Dhaka International University, Bangladesh

Department of CSE

Knowledge is Power

DIU

Estd. 7th April, 1995
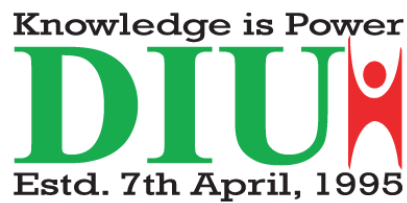
Assignment No: 01 & 02

7ⁿᵈ Semester E83 Batch

Course Code: CSE-301

Course Title: Algorithm Design and Analysis

Submitted To:

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CSE EVE-83 Batch

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Assignment No: 01

Assignment Name: Write an algorithm and program to find the maximum and minimum number from an array list by using any language.

Aim: I will do this to find the maximum and minimum number from an array list.

Algorithm: Algorithm to find the maximum and minimum number from an array list.

> Algorithm MaxAndMin(A,n)
>
> // A is an Array of size n.
>
> {
>
> MaxResult := MinResult := A[1];
>
> for i := 1 to n do
>
> if A[i] >MaxResult then MaxResult := A[i];
>
> > return MaxResult;
>
> else if A[i] < MinResult then MinResult := A[i];
>
> > return MinResult;
>
> }

Program/Code: Programming code to find the maximum and minimum number from an array list by using C plus plus language.

```
#include <iostream>
using namespace std;
int main(){
        int i, maxResult, minResult, n = 5, a[] = {5, 7, 1, 9, 3};
        maxResult = minResult = a[0];
        for(i = 1 ; i < n ; i++){
        if(a[i] > maxResult){
```

```
        maxResult = a[i];

        }

        if(a[i] < minResult){

        minResult = a[i];

        }

        }

    cout << "The Maximum value is " << maxResult << endl;

    cout << "The Minimum value is " << minResult << endl;

    return 0;

}
```
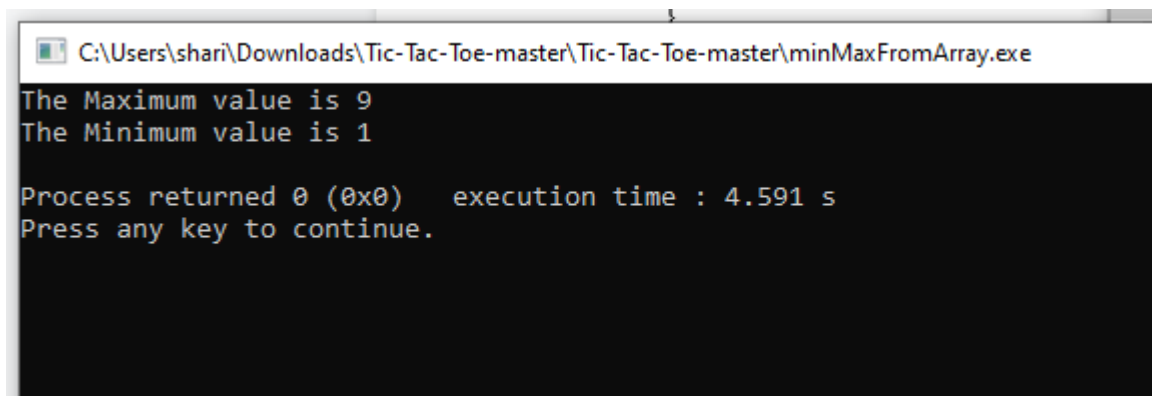
Output: Here array was a[] = {5, 7, 1, 9, 3}, After executing the program we get the output.

End the assignment 01

Assignment No: 02

Assignment Name: Write an algorithm and program to sort as ascending and descending from an un-order array list by using any language.

Aim: I will do this to sort as ascending and descending from an un-order array list/

Algorithm: Algorithm to sort as ascending and descending from an un-order array list.

Algorithm SortAsAseAndDesFUArrayList(a, n)

// Sort the array a[1 : n] into an ascending and descending order.

{

    for i:= 1 to n do

{

    j := i;

    {

        for k to n do

        if a[k] < a[j] then set a[j] := a[k], a[k] := a[j].

            return AssendingArrayList;

        else if a[k] > a[j] then set a[j] := a[k], a[k] := a[j].

            return DesendingArrayList;

    }

}

}

Program/Code: Programming code to sort as ascending and descending from an un-order array list by using C plus plus language.

```cpp
#include <iostream>
using namespace std;
int main() {
    int i, j, k, a[5]={4,5,1,10,7}, n=5, temp;
        for(i = 0; i < n; i++){
            j = i;
            for(k = i+1; k < n; k++){
                if(a[k] < a[j]){
                    temp = a[j];
```

```cpp
                        a[j] = a[k];

                        a[k] = temp;

                }

            }

        }

        cout << "After asending sorting is: ";

        for(i = 0; i < n; i++){

                cout << a[i] << " ";

        }


        for(i = 0; i < n; i++){

                j = i;

                for(k = i+1; k < n; k++){

                        if(a[k] > a[j]){

                                temp = a[j];

                                a[j] = a[k];

                                a[k] = temp;

                        }

                }

        }

        cout << "\nAfter desending sorting is: ";

                for(i = 0; i < n; i++){

                        cout << a[i] << " ";

                }

    return 0;

}
```
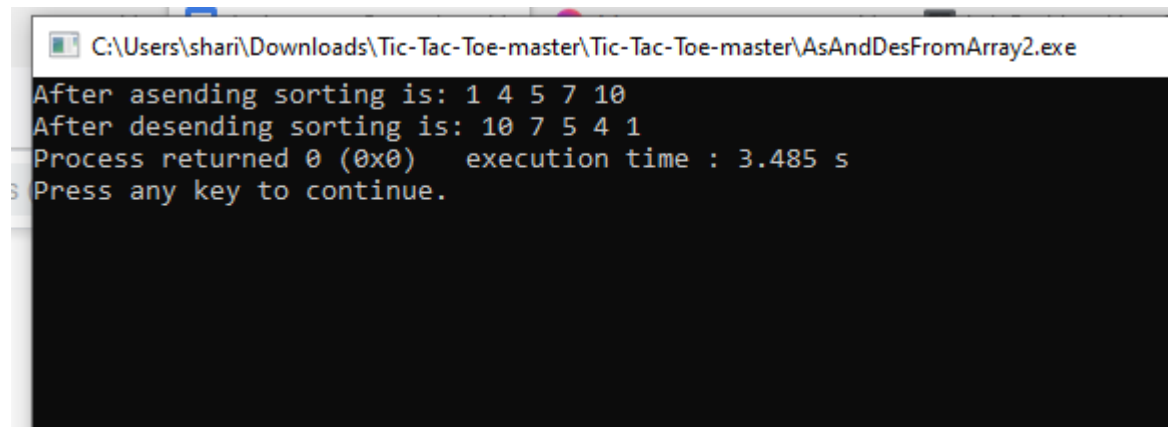
Output: Here array was a[5]={4,5,1,10,7}, After executing the program we get the output.

```
C:\Users\shari\Downloads\Tic-Tac-Toe-master\Tic-Tac-Toe-master\AsAndDesFromArray2.exe

After asending sorting is: 1 4 5 7 10
After desending sorting is: 10 7 5 4 1
Process returned 0 (0x0)    execution time : 3.485 s
Press any key to continue.
```

End the assignment 02