

Q1) Insert an element at end of array

```
1 #include <stdio.h>
2
3 int main() {
4     int arr[100];
5     int n, i, newElement;
6
7     printf("Enter number of elements: ");
8     scanf("%d", &n);
9
10    printf("Enter the elements:\n");
11    for(i = 0; i < n; i++) {
12        scanf("%d", &arr[i]);
13    }
14
15    printf("Enter the element to insert at the end: ");
16    scanf("%d", &newElement);
17
18    arr[n] = newElement;
19    n++;
20
21    printf("Array after inserting at the end:\n");
22    for(i = 0; i < n; i++) {
23        printf("%d ", arr[i]);
24    }
25 }
```

```
6     printf("Enter number of elements: ");
7     scanf("%d", &n);
8
9     printf("Enter the elements:\n");
10    for(i = 0; i < n; i++) {
11        scanf("%d", &arr[i]);
12    }
13
14
15    printf("Enter the element to insert at the end: ");
16    scanf("%d", &newElement);
17
18    arr[n] = newElement;
19    n++;
20
21    printf("Array after inserting at the end:\n");
22    for(i = 0; i < n; i++) {
23        printf("%d ", arr[i]);
24    }
25
26    return 0;
27 }
```

OUTPUT

```
C:\Users\SARTHAK MUKHOP... x + v
Enter number of elements: 5
Enter the elements:
6
5
4
2
7
Enter the element to insert at the end: 9
Array after inserting at the end:
6 5 4 2 7 9
-----
Process exited after 21.93 seconds with return value 0
Press any key to continue . . .
```

Q2) Find largest element in array

```
1 #include<stdio.h>
2 void main(){
3     int i,n,largest;
4     printf("Enter array size: ");
5     scanf("%d",&n);
6     int arr[n];
7     for(i=0;i<n;i++){
8         printf("Enter array elements: ");
9         scanf("%d",&arr[i]);
10    }
11    largest=arr[0];
12    for(i=1;i<n;i++){
13        if(arr[i]>largest){
14            largest=arr[i];
15        }
16    }
17    printf("The largest no is:%d\n",largest);
18 }
```

OUTPUT

```
C:\Users\SARTHAK MUKHOP >
Enter array size: 5
Enter array elements: 9
Enter array elements: 6
Enter array elements: 3
Enter array elements: 4
Enter array elements: 5
The largest no is:9

-----
Process exited after 15.48 seconds with return value 20
Press any key to continue . . . |
```

Q3) Find second largest element

```
11     scanf("%d",&arr[i]);
12 }
13 if (arr[0] > arr[1]) {
14     max = arr[0];
15     secmax = arr[1];
16 } else {
17     max = arr[1];
18     secmax = arr[0];
19 }
20 for(i = 2; i < n; i++) {
21     if(arr[i] > max) {
22         secmax = max;
23         max = arr[i];
24     } else if(arr[i] > secmax && arr[i] != max) {
25         secmax = arr[i];
26     }
27 }
28 printf("Second maximum element is: %d\n", secmax);
29 return 0;
30 }
31
32
33
```

```
1 //input an array of n integer element and find the second highest among them
2 #include<stdio.h>
3 #include<limits.h>
4 int main(){
5     int i,j,n,max,secmax;
6     printf("Enter array size: ");
7     scanf("%d",&n);
8     int arr[n];
9     for(i=0;i<n;i++){
10         printf("Enter array elements: ");
11         scanf("%d",&arr[i]);
12     }
13     if (arr[0] > arr[1]) {
14         max = arr[0];
15         secmax = arr[1];
16     } else {
17         max = arr[1];
18         secmax = arr[0];
19     }
20     for(i = 2; i < n; i++) {
21         if(arr[i] > max) {
22             secmax = max;
23             max = arr[i];
24         } else if(arr[i] > secmax && arr[i] != max) {
25             secmax = arr[i];
26         }
27     }
28     printf("Second maximum element is: %d\n", secmax);
29     return 0;
30 }
```

