

1. Please list out changes in the directions of your project if the final project is different from your original proposal (based on your stage 1 proposal submission).
 - a. Initially we had planned to include features like the Shopping Cart maker which would consist of all the games that best fits the user's interests. However, we changed the implementation by letting users use the filters instead of looking at their history to recommend them a game. Now the user would just search the database instead.
 - b. Another idea we had was to use "This Or That" where we would provide users with two game options to pick from for 5-7 times and eventually recommend a game. However, that idea required a lot of probability calculations and regression algorithms, which were not feasible with the time constraints.
 - c. We had not planned to add the Friend Finder initially, but we opted to add it due to its usefulness to our website and since we had to cut a large amount of features.
2. Discuss what you think your application achieved or failed to achieve regarding its usefulness.
 - a. Application achieved the basic implementation of CRUD and real time update of the leaderboard. It also allowed users to input games to our database so we have more information about the game if it doesn't already exist. However, it failed to ensure the security of the user's account. It also failed at displaying the correct count of the number of players who play the particular game.
3. Discuss if you change the schema or source of the data for your application
 - a. No, we didn't change the schema but we did change the source of data. Instead of using an API to retrieve users from Steam, we added a new dataset of users.
4. Discuss what you change to your ER diagram and/or your table implementations. What are some differences between the original design and the final design? Why? What do you think is a more suitable design?
 - a. We stuck with our implementation of ER diagrams and the relational model.
5. Discuss what functionalities you added or removed. Why?
 - a. Functionalities added or removed were already discussed in question 1.
6. Explain how you think your advanced database programs complement your application.
 - a. Our advanced database programs were related to keeping our website updated. Our stored procedure made sure that if a new game was added into a user's personal library, it would also show up in our databases. In addition, we had a trigger that would update the amount of hours played by users as they added to our website. This made our application more dynamic even if we had a growing base of users.

7. Each team member should describe one technical challenge that the team encountered. This should be sufficiently detailed such that another future team could use this as helpful advice if they were to start a similar project or where to maintain your project.
 - a. Parthvi: The technical challenge I encountered was the total players getting updated for all the games instead of a particular game the use added or updated. We resolve the issue by only increasing the player after checking the game name and grouping by gamename to get total players.
 - b. Arnab: A major issue I had was working with GCP. Specifically, adding my database to the cloud was difficult because of the lack of GUI and having to work from the CLI. In addition, creating a frontend in GCP was difficult because, due to the lack of a GUI, it was very hard to debug our code. Everything was in a lot of different areas and, for someone entirely new to GCP, it was quite overwhelming. Exploring the GCP interface and connecting with VS Code earlier would have been really helpful.
 - c. Andrew: Our team has not had javascript experience in a while, so using that, especially for styling a website, was very difficult. Refreshing our knowledge or watching some tutorials would have been really helpful.
8. Are there other things that changed comparing the final application with the original proposal?
 - a. Our initial proposal was definitely very ambitious in terms of what features we would have, but other than the previously mentioned functionalities that were changed, our project remained quite faithful to the original vision.
9. Describe future work that you think, other than the interface, that the application can improve on
 - a. We definitely need to improve upon the security and how we save the login information of the user. For instance, we would allow users to change passwords and not allow duplicate accounts. We would also like to include the aforementioned features that we weren't able to include (This or That and Shopping Cart Maker).
10. Describe the final division of labor and how well you managed teamwork.
 - a. The work was well distributed. We were highly motivated in the beginning of the semester and due to other commitments we weren't able to contribute as much time to the project as we would like but it all came together in the end.

