

CPSC 304 Project Cover Page

Milestone #: 4

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Group Number: 51

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By typing our names and student numbers in the above table, we certify that the work in the attached assignment was performed solely by those whose names and student IDs are included above. (In the case of Project Milestone 0, the main purpose of this page is for you to let us know your e-mail address, and then let us assign you to a TA for your project supervisor.)

In addition, we indicate that we are fully aware of the rules and consequences of plagiarism, as set forth by the Department of Computer Science and the University of British Columbia

CPSC 304 Milestone 4

- GitHub Repo Link
- https://github.students.cs.ubc.ca/CPSC304-2024S-T2/project_e1h8m_i6m6h_t9n6o

Project Description and Final Accomplishments

The “Uno Game Users and Game State Management” project tracks active players (and information about them, such as their countries) and active (and expired) memberships (which tracks their Privilege Class and Privilege Level among other things) pertinent to players. Furthermore, we also offer an Items and Store functionality that allows keeps tracks of User-assigned Stores which they may access. It was intended that upon deployment the User’s would be able to make purchases, however this application only provides the functionality to **view** assigned stores and the items therein. We do have a table that would allow for purchases, however, “PlayerContainsItems.” Also, we keep track of items that have been recently created (inside “Items”), though they are not assigned to a store, automatically (the table exists which **allows** for this, however: “StoresSellsItems”). As this is intended to be administrative this functionality’s tables and necessary scaffolding is present, which shows coherence, though to truly leverage it, we would need a non-administrative (i.e. user) interface. The project also encompasses limited game state management of an Uno Game’s instance. At present it shows a match’s Winner, Start and End Date, and Status. This addresses the issue of tracking game states. **Extended functionality would have been allowed, and tables do exist for this**

(“CardHeldByHand,” “CardBelongsToPlayerAndMatch,” etc). For example, the cards held by each player, the type of cards held by each player, the cards remaining in the deck, and whose turn it is. A real-life situation would, of course, be a group of individuals engaged in a (virtual) game of Uno. **However, the aforementioned functionality is NOT present.** This would only have been implemented if there was indeed a User interface where people could engage in a game (and thereby update the Database ad hoc.) but as stated, this is administrative. We also keep track of Events along with their Statuses, no of participants, and Dates. This was limited in functionality for the reasons mentioned previously. A user would need to sign up for an event, and therefore whilst we allow for user registration in events (via a table, “PlayerParticipatesEvents,”) it lies dormant.

There are five main “views,” excluding the authentication page. All pages have associated Insert, Delete, and Edit functionalities, and checks that uphold Relation integrity e.g. You cannot create a Match with Usernames that do not exist. Many such checks are placed on the front-end including but not limited to date checks, empty fields checks etc. All these pages show interconnection using the underlying database (as exemplified by Creating a Match). The pages also have other features: e.g. Events allows you to view only certain attributes and Search for events based on a criteria. There are also sorting functions, groupings, and a “division,” functionality as well, all of which can be leveraged using button interfaces.

To summarize it can be said, the final achievements are:

- Tracking Individual Players and their associated statistics, and information.
- Tracking Stores assigned to Players, and Newly added items.
- Tracking Player Memberships (and associated attributes).
- Tracking Events with associated attributes.
- Limited Tracking of Match States.
- Tracking **total** number of Active Players, Events, and matches. (Revenue is unfortunately incomplete.)

Consider what follows to be a somewhat brief overview of the tables, db structure etc. The below is intended to augment the above and vice versa.

1. Database Structure:
 - The database, UNOGameSystem, includes tables to store player information, match details, player memberships, player involvement in matches, items, and other game-related data. Events are also accounted for,
 - Primary tables include `PlayerUsernameAndEmail`, `Players`, `Matches`, `PlayerInvolveMatches`, `HandBelongsToPlayerAndMatch`, `Events` and several others responsible for managing in-game items and events.
2. Players Management:
 - `PlayerUsernameAndEmail`: Stores usernames and corresponding emails.
 - `Players`: Contains detailed player data including total wins, total games, experience points, win rates, country, and passwords. The table references `PlayerUsernameAndEmail` and `PlayerLevel`.
3. Player Experience and Levels:
 - `PlayerLevel`: Maps experience points to player levels, ensuring experience points do not exceed 10,000. This references the `Players` table.
4. Membership Management:
 - The system manages player memberships through tables like `MembershipPrivilegeClass` and `Memberships`, tracking membership statuses, issue and expiration dates, and player privilege levels.
5. Events Management:
 - `Events`: Manages event details, participation, and status, ensuring all event-related activities are easily trackable. (participation refers to both the no. of players participating, and their identity: we have a "PlayerParticipatesEvents" table).
6. Matches and Participation:
 - `Matches`: Records match details such as start and end times, winner, and status.
 - `PlayerInvolveMatches`: Tracks players involved in specific matches.
7. Item and Store Management:

- Items and related tables
`(ItemOriginalPrice, ItemDiscount, StoreSellItems, PlayerContainItems)`
 manage in-game items, their prices, promotions, and which stores sell them, to Players. Different players can access different stores that are associated with them.

Note for assertions that were needed:

- > An assertion is needed for Match's total participation relationship with Player.
- > An assertion is needed for Draw's total participation relationship with Card.
- > An assertion is needed for Play's total participation relationship with Card.

No triggers were seen as required, as the front-end and back-end maintains all constraints, and there is nothing to be updated that we don't already account for via code checks or SQL DDL.

Schema Changes

1. We removed some entities & relationships that are unnecessary to be included in this system since we only have limited time to complete this project.
 1. Removed entities: `LuckyDraw`, `Character`, and `Action` and all relationships involving those entities. For "Action," a bit more detail is warranted which is provided below.
 2. We made an aggregation of the Hand and Card Entities.
2. We denormalized (joined) several relations representing the `Membership` entity, as changing the issue/expiration date of one membership should not influence other users' memberships. To reiterate, we annulled our BCNF decomposition of the "MembershipInPlayer," relation, as this made creation of the application much more conducive and got rid of unnecessary, extraneous and redundant queries. It was a tradeoff between storage and cohesion, and the latter was preferred.
3. We changed the `Membership` entity into a normal entity with a one-to-one relationship with the player. Because one player can have at most one membership, and not every player **needs** a membership, per se. Imagine an instance of a player playing without having ever created an account.
4. For the `ISA` relationship between different types of actions, we simplified them to a single table with some redundancy for easier interaction and display. There was some extra finetuning done here as well, which is detailed below. But, this was also, in sum, to allow for cohesion, and ease of application coherence.
5. The participation constraint's direction b/w Draw and Card entities has been reversed: it is now Draw has total participation, Card does not, and the one to many relationship has been reversed.
6. By virtue of the removal of Character, and its subsumption by Player, Match has a total participation constraint (many to many) with Player.

For more specificity, the primary changes are (though some of this may be redundant):

- > Event now has new attributes StartDate, EndDate, Status, NumOfParticipants.
- > Membership now has Status, and DaysRemaining, and TotalPoints has been removed.
- > Membership is not longer a weak entity and has a Foreign Key Constraint.
- > For Player, EXP has been renamed to ExperiencePoint; Password has been added, and PreferredLanguage has been removed.
- > For Turn, we have added Turnstamp, and dismantled Action entirely to simplify ER Diagram. So now the parent entity is Turn as opposed to Action.
- > For Draw, we have added DrawAmount and removed it's direct relation to Deck.
- > Play has a connection to an Aggregation (Card held by Hand) now. It also has a total participation constraint.
- > Card has a new attribute: IsCardInDeck.
- > The Character entity has been excised, along with redundant attributes like CharacterID, Price, and Name, and so have been the relevant relations. Player has taken over its functionality.
- > "In" becomes "Belongs To" b/w Card and Deck.
- > For Deck, TotalCards was renamed to CardAmount
- > For the Has Relationship b/w Match and Deck, the TimeElapsed attribute has been removed.

As for the why: project complexity was too high to maintain, and this still achieves our main objective (outlined above), though it is much simpler. Progression in the course played a part, most definitely, but it was time which was the true impediment in our final deliverables and schema.

Final Schema Screenshot Iteration One [for a brief overview].

