CS2413: Data Structure
Fall 2021

Lab Assignment #2

- Name only: _____
- Release date: Sep 7th, 2021 (Tuesday)
- Due date: Sep 9th, 2021 (Thursday) 11:59 PM
- It should be done INDIVIDUALLY; Show ALL your work.
- Please turn in your codes through Blackboard in the **same file in .cpp format**. You can have different functions for different questions. Do not compress/zip your submission. This is to ensure faster grading.

- Total: 30 pts

1. Define a class student with the following specifications:
Private members of class student

admno	integer
sname	20 characters
eng, math, science	float
total	float
ctotal()	a function to calculate eng + math + science with float return type.

Public member function of class student

takeData()	Function to accept values for admno, sname, eng, science, math and invoke ctotal() to calculate total.
showData()	Function to display all the data members on the screen.

[10 pts]

2. Define a class BOOK with the following specifications:
Private members of the class BOOK are

BOOK NO	Integer type
BOOKTITLE	20 characters
PRICE	float (price per copy)
TOTAL_COST()	A function to calculate the total cost for N number of copies where N is passed to the function as argument.

Public members of the class BOOK are

INPUT()	function to read BOOK_NO. BOOKTITLE, PRICE
PURCHASE()	function to ask the user to input the number of copies to be purchased. It invokes TOTAL_COST() and prints the total cost to be paid by the user.

Note: You are also required to give detailed function definitions.

[10 pts]

3. Write the definition for a class called **Distance** that has data member feet as integer and inches as float. The class has the following member functions:
void set(int, float) to give value to object
void disp() to display distance in feet and inches
Distance add(Distance) to add a new distance to the current distance (calculate sum) & return distance

1. Write the definitions for each of the above member functions.
2. Write main function to create three Distance objects. Set the value in two objects and call add() to calculate sum and assign it in third object. Display all distances.

[10 pts]