



National University of Sciences and Technology (NUST)
School of Electrical Engineering and Computer Science

Department of Electrical and Computer Sciences

CS 212: Object Oriented Programming

Class: BEE-14D

Fall 2023

Lab02: Fundamentals of C++

Date: 18th September, 2023

Instructor: Mehreen Tahir

Lab Engineer: Mehwish Kiran

Name: Irfa Farooq

CMSID: 412564



Task 1: Write down a simple program that takes the length in Feet and inches and then converts it into centimeters. Based on the problem, you need to design an algorithm as follows:

1. Get the length in feet and inches.
2. Convert the length into total inches.
3. Convert total inches into centimeters.
4. Output in centimeters.

Hint: One Foot is 12 inches. One inch is 2.54 cm.

Write down a simple program which can convert a String into

Code:

```
#include <iostream>
using namespace std;

int main(){
    float feet, inches, c_meters;
    cout << "Enter feet: ";
    cin >> feet;
    cout << "Enter inches: ";
    cin >> inches;
    cout << "The total length in centimeters is: " << ((feet * 12) + (inches))*2.54
<< endl;
    return 0;
}
```

Output Screenshots

The screenshot shows a Windows Command Prompt window titled 'cmd' with the path 'C:\WINDOWS\system32\cmd.exe'. The window contains the following text:
Enter feet: 5
Enter inches: 6
The total length in centimeters is: 167.64
Press any key to continue . . .



Task 2: Write down a simple program which can convert a String into all Upper Case?
(Please don't use the build in function and reinvent the wheel.)

Hint: The ASCII Value of Upper-Case A is 65 and Lower Case a is 97.

Hint: difference in ASCII codes of the lowercase and uppercase counterparts of a character is 32

Code:

```
#include <iostream>
#include<string>
using namespace std;

int main() {
    string input;
    cout << "Enter the string to be converted in upper case: ";
    cin >> input;
    for (int i = 0; i < input.length(); i++) {
        if ((input[i]) < 97 || input[i] > 112) {
            cout << char(input[i]);
        }
        else
            cout << char(input[i] - 32);
    }
    cout << "\n";
    return 0;
}
```

Output Screenshots

```
C:\WINDOWS\system32\cmd.exe
Enter the string to be converted in upper case: Teacher
TEACHER
Press any key to continue . . .
```



Task 3: Write a Program that can take five numbers and then able to sort them and display them in the Descending Order.

Code:

```
#include <iostream>
using namespace std;

int main(){
    float temp, input_num[5];
    cout << "Enter five numbers for sorting: ";
    for (int l = 0; l < 5; l++){
        cin >> input_num[l];
    }
    for (int j = 1; j < 5; j++){
        for (int i = 0; i < 5; i++){
            if (input_num[i] < input_num[j]){
                temp = input_num[i];
                input_num[i] = input_num[j];
                input_num[j] = temp;
            }
        }
    }
    cout << "The numbers in descending order are: ";
    for (int k = 0; k < 5; k++){
        cout << input_num[k] << endl;
    }
    system("pause");
    return 0;
}
```

Output Screenshots

```
C:\> C:\WINDOWS\system32\cmd.exe
Enter five numbers for sorting: 5
4
2
8
9
The numbers in descending order are: 9
8
5
4
2
Press any key to continue . . .
```