Name	Engine	Version	Row Format	Rows	Avg Row Length	Data Length	Max Data Length	Index Length	Data Free	Auto Increm...	Create Time	Update Time	Check Time	Collation
CardBelongsToDeck	InnoDB	10	Dynamic	108	151	16.0 Kib	0.0 bytes	16.0 Kib	0.0 bytes	0	2024-08-05 21:28:34	2024-08-05 21:28:34	2024-08-05 21:28:34	utf8mb4_090...
CardHeldByHand	InnoDB	10	Dynamic	14	1170	16.0 Kib	0.0 bytes	16.0 Kib	0.0 bytes	0	2024-08-05 21:28:34	2024-08-05 21:28:34	2024-08-05 21:28:34	utf8mb4_090...
CardDrawnInTurn	InnoDB	10	Dynamic	6	2730	16.0 Kib	0.0 bytes	0.0 bytes	0.0 bytes	0	2024-08-05 21:28:34	2024-08-05 21:28:34	2024-08-05 21:28:34	utf8mb4_090...
Decks	InnoDB	10	Dynamic	0	0	16.0 Kib	0.0 bytes	0.0 bytes	0.0 bytes	2	2024-08-05 21:28:34	2024-08-05 21:28:34	2024-08-05 21:28:34	utf8mb4_090...
DrawCard	InnoDB	10	Dynamic	8	2048	16.0 Kib	0.0 bytes	0.0 bytes	0.0 bytes	0	2024-08-05 21:28:34	2024-08-05 21:28:34	2024-08-05 21:28:34	utf8mb4_090...
DrawAction	InnoDB	10	Dynamic	2	8192	16.0 Kib	0.0 bytes	0.0 bytes	0.0 bytes	0	2024-08-05 21:28:34	2024-08-05 21:28:34	2024-08-05 21:28:34	utf8mb4_090...
Events	InnoDB	10	Dynamic	21	780	16.0 Kib	0.0 bytes	0.0 bytes	0.0 bytes	22	2024-08-05 21:28:34	2024-08-05 21:28:34	2024-08-05 21:28:34	utf8mb4_090...
HandBelongsToPlayerA...	InnoDB	10	Dynamic	2	8192	16.0 Kib	0.0 bytes	32.0 Kib	0.0 bytes	3	2024-08-05 21:28:34	2024-08-05 21:28:34	2024-08-05 21:28:34	utf8mb4_090...
ItemDiscount	InnoDB	10	Dynamic	8	2048	16.0 Kib	0.0 bytes	0.0 bytes	0.0 bytes	0	2024-08-05 21:28:34	2024-08-05 21:28:34	2024-08-05 21:28:34	utf8mb4_090...
ItemOriginalPrice	InnoDB	10	Dynamic	5	3276	16.0 Kib	0.0 bytes	0.0 bytes	0.0 bytes	0	2024-08-05 21:28:34	2024-08-05 21:28:34	2024-08-05 21:28:34	utf8mb4_090...
Items	InnoDB	10	Dynamic	26	655	16.0 Kib	0.0 bytes	32.0 Kib	0.0 bytes	26	2024-08-05 21:28:34	2024-08-05 21:28:34	2024-08-05 21:28:34	utf8mb4_090...
Matches	InnoDB	10	Dynamic	0	0	16.0 Kib	0.0 bytes	0.0 bytes	0.0 bytes	2	2024-08-05 21:28:34	2024-08-05 21:28:34	2024-08-05 21:28:34	utf8mb4_090...
MatchHasDeck	InnoDB	10	Dynamic	1	16384	16.0 Kib	0.0 bytes	32.0 Kib	0.0 bytes	0	2024-08-05 21:28:34	2024-08-05 21:28:34	2024-08-05 21:28:34	utf8mb4_090...
MembershipPrivilegeCl...	InnoDB	10	Dynamic	5	3276	16.0 Kib	0.0 bytes	0.0 bytes	0.0 bytes	0	2024-08-05 21:28:34	2024-08-05 21:28:34	2024-08-05 21:28:34	utf8mb4_090...
Memberships	InnoDB	10	Dynamic	20	819	16.0 Kib	0.0 bytes	32.0 Kib	0.0 bytes	21	2024-08-05 21:28:34	2024-08-05 21:29:45	2024-08-05 21:28:34	utf8mb4_090...
NumberCard	InnoDB	10	Dynamic	76	215	16.0 Kib	0.0 bytes	0.0 bytes	0.0 bytes	0	2024-08-05 21:28:34	2024-08-05 21:28:34	2024-08-05 21:28:34	utf8mb4_090...
PlayAction	InnoDB	10	Dynamic	9	1820	16.0 Kib	0.0 bytes	16.0 Kib	0.0 bytes	0	2024-08-05 21:28:34	2024-08-05 21:28:34	2024-08-05 21:28:34	utf8mb4_090...
PlayerContainsItems	InnoDB	10	Dynamic	39	420	16.0 Kib	0.0 bytes	16.0 Kib	0.0 bytes	0	2024-08-05 21:28:34	2024-08-05 21:28:34	2024-08-05 21:28:34	utf8mb4_090...
PlayerInvolveMatches	InnoDB	10	Dynamic	2	8192	16.0 Kib	0.0 bytes	16.0 Kib	0.0 bytes	0	2024-08-05 21:28:34	2024-08-05 21:28:34	2024-08-05 21:28:34	utf8mb4_090...
PlayerLevel	InnoDB	10	Dynamic	11	1489	16.0 Kib	0.0 bytes	0.0 bytes	0.0 bytes	0	2024-08-05 21:28:34	2024-08-05 21:28:34	2024-08-05 21:28:34	utf8mb4_090...
PlayerParticipateEvents	InnoDB	10	Dynamic	30	546	16.0 Kib	0.0 bytes	16.0 Kib	0.0 bytes	0	2024-08-05 21:28:34	2024-08-05 21:28:34	2024-08-05 21:28:34	utf8mb4_090...
Players	InnoDB	10	Dynamic	20	819	16.0 Kib	0.0 bytes	32.0 Kib	0.0 bytes	23	2024-08-05 21:28:34	2024-08-05 21:28:34	2024-08-05 21:28:34	utf8mb4_090...
PlayerUsernameAndEm...	InnoDB	10	Dynamic	20	819	16.0 Kib	0.0 bytes	0.0 bytes	0.0 bytes	0	2024-08-05 21:28:34	2024-08-05 21:28:34	2024-08-05 21:28:34	utf8mb4_090...
ReverseCard	InnoDB	10	Dynamic	8	2048	16.0 Kib	0.0 bytes	0.0 bytes	0.0 bytes	0	2024-08-05 21:28:34	2024-08-05 21:28:34	2024-08-05 21:28:34	utf8mb4_090...
SkipCard	InnoDB	10	Dynamic	8	2048	16.0 Kib	0.0 bytes	0.0 bytes	0.0 bytes	0	2024-08-05 21:28:34	2024-08-05 21:28:34	2024-08-05 21:28:34	utf8mb4_090...
Stores	InnoDB	10	Dynamic	20	819	16.0 Kib	0.0 bytes	16.0 Kib	0.0 bytes	21	2024-08-05 21:28:34	2024-08-05 21:28:34	2024-08-05 21:28:34	utf8mb4_090...
StoreSellItems	InnoDB	10	Dynamic	500	32	16.0 Kib	0.0 bytes	16.0 Kib	0.0 bytes	0	2024-08-05 21:28:34	2024-08-05 21:28:34	2024-08-05 21:28:34	utf8mb4_090...
TurnBelongsToPlayerAn...	InnoDB	10	Dynamic	13	1260	16.0 Kib	0.0 bytes	32.0 Kib	0.0 bytes	14	2024-08-05 21:28:34	2024-08-05 21:28:34	2024-08-05 21:28:34	utf8mb4_090...
TurnLostAction	InnoDB	10	Dynamic	2	8192	16.0 Kib	0.0 bytes	0.0 bytes	0.0 bytes	0	2024-08-05 21:28:34	2024-08-05 21:28:34	2024-08-05 21:28:34	utf8mb4_090...
WildCard	InnoDB	10	Dynamic	4	4096	16.0 Kib	0.0 bytes	0.0 bytes	0.0 bytes	0	2024-08-05 21:28:34	2024-08-05 21:28:34	2024-08-05 21:28:34	utf8mb4_090...
WildDraw4Card	InnoDB	10	Dynamic	4	4096	16.0 Kib	0.0 bytes	0.0 bytes	0.0 bytes	0	2024-08-05 21:28:34	2024-08-05 21:28:34	2024-08-05 21:28:34	utf8mb4_090...

