

URL to index.html: <https://craigkelleher.github.io/Tabletop-Aficionados/>

Project Step 5 Draft Version: Implement Create + Read operations

Team 40: Tabletop Aficionados

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Project: Database of Tabletop Board Games

Part A: Project Outline and Database Outline, ERD and Schema - Updated Version:

The idea is to have a website focused on showing a user the highest rated, newest, or most discussed tabletop board games quickly and easily. A chief issue with a static page, one without a database back end, is it would require any changes to the website to be done by the owner and users to have little impact on what is displayed. A database back end would allow the users to create an account to login to allow adding a boardgame listing, giving an item a rating, creating a login for return visits, or even a favorites list, to come back later and see rating changes over time.. For instance, a website with a back end database would be able to support ratings and listings for 100 tabletop boardgames in comparison to a static webpage handled by two administrators, which would probably only have 50 board game listings at most.

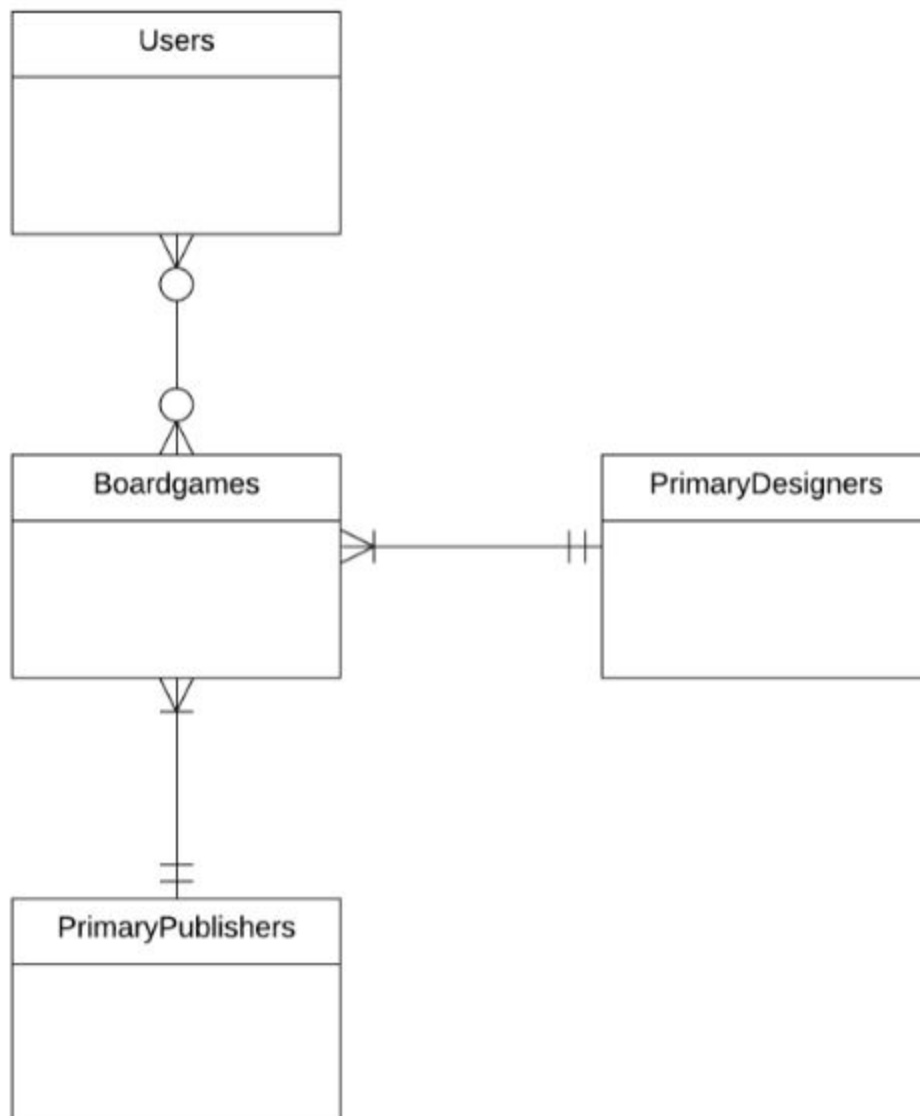
This database would have information be all user-generated. We would start with ourselves as moderators as well as the first two users. To begin we would add 20 boardgame listings and letting it scale with user input. As the site grows, moderators would be selected from the community, can be removed as well, to help validate user submissions. We expect the database to hold 100 tabletop boardgames to start. Furthermore, the number of game listings is just a rough estimate, and the number of possible listings and ratings for tabletop board games could be higher based on the number of users who actually create an account on the site and contribute to the pool of games available.

