THIS WORK IS FOR INDIVIDUAL STUDENT

(Informal Part Two of Assignment 2)

(Informal Part 2 of Quiz Two will be in Next Class on Tue April 22)
(Formal CP1 in Next Class Tue April 22)

DUE, HANDWRITTEN ONLY, IN CLASS Tue April 22, 2025

Task One: CONCEPT TOPICS: C++ Functions:

Use ChatGPT to generate Tutorial (**you may be asked to show or print this tutorial)** on C++ Functions to Understand the following:

- The Use of Functions in C++
- Passing Parameters by Value to Functions
- Passing Arrays as Parameters to Functions
- Passing Parameters by reference to Functions

Write in your own words a complete summary of the ChatGPT tutorial but without any C++ Code

Task Two: This is a Portion of Assignment 2 and No Need to Submit again for Assignment 2

1. **Function Analysis:** You will need to read the task two of assignment One and do a function analysis of set one. You will need to write the name of functions to use and for each function: parameters and data types, passed by value or reference, return type. **So, consider at least 7 functions for set one. Must use the format provided in the following example [5 Marks per Function]**

EXAMPLE: Write a complete program that reads integer values from user for 2 arrays and then inserts the first array in the second array

EXAMPLE SOLUTION:

Function Names: read, readArray, shiftRightOnce, shiftRight, Insert, display
Function Details:
read: reads a single integer value from the user
Parameters: None
Return type: int
readArray: reads N integers values from the user
Parameters:
Parameter 1: int array to hold integer values
Parameter 2: int (by value) for size of array
Return type: void
shiftRightOnce: shifts Once an array right from a given index
Parameters:
Parameter 1: int array to hold integer values
Parameter 2: int (by value) for size of array
Parameter 3: int (by value) for index

Return type: void

shiftRight: shifts an array right from a given index and by a given amount

Parameters:

Parameter 1: int array to hold integer values
Parameter 2: int (by value) for size of array
Parameter 3: int (by value) for index
Parameter 4: int (by value) for amount

Return type: void

insert: Inserts one array in another array

Parameters:

Parameter 1: int source array
Parameter 2: int (by value) for size of source array
Parameter 3: int destination array
Parameter 4: int (by value) for size of destination array

Return type: void

display: display an integer array on screen

Parameters:

Parameter 1: int array
Parameter 2: int (by value) for size of array

Return type: void

2. For each of the following **Two Codes**, do a dry Run (**must use the same format and method as provided in the document previously shared on portal).** **[20 Marks per Code]**

Identify any errors and correct these error

Code 1:

```
1.  int count(int values[], int size, int v)
2.  {
3.    int cnt = 0;
4.    for(int i = 0 ; i < size; i++)
5.     {
6.       if(values[i] == v)
7.             {
8.               cnt++;
9.             }
10.    }
11.   return cnt;
12. }
13.
14. int main()
15. {
16.   int set[20] = {3, 1, 2, 2, 3, 3, 1, 2, 3, 4, 3, 3};
17.   int n = 12;
18.   int freq = count(set, n, set[5]);
19.   cout << "Frequency of " << set[5] << " is " << freq << endl;
20.   return 0;
21. }
```

Code 2

```
1.  void read(char s[])
2.  {
3.    cout << "Enter an English word: ";
4.    cin >> s;
5.  }
6.
7.  void length(char s[], int & len)
8.  {
9.    len = 0;
10.   while(s[len++] != '\0');
11. }
12.
13. void copyStr(char src[], char dst[])
14. {
15.   int ls = 0;
16.   length(src, ls);
17.
18.   for(int i = 0; i < ls; i++)
19.     {
20.       dst[i] = src[i];
21.     }
22. }
23.
24. bool isLowercase(char c)
25. {
26.   bool result = false;
27.   result = (c >= 'a');
28.   result = result && (c <= 'z');
29.   return result;
30. }
31.
32. bool isUPPERCASE(char c)
33. {
34.   bool result = false;
35.   result = (c >= 'A');
36.   result = result && (c <= 'Z');
37.   return result;
38. }
39.
40. void changeCase(char s[])
41. {
42.   int ls = 0;
43.   length(s, ls);
```

```
44.   for(int i = 0; i < ls; i++)
45.    {
46.      if(isLowercase(s[i]))
47.            {
48.              s[i] -= 32;
49.            }
50.      if(isUPPERCASE(s[i]))
51.            {
52.              s[i] += 32;
53.            }
54.    }
55. }
56.
57. int main()
58. {
59.   char word[30] = "";
60.   read(word);
61.   char save[30] = "";
62.   copyStr(word, save);
63.   changeCase(word);
64.   cout << save << " " << word << endl;
65.
66.   return 0;
67. }
```