

## 6a. 1D Arrays in C

**Objective:** Print the sum and free the memory where the array is stored.

<https://www.hackerrank.com/challenges/1d-arrays-in-c/problem?isFullScreen=true>

```
#include <stdio.h>
#include <string.h>
#include <math.h>
#include <stdlib.h>
```

```
int main() {
```

```
    /* Enter your code here. Read input from STDIN. Print output to
    STDOUT */
```

```
    int n;
    scanf("%d", &n);

    int arr[n];
    for (int i = 0; i < n; i++) {
        scanf("%d", &arr[i]);
    }
    int sum = 0;
    for (int i = 0; i < n; i++) {
        sum += arr[i];
    }
    printf("%d", sum);
    return 0;
}
```

```
Input (stdin)
6
16 13 7 2 1 12
```

```
Expected Output1:-
51
```

```
Input (stdin)
8
15 5 16 15 17 11 5 11
```

```
Expected Output2:-
95
```

## 6b. Array reversal

### Objective: Working with indices in array

<https://www.hackerrank.com/challenges/reverse-array-c/problem?isFullScreen=true>

```
#include <stdio.h>

int main()
{
    int n,a[1000],i;
    scanf("%d", &n);

    for(i = 0; i < n; i++) {
        scanf("%d", &a[i]);
    }

    for(i = n-1; i >= 0; i--)
    {
        printf("%d ", a[i]);
    }
    return 0;
}
```

Input (stdin)  
6  
16 13 7 2 1 12

Your Output (stdout)  
12 1 2 7 13 16

Expected Output  
12 1 2 7 13 16

### 6c. Search an element in array (Linear Search)

```
#include<stdio.h>

int main()
{
    int arr[100],key,i,size,flag=0;
    printf("Enter the array size:");
    scanf("%d",&size);

    printf("Enter the elements:");
```

```

for(i=0;i<size;i++)
{
scanf("%d",&arr[i]);
}
printf("Enter element to search\n");
scanf("%d",&key);
for(i = 0; i < size; i++)
{
    if(arr[i] == key)
    {
        flag = 1;
        break;
    }
}
if(flag == 1)
    printf("Search Found\n");
else
    printf("Search Not Found\n");

return 0;
}

```

### **OUTPUT:**

```

Enter the array size:10
Enter the elements:12 43 56 76 98 43 54 14 27 85
Enter element to search
43
Search Found

```

### **OUTPUT :**

```
Enter the array size:10
Enter the elements:12 43 56 87 98 65 54 99 10 63
Enter element to search
8
Search Not Found
```

### 6d. Find min and max elements in array

```
#include<stdio.h>

int main()
{
    int a[1000],i,n,min,max;
    printf("Enter size of the array : ");
    scanf("%d",&n);
    printf("Enter elements in array : ");
    for(i=0; i<n; i++)
    {
        scanf("%d",&a[i]);

        min=max=a[0];
        for(i=1; i<n; i++)
        {
            if(min>a[i])
                min=a[i];
            if(max<a[i])
                max=a[i];
        }
        printf("minimum of array is : %d",min);
        printf("\nmaximum of array is : %d",max);
    }
    return 0;
}
```

**OUTPUT:**

```
Enter size of the array : 5
Enter elements in array : 12 34 65 87 99
minimum of array is : 12
maximum of array is : 99
```

### **6e. Insert an element into array**

```
#include<stdio.h>

int main()
{
    int a[40],pos,i,size,value;
    printf("enter no of elements in array of:");
    scanf("%d",&size);
    printf("enter %d elements are:",size);
    for(i=0;i<size;i++)
        scanf("%d",&a[i]);
    printf("enter the position where you want to insert the element:");
    scanf("%d",&pos);
    printf("enter the value into that poition:");
    scanf("%d",&value);
    for(i=size-1;i>=pos-1;i--)
    {
        a[i+1]=a[i];
    }
    a[pos-1]= value;
    printf("final array after inserting the value is:");
    for(i=0;i<=size;i++)
        printf("%d\t",a[i]);
    return 0;
}
```

### **OUTPUT :**

```
Enter size of array :6
```

enter 6 elements are: 52 14 63 96 85 74

enter the position to insert the element:4

enter the value to be inserted at that poition: 39

Final array after inserting the value is: 52 14 63 39 96 85 74

## 6f. Eliminate duplicate elements from array

```
#include<stdio.h>
#include<stdlib.h>
int main()
{
    int a[50],i,j,k, count = 0, dup[50], size;

    printf("Enter size of the array: ");
    scanf("%d",&size);

    printf("Enter Elements of the array:");
    for(i=0;i<size;i++)
    {
        scanf("%d",&a[i]);
    }

    for(i=0;i<size;i++)
    {
        for(j = i+1; j < size; j++)
        {
            if(a[i] == a[j])
            {
                for(k = j; k <size; k++)
                {
                    a[k] = a[k+1];
                }

                size--;
                j--;
            }
        }
    }
    printf("Array After deleting the duplicate element is:");
    for(i=0;i<size;i++)
    {
        printf("%d ",a[i]);
    }
}
```

```
}
```

## Output:

```
Enter size of the array: 10
Enter Elements of the array:21 36 98 56 21 21 69 36 58 98 21
Array After deleting the duplicate element is:21 36 98 56 69 58
```

## 6g. Sorting of elements in an array using Bubble sort.

```
#include <stdio.h>

int main()
{
    int array[100], size, i, j, temp;

    printf("Enter size of array : ");
    scanf("%d", &size);

    printf("Enter array elements : ");
    for (i = 0; i < size; i++)
        scanf("%d", &array[i]);

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

```
printf("Sorted list in ascending order: ");  
for (i = 0; i < size; i++)  
    printf("%d\t", array[i]);  
return 0;  
}
```

#### OUTPUT:

Enter size of array : 6

Enter array elements : 98 56 43 87 28 15

Sorted list in ascending order: 15 28 43 56 87 98