Outline:

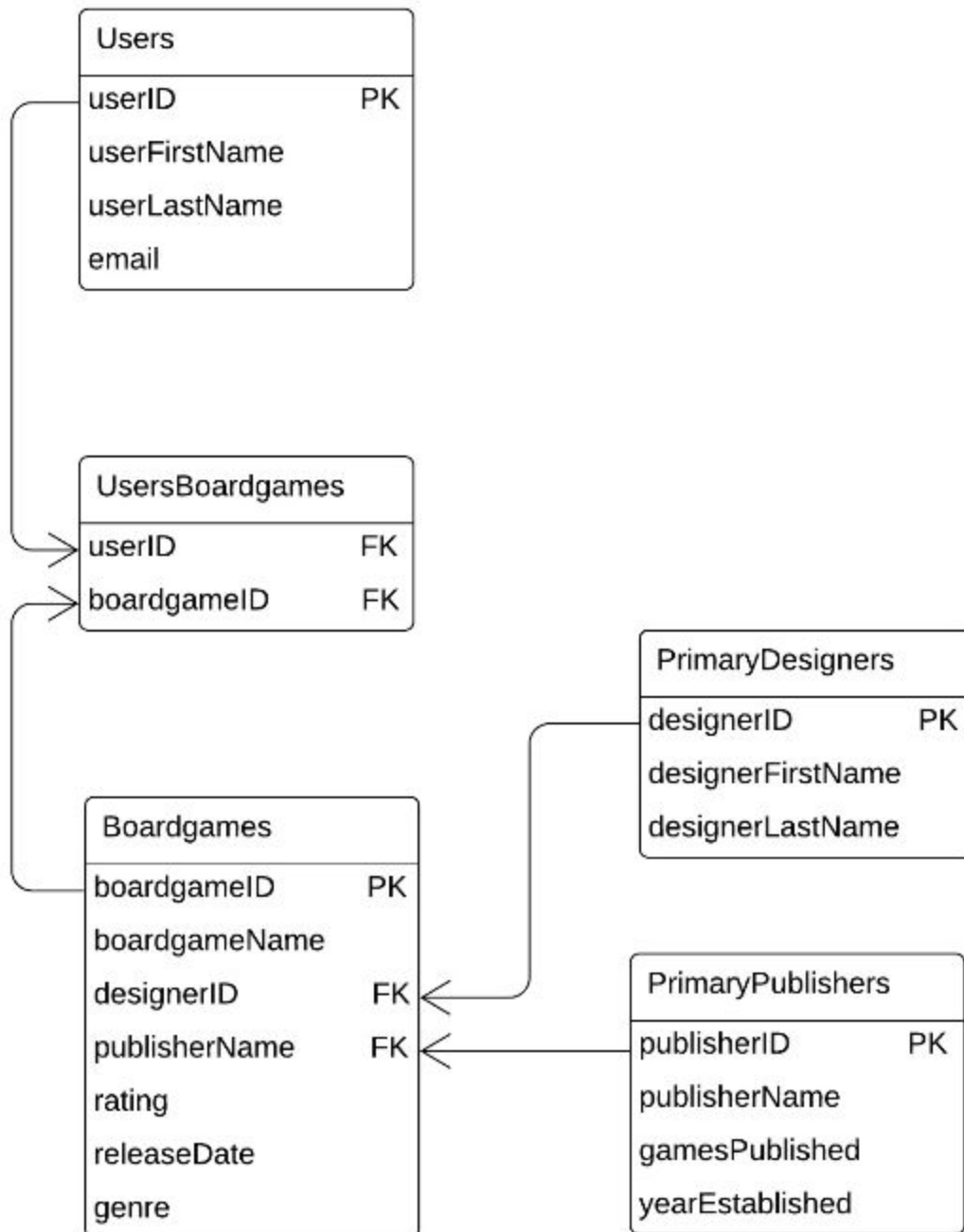
- **Boardgames:** Records the details of board games we have we information on.
 - boardgameID: INT, auto_increment, unique, not NULL, PK.
 - boardgameName: VARCHAR(50), not NULL.
 - designerID, INT, not NULL, FK
 - publisherName: VARCHAR(25), not NULL, FK
 - rating: FLOAT(3)
 - releaseDate: DATE, not NULL.
 - genre: VARCHAR(20), not NULL.
 - Relationship: M:M relationship between Boardgames and site Users is established with boardgameID as the primary key. A 1:M between boardgames and designers, and 1:M with publishers. Utilize interception table UserBoardgames to handle the M:M relationship.
- **Users:** Records the details of users who created an account to interact with the site.
 - userID: INT, auto_increment, unique, not NULL, PK.
 - userFirstName: VARCHAR(25), not NULL
 - userLastName: VARCHAR(25), not NULL
 - email: VARCHAR(50), unique, not NULL
 - Relationship: A many to many relationship between site Users entity and Boardgames entity is established with userID as primary key. Utilize interception table UserBoardgames to handle the M:M relationship.
- **PrimaryPublishers:** Records details of Publishers of tabletop board games rated on the site.
 - publisherID, INT, not NULL, auto_increment, PK
 - publisherName: VARCHAR(25), unique, not NULL
 - gamesPublished: INT, not NULL
 - yearEstablished: INT(4), not NULL (year Publisher began activity or making games)
 - Relationship: A 1:M relationship between publishers and boardgames. publisherID as the PK with publisherName used as a PK in Boardgames.
- **PrimaryDesigners:** Records the details of Developer/Designer who worked on each tabletop game.
 - designerID: INT, not NULL, PK.
 - designerFirstName: VARCHAR(25), not NULL
 - designerLastName: VARCHAR(25), not NULL