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Table	Column	Type	Default Value	Nullable	Character Set	Collation	Privileges	Extra	Comments
WildDraw4Card	◆ card_id	int	NO				select,insert,update,references		
WildDraw4Card	◆ deck_id	int	NO				select,insert,update,references		
WildCard	◆ card_id	int	NO				select,insert,update,references		
WildCard	◆ deck_id	int	NO				select,insert,update,references		
TurnLostAction	◆ turn_id	int	NO				select,insert,update,references		
TurnLostAction	◆ player_id	int	NO				select,insert,update,references		
TurnLostAction	◆ match_id	int	NO				select,insert,update,references		
TurnBelongsToPlayerA...	◆ turn_id	int	NO				select,insert,update,references		
TurnBelongsToPlayerA...	◆ player_id	int	NO				select,insert,update,references		
TurnBelongsToPlayerA...	◆ match_id	int	NO				select,insert,update,references		
TurnBelongsToPlayerA...	◆ time_stamp	timestamp	CURRENT_TIME...	YES			select,insert,update,references		
TurnBelongsToPlayerA...	◆ turn_order	varchar(255)		NO	utf8mb4	utf8mb4_090...	select,insert,update,references		DEFAULT_GE...
Stores	◆ store_id	int	NO				select,insert,update,references		
Stores	◆ player_id	int	NO				select,insert,update,references		
Stores	◆ num_of_items	int	0	YES			select,insert,update,references		
StoreSellItems	◆ store_id	int	NO				select,insert,update,references		
StoreSellItems	◆ item_id	int	NO				select,insert,update,references		
SkipCard	◆ card_id	int	NO				select,insert,update,references		
SkipCard	◆ deck_id	int	NO				select,insert,update,references		
SkipCard	◆ color	varchar(255)		NO	utf8mb4	utf8mb4_090...	select,insert,update,references		
ReverseCard	◆ card_id	int	NO				select,insert,update,references		
ReverseCard	◆ deck_id	int	NO				select,insert,update,references		
ReverseCard	◆ color	varchar(255)		NO	utf8mb4	utf8mb4_090...	select,insert,update,references		
Players	◆ win_rate	float	0	YES			select,insert,update,references		
Players	◆ player_id	int	NO				select,insert,update,references		
Players	◆ total_win	int	0	YES			select,insert,update,references		
Players	◆ total_game_count	int	0	YES			select,insert,update,references		
Players	◆ experience_point	int	0	YES			select,insert,update,references		
Players	◆ username	varchar(255)		NO	utf8mb4	utf8mb4_090...	select,insert,update,references		
Players	◆ country	varchar(255)		NO	utf8mb4	utf8mb4_090...	select,insert,update,references		
Players	◆ password	varchar(255)		NO	utf8mb4	utf8mb4_090...	select,insert,update,references		
PlayUsernameAndE...	◆ username	varchar(255)		NO	utf8mb4	utf8mb4_090...	select,insert,update,references		
PlayUsernameAndE...	◆ email	varchar(255)		NO	utf8mb4	utf8mb4_090...	select,insert,update,references		
PlayParticipateEvents	◆ player_id	int	NO				select,insert,update,references		
PlayParticipateEvents	◆ event_id	int	NO				select,insert,update,references		
PlayerLevel	◆ level	int	NO				select,insert,update,references		
PlayerInvolveMatches	◆ player_id	int	NO				select,insert,update,references		
PlayerInvolveMatches	◆ match_id	int	NO				select,insert,update,references		
PlayContainItems	◆ player_id	int	NO				select,insert,update,references		
PlayContainItems	◆ item_id	int	NO				select,insert,update,references		
PlayAction	◆ turn_id	int	NO				select,insert,update,references		
PlayAction	◆ player_id	int	NO				select,insert,update,references		
PlayAction	◆ match_id	int	NO				select,insert,update,references		
PlayAction	◆ card_id	int	NO				select,insert,update,references		
PlayAction	◆ deck_id	int	NO				select,insert,update,references		
PlayAction	◆ hand_id	int	NO				select,insert,update,references		
NumberCard	◆ card_id	int	NO				select,insert,update,references		
NumberCard	◆ deck_id	int	NO				select,insert,update,references		
NumberCard	◆ number	int	NO				select,insert,update,references		
NumberCard	◆ color	varchar(255)		NO	utf8mb4	utf8mb4_090...	select,insert,update,references		
Memberships	◆ issue_date	date		NO			select,insert,update,references		
Memberships	◆ expire_date	date		NO			select,insert,update,references		
Memberships	◆ membership_id	int	NO				select,insert,update,references		
Memberships	◆ player_id	int	NO				select,insert,update,references		
Memberships	◆ privilege_level	int	NO				select,insert,update,references		
Memberships	◆ status	varchar(255)	YES	utf8mb4	utf8mb4_090...	select,insert,update,references			
MembershipPrivilege...	◆ privilege_level	int	NO				select,insert,update,references		
MembershipPrivilege...	◆ privilege_class	varchar(255)		NO	utf8mb4	utf8mb4_090...	select,insert,update,references		
Matches	◆ match_id	int	NO				select,insert,update,references		
Matches	◆ start_time	timestamp	CURRENT_TIME...	YES			select,insert,update,references		
Matches	◆ end_time	timestamp		YES			select,insert,update,references		
Matches	◆ winner	varchar(255)	YES	utf8mb4	utf8mb4_090...	select,insert,update,references			
Matches	◆ status	varchar(255)	In Process	YES	utf8mb4	utf8mb4_090...	select,insert,update,references		
MatchHasDeck	◆ match_id	int	NO				select,insert,update,references		
MatchHasDeck	◆ deck_id	int	NO				select,insert,update,references		
Items	◆ item_id	int	NO				select,insert,update,references		
Items	◆ current_price	int	NO				select,insert,update,references		
Items	◆ name	varchar(255)		NO	utf8mb4	utf8mb4_090...	select,insert,update,references		
Items	◆ quality	varchar(255)		NO	utf8mb4	utf8mb4_090...	select,insert,update,references		
Items	◆ applied_promotion	varchar(255)	YES	utf8mb4	utf8mb4_090...	select,insert,update,references			
ItemOriginalPrice	◆ original_price	int		NO			select,insert,update,references		
ItemOriginalPrice	◆ quality	varchar(255)		NO			select,insert,update,references		
ItemDiscount	◆ discount	int		NO			select,insert,update,references		
ItemDiscount	◆ applied_promotion	varchar(255)		NO	utf8mb4	utf8mb4_090...	select,insert,update,references		
HandBelongsToPlayer...	◆ hand_id	int	NO				select,insert,update,references		
HandBelongsToPlayer...	◆ player_id	int	NO				select,insert,update,references		
HandBelongsToPlayer...	◆ match_id	int	NO				select,insert,update,references		
HandBelongsToPlayer...	◆ card_amount	int	7	YES			select,insert,update,references		
Events	◆ start_date	date		NO			select,insert,update,references		
Events	◆ end_date	date		NO			select,insert,update,references		
Events	◆ event_id	int	NO				select,insert,update,references		
Events	◆ num_of_participants	int	0	YES			select,insert,update,references		
Events	◆ name	varchar(255)	YES	utf8mb4	utf8mb4_090...	select,insert,update,references			
Events	◆ status	varchar(255)	NO	utf8mb4	utf8mb4_090...	select,insert,update,references			
DrawAction	◆ turn_id	int	NO				select,insert,update,references		
DrawAction	◆ player_id	int	NO				select,insert,update,references		
DrawAction	◆ match_id	int	NO				select,insert,update,references		
DrawAction	◆ draw_amount	int	NO				select,insert,update,references		
Draw2Card	◆ card_id	int	NO				select,insert,update,references		
Draw2Card	◆ deck_id	int	NO				select,insert,update,references		
Decks	◆ color	varchar(255)		NO	utf8mb4	utf8mb4_090...	select,insert,update,references		
Decks	◆ deck_id	int	NO				select,insert,update,references		
Decks	◆ card_amount	int	108	YES			select,insert,update,references		
CardsDrawnInTurn	◆ turn_id	int	NO				select,insert,update,references		
CardsDrawnInTurn	◆ player_id	int	NO				select,insert,update,references		
CardsDrawnInTurn	◆ match_id	int	NO				select,insert,update,references		
CardsDrawnInTurn	◆ card_id	int	NO				select,insert,update,references		
CardsDrawnInTurn	◆ deck_id	int	NO				select,insert,update,references		
CardHeldByHand	◆ card_id	int	NO				select,insert,update,references		
CardHeldByHand	◆ deck_id	int	NO				select,insert,update,references		
CardHeldByHand	◆ hand_id	int	NO				select,insert,update,references		
CardHeldByHand	◆ player_id	int	NO				select,insert,update,references		
CardHeldByHand	◆ match_id	int	NO				select,insert,update,references		
CardBelongsToDeck	◆ card_id	int	NO				select,insert,update,references		
CardBelongsToDeck	◆ deck_id	int	NO				select,insert,update,references		
CardBelongsToDeck	◆ is_card_in_deck	int	1	YES			select,insert,update,references		
CardBelongsToDeck	◆ name	varchar(255)	NO	utf8mb4	utf8mb4_090...	select,insert,update,references			

Please ignore the average row length and the row length as they are inaccurate. Instead in the repository, inside insertion_images, find the associated tables and their population after the SQL script provided is run. Please do pardon the lack of editing but the tables are present, You will also find the primary keys and the foreign keys listed, in the bottom left.

Note: To interpret the Primary and Foreign keys:

- We apologize for not following class conventions, but it was indicated that we could have them generated, and they were generated in that manner.
- Primary keys are **Bold and Underlined** and have PK next to them.
- Foreign keys are only **Bold**.
- **IF THERE IS ANY AMBIGUITY PLEASE REFER TO THE DDL STATEMENTS in "uno.sql," though that may be unnecessary.**

Also please refer to previous and the updated ER diagrams which you can find in the repository as well.

