalog, display payment/billing info on invoices, carts will be processed as orders, and info about customers update-able. As an introduction course, all of this seems ambitious (in an admirable way). Perhaps promise a few core functions, such as customers being able to select favorite games and add them to their accounts (such as myanimelist.com), displaying them, seeing how much they currently cost, etc. Then if there is time you two can focus on the more challenging cart/checkout/invoice part, which isn't directly a requirement of the final project.

- **Does the overview list specific facts?**
    - Somewhat - please include how many users you anticipate will use this program, including how many games an average user may purchase on a monthly or yearly rate.

- **Are at least four entities described and does each one represent a single idea to be stored a s a list?**
    - Yes. Although pretty straightforward, a one-liner explaining the idea of each entity would be nice (like in example provided).

- **Does the outline of entity details describe the purpose of each, list attribute datatypes and constraints and describe relationships between entities?**
    - Yes, although a short sentence explaining the nature of the relationship (like in example) would be appreciated.

- **Are 1:M relationships correctly formulated? Is there at least one M:M relationship?**
    - Yes, there is a 1:M relationship between Customers and Carts, and an M:M relationship between Carts and Games

- **Is there consistency in a) naming between overview and entity/attributes b) entities plural, attributes singular c) use of capitalization for naming?**
    - Yes, although it is best to avoid spaces in naming, and this is personal preference but attributes could be in lowercase.

Benjamin Gottschalk

- **1. Does the overview describe what problem is to be solved by a website with DB back end?**
    - Yes; a DB can solve this problem. I understand that a DB will hold the information about games, games in a cart, user orders, and information about users.
- **2. Does the overview list specific facts?**
    - Mostly yes; it says that a DB will be used to track orders and keep track of customers' order history. Later, however, it is listed that "Games" are an entity. I think that it should be added to the database description (2nd sentence in Part B - Overview).
- **3. Are at least four entities described and does each one represent a single idea to be stored as a list?**
    - Yes; Games, Customers, Carts, and Orders are listed as entities.
- **4. Does the outline of entity details describe the purpose of each, list attribute datatypes and constraints and describe relationships between entities?**
    - Yes; a small description should be added to get the point of what each entity does.
- **5. Are 1:M relationships correctly formulated? Is there at least one M:M relationship?**
    - Yes; those relationships are described well and look good.
- **6. Is there consistency in a) naming between overview and entity/attributes b) entities plural, attributes singular c) use of capitalization for naming?**
    - Yes; the only thing I see is that the orders in the outline says "Cart ID" whereas the ER Diagram says that it contains a "Cart ID Number". I would suggest staying with one of them to make sure the DB works correctly.

Glenn Frutiz

- **Does the overview describe what problem is to be solved by a website with DB back end?**
    - Their goal is to track orders of video games and keep customer's order history.
- **Does the overview list specific facts?**
    - The overview goes into detail of how the website will work in terms of purchases. It does not describe the types of relationships and examples of the relationships.
- **Are at least four entities described and does each one represent a single idea to be stored a s a list?**
    - Four entities are described and each are single ideas.
- **Does the outline of entity details describe the purpose of each, list attribute datatypes and constraints and describe relationships between entities?**
    - It does not describe the purpose of each entity detail but that information can be gathered from the overview above. I think more description can be provided about the relationships. This would help understand the reasoning for the notation in the ER diagram.
- **Are 1:M relationships correctly formulated? Is there at least one M:M relationship?**
    - I believe it is correctly formulated.
- **Is there consistency in a) naming between overview and entity/attributes b) entities plural, attributes singular c) use of capitalization for naming?**
    - There is consistency in naming, entities and use of capitalization

Actions Based on Step 2 Student Feedback

- Added entity descriptions to our Overview as per peer suggestions. Realized this was indeed needed once looking over the Overview again. Explained each entity and what information they hold.
- Included one-line descriptions of each entity in our Database Outline for simplicity and easier reading. This would make things easier to understand if just looking at our Database Outline alone.
- Reviewed our relationships and included a missing relationship (1:M) pointed out by a peer review. This resulted in us adding a “Library” entity to have a 1:M relationship and meet the project requirements.
- It was suggested to add our expected number of users or average purchase rates but we ad a group thought against this since this outline isn’t a business model and the required attributes/information to achieve the goal of the database doesn’t change based on the amount of customers.

Upgrades to Step 2 Draft Version

- Decided to re-add our “Library” entity after further discussion. Updated and refined the entity as well.
- Added a “Games_Carts” table to Schema
- Updated our ER Diagram based on entity changes
- Updated Schema to reflect entity and table changes
- Updated Database Outline with re-added “Library” entity and with respective attributes

Fixes based on Step 2 Instructor Feedback

Our original overview (before peer reviews) was much longer than our current version and our current database subject is much different than our original idea. We first wanted to come up with a way to organize video games based on Genre, Developer, and Platforms while adding a sort of store like function to the database. After the feedback from the TAs and professor, we realized a store-like option might be an easier and more streamlined idea to follow. Included in the original were many irrelevant statistics and details that we ultimately decided were not needed or not important enough for the general goal of our database. Within these removed details were numbers such as average gamer age, common genre per gamer age, and many other numerical and age-based statistics. We also had about 7 entities in our original plans and decided to trim them down to 4 for simplicity and to best optimize them for the main goal of our database. Building a pseudo-Steam store, we realized entities such as Genre, Developers, and Platforms were not the best choices for what we want to achieve.

The other aspect of our idea that we really toned down was our amount of relationships. We trimmed down the amount and also included all types of relationships since our very first plan did not have enough variety. Our updated version ensures we have the correct amount and correct types of relationships. We also fine tuned our ER diagram to better match real world and natural occurrences within an online store such as this one. We realized that a “Cart” can exist without having a confirmed or completed “Order”, such as when a customer chooses items to add to the Cart but ultimately decides against purchasing and deletes their cart and its items, therefore never creating an official order.