- Relationship: A 1:M relationship between Designers and boardgames with designer ID as the PK.
- **UserBoardgames:** interception table to handle the M:M relationship between Boardgames and site Users.
 - userID, FK
 - boardgameID, FK
 - Relationship: a 0 to many relationship with users, and a many to 0 relationship with boardgames, used to handle the M:M relationship between Boardgames and site Users.

Entity-Relationship Diagram:



Schema:



Part B: Feedback and Actions based on the feedback from step 4:

DML:

1. Are the queries syntactically correct?

- a. “Yes, the syntax on all the queries looks good.”
- b. “Yes, it seems so.”
- c. “All seems correct from testing”
- d. “Yes, the syntax looks mostly correct, though the “users” in the query on line 9 may need to be capitalized, and “PrimaryPublisher” may need an at the end on line 20.”
 - i. *Based on this good peer feedback, we were able to locate the syntax errors and adjust them accordingly. users needed to be capitalized and PrimaryPublishers needed to be made plural.*

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

- a. “There are a couple of update and delete queries as required. However, there is not a select query on all tables. It looks like UsersBoardgames, PrimaryDesigners, and PrimaryPublishers do not have select queries. Additionally, it looks like there is no way to insert into the UsersBoardgames table.”
- b. “There are updates, selects, inserts, and deletes.”
- c. “I believe everything needed is here yes.”
- d. “I’m not seeing an “update” for primaryDesigners, primaryPublishers, or the joint table UsersBoardgames. Also, there’s not a way to select/view primaryDesigners, primaryPublishers, or the joint table. There should also be deletes for primaryDesigners and primaryPublishers.”
 - i. *UPDATE for PrimaryDesigners, PrimaryPublishers, UsersBoardgames implemented.*
 - ii. *DELETE for PrimaryDesigners and PrimaryPublishers implemented.*
 - iii. *SELECT for PrimaryDesigners and PrimaryPublishers implemented.*
 - iv. *We did not implement UsersBoardgames since that table can be updated, inserted into, etc., by changing the data it pulls from since it is just an interception table used to handle the M:M relationship between two entities, Users and Boardgames. So, update Users or Boardgames to update UsersBoardgames.*

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

- a. “No, there is no query that selects from or inserts into UsersBoardgames”
- b. “Not sure, but I don’t see any inner joins going on here which seems off.”
- c. “Yes”
- d. “Mostly, though there are UPDATE s missing as described above.”