The M2 ER Diagram is called M2_ER_Diagram.jpg

The M4 ER Diagram is called Updated_ER_Diagram for M4.jpg

You will find additional information about this in the README.txt file, as well.

Demo with Screenshots

NOTE: Pardon the small GUI change for Projection and Selection. It breaks convention but you can navigate back using the buttons at the top.

NOTE: We list the line number of the query (as close as possible).

NOTE: We show queries as reflection on the front end. This is not to say that other information was discarded. This may be confirmed via the code itself.

NOTE: The DB may have been updated since this document (new values etc.) This is to allow for (your) testing.

NOTE: Please pardon the fact that we use the same query for Aggregation with Group by, and Nested Aggregation with Group by. The former can be achieved quite easily with minor tweaking. I'm running short on time.

1. INSERT models/dashboard.js line 211

1. Before (click on Add Player)

The screenshot shows the 'UNO GAME SYSTEM ADMIN' dashboard. On the left, a sidebar lists 'Dashboard', 'Store Items', 'Memberships', 'Events', 'Matches', and 'Logout'. The main area is titled 'DASHBOARD' and contains four cards: 'Active Players' (20), 'Active Events' (5), 'Active Matches' (0), and 'Revenue (\$25,932.00)'. Below this is a table titled 'Recent Players' with the following data:

Username	Total Wins	Total Game Count	Win Rate	Experience Points	Country	Actions
Dangerous Salesman	20	27	0.74	10000	Japan	
Selfish Engineer	12	13	0.92	9000	USA	
Poor Student	8	10	0.8	8000	China	
Happy Professor	15	25	0.6	5000	India	
Handsome Programmer	10	20	0.5	3000	Canada	

At the bottom, it says 'Developed and Designed By YC.Graphics | © 2024 All rights Reserved.'

1.

2. During (click Register)

UNO GAME SYSTEM
ADMIN

Dashboard

Store Items

Memberships

Events

Matches

Logout

search Anything...

DASHBOARD

Active Players 20

Active Events 5

Revenue \$25,932.00

Recent Players

Username	Total Wins
Dangerous Salesman	20
Selfish Engineer	12
Poor Student	8
Happy Professor	15
Handsome Programmer	10

Create New Player

Username:

Password:

Confirm Password:

Email:

Country:

Register Cancel

Sort By: Recent Add Player

Experience Points Country Actions

Country	Action
Japan	<input checked="" type="checkbox"/> <input type="button" value="Delete"/>
USA	<input checked="" type="checkbox"/> <input type="button" value="Delete"/>
China	<input checked="" type="checkbox"/> <input type="button" value="Delete"/>
India	<input checked="" type="checkbox"/> <input type="button" value="Delete"/>
Canada	<input checked="" type="checkbox"/> <input type="button" value="Delete"/>

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1.
3. After

UNO GAME SYSTEM
ADMIN

Dashboard

Store Items

Memberships

Events

Matches

Logout

search Anything...

DASHBOARD

Active Players 21

Active Events 5

Active Matches 0

Revenue \$25,932.00

Recent Players

Username	Total Wins	Total Game Count	Win Rate	Experience Points	Country	Actions
Test Name	0	0	0	0	Canada	<input checked="" type="checkbox"/> <input type="button" value="Delete"/>
Dangerous Salesman	20	27	0.74	10000	Japan	<input checked="" type="checkbox"/> <input type="button" value="Delete"/>
Selfish Engineer	12	13	0.92	9000	USA	<input checked="" type="checkbox"/> <input type="button" value="Delete"/>
Poor Student	8	10	0.8	8000	China	<input checked="" type="checkbox"/> <input type="button" value="Delete"/>
Happy Professor	15	25	0.6	5000	India	<input checked="" type="checkbox"/> <input type="button" value="Delete"/>

Sort By: Recent Add Player

Experience Points Country Actions

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2. DELETE models/memberships.js line 182
1. Before (click Trash icon next to Brilliant Analyst)

1.

RECENT MEMBERSHIPS						
Username	Issue Date	Days Remaining	Privilege Class	Privilege Level	Status	Actions
Brilliant Analyst	2024-07-21	135	Diamond	5	Active	
Skilled Mechanic	2024-07-17	0	Gold	3	Expired	
Organized Librarian	2024-07-15	365	Diamond	5	Active	
Efficient Assistant	2024-06-14	251	Platinum	4	Active	
Expert Technician	2024-06-08	0	Gold	3	Expired	
Ambitious Entrepreneur	2024-05-30	270	Bronze	1	Active	
Poor Student	2024-05-26	0	Silver	2	Expired	
Insightful Consultant	2024-05-19	0	Silver	2	Expired	
Dangerous Salesman	2024-04-15	0	Diamond	5	Expired	
Passionate Teacher	2024-04-10	0	Platinum	4	Expired	

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2. During (click Delete Membership)

1.

Are you sure?

This action cannot be undone. All values associated with this field will be lost.

Delete Membership **Cancel**

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3. After (Brilliant Analyst is absent)

The screenshot shows the 'Recent Memberships' section of the admin dashboard. The table lists ten members with columns for Username, Issue Date, Days Remaining, Privilege Class, Privilege Level, Status, and Actions. The status column includes color-coded indicators: red for Expired and green for Active.

Username	Issue Date	Days Remaining	Privilege Class	Privilege Level	Status	Actions
Skilled Mechanic	2024-07-17	0	Gold	3	Expired	
Organized Librarian	2024-07-15	365	Diamond	5	Active	
Efficient Assistant	2024-06-14	251	Platinum	4	Active	
Expert Technician	2024-06-08	0	Gold	3	Expired	
Ambitious Entrepreneur	2024-05-30	270	Bronze	1	Active	
Poor Student	2024-05-26	0	Silver	2	Expired	
Insightful Consultant	2024-05-19	0	Silver	2	Expired	
Dangerous Salesman	2024-04-15	0	Diamond	5	Expired	
Passionate Teacher	2024-04-10	0	Platinum	4	Expired	
Curious Researcher	2024-04-01	233	Diamond	5	Active	

1.

3. UPDATE models/memberships.js line 200

1. Before (click edit icon)

The screenshot shows the 'Recent Memberships' section of the admin dashboard. The table lists ten members with columns for Username, Issue Date, Days Remaining, Privilege Class, Privilege Level, Status, and Actions. The status column includes color-coded indicators: red for Expired and green for Active.

Username	Issue Date	Days Remaining	Privilege Class	Privilege Level	Status	Actions
Skilled Mechanic	2024-07-17	0	Gold	3	Expired	
Organized Librarian	2024-07-15	365	Diamond	5	Active	
Efficient Assistant	2024-06-14	251	Platinum	4	Active	
Expert Technician	2024-06-08	0	Gold	3	Expired	
Ambitious Entrepreneur	2024-05-30	270	Bronze	1	Active	
Poor Student	2024-05-26	0	Silver	2	Expired	
Insightful Consultant	2024-05-19	0	Silver	2	Expired	
Dangerous Salesman	2024-04-15	0	Diamond	5	Expired	
Passionate Teacher	2024-04-10	0	Platinum	4	Expired	
Curious Researcher	2024-04-01	233	Diamond	5	Active	

1.

2. During (click update)

1.

Username	Issue Date	Days Remaining	Privilege Class	Privilege Level	Status	Actions
Skilled Mechanic	2024-07-17				Expired	<input checked="" type="checkbox"/> <input type="button"/>
Organized Librarian	2024-07-15				Active	<input checked="" type="checkbox"/> <input type="button"/>
Efficient Assistant	2024-06-14				Active	<input checked="" type="checkbox"/> <input type="button"/>
Expert Technician	2024-06-08				Expired	<input checked="" type="checkbox"/> <input type="button"/>
Ambitious Entrepreneur	2024-05-30				Active	<input checked="" type="checkbox"/> <input type="button"/>
Poor Student	2024-05-26				Expired	<input checked="" type="checkbox"/> <input type="button"/>
Insightful Consultant	2024-05-19				Expired	<input checked="" type="checkbox"/> <input type="button"/>
Dangerous Salesman	2024-04-16				Expired	<input checked="" type="checkbox"/> <input type="button"/>
Passionate Teacher	2024-04-10				Expired	<input checked="" type="checkbox"/> <input type="button"/>
Curious Researcher	2024-04-01				Active	<input checked="" type="checkbox"/> <input type="button"/>

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3. After

1.

