Hands on Activity 4.2	
Arrays	
Course Code: CPE007	**Program:** Computer Engineering
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6. Output	

Cenar_Activity 4.2.cpp

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

int main() {
    int n[10];

    // Initialize array elements to 0
    for (int i = 0; i < 10; i++) {
        n[i] = 0;
    }

    cout << "Element   Value" << endl;

    // Print index and value
    for (int i = 0; i < 10; i++) {
        cout << "   " << i << "        " << n[i] << endl;
    }

    return 0;
}
```

```
Element    Value
   0         0
   1         0
   2         0
   3         0
   4         0
   5         0
   6         0
   7         0
   8         0
   9         0


------------------------------------
Process exited after 0.01822 seconds with return value 0
Press any key to continue . . .
```

-   The code created an array of 10 elements starting from 0 to 10. The loop shows all elements from 0 to 9 and prints/displays "Element Value" for indication. The elements 0 to 9 is the indication that shows what position are the elements in an array. The index of the value were all set to 0 so no values were shown.

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

int main() {
    int n[10] = {32, 27, 64, 18, 95, 14, 90, 70, 60, 37};

    cout << "Element  Value" << endl;

    for (int i = 0; i < 10; i++) {
        cout << "   " << i << "        " << n[i] << endl;
    }

    return 0;
}
```

```
Element   Value
   0         32
   1         27
   2         64
   3         18
   4         95
   5         14
   6         90
   7         70
   8         60
   9         37


--------------------------------
Process exited after 0.009407 seconds with return value 0
Press any key to continue . . .
```

- This code makes an array with 10 elements and 10 values starting from 0 to 9. Again, it outputs "Elements Values" for indication. The loop is used to go through each element from 0 to 9 and shows each of its values for every position of the array. In my entire understanding in simple terms, it is a way to display all number of the array together with their position and values of each element.

```cpp
1    #include <iostream>
2    using namespace std;
3
4    #define SIZE 12
5
6    int main() {
7        int a[SIZE] = {1, 3, 5, 4, 7, 2, 99, 16, 45, 67, 89, 45};
8        int total = 0;
9
10       for (int i = 0; i < SIZE; i++) {
11           total += a[i];
12       }
13
14       cout << "Total of array element values is " << total << endl;
15       return 0;
16   }
```

```
C:\Users\TIPQC\Documents\C

Total of array element values is 383

----------------------------------
Process exited after 0.01291 seconds with return value 0
Press any key to continue . . .
```

- The code creates an array containing 12 elements and initializes a variable which is "total" that starts from 0. The loop starts off by going through each element in the array and adding them one by one to get the total of the elements. After adding each element, it outputs the total or sum of all the numbers of the array. For me, it's like a calculator that only uses addition and gets the sum or total of all the numbers that contains in the array then prints it out.

7. Supplementary Activity

1.

Cenar_Activity 4.2.cpp

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

int main() {
    int n[10] = {19, 3, 15, 7, 11, 9, 13, 5, 17, 1};
    int arraySize = 10;
    int element[arraySize];
    string histogram[arraySize];

    for (int i = 0; i < arraySize;i++) {
        element[i] = 1;
    };

    for (int j = 0; j < arraySize;j++) {
        for (int h = 0; h < n[j];h++) {
            histogram[j] = histogram[j] + "*";
        }
    }

    cout << "Element\tValue\tHistogram" << endl;

    for (int i = 0; i < 10; i++) {

        cout << i << "\t" << n[i] << "\t"<< histogram[i] << endl;
    }

    return 0;
}
```

```
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Element Value    Histogram
0        19       ********************
1        3        ***
2        15       ***************
3        7        *******
4        11       ***********
5        9        *********
6        13       *************
7        5        *****
8        17       *****************
9        1        *


--------------------------------
Process exited after 0.01512 seconds with return value 0
Press any key to continue . . . |
```

- The program shows 10 numbers or elements in the array then makes a histogram for each element using "*". *The asterisk (*) is the representation of each value of the element in the array. Two loops are used in the program, the first of to create the array (the elements and it's value) then the second one for the representation of the value using asterisks (*). The output shows a kind of table containing the elements, values, and histogram. In other words, the output simply shows a visual aid of each value of an element in the array.

```cpp
Cenar_Activity 4.2.cpp
1    #include <iostream>
2    using namespace std;
3
4    int main() {
5        int response_size = 40;
6        int responses[40] = {1, 2, 6, 4, 8, 5, 9, 7, 8, 10, 1, 6, 3, 8, 6, 10, 3, 8, 2, 7, 6, 5, 7, 6, 8, 6, 7, 5, 6, 6, 5, 6, 7, 5, 6, 4, 8, 6, 8, 10};
7        int frequency_size = 11;
8        int frequency[10]= {0, 0, 0, 0, 0, 0 ,0, 0, 0, 0};
9
10
11       for (int i = 0; i < response_size; i++) {
12       int responsenum = responses[i];
13       frequency[responsenum-1]++;
14   };
15
16       cout << "Response Summary:\n";
17       for (int i = 1; i < frequency_size; i++) {
18           cout << "Response " << i << ":\t" << frequency[i-1] << " students" << endl;
19       }
20
21       return 0;
22   }
```

```
Response Summary:
Response 1:     2 students
Response 2:     2 students
Response 3:     2 students
Response 4:     2 students
Response 5:     5 students
Response 6:     11 students
Response 7:     5 students
Response 8:     7 students
Response 9:     1 students
Response 10:    3 students

--------------------------------
Process exited after 0.01256 seconds with return value 0
Press any key to continue . . . |
```

- This program shows the survey summary from 40 students. I used two variables in this code called "responses" and "frequency" for creating the array to count how many times an answer or option was chosen by a student. The loop goes through each response and adds each response to the total amount of how many times it was answered. The output then shows a summary of how many students choose each response or answer. In summary, the code shows and counts how many students picked each answer or response from the survey.

8. Conclusion

- I learned how to understand more clearly and explain some complicated codes to be learned and understood by a perspective that doesn't have all the knowledge about these codes/programs. I made this activity and my explanations as if I was telling or explaining this to someone who does not have much knowledge about programming. Even though I also have much to learn in this subject, it made me understand it better by doing this technique to finish this task/activity. For me, it was easier explaining how it worked rather than doing the code itself because I still have to learn and study better about programming.