- i. *We implemented UPDATE for PrimaryDesigners PrimaryPublishers and UsersBoardgames*
- ii. *Investigating implementing SELECT and INSERT into UsersBoardgames*

DDQ

4. Is the SQL file syntactically correct?

- a. "Yes, the import ran in no problem"
- b. "Yes, it was successfully loaded in my database."
- c. "All seems correct from testing."
- d. "Yes, there were no errors when I imported the data."
 - i. *No changes based on this feedback*

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

- a. "For the PrimaryPublisher table, I think it is a little weird to store "yearEstablished" as an int. To me, I would expect that data type to be a date. However, I could see an int working as well, and potentially avoiding some of the nastiness with date formatting and casting dates to strings."
- b. "Rating is listed as an int(11) but a tinyint might be more appropriate as the values will only be 1 through 5?"
- c. "They all seem to match up well to the subjects. One note: Games like Chess, Go, etc. Don't have designers, so considering making this requirement null or specifying users to say "Unknown"
- d. "Yes, all the data types seem appropriate. One that could be modified is "rating" in boardgames, from int to float, in case someone gave a decimal rate, e.g. 4.5."
 - i. *Regarding yearEstablished, we did not decide to change how this is stored as INT as we only want an int entered for the year. We, however, added the constraint to be 4, so a year can be inputted as intended*
 - ii. *Changed type for Rating to be float to allow decimal ratings, with a constraint of 3.*
 - iii. *Per the suggestion changing designers to say Unknown since some games don't have them. We disagree with this as if a game is released in a mass market system, the board, pieces, etc. will have a designer attached to them and on the box that is sold. The original creator of chess wouldn't be here, but whoever designed a specific version of chess and released it would be.*

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

- a. "Yes, these look solid."
- b. "Didn't see a schema but it looks correct."
- c. "Yes, though the Schema is very clear."

- d. "All foreign keys seem to be well connected, though I don't see a schema provided."
 - i. *We didn't provide a schema in the draft post so some persons b and c clearly didn't properly review.*
 - ii. *No changes based on this feedback.*
- 7. ***Are relationship tables present when compared to the ERD/Schema?***
 - a. "Yes, the intersection table is present and formatting correctly."
 - b. "Didn't see a schema but it looks correct."
 - c. "Yep, looks good to me!"
 - d. "The relationship table (e.g. the M:M UsersBoardgames table) seems well defined, and the example data works!."
 - i. *No changes based on this feedback.*

Part B.1: Feedback and Actions based on the feedback from step 3:

1. ***Does the UI implement an INSERT for every table in the schema?***
 - a. "I don't think there is an insert for the primary publisher entity."
 - b. "It does not seem there is any way to add a new PrimaryPublisher, as there is no input for yearEstablished."
 - c. "I don't see inserts for the PrimaryPublishers tables."
 - i. Based on the peer feedback that we received that showed our deficiency, we implemented an INSERT for the primaryPublisher entity.
2. ***Is there at least one DELETE and does at least one DELETE remove things from a M:M relationship?***
 - a. "I didn't see any delete functions at all."
 - b. "I do not see an option to DELETE anything from the tables."
 - c. "I didn't see any delete buttons but they might be added when there is data. In any event, the team should make sure this is on the final version."
 - d. "I did not see any DELETE actions."
 - i. We have implemented DELETE functionality and have made our M:M relationship between users and boardgames have the DELETE functionality so a USER could delete a review for a boardgame and either remake it or leave it deleted.
3. ***Is there at least one UPDATE for any one entity?***
 - a. "There is nothing specifically called out for UPDATE, but the INSERTS may act as an update behind the scenes."
 - b. "I did not see any updates, but I think that this could easily be implemented in users or boardgames."
 - c. "I didn't see any update buttons but they could be added once there is data."

