Activity No. 4.2	
Assignment 4.2: Bubble Sort	
Course Code: CPE 007	**Program:** Computer Engineer
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Name: Canoy Hail B.	**Instructor:** Engr. Jimlord M. Quejado
6. Output	

Bubble Sort Code :

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

int main (){

int scores [10] = {80, 78, 87, 94, 90, 89, 90, 93, 91, 84};
int temp = scores[0];
int n = 10;

scores[0] = scores[9];
scores[9] = temp;

for (int i = 0; i < n - 1; i++) {
    for (int j = 0; j < n - i - 1; j++) {
        if (scores[j] > scores [j+1]){
            temp = scores[j];
            scores[j] = scores[j + 1];
            scores[j +1] = temp;
        }
    }
}

cout << "scores in ascending order: ";
for (int i = 0; i < n; i++) {
    cout << scores[i] << " ";
}




cout << endl;

return 0;

}
```

Bubble Sort Output :

```
scores in ascending order: 78 80 84 87 89 90 90 91 93 94

--------------------------------
Process exited after 0.01314 seconds with return value 0
Press any key to continue . . .
```

Bubble Sort Explanation :

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

This is commonly seen in almost all c++ codes. #include <iostream> to input and

output something, while using namespace std; because it's convenient instead of having std::cout you'll only need to do cout.

```
int main (){
```

This is where the body of the program runs, it's like the main part of the program and how the program should run is listed on this.

```
int scores [10] = {80, 78, 87, 94, 90, 89, 90, 93, 91, 84};
```

This is to create the list and display all its value.

```
int temp = scores[0];
int n = 10;
```

int temp is just a temporary storage to store temporary number for swapping numbers, while int n is just the number of elements in the array.

```
for (int i = 0; i < n - 1; i++) {
    for (int j = 0; j < n - i - 1; j++) {
        if (scores[j] > scores [j+1]){
            temp = scores[j];
            scores[j] = scores[j + 1];
            scores[j +1] = temp;
        }
    }
}
```

The first line is for (int i = 0; i < n - 1; i++) { basically for means to do a loop.
Int i = 0 means the program will start at 0, i < n - 1; the loop will keep running as long as the i is less than n - 1 and 1++ just means to add 1 to i every round.

The second line is for (int j = 0; j < n - i; j++, int j = 0 means to start from the very first position in the array, j < n - i -1; is to loop j and to not stop until it is less than n - i - 1 and j++ is to increase j to 1.

If (scores[j] > scores [j +1]) , means that if scores[j] is greater than scores [j +1] then swap them.

Temp = scores [j]; is to save if scores[j] value in temp, scores [j] = scores [j+1]; is to replace scores[j] with scores [j +1]).

Last line is about scores [j + 1] = temp;
Is to put the saved data information to scores [j +1]) they will swap value this code.

```
cout << "scores in ascending order: ";
for (int i = 0; i < n; i++) {
    cout << scores[i] << " ";
}




cout << endl;

return 0;
```

Cout << “scores in ascending order: “; just means to print or display the text.
for (int i = 0; i < n; i++) , i = 0 is to start with 0, i < n is to repeat while i is less than n
Then i++ is to increase every run with 1.

Then cout << scores[i] << “ “; is to display the space for it not to jamble.
Then cout << endl; to end the program.
Return 0; to end the program without errors.

7. Supplementary Activity

8. Conclusion

- I learned that this program makes a list of scores easier to arrange with correct order like low to high numbers. The Bubble Sort program will start by storing numbers then can loop it. It can also compare and swap values using a temporary variable, it will continue to loop until all the scores are arranged. Once the program runs without error it will display all the values in low to high numbers. This program shows us how to make a list easier and clearer to read, it organizes the list of numbers or variables.

9. Assessment Rubric