CS 418 Web Programming Extra Credit Project 4

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ABSTRACT

In this report, I'll describe the procedure I took to complete an additional project to my semester assignment of making a social media website. The type of website that I have built has similar functionality to the web app Slack. If you are not too familiar with Slack, the functionality is that users can communicate in different groups called channels by sharing text, files, pictures, and computer code. These channels are where majority of conversations take place and ideas can be exchanged on the website. This project required an algorithm to help users find new groups. This algorithm must have included some type of math equation. My method to complete this project is in three different sections; research, implementation, and demonstration.

CCS Concepts

• **Web Development → Database management system engines**
• **Programming Languages → HTML, CSS, and jQuery.**

Keywords

OpenSearch; YouTube; phpMyadmin; query; SQL; QR code; reCAPTHA;

1. INTRODUCTION

This project is the final of four extra credit projects that I have set to do for my semester assignment of creating a social media website. Groups are what define the social in social media. A lot of apps have been developed to connect someone to another, in this case others. Everywhere you look there will be something trying to connect you to a group. Part of life is finding the right group to be in. I helped my users with this by making my final additional project group recommendations. I will be explaining the planning and research I placed into the group recommendations, followed by the implementation and demonstration. In the implementation section, I will go over what I did to build this project. Lastly in the demonstration will include the visuals of the project to help make sense of the implementation section.

2. RECOMMENDED GROUPS

In this section I will be explaining how I researched the best way to complete this project. The implementation is where I will explain where the research came into play, showing what I did to implement the project. The research and implementation are closely related because I underwent multiple changes in the way I intended to implement which called for seeking out help and additional resources. The demonstration is where I will explain the output of the code implemented with supporting figures.

2.1 RESEARCH

The plan for this project was to have an algorithm that recommended groups with the most members by each of the users the session user is direct messaging with. For example, if I direct message you, I would then be recommended a group you're in with the most members. As far as research, I did not need to look up anything until it came time to place my query results into arrays. The reason for this was that I knew I could use previous code that I used to program the list of direct messages a user is in for this same instance. The next step required this because in order to use that direct messaging thread list structure in relation to groups was to find the group with the most members need to be found with PHP array functions. The array functions that I found relevant to the project was array_push(). What array_push() does is place a set of numbers into an array. This set of numbers in this case was group IDs. Remember that the algorithm is looking to see how many members are in each group that the messenger is in.

2.2 IMPLEMENTATION

Implementing this project, like what I mentioned in the Research section, was partly easy since I already had the code I needed for this project on another page. The same code was found in the messages.php file so I simply copied and pasted the code into this groups.php file. To help you understand the implementation, I will be explaining from Figure 1 on the next page.
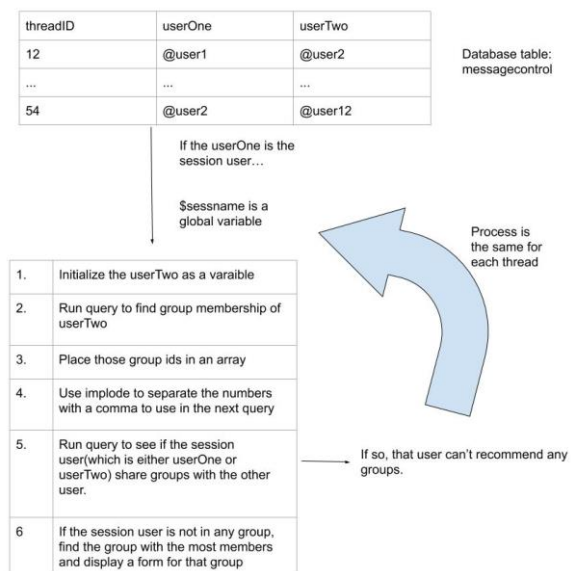

Figure 1: Implementation flow chart

The first thing I needed to do was to find which user from the database table is the session user and initialize them called variable $sessname. This was my first basis of condition in making if, elseif, else conditional loops to help filter the algorithm based on the thread users. Once the session user is found, I wanted to find the other user in the thread. The reason for this is to see how many groups that second user is in then to see if the session user is in any of those groups. Ideally, if we want a recommendation, the session user is not in any of the groups the other thread user is in so now the algorithm can bring out the group with the most users.

The way I found this step out was with a lot of help. I used a foreach loop that had an if loop inside of it to filter through the results of the member count and group id to find the group id with the highest member count. This allowed me to use the group id related the highest member count to query the database for the group name to allow the user to see what the name of the group is that is recommended to the user
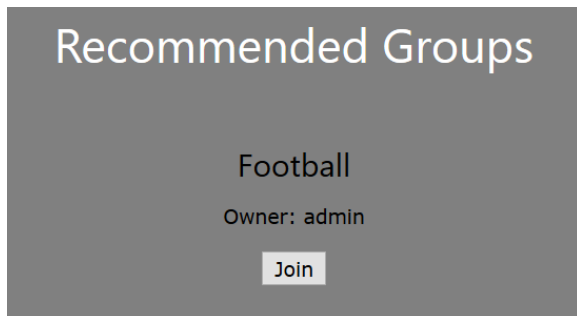
2.3 DEMONSTRATION

Figure 2: Recommended Groups Area

Figure 2 shows the results of the algorithm finding the group with the highest member count and recommending the user join. The process is all on the backend, so Figure 2 shows the result of the activity in the background.

3. FIGURES/CAPTIONS

4. CONCLUSION

I found out that in finishing the requirements of the different milestones and finishing these extra credit projects that it is amazing the effort that goes into the social media sites we seem to abuse. I was excited that is was the most challenging project that I had completed out of the four projects. I would want to go back and make sure there is not bugs and that the privacy of the groups determines the interaction of the recommendation. I would also like to go back and find a better way to test and filter out what happens on the session user group verifying process when the user is in a group with the other. The question is whether the algorithm throw out the users list and not give a recommendation or does it find the groups the user is not in and use that list? What this report is on is a valid starting point to improve on because it uses a requirement from the professor of using math in the approach.

5. ACKNOWLEDGMENTS