Program 4

The goal for this fourth project was to create the one key element of a chatbot, which is the ability to handle absolutely any question the user enters in. Use an algorithm to compare the question entered by the user with a known question and check if the words in each string match. Then, in the end, you have to calculate the match percentage. If the match percentage succeeded a certain threshold, then give some result relating to that question.

I used three new classes to help achieve this goal by once again allowing the user to type whatever they want. From there I used a counter class where I split their question up into words and looped through two strings character by character, ultimately computing a threshold calculation. Then the keyword class used this method in the counter class to loop through each word with a keyword and if this word matched close enough to the keyword. After I send it to class to basically sort and return the word back to my main method. That is when I check which word was returned and print out a result. I use a lot of if-else statements and a try-catch to handle any errors I come across.

I think this program was extremely, difficult due to the many ways you can construct the algorithm. I attempted to do this project in many different ways like using one using arrays, another using vectors, and hash maps. I also found implementing algorithms such as the Levenshtein distance was difficult for me to use. However, I found lots of interest in researching these sequence-based algorithms. Another difficult aspect of the assignment I had trouble with is getting the proper thresholding value in my counter.cpp. Also, for extra credit, I was able to implement my classmate's code Antonio Turner for bonus points because I was able to use his counter class.