MET CS 521 Final Project - Daniel Shiang

Summary

This program was built to give lab researchers and chemistry/biology an easier way to calculate mass of compound, molarity of solution, and volume of solution based on different parameters, mass, compound molar mass, volume of solution, and solution molarity. The three classes used by the main program, mass_calculator, volume_calculator, and molarity_calculator work off of 3 variations of the formula M (molarity) = n (moles of solute)/v (liters of solution). The calculator allows the user to upload a text file with half life constant data as well for their compound in question to calculate half life in years.

Instructions:

After running program, the user will be prompted to give name of their compound or solution. The user will then choose to calculate mass, volume, or molarity. The program will then give the user specific prompts to enter in appropriate values. After entering all values, the user will receive their calculation. If a user enters invalid characters or zeroes in certain inputs, the program will re-prompt user to re-enter a correct integer or float.

After the user receives their calculation, the user will be prompted to upload input file to calculate half-life or skip to the last question. If user chooses “YES”, the program will upload the text file to calculate half-life of the compound for the user. The user will finally be asked if they want to restart program or exit.