CL-1004 OBJECT ORIENTED PROGRAMMING LAB

Assignment # 02

INSTRUCTOR: MUHAMMAD ABDULLAH

SEMESTER FALL 2021

ASSIGNMENT #02
Pointers and Structures
Object Oriented Programming – Lab

Due Date: 31th October 2021

Total Marks: 80

A note of warning: Start work on assignments as soon as they are given. Do not underestimate the demanding nature of this course. Expect the system to crash the night before your program is due. Aim to have it done the day before.

Submit the assignment on **Google Classroom and printed form.** Do not email me assignments after due date. It will not be accepted in any case. Students are required to submit actual content written in Pdf. Hand written/ Scanned assignments will not be accepted.

Note: Name of the file should start with your Serial Number followed by Roll number, Name and at the end assignment number (**10_p190001_Name_Assign#01)**

i.e. 10_p190001_Ali_Assign#01

Pointers

Q No.1: Write a program to input data into an array (**Take value from user at runtime for inserting into array using loop**) and find out the maximum value and minimum value from array through pointer?

Q No.2: Write a program to convert Fahrenheit to Celsius degrees by passing pointers as arguments to the function?

(**Take value from user at runtime**)

Q No.3: Write a program to convert kilogram into grams by passing pointers as arguments to the function?

(**Take values from user at runtime**)

Q No.4: Write a program to find out the length of string by using pointers?

(**Take string value from user at runtime**)

Q No.5: Write a program to copy one string to another string by using pointers?

(**Take string value from user at runtime**)

Q No.6: Write a program to combine two strings by using pointers?

(**Take both strings value from user at runtime**)

Structures

Note: *For all task, you have to define the Structures, Function with structures and arrays whenever appropriate.*

1. Create a structure called employee that contains two members: an employee number (type int) and the employee's compensation (in dollars; type float). Ask the user to fill in this data for three employees, store it in three variables of type struct employee, and then display the information for each employee.

2. Create a structure called time. Its three members, all type int, should be called hours, minutes, and seconds. Write a program that prompts the user to enter a time value in hours, minutes, and seconds. The program should then store the time in a variable of type struct time, and finally print out the total number of seconds.

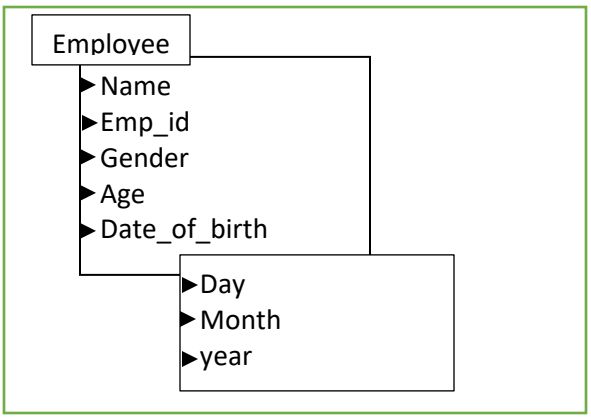
3. Use the time structure from above question and write a program that obtains two time values from the user, stores them in struct time variables, converts each one to seconds (type int), adds these quantities, converts the result back to hours-minutes- seconds, stores the result in a time structure, and finally displays the result in 12:59:59 format

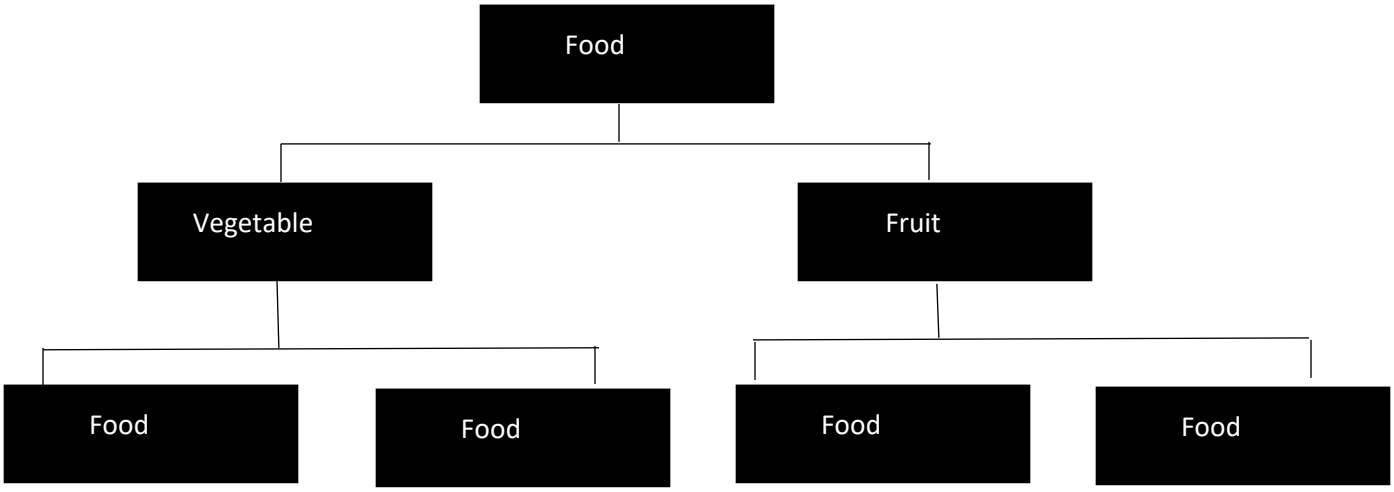
4. Create a structure called Volume that uses three variables of type Distance to model the volume of a room. Initialize a variable of type Volume to specific dimensions, then calculate the volume it represents, and print out the result. To calculate the volume, convert each dimension from a Distance variable to a variable of type float representing feet and fractions of a foot, and then multiply the resulting three numbers.

5. A phone number, such as (212) 767-8900, can be thought of as having three parts: the area code (212), the exchange (767), and the number (8900). Write a program that uses a structure to store these three parts of a phone number separately. Call the structure phone. Create two structure variables of type phone. Initialize one, and have the user input a number for the other one. Then display both numbers. The interchange might look like this:

```
Enter your area code, exchange, and number: 415 555 1212
My number is (212) 767-8900
Your number is (415) 555-1212
```

6. Implement the given nested structure in the following figures. Note: Only write the definitions of structs nothing else. It is not a complete program.





Note: Program copied from someone or plagiarized will not be considered for grading. Zero percent tolerance with plagiarism.