CS 418 Web Programming Extra Credit Project 3

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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 where users can communicate in different groups called channels by sharing text, files, pictures, and computer code. Today technology has created a way to do more in less time, which could be done in typing a single command. The feature I will be discussing is slash command or also known as bot command that allow the user to complete tasks through typing the command instead of navigating their way to fulfill the task. With many methods available to use to complete this implementation, I decided to use a conditional approach to help error handle and make it easier for myself. I explain my method 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 third of four extra credit projects that I have completed for my semester assignment of creating a social media website. User interaction with a website is very important. Some companies place big investment on how the consumer or account user spends time on their webpage. One of those investments has been in the company being to interact with the user. The biggest feature we see in regard to this is live chat with a customer representative. Have you ever browsed a fall collection and had this pop-up window asking if you need assistance? Tools like that are designed to make your stay on that site easier, building your loyalty to the brand. Another example is how companies that use Facebook Business can automate conversations with user who want to get general information about the company like store hours or prices. How can this be translated to an environment like my social media page. I decided to make slash commands that would cause the user to do commands from one page that would take at least three clicks. I will be explaining the planning and research I placed into the slash commands, 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.

2. SLASH COMMANDS
Slash commands have become very popular in the modern websites. You see them the most of project managements application where there is more than one user in a channel or chat room. The phrase slash commands and bots are referred to the same feature. You can type command preceded by a backslash which will trigger the bot to carry out the command. This feature gives a sense of delegation and allows the bot to do certain tasks for you.

2.1 RESEARCH
Like the my first to projects, I did look for a brief tutorial on YouTube. As I looked and watched there was nothing that would be of any assistance. Since Slack is the lead application with this feature there was a lot of videos of how to make Slack bots and apps that where only Slack exclusive not, to my custom project. I originally thought it there was an API I could have used to work with my code, but there was not. I started to brainstorm as I look at the requirements for this extra credit project outlines in an old lecture. All I had to do to integrate this feature was to initiate the bot commands with a backslash. I started to look for PHP functions that would help me make this possible and I found the two; md_substr and explode. The function md_substr would allow me to extract the first character of a string. I needed this function to identify whether the user is typing a command or just a status message. The function explode was needed to grab words from the string that was typed into the text area. Once I understood how I was going to use these functions I designed my commands and started to implement the bot commands.

2.2 IMPLEMENTATION
The way I designed my commands was by the example made by Slack. Some commands are one-word commands others need objects or variable to carry out the command. I designed four slash commands; archive, message, invite, and who. Archive command is only for the administrator of the site [Milestone 3]. After typing in this command, the group where this command is typed will become archived. The next command is message, and this is a multiple object command. Any user can type the command followed by the username the user would like to send a message to. The third command is just like the second with multiple objects. This third command is allowing you to invite a user into the current group where the command is sent. The last slash command is called who. This command generates and displays a text file of the users who are in the group the user types this command in. Once I designed these slash commands, I was able to duplicate process I took during the milestones to create the user experience.

When I started to do this project, I knew that I wanted to make conditional loops for this process. I understood that if the requirement for the slash commands was to be initiated by a backslash, I need a way to extract the backslash. The function md_substr() allowed me to get the backslash from the beginning of the string meaning the command would have to come first and so would the backslash. The way I planned to use this slash was the predetermining factor for the rest of the conditional method I put into place. I next wanted to make sure I could find a way to identify the command word. Yes, I could continue

to use the previous function, but I would have had to purposely make all the commands that same amount of characters. This way is not realistic, and I wanted to build something that would be commonly understand for the user. This is when I found the explode() function that would place each word in a string and place it into an array to be retrieved. I used this to grab the next couple of conditions.

Another feature that I added to guide users on the use of the slash commands, I duplicated the same autocomplete process I used for the search bar to search user. This process reads the command that I placed in a xml file that are organized by command noting the name, example, and function. This comes into play when the user types the backslash first the user will be able to few their options for a command from the autocomplete drop down menu.

To review, I implemented the slash commands by using the results of the functions as conditions. The backslash is the first condition, otherwise treat the comment as a regular comment. The next condition is to test whether the proper command was typed. If that condition is met, then you could be able to use execute the command. The way I executed the command was by SQL queries that would register the commands into the database to reflect the action to the rest of the website. Once the command has been typed successfully it will only be seen by the user who typed it and as well as the bot.

2.3 DEMONSTRATION

With the explanation given further I will incorporate even more to show how this is done. Once the user is logged in and is on any channel, the user can begin to type in what every command they would like to use. As the user is typing there is suggestions that are popping up to aide the user not to complete the command. Once the user completes the command and posts the message, the bot (Coach Bot) will show and execute the command. I have ordered the figures below to give a visual for the demonstration. In Figure 1, you can see how Coach Bot shows up and give a list of the user accounts in the groups. In Figure 2, the slash command suggestion is displayed once the backslash is typed. In Figure 3, shows a few wrong input handlings. For example, there is a command that only the admin can use.

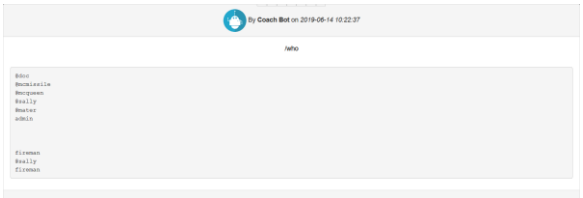

Figure 1

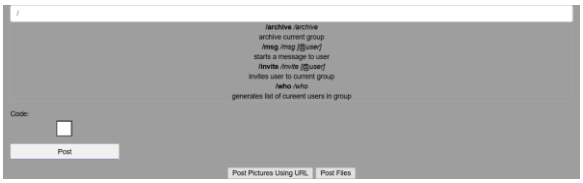

Figure 2

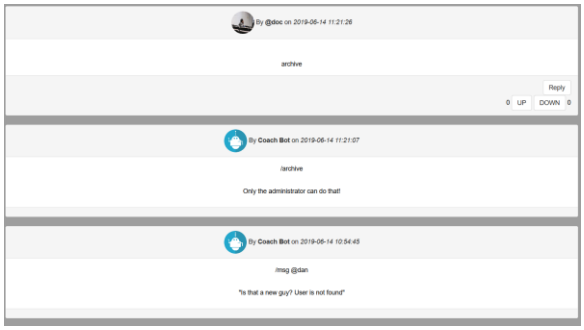

Figure 3

3. FIGURES/CAPTIONS

4. CONCLUSION

I noticed 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 first project that I had some experience with, not needing to watch any YouTube videos. I would want to go back and make sure there is not bugs and that the reliability would be in the best shape possible. For example, even though there is a message command it only starts a new message I would like for the user to be able to continue a message if there is an existing thread made with the desired user. I also would like to research into the jQuery method of the suggestion. I think I would be able to have this serve as a autocomplete as well as a suggestion. With the XML method I had to hardcode the format that is shown in the suggestion menu.

5. ACKNOWLEDGMENTS

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