- d. "I did not see any UPDATE actions(average review would be a server-side function)"
- e. I don't see any UPDATES(to edit information), they all appear to be submitting new information
 - i. On these reviews we noticed that we were missing an UPDATE field and we added UPDATE functionality for account information, boardgame reviews, and posting new games not yet in our database.

4. *Is at least one relationship NULLable?*

- a. "The database description shows that the rating can be NULL for boardgames."
- b. "Somethings might be optional, but the ERD and schema/table don't seem to indicate any nullable."
- c. "Yes, users and boardgames may both be null."
- d. "I did not notice any explicitly nullable relationships."
- e. "No, there are no NULLABLE relationships as far as I can tell because there isn't a delete action.
 - i. Based on this feedback we went over our design and did indeed see NULLABLE relationships but to get in line with this feedback we implemented delete actions to be able to make NULL the relationship between user and boardgames.

5. *Any suggestions to help the team with their UI?*

- a. "The HOME button on the Boardgames page tries to go to ~ohp/home.html. This needs to be changed to ~ohp/index.html otherwise it gives a 404 error."
 - i. We have updated our code to direct to the ~ohp/index.html to avoid the 404 error we were able to replicate and appreciate this observation.
- b. "Clear Update and Delete buttons should be added"
 - i. We have implemented Update and Delete functionality and we believe that we have made their respective buttons clear for the user to interact with.
- c. "An index page would be helpful, along with breaking up the Boardgames page into multiple single pages."
 - i. Our home page is an index.html page, if we understood this recommendation correctly.
 - ii. We've decided to indeed split our boardgames page into multiple pages to increase readability and appreciate this suggestion.
- d. "It is not clear what is to be achieved in the Boardgame Description area. What boardgame is being described? Is it to add/or update a boardgame? There is no button or selection criteria for what is to be displayed. As mentioned above, I think a better way to differentiate where any UPDATE vs INSERT is happening is needed.

- i. By implementing the UPDATE/INSERT/DELETE functionality and buttons on our static webpage, we believe it is now more clear what is intended to happen on each page and what the user can do on each page.
- ii. With respect to the lack of clarity on the boardgame description section, there is now separate pages for boardgames and a user can either see information on a boardgame, edit that information, or provide that information. So the description, if empty, would look just like input fields, and if full, would look that descriptive fields that could be changed with the UPDATE functionality. Thank you for this feedback, this will help improve our user experience and functionality.

Part B.2: Feedback and Actions based on the feedback from step 1:

Feedback from grader: *“There is a minor comment in the rubric regarding the minimum use of one many to many M:M relationships which is missing.”*

1. In our project we added a many to many (M:M) relationship per feedback given from step 1. Our Entities: Boardgames and Users, were originally marked as a many to one relationship, but they should have been many to many. A user can favorite many boardgames and a boardgame can be favorited by many users.
2. We changed the relationships between publishers/designers, and boardgames/designers to M:M, adding intersection tables to handle the relationships.
3. We also changed the relationship between designers and publishers from one-to-one to one-to-many thinking that publishers many have more than 1 designer working with them.

Feedback by the peers on things we were told to fix:

1. *add constraints on your attributes, I would look into that particularly for your varchar variables.*
 - We added size constraints to attributes with the datatype VARCHAR.
2. *PrimaryDesigner not being plural on ERD*
 - We made PrimaryDesigner plural on the ERD
3. *Does the overview list specific facts: There are two numbers stated but neither are used in reference to their specific database and website. Some specific facts that would be helpful to understanding their database is the number of users they plan to support and the number of board games they plan to have in their database.*