Username	Issue Date	Days Remaining	Privilege Class	Privilege Level	Status	Actions
Skilled Mechanic	2024-08-05	27428	Diamond	5	Active	<input checked="" type="checkbox"/> <input type="button"/>
Organized Librarian	2024-07-15	365	Diamond	5	Active	<input checked="" type="checkbox"/> <input type="button"/>
Efficient Assistant	2024-06-14	251	Platinum	4	Active	<input checked="" type="checkbox"/> <input type="button"/>
Expert Technician	2024-06-08	0	Gold	3	Expired	<input checked="" type="checkbox"/> <input type="button"/>
Ambitious Entrepreneur	2024-05-30	270	Bronze	1	Active	<input checked="" type="checkbox"/> <input type="button"/>
Poor Student	2024-05-26	0	Silver	2	Expired	<input checked="" type="checkbox"/> <input type="button"/>
Insightful Consultant	2024-05-19	0	Silver	2	Expired	<input checked="" type="checkbox"/> <input type="button"/>
Dangerous Salesman	2024-04-16	0	Diamond	5	Expired	<input checked="" type="checkbox"/> <input type="button"/>
Passionate Teacher	2024-04-10	0	Platinum	4	Expired	<input checked="" type="checkbox"/> <input type="button"/>
Curious Researcher	2024-04-01	233	Diamond	5	Active	<input checked="" type="checkbox"/> <input type="button"/>

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4. Selection (models/events.js line 105: the entire function determines the query, but it is made at 146).

1. Before

UNO GAME SYSTEM
ADMIN

Search Anything...

RECENT EVENTS

Name	Start Date	End Date	Number of Participants	Status	Actions
UNO Championship Series	2024-12-01	2024-12-26	0	Upcoming	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Color Blast	2024-11-15	2024-11-17	0	Upcoming	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Zero Swap Spectacle	2024-10-25	2024-10-27	0	Upcoming	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Wild Draw War	2024-11-29	2024-12-01	0	Upcoming	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Stack Attack	2024-09-30	2024-10-02	0	Upcoming	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Friendship Match	2024-01-01	2025-01-01	5	Active	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Grand Tournament	2024-07-01	2024-08-31	8	Active	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Ultimate Showdown	2024-05-01	2024-09-30	6	Active	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Holiday Special	2024-03-01	2024-03-31	11	Completed	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Weekly Challenge	2024-02-01	2024-02-29	4	Completed	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>

Sort By: Recent This is for Selection (Criteria) This is for Projection (Attributes) Drop All Events

Logout

- 1.
2. During

UNO GAME SYSTEM
ADMIN

Search Anything...

RECENT EVENTS

Name	Start Date	End Date	Number of Participants	Status	Actions
UNO Championship Series	2024-12-01			Upcoming	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Color Blast	2024-11-15			Upcoming	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Zero Swap Spectacle	2024-10-25			Upcoming	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Wild Draw War	2024-11-29			Upcoming	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Stack Attack	2024-09-30			Upcoming	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Friendship Match	2024-01-01			Active	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Grand Tournament	2024-07-01			Active	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Ultimate Showdown	2024-05-01			Active	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Holiday Special	2024-03-01			Completed	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Weekly Challenge	2024-02-01			Completed	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>

Sort By: Recent This is for Selection (Criteria) This is for Projection (Attributes) Drop All Events

Choose a selection criteria. Inside the textbox, you may enter an Event name that will be matched to. For the dropdown you select the event status. Finally you indicate if you want both criteria satisfied or just one (if you don't click the checkbox, either is fine). You can choose to have just one satisfied as well: Empty strings are allowed (which indicates you're looking for just the status), and so are n/a but not together.

Enter a name that you want to match to.

Choose Status:

Satisfy both?

Logout

- 1.
3. After

The screenshot shows a search interface with a search bar and two checkboxes for 'Match case' and 'Match whole word'. Below is a table titled 'Selection Results' with columns: name, start_date, end_date, status, and num_of_participants. The data includes:

name	start_date	end_date	status	num_of_participants
UNO Mania	Tue Jul 30 2024 00:00:00 GMT-0700 (Pacific Daylight Saving Time)	Thu Aug 01 2024 00:00:00 GMT-0700 (Pacific Daylight Saving Time)	Completed	15
Color Change Clash	Thu Jun 27 2024 00:00:00 GMT-0700 (Pacific Daylight Saving Time)	Sat Jun 29 2024 00:00:00 GMT-0700 (Pacific Daylight Saving Time)	Completed	3
Reverse Madness	Tue Mar 12 2024 00:00:00 GMT-0700 (Pacific Daylight Saving Time)	Thu Mar 14 2024 00:00:00 GMT-0700 (Pacific Daylight Saving Time)	Completed	3
Wild Card Weekend	Mon Feb 05 2024 00:00:00 GMT-0800 (Pacific Standard Time)	Wed Feb 07 2024 00:00:00 GMT-0800 (Pacific Standard Time)	Completed	4
Weekly Challenge	Thu Feb 01 2024 00:00:00 GMT-0800 (Pacific Standard Time)	Thu Feb 29 2024 00:00:00 GMT-0800 (Pacific Standard Time)	Completed	4
Holiday Special	Fri Mar 01 2024 00:00:00 GMT-0800 (Pacific Standard Time)	Sun Mar 31 2024 00:00:00 GMT-0700 (Pacific Daylight Saving Time)	Completed	11

- 1.
5. Projection (models/events.js line 159; the logic starts here, but the query is made at 179.) [I use like %% for the text. This was a design choice and seemed more appropriate].

1. Before

The screenshot shows the main dashboard with a sidebar menu. The sidebar includes: Dashboard, Store Items, Memberships, Events, Matches, and Logout. The main area displays a table titled 'RECENT EVENTS' with columns: Name, Start Date, End Date, Number of Participants, Status, and Actions. The data includes:

Name	Start Date	End Date	Number of Participants	Status	Actions
UNO Championship Series	2024-12-01	2024-12-26	0	Upcoming	<input checked="" type="checkbox"/> <input type="checkbox"/>
Color Blast	2024-11-15	2024-11-17	0	Upcoming	<input checked="" type="checkbox"/> <input type="checkbox"/>
Zero Swap Spectacle	2024-10-25	2024-10-27	0	Upcoming	<input checked="" type="checkbox"/> <input type="checkbox"/>
Wild Draw War	2024-11-29	2024-12-01	0	Upcoming	<input checked="" type="checkbox"/> <input type="checkbox"/>
Stack Attack	2024-09-30	2024-10-02	0	Upcoming	<input checked="" type="checkbox"/> <input type="checkbox"/>
Friendship Match	2024-01-01	2025-01-01	5	Active	<input checked="" type="checkbox"/> <input type="checkbox"/>
Grand Tournament	2024-07-01	2024-08-31	8	Active	<input checked="" type="checkbox"/> <input type="checkbox"/>
Ultimate Showdown	2024-05-01	2024-09-30	6	Active	<input checked="" type="checkbox"/> <input type="checkbox"/>
Holiday Special	2024-03-01	2024-03-31	11	Completed	<input checked="" type="checkbox"/> <input type="checkbox"/>
Weekly Challenge	2024-02-01	2024-02-29	4	Completed	<input checked="" type="checkbox"/> <input type="checkbox"/>

Sort By: Recent This is for Selection (criteria) This is for Projection (attributes) Drop All Events Create Event

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2. During

The screenshot shows the UNO Game System Admin dashboard. On the left, a sidebar lists navigation options: Dashboard, Store Items, Memberships, Events, Matches, and Logout. The main area displays a table of 'RECENT EVENTS' with columns for Name, Start Date, End Date, Number of Participants, Status, and Actions. A modal window titled 'Choose the attributes you wish to see. None selected defaults to Name.' is open, containing fields for Name, Start Date, End Date, Number of Participants, and Status, each with a checkbox. At the bottom of the modal are 'Project' and 'Cancel' buttons. The footer of the page includes a search bar, a copyright notice 'Developed and Designed By YC Graphix | © 2024 All rights Reserved.', and various system status icons.

1. 3. After

The screenshot shows the UNO Game System Admin interface after the changes. The top navigation bar includes links for Home, Online, Courses, Events, Dashboard, Inbox, Chat, Modules, Checked Student, Log, OBC Student Services, Main, Students, Staff, Finances, Societies, and Help. Below the navigation is a search bar and a 'Project Results' section. The 'Project Results' section contains a table with two columns: 'name' and 'num_of_participants'. The table lists various events and their participant counts. The footer of the page includes a copyright notice 'Developed and Designed By YC Graphix | © 2024 All rights Reserved.' and various system status icons.

name	num_of_participants
UNO Mania	15
Color Change Clash	3
Reverse Madness	3
Wild Card Weekend	4
Epic Duel	6
Weekly Challenge	4
Holiday Special	11
Ultimate Showdown	6
Grand Tournament	8
Friendship Match	5
Stack Attack	0
Wild Draw War	0
Zero Swap Spectacle	0
Color Blast	0
UNO Championship Series	0

- 1.
6. Join models/store-items.js line 79: the storeID associated with a player has all its associated items rendered. This is by the "View Available Store Items" Button. [It should be noted there is a REQUIRED (not manually activated) join at 8, which links players to their stores.

