Istanbul Technical University

Computer Engineering

BLG 102E - Int to Scientific&Eng.Computing (C)

Spring 2022-2023

Midterm 2

- Make sure your source code is compiled and linked successfully, and passed all the tests given with the questions before your submission.
- Remember to use –std=c99 –Wall –Werror flags while compiling with gcc.
- **Your codes will be checked with automated similarity checking tools among other submissions and web.**

Question 1: Moleculer Weight Calculator (Duration: 30 minutes)

Modify the code "m2q1.c" to accomplish the description below. Test your code with m2q1.t using calico (python -m calico.cli m2q1.t)

The user will enter an element symbol (upto and including Ne in the periodic table) and the number of atoms of that element separated by spaces for each and every atom in the molecule, then enter "end 0" to finish. You will write the `calculate()` function, compatible to work with the `main()` function given below. The function will get the atomic weight of the entered element from the atomic weights array corresponding to the element symbol from the elements array. The indexes of the symbols and the corresponding atomic weights are the same.

Hint: `strcmp()` returns 0 if its two arguments are identical strings

Do not modify the main function. Please **add your code above the main function**. If you modify the main function, you **will get 0 points** from this question.

Some sample runs:

CO_2

```
Enter element symbol and number of atoms separated with a space: C 1
Enter element symbol and number of atoms separated with a space: O 2
Enter element symbol and number of atoms separated with a space: end 0
The molecular weight is 44.01
```

CH_4

```
Enter element symbol and number of atoms separated with a space: C 1
Enter element symbol and number of atoms separated with a space: H 4
Enter element symbol and number of atoms separated with a space: end 0
The molecular weight is 16.04
```

C_2H_5OH

```
Enter element symbol and number of atoms separated with a space: C 2
Enter element symbol and number of atoms separated with a space: H 5
Enter element symbol and number of atoms separated with a space: O 1
Enter element symbol and number of atoms separated with a space: H 1
Enter element symbol and number of atoms separated with a space: end 0
The molecular weight is 46.06
```