Bangladesh Open University

School of Science and Technology

Bsc in Computer Science and Engineering

Lab report no.   : lab-03.

Report on   : Stack

Course title   : Data Structure Lab

Course code   : CSE21P6

Submitted By :

Student's name : MD Rafsan Jani.

Student's ID   : 18-0-52-020-023.

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Submitted To :

 Mr Md. Mahbub Hasan

Assistant Professor,

Department of Computer Science and Engineering

DUET

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Study Center   : Dhaka University of Engineering and Technology, Gazipur

sort an array using Bubble sort

```c
#include <stdio.h>


void bubble_sort(int a[], int n) {
    int i = 0, j = 0, tmp;
    for (i = 0; i < n; i++) {   // loop n times - 1 per element
        for (j = 0; j < n - i - 1; j++) { // last i elements are sorted already
            if (a[j] > a[j + 1]) {  // swop if order is broken
                tmp = a[j];
                a[j] = a[j + 1];
                a[j + 1] = tmp;
            }
        }
    }
}
int main() {
    printf("\n-------Short Arry using Bubbole Short Program-------\n");
    int a[100], n, i;
    printf("[+]Define your array Size ==>");
    scanf("%d", &n);
    for (i = 0; i < n; i++)
    {
        printf("[+] Ok now you Enter for  No in Arry[%d]==>",i);
        scanf("%d", &a[i]);
```

```c
    }

    bubble_sort(a, n);

    printf("\n-------======---------\n");

    printf("[+] Operation Compleate ... Now your your Shorted  Array is:===>");

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

    {

        printf("%d ", a[i]);

    }

    return 0;

}
```

OUT PUT


```
"Rafsan@Coder >>" bubool.exe

-------Short Arry using Bubbole Short Program-------
[+]Define your array Size ==>4
[+] Ok now you Enter for  No in Arry[0]==>4
[+] Ok now you Enter for  No in Arry[1]==>3
[+] Ok now you Enter for  No in Arry[2]==>2
[+] Ok now you Enter for  No in Arry[3]==>1

-------======---------
[+] Operation Compleate ... Now your your Shorted  Array is:===>1 2 3 4
"Rafsan@Coder >>"
```

sort an array using Insertion sort

```c
#include<stdio.h>


int insert_short(int n)
{
    int i,j,temp,a[30];
    for(i=0;i<n;i++)
    {
        printf("[+]OK ... Now Enter integer for Array Element[%d]",i);
        scanf("%d",&a[i]);
    }

    for(i=1;i<=n-1;i++)
    {
        temp=a[i];
        j=i-1;

        while((temp<a[j])&&(j>=0))
        {
            a[j+1]=a[j];    //moves element forward
            j=j-1;
        }
```

```c
        a[j+1]=temp;   //insert element in proper place
    }


    printf("\n[+] Complate \n-------\n");
    printf("[+]Your Sorted arry is ===>");
    for(i=0;i<n;i++)
    {
        printf("%d ",a[i]);
    }
}




int main()
{


    printf("\n -----===insert_short Programm-----======\n");
    printf("[+]Enter How many integer you Want short===>");
    int n;
    scanf("%d",&n);
    insert_short(n);



}
```

OUT PUT

```
Administrator:  Rafsan@Coder Terminal

"Rafsan@Coder >>"ls
binary_search.py      bubool.exe           insert_short.c       postfix.py
bubble_short.c        insert.exe           lenear_search.py     stack_using_array.py

"Rafsan@Coder >>"insert.exe

 --------===insert_short Programm-------=======
[+]Enter How many integer you Want short===>4
[+]OK ... Now Enter integer for Array Element[0]4
[+]OK ... Now Enter integer for Array Element[1]3
[+]OK ... Now Enter integer for Array Element[2]2
[+]OK ... Now Enter integer for Array Element[3]1

[+] Complate
-------
[+]Your Sorted arry is ===>1 2 3 4
"Rafsan@Coder >>"
```