- We added the following to the overview: “This database would have information be all user-generated. We would start with ourselves as moderators as well as the first two users. We would start with adding 20 boardgame listings and letting it scale with user input.”
4. *Primary keys are evident in the outline, but are not distinguished in the schema. I would recommend underlining them in the schema so it is clear which ones are the PKs or FKs.*
 - We distinguished primary keys on the schema by adding arrows, labels (PK) and also distinguished foreign keys by receiving the arrows and labeling (FK).
 5. *PublisherID is mentioned in the outline, but is not an attribute in the Publisher entity.*
 - added publisherID as an attribute on the outline to the PrimaryPublisher entity.
 6. *The M:M relationship between Users and Boardgames. Also, why must a user be connected to at least 1 boardgame and vice versa? If the content is user generated, I can see a boardgame having to have a user, but a new user would not yet be connected to a boardgame. There should also be some description of this relationship (and the interception table) in the ERD.*
 - added UserBoardgames to the outline to show the relationship
 - changed the relationship on the ERD to be 0 to many.
 - We decided to leave the interception/join table for the outline and the schema. We thought that the ERD does not need to join table and that the many to many relationship can remain shown on the ERD.
 7. *The overview is fairly light on specific facts about the user base. Who will be generating all of the content? How many Boardgames do you expect to be held by the database, and if users have total control, how to do you validate their input? I could easily flood your database with a million fake Boardgames. Weird thought I know, but if all of the content is user generated, then they have a lot of control of your site without intense moderation.*
 - We added the following to the overview: We would start with ourselves as moderators as well as the first two users. To begin we would add 20 boardgame listings and letting it scale with user input. As the site grows, moderators would be selected from the community, can be removed as well, to help validate user submissions. We expect the database to hold 100 tabletop boardgames to start

8. *I would also add a the UsersBoardgames table to the overview, and mention its existence in the ERD.*
- We added UsersBoardgames to the over view but not the ERD. Piazza discussion posts with instructor interaction explained that the ERD does not need to join table and that the many to many relationship can remain shown on the ERD.
9. *designerID is missing from the Boardgames attributes on the overview as well.*
- added designerID as a Boardgame attribute FK.
10. *Two publishers could have been established in the same year. unique should be removed from the attribute.*
- unique removed from the attribute: year.
11. *Clarify if users can rate boardgames as well as add them to the database, or just rate them.*
- We added the words: “adding a boardgame listing” to the overview to clarify what a user will be able to do with the website/database.
 - “A database back end would allow the users to create an account to login to allow adding a boardgame listing”
12. *The ERD shows an extra 1:M relationship between Designers and Publishers. However, this relationship is not mentioned anywhere else in the document. It appears to be a mistake.*
- We removed this relationship, it was an initial thought that we removed after discussion but failed to update in the ERD.
13. *Primary and foreign keys are evident in the schema from what I can tell, however it would be helpful if your ERD had a bit more information regarding attributes or primary keys.*
- Chosen not to do this since it is beyond the scope of the requirements for an ERD and is shown in the Schema.

Part B.3: Upgrades to the Draft Version: (changes we made to the files based on our own design decisions and not feedback).

1. With regard to normalization we had publisherName rely on publisherID in boardgames entity. We removed publisherID(not really necessary for user's) and instead will have publisherName in boardgames be the FK. Now, we believe that each table does indeed

reflect a single theme, has a PK, and no attribute is determined by another non-key attribute.

2. We changed our URL due to moving to GitHub hosting so that we have better version control and more easily help each other work on the project and readily see the changes.
3. We decided to upgrade our site to have more pages to increase usability and ease of use for the user on our webpage.
4. On the homepage we added an image and made the interface more readable and user friendly.
5. We added a User Sign Up page and took it off of My Account. We may consider re-merging this with My Account depending on feedback for user usability.
6. We changed the User Info page to be called My Account page to be more clear on the purpose of this page. We also added the ability for a user to Login to an account on this page as well as see their reviews that they've posted and the option to update a rating, update the review, or delete the review on this page.
7. We added a page called Post Game where users can post a boardgame not currently in the database with its name, publisher, designer, release date, genre, and description.
8. We added a Browse page where Users can search for a boardgame that meets some filter that they would want:
 - a. By boardgame name
 - b. By Publisher name
 - c. By Designer
 - d. By release date
 - e. By genre

These filters allow the user to find a boardgame or boardgames that meet their requirement of at least one of the above filters.