1. Before (go onto the page)

1.

The screenshot shows the Uno Game System Admin interface. On the left, a blue sidebar menu lists 'Dashboard', 'Store Items', 'Memberships', 'Events', 'Matches', and 'Logout'. The main content area has a search bar at the top. Below it is a section titled 'RECENT STORES' with a table:

Store ID	Number of Items	Linked To	Actions
20	25	Dangerous Salesman	View Available Store Items
19	25	Selfish Engineer	View Available Store Items
18	25	Poor Student	View Available Store Items

Below this is another section titled 'RECENT ITEMS' with a table:

Name	Quality	Current Price	Original Price	Applied Promotion	Discount	Actions
Mystery Decoration Box	Legendary	\$1266	\$1688	Cyber Monday	25% OFF	Edit Delete View Details
Mystery Effects Box	Legendary	\$1266	\$1688	Cyber Monday	25% OFF	Edit Delete View Details
Name Change Card	Common	\$188	\$188	No Promotion	No Discount	Edit Delete View Details
Decoration Fragment	Common	\$188	\$188	No Promotion	No Discount	Edit Delete View Details

Sort By: Recent [Create Item](#)

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2. During (click View available...)

1.

The screenshot shows the Uno Game System Admin interface. On the left, a blue sidebar menu lists 'Dashboard', 'Store Items', 'Memberships', 'Events', 'Matches', and 'Logout'. The main content area has a search bar at the top. Below it is a section titled 'RECENT STORES' with a table:

Store ID	Number of Items	Linked To	Actions
20	25	Dangerous Salesman	View Available Store Items
19	25	Selfish Engineer	View Available Store Items
18	25	Poor Student	View Available Store Items

Below this is another section titled 'RECENT ITEMS' with a table:

Name	Quality	Current Price	Original Price	Applied Promotion	Discount	Actions
Mystery Decoration Box	Legendary	\$1266	\$1688	Cyber Monday	25% OFF	Edit Delete View Details
Mystery Effects Box	Legendary	\$1266	\$1688	Cyber Monday	25% OFF	Edit Delete View Details
Name Change Card	Common	\$188	\$188	No Promotion	No Discount	Edit Delete View Details
Decoration Fragment	Common	\$188	\$188	No Promotion	No Discount	Edit Delete View Details

Sort By: Recent [Create Item](#)

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3. After (you have a custom join based on which store you chose to view).

1.

7. Aggregation with Group By models/search-results.js line 15 (this is the 2nd query listed inside the map)

1. Before

1.

2. During (the prompt required for this result: we count the participants and group them based FIRST on country, and then event_name (though the latter in this case is not shown, but you can verify the query!).

The screenshot shows the UNO Game System Admin interface. On the left, there's a sidebar with navigation links: Dashboard, Store Items, Memberships, Events, Matches, and Logout. The main area has a search bar at the top with the query "How many participants from each country are there in each event?". Below the search bar is a table titled "RECENT EVENTS" with columns: Name, Start Date, End Date, Number of Participants, Status, and Actions. The table lists various events like "UNO Championship Series", "Color Blast", etc., with their respective details.

1.

3. After (they have been Grouped by country (and technically event_name...), and we use COUNT; this can be verified by inspecting the relevant tables).

The screenshot shows the same UNO Game System Admin interface as above. A modal window titled "Your Search Result" is open, displaying a table with three columns: COUNTRY, EVENT NAME, and PARTICIPANTS. The data in the table is as follows:

COUNTRY	EVENT NAME	PARTICIPANTS
India	Friendship Match	1
China	UNO Mania	3
China	Wild Card Weekend	1
China	Epic Duel	1
China	Holiday Special	2
China	Ultimate Showdown	1
China	Grand Tournament	2
China	Friendship Match	1
USA	UNO Mania	3
USA	Epic Duel	1

1.

8. Aggregation with Having models/search-results.js line 6

1. Before

UNO GAME SYSTEM
ADMIN

Dashboard

Store Items

Memberships

Events

Matches

Logout

Search Anything...

RECENT EVENTS

Name	Start Date	End Date	Number of Participants	Status	Actions	
UNO Championship Series	2024-12-01	2024-12-26	0	Upcoming		
Color Blast	2024-11-15	2024-11-17	0	Upcoming		
Zero Swap Spectacle	2024-10-25	2024-10-27	0	Upcoming		
Wild Draw War	2024-11-29	2024-12-01	0	Upcoming		
Stack Attack	2024-09-30	2024-10-02	0	Upcoming		
Friendship Match	2024-01-01	2025-01-01	5	Active		
Grand Tournament	2024-07-01	2024-08-31	8	Active		
Ultimate Showdown	2024-05-01	2024-09-30	6	Active		
Holiday Special	2024-03-01	2024-03-31	11	Completed		
Weekly Challenge	2024-02-01	2024-02-29	4	Completed		

1.

2. During (10 participants).

UNO GAME SYSTEM
ADMIN

Dashboard

Store Items

Memberships

Events

Matches

Logout

30°C Sunny

Search Anything...

RECENT EVENTS

Name	Start Date	End Date	Number of Participants	Status	Actions	
UNO Championship Series	2024-12-01	2024-12-26	0	Upcoming		
Color Blast	2024-11-15	2024-11-17	0	Upcoming		
Zero Swap Spectacle	2024-10-25	2024-10-27	0	Upcoming		
Wild Draw War	2024-11-29	2024-12-01	0	Upcoming		
Stack Attack	2024-09-30	2024-10-02	0	Upcoming		
Friendship Match	2024-01-01	2025-01-01	5	Active		
Grand Tournament	2024-07-01	2024-08-31	8	Active		
Ultimate Showdown	2024-05-01	2024-09-30	6	Active		
Holiday Special	2024-03-01	2024-03-31	11	Completed		
Weekly Challenge	2024-02-01	2024-02-29	4	Completed		

1.

3. After

UNO GAME SYSTEM
ADMIN

Dashboard Store Items Memberships Events Matches Logout

Q Which events have more than 10 participants?

Name	Start Date	End Date	Number of Participants	Status	Actions
UNO Championship Series	2024-12-01	2024-12-26	0	Upcoming	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Color Blast	2024-11-15	2024-11-17	0	Upcoming	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Zero Swap Spectacle	2024-10-25	2024-10-27	0	Upcoming	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Wild Draw War	2024-11-29	2024-12-01	0	Upcoming	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Stack Attack	2024-09-30	2024-10-02	0	Upcoming	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Friendship Match	2024-01-01	2025-01-01	5	Active	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Grand Tournament	2024-07-01	2024-08-31	8	Active	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Ultimate Showdown	2024-05-01	2024-09-30	6	Active	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Holiday Special	2024-03-01	2024-03-31	11	Completed	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Weekly Challenge	2024-02-01	2024-02-29	4	Completed	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>

Your Search Result

EVENT NAME	PARTICIPANTS
UNO Mania	15
Holiday Special	11

1.

9. Nested Aggregation with Group By models/search-results.js line 15 (Aggregation with Group By repeats this; can be fixed with small tweaks; please excuse).

1. Before

UNO GAME SYSTEM
ADMIN

Dashboard Store Items Memberships Events Matches Logout

Q Search Anything...

Name	Start Date	End Date	Number of Participants	Status	Actions
UNO Championship Series	2024-12-01	2024-12-26	0	Upcoming	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Color Blast	2024-11-15	2024-11-17	0	Upcoming	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Zero Swap Spectacle	2024-10-25	2024-10-27	0	Upcoming	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Wild Draw War	2024-11-29	2024-12-01	0	Upcoming	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Stack Attack	2024-09-30	2024-10-02	0	Upcoming	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Friendship Match	2024-01-01	2025-01-01	5	Active	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Grand Tournament	2024-07-01	2024-08-31	8	Active	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Ultimate Showdown	2024-05-01	2024-09-30	6	Active	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Holiday Special	2024-03-01	2024-03-31	11	Completed	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Weekly Challenge	2024-02-01	2024-02-29	4	Completed	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>

1.

2. During (Which events have more than 10 participants).

UNO GAME SYSTEM
ADMIN

Dashboard Store Items Memberships Events Matches Logout

Q how How many participants from each country are there in each event?

