

Computer Science IA Writeup

Part A

My client Daniel is a grade 12 chemistry student at the high school I attend. He has encountered difficulty in chemistry and requested to make him a piece of software to help him improve his scores in Chemistry. Daniel is a fairly unorganized student and requested the program help him organize himself and assist him in completing the basic functions in all chemistry problems. I proposed making a program with a database of all grade 12 chemistry formulas. The user can input their values into the variables in the formula and the program will calculate the value of the unknown variable for the user.

Rationale

There exist a variety of chemistry related tools available but none cater to the needs of my client. Therefore, I will be creating a desktop GUI program called "Science Buddy". The program will house a database for all grade 12 science related formulas. The user will be able to filter through the list of formulas with a search bar. Each formula can be double clicked to expand it in a new window. The formula will be broken down into its variables and the user will be set the values of the formulas. My user also has trouble with balancing chemical equations so I decided to implement an auto balancer for my client in my program. The language I will be using to code my program is Java, it is the language I have most experience and comfort with and will allow me to add the best and most convenient functionality into the finished product.

Success Criteria

Criteria No.	Success Criteria
1	All grade 12 science formulas in the Ontario curriculum will be accessible in the program
2	The user will be allowed to input and calculate an answer for the formula based on values they have.
3	The program will have a constant list with all grade 12 science constants in the Ontario curriculum
4	The user will be able to search and filter by the name of the formula or constant they are looking for.
5	The user will be able to enter an unbalanced formula and the program will calculate and output a balanced version of the formula
6	The program will contain an efficient GUI for easy access and movement between different menus in the program.

The advisor for my computer science IA will be Mr. Reid my HL computer science teacher.

Word Count: 406