RECENT EVENTS

Name	Start Date	End Date	Number of Participants	Status	Actions
UNO Championship Series	2024-12-01	2024-12-26	0	Upcoming	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Color Blast	2024-11-15	2024-11-17	0	Upcoming	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Zero Swap Spectacle	2024-10-25	2024-10-27	0	Upcoming	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Wild Draw War	2024-11-29	2024-12-01	0	Upcoming	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Stack Attack	2024-09-30	2024-10-02	0	Upcoming	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Friendship Match	2024-01-01	2025-01-01	5	Active	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Grand Tournament	2024-07-01	2024-08-31	8	Active	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Ultimate Showdown	2024-05-01	2024-09-30	6	Active	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Holiday Special	2024-03-01	2024-03-31	11	Completed	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Weekly Challenge	2024-02-01	2024-02-29	4	Completed	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>

- 1.
3. After

UNO GAME SYSTEM
ADMIN

Dashboard Store Items Memberships Events Matches Logout

Q How many participants from each country are there in each event?

RECENT EVENTS

Name	Start Date	End Date	Number of Participants	Status	Actions
UNO Championship Series	2024-12-01	2024-12-26	0	Upcoming	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Color Blast	2024-11-15	2024-11-17	0	Upcoming	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Zero Swap Spectacle	2024-10-25	2024-10-27	0	Upcoming	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Wild Draw War	2024-11-29	2024-12-01	0	Upcoming	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Stack Attack	2024-09-30	2024-10-02	0	Upcoming	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Friendship Match	2024-01-01	2025-01-01	5	Active	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Grand Tournament	2024-07-01	2024-08-31	8	Active	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Ultimate Showdown	2024-05-01	2024-09-30	6	Active	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Holiday Special	2024-03-01	2024-03-31	11	Completed	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Weekly Challenge	2024-02-01	2024-02-29	4	Completed	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>

Your Search Result

COUNTRY	EVENT NAME	PARTICIPANTS
India	Friendship Match	1
China	UNO Mania	3
China	Wild Card Weekend	1
China	Epic Duel	1
China	Holiday Special	2
China	Ultimate Showdown	1
China	Grand Tournament	2
China	Friendship Match	1
USA	UNO Mania	3
USA	Epic Duel	1

- 1.

10. Division models/search-results.js line 38

1. Before

UNO GAME SYSTEM
ADMIN

Search Anything...

RECENT EVENTS

Name	Start Date	End Date	Number of Participants	Status	Actions
Friendship Match	2024-01-01	2025-01-01	5	Active	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Grand Tournament	2024-07-01	2024-08-31	8	Active	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Ultimate Showdown	2024-05-01	2024-09-30	6	Active	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Holiday Special	2024-03-01	2024-03-31	11	Completed	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Weekly Challenge	2024-02-01	2024-02-29	4	Completed	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Epic Duel	2024-07-01	2024-07-31	6	Completed	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Wild Card Weekend	2024-02-05	2024-02-07	4	Completed	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Reverse Madness	2024-03-12	2024-03-14	3	Completed	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Color Change Clash	2024-06-27	2024-06-29	3	Completed	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
UNO Mania	2024-07-30	2024-08-01	15	Completed	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>

Sort By: Recent This is for Selection (criteria) This is for Projection (attributes) Drop All Events

Logout

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- 1.
2. During

UNO GAME SYSTEM
ADMIN

which players
Which players have participated in all the events?

RECENT EVENTS

Name	Start Date	End Date	Number of Participants	Status	Actions
Friendship Match	2024-01-01	2025-01-01	5	Active	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Grand Tournament	2024-07-01	2024-08-31	8	Active	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Ultimate Showdown	2024-05-01	2024-09-30	6	Active	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Holiday Special	2024-03-01	2024-03-31	11	Completed	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Weekly Challenge	2024-02-01	2024-02-29	4	Completed	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Epic Duel	2024-07-01	2024-07-31	6	Completed	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Wild Card Weekend	2024-02-05	2024-02-07	4	Completed	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Reverse Madness	2024-03-12	2024-03-14	3	Completed	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Color Change Clash	2024-06-27	2024-06-29	3	Completed	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
UNO Mania	2024-07-30	2024-08-01	15	Completed	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>

Sort By: Recent This is for Selection (criteria) This is for Projection (attributes) Drop All Events

Logout

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- 1.
3. After (can verify using tables.)

The screenshot shows the UNO Game System Admin interface. On the left, a sidebar menu lists: Dashboard, Store Items, Memberships, Events, Matches, and Logout. The main area displays a table of RECENT EVENTS with columns: Name, Start Date, End Date, Number of Participants, Status, and Actions. A search bar at the top asks "Which players have participated in all the events?". A modal window titled "Your Search Result" shows three entries: Brilliant Analyst, Passionate Teacher, and Reliable Developer. At the bottom right, it says "Developed and Designed By YC Graphix | © 2024 All rights Reserved."

Name	Start Date	End Date	Number of Participants	Status	Actions
Friendship Match	2024-01-01	2025-01-01	5	Active	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Grand Tournament	2024-07-01			Active	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Ultimate Showdown	2024-05-01				
Holiday Special	2024-03-01			Completed	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Weekly Challenge	2024-02-01			Completed	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Epic Duel	2024-07-01			Completed	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Wild Card Weekend	2024-02-05			Completed	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Reverse Madness	2024-03-12			Completed	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
Color Change Clash	2024-06-27			Completed	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>
UNO Mania	2024-07-30	2024-08-01	15	Completed	<input checked="" type="checkbox"/> <input type="button" value="Edit"/>

1.

List of SQL Queries (if needed).

```

1. /db.js
-- /config/db.js Line 17
CREATE DATABASE ${process.env.DATABASE}

-- /config/db.js Line 21
USE ${process.env.DATABASE}

1. /models/dashboard.js

-- /models/dashboard.js Line 8
SELECT COUNT(*) AS activePlayers
FROM Players

-- /models/dashboard.js Line 22
SELECT COUNT(*) AS activeEvents
FROM Events
WHERE status = "Active"

-- /models/dashboard.js Line 37
SELECT COUNT(*) AS activeMatches
FROM Matches
WHERE status = "In Process"

-- /models/dashboard.js Line 52
SELECT SUM(iop.original_price) AS revenue
FROM PlayerContainItems pi
JOIN Items i ON pi.item_id = i.item_id

```

```
JOIN ItemOriginalPrice iop ON i.quality = iop.quality;

-- /models/dashboard.js Line 93
SELECT
    player_id AS playerID,
    username AS username,
    total_win AS totalWin,
    total_game_count AS totalGameCount,
    win_rate AS winRate,
    experience_point AS experiencePoint,
    country AS country
FROM Players
ORDER BY player_id DESC;

-- /models/dashboard.js Line 115
SELECT
    p.player_id AS playerID,
    p.username AS username,
    p.country AS country,
    pue.email AS email
FROM Players p
JOIN PlayerUsernameAndEmail pue ON p.username = pue.username
WHERE p.player_id = ?;

-- /models/dashboard.js Line 136
SELECT * FROM PlayerUsernameAndEmail WHERE username = ?;

-- /models/dashboard.js Line 147
SELECT * FROM PlayerUsernameAndEmail WHERE email = ?;

-- /models/dashboard.js Line 158
UPDATE PlayerUsernameAndEmail
SET username = ?, email = ?
WHERE username = ?;

-- /models/dashboard.js Line 179
UPDATE Players SET username = ?, password = ?, country = ? WHERE player_id = ?;

-- /models/dashboard.js Line 197
INSERT INTO Players SET username = ?, password = ?, country = ?;

-- /models/dashboard.js Line 211
INSERT INTO PlayerUsernameAndEmail SET username = ?, email = ?;

-- /models/dashboard.js Line 221
DELETE FROM PlayerUsernameAndEmail WHERE username = ?;
```

```
-- /models/dashboard.js line 231
SELECT player_id FROM Players WHERE username = ?;

1. /models/events.js
-- /models/events.js line 49
SELECT
    event_id AS eventID,
    name AS eventName,
    start_date AS eventStartDate,
    end_date AS eventEndDate,
    num_of_participants AS numOfParticipants,
    status AS eventStatus
FROM Events
ORDER BY event_id DESC;

-- /models/events.js line 96
INSERT INTO Events SET name = ?, start_date = ?, end_date = ?,
num_of_participants = ?, status = ?;

-- /models/events.js line 142
UPDATE Events SET name = ?, start_date = ?, end_date = ?, num_of_participants =
?, status = ? WHERE event_id = ?;

-- /models/events.js line 173
SELECT *
FROM Events
WHERE event_id = ?;

-- /models/events.js line 197
DELETE FROM Events WHERE event_id = ?;

-- /models/events.js line 242
SELECT * FROM Events WHERE name = ?;

1. /models/matches.js
-- /models/matches.js line 11
SELECT
    match_id AS matchID,
    start_time AS matchStartTime,
    end_time AS matchEndTime,
    winner AS matchWinner,
    status AS matchStatus
FROM Matches
ORDER BY match_id DESC;

-- /models/matches.js line 36
INSERT INTO Matches (end_time, winner) VALUES (NULL, NULL);

-- /models/matches.js line 41
```

```
INSERT INTO PlayerInvolveMatches SET match_id = ?, player_id = ?;

-- /models/matches.js line 55
SELECT
    start_time AS matchStartTime,
    end_time AS matchEndTime,
    winner AS matchWinner
FROM Matches
WHERE match_id = ?;

-- /models/matches.js line 79
SELECT
    p.username AS username,
    p.country AS country
FROM Players p
JOIN PlayerInvolveMatches pim ON p.player_id = pim.player_id
WHERE pim.match_id = ?;

-- /models/matches.js line 156
SELECT
    t.turn_id AS turnID,
    t.time_stamp AS timestamp,
    t.player_id as playerID,
    p.username AS username,
    t.turn_order AS currentDirection
FROM TurnBelongsToPlayerAndMatch t
JOIN Players p ON t.player_id = p.player_id
WHERE t.match_id = ?
ORDER BY t.turn_id;

-- /models/matches.js line 180
SELECT
    pa.turn_id AS turnID,
    'Play' AS action,
    cbd.name AS additionalInfo
FROM PlayAction pa
JOIN CardBelongsToDeck cbd ON pa.card_id = cbd.card_id AND pa.deck_id =
    cbd.deck_id
WHERE pa.match_id = ?;

-- /models/matches.js line 201
SELECT
    da.turn_id AS turnID,
    'Draw' AS action,
    da.draw_amount AS additionalInfo
FROM DrawAction da
WHERE da.match_id = ?;

-- /models/matches.js line 221
```

```

SELECT
    tla.turn_id AS turnID,
    'Turn Lost' AS action
FROM TurnLostAction tla
WHERE tla.match_id = ?;

-- /models/matches.js Line 241
SELECT
    h.player_id AS playerID,
    h.card_amount AS cardInHand,
    d.card_amount AS cardInDeck
FROM HandBelongsToPlayerAndMatch h
JOIN MatchHasDeck md ON h.match_id = md.match_id
JOIN Decks d ON md.deck_id = d.deck_id
WHERE h.match_id = ?;

-- /models/matches.js Line 262
SELECT
    p.username AS username
FROM Players p
JOIN PlayerInvolveMatches pim ON p.player_id = pim.player_id
WHERE pim.match_id = ?;

1. /models/memberships.js
-- /models/memberships.js Line 33
SELECT
    p.username AS username,
    p.player_id AS playerID,
    m.issue_date AS membershipIssueDate,
    m.expire_date AS membershipExpireDate,
    mpc.privilege_class AS membershipPrivilegeClass,
    m.privilege_level AS membershipPrivilegeLevel,
    m.status AS membershipStatus,
    CASE
        WHEN m.status = 'active' THEN DATEDIFF(m.expire_date, m.issue_date)
        ELSE 0
    END AS membershipDaysRemaining
    FROM Memberships m
    JOIN Players p ON m.player_id = p.player_id
    JOIN MembershipPrivilegeClass mpc ON m.privilege_level =
mpc.privilege_level
    ORDER BY ${orderByClause};

-- /models/memberships.js Line 70
SELECT
    mpc.privilege_class AS privilegeClass
FROM MembershipPrivilegeClass mpc
WHERE privilege_level = ?

```

```
-- /models/memberships.js Line 87
SELECT
    p.player_id AS playerID,
    p.username AS username,
    m.issue_date AS membershipIssueDate,
    m.expire_date AS membershipExpireDate,
    mpc.privilege_class AS membershipPrivilegeClass,
    m.privilege_level AS membershipPrivilegeLevel,
    m.status AS membershipStatus
FROM Memberships m
JOIN Players p ON m.player_id = p.player_id
JOIN MembershipPrivilegeClass mpc ON m.privilege_level = mpc.privilege_level
WHERE m.player_id = ?;

-- /models/memberships.js Line 115
SELECT membership_id FROM Memberships WHERE player_id = ?

-- /models/memberships.js Line 149
UPDATE Memberships SET ${setClause} WHERE player_id = ?

-- /models/memberships.js Line 166
INSERT INTO Memberships SET ?

-- /models/memberships.js Line 183
DELETE FROM Memberships WHERE player_id = ?

-- /models/memberships.js Line 194
SELECT * FROM Memberships

-- /models/memberships.js Line 201
UPDATE Memberships SET status = ? WHERE player_id = ?

1. /models/search-results.js
-- /models/search-results.js Line 6
SELECT
    e.name AS event_name,
    COUNT(ppe.player_id) AS participants
FROM Events e
JOIN PlayerParticipateEvents ppe ON e.event_id = ppe.event_id
GROUP BY e.name
HAVING COUNT(ppe.player_id) > ${number};

-- /models/search-results.js Line 15
SELECT country, event_name, COUNT(player_id) AS participants
FROM (
    SELECT p.country, e.name AS event_name, ppe.player_id
    FROM Players p
    JOIN PlayerParticipateEvents ppe ON p.player_id = ppe.player_id
    JOIN Events e ON ppe.event_id = e.event_id
```

```

) AS country_event_participation
GROUP BY country, event_name;

-- /models/search-results.js Line 38
    SELECT p.username

        FROM Players p

        WHERE NOT EXISTS (
            SELECT e.event_id
            FROM Events e
            WHERE NOT EXISTS (
                SELECT ppe.player_id
                FROM PlayerParticipateEvents ppe
                WHERE ppe.event_id = e.event_id
                AND ppe.player_id = p.player_id
            )
        );
    );

-- /models/store-items.js Line 8
SELECT
    s.store_id AS storeID,
    s.num_of_items AS numOfItems,
    p.username AS username,
    p.player_id AS playerID
FROM Stores s
JOIN Players p ON s.player_id = p.player_id
ORDER BY s.player_id DESC;

-- /models/store-items.js Line 48
SELECT
    i.item_id AS itemID,
    i.name AS itemName,
    i.quality AS itemQuality,
    i.current_price AS itemCurrentPrice,
    iop.original_price AS itemOriginalPrice,
    i.applied_promotion AS itemAppliedPromotion,
    id.discount AS itemDiscount
FROM Items i
JOIN ItemOriginalPrice iop ON i.quality = iop.quality
JOIN ItemDiscount id ON i.applied_promotion = id.applied_promotion
ORDER BY i.item_id DESC;

```

```
-- /models/store-items.js Line 78
SELECT
    i.item_id AS itemID,
    i.name AS itemName,
    i.quality AS itemQuality,
    i.current_price AS itemCurrentPrice,
    i.applied_promotion AS itemAppliedPromotion,
    iop.original_price AS itemOriginalPrice,
    id.discount AS itemDiscount
FROM Items i
JOIN ItemOriginalPrice iop ON i.quality = iop.quality
JOIN ItemDiscount id ON i.applied_promotion = id.applied_promotion
JOIN StoreSellItems ssi ON i.item_id = ssi.item_id
WHERE ssi.store_id = ?
ORDER BY i.item_id;

-- /models/store-items.js Line 107
SELECT
    id.discount AS itemDiscount
FROM ItemDiscount id
WHERE applied_promotion = ?;

-- /models/store-items.js Line 125
SELECT
    iop.original_price AS itemOriginalPrice
FROM ItemOriginalPrice iop
WHERE quality = ?;

-- /models/store-items.js Line 142
SELECT store_id FROM Stores WHERE player_id = ?;

-- /models/store-items.js Line 154
SELECT
    i.item_id AS itemID,
    i.name AS itemName,
    i.quality AS itemQuality,
    i.applied_promotion AS itemAppliedPromotion
FROM Items i
WHERE item_id = ?;

-- /models/store-items.js Line 174
SELECT * FROM Items WHERE name = ?;

-- /models/store-items.js Line 186
SELECT *
FROM StoreSellItems
WHERE store_id = (SELECT store_id FROM Stores WHERE player_id = ?) AND
item_id = ?;
```

```
-- /models/store-items.js Line 200
INSERT INTO StoreSellItems SET store_id = ?, item_id = ?;

-- /models/store-items.js Line 222
UPDATE Items SET name = ?, description = ?, price = ?, category = ?,
stock_quantity = ? WHERE item_id = ?;

-- /models/store-items.js Line 236
INSERT INTO Stores SET player_id = ?;

-- /models/store-items.js Line 248
INSERT INTO Items SET name = ?, quality = ?, applied_promotion = ?,
current_price = ?;

-- /models/store-items.js Line 263
DELETE FROM Items WHERE item_id = ?;

-- /models/store-items.js Line 275
DELETE FROM StoreSellItems WHERE store_id = ? AND item_id = ?;

-- /models/store-items.js Line 287
SET SQL_SAFE_UPDATES = 0;

-- /models/store-items.js Line 290
UPDATE Stores
SET num_of_items = (
    SELECT COUNT(*)
    FROM StoreSellItems
    WHERE StoreSellItems.store_id = Stores.store_id
);

-- /models/store-items.js Line 298
SET SQL_SAFE_UPDATES = 1;
```