OUTPUT

```
C:\Users\SARTHAK MUKHOP >
Enter array size: 5
Enter array elements: 7
Enter array elements: 9
Enter array elements: 8
Enter array elements: 4
Enter array elements: 5
Second maximum element is: 8

-----
Process exited after 14.04 seconds with return value 0
Press any key to continue . . . |
```

Q4)Write a program to move all zeros to end

```
1 #include <stdio.h>
2 int main() {
3     int arr[100], n, i, j = 0;
4     int result[100];
5
6     printf("Enter number of elements: ");
7     scanf("%d", &n);
8
9     printf("Enter the elements:\n");
10    for(i = 0; i < n; i++) {
11        scanf("%d", &arr[i]);
12    }
13
14    for(i = 0; i < n; i++) {
15        if(arr[i] != 0) {
16            result[j] = arr[i];
17            j++;
18        }
19    }
20
21    while(j < n) {
22        result[j] = 0;
23        j++;
24    }
25}
```

```
11     scanf("%d", &arr[i]);
12 }
13
14 for(i = 0; i < n; i++) {
15     if(arr[i] != 0) {
16         result[j] = arr[i];
17         j++;
18     }
19 }
20
21 while(j < n) {
22     result[j] = 0;
23     j++;
24 }
25
26 printf("Array after moving zeros to the end:\n");
27 for(i = 0; i < n; i++) {
28     printf("%d ", result[i]);
29 }
30
31 return 0;
32 }
33 }
```

OUTPUT

```
C:\Users\SARTHAK MUKHOP... x + -
Enter number of elements: 5
Enter the elements:
1
7
0
6
0
Array after moving zeros to the end:
1 7 6 0 0
-----
Process exited after 24.19 seconds with return value 0
Press any key to continue . . .
```

Q5)Rotate array by one

```
1 #include <stdio.h>
2 int main() {
3     int arr[100], n, i, last;
4     printf("Enter number of elements: ");
5     scanf("%d", &n);
6     printf("Enter the elements:\n");
7     for(i = 0; i < n; i++) {
8         scanf("%d", &arr[i]);
9     }
10    last = arr[n - 1];
11    for(i = n - 1; i > 0; i--) {
12        arr[i] = arr[i - 1];
13    }
14    arr[0] = last;
15    printf("Array after rotation:\n");
16    for(i = 0; i < n; i++) {
17        printf("%d ", arr[i]);
18    }
19    return 0;
20 }
21 }
```

OUTPUT

```
C:\Users\SARTHAK MUKHOP... x + -
Enter number of elements: 5
Enter the elements:
10
20
30
40
50
Array after rotation:
50 10 20 30 40
-----
Process exited after 11.49 seconds with return value 0
Press any key to continue . . .
```

Q6)Write a program to check if array is sorted

```
1 #include <stdio.h>
2 int main() {
3     int arr[100], n, i, isSorted = 1;
4     printf("Enter number of elements: ");
5     scanf("%d", &n);
6     printf("Enter the elements:\n");
7     for(i = 0; i < n; i++) {
8         scanf("%d", &arr[i]);
9     }
10    // Check if array is sorted in ascending order
11    for(i = 0; i < n - 1; i++) {
12        if(arr[i] > arr[i + 1]) {
13            isSorted = 0;
14            break;
15        }
16    }
17    if(isSorted) {
18        printf("The array is sorted in ascending order.\n");
19    } else {
20        printf("The array is not sorted.\n");
21    }
22    return 0;
23 }
```

OUTPUT

```
C:\Users\SARTHAK MUKHOPPA >
Enter number of elements: 5
Enter the elements:
5
7
1
2
3
The array is not sorted.

-----
Process exited after 16.06 seconds with return value 0
Press any key to continue . . .
```

```
C:\Users\SARTHAK MUKHOPPA >
Enter number of elements: 5
Enter the elements:
1
2
3
4
5
The array is sorted in ascending order.

-----
Process exited after 9.163 seconds with return value 0
Press any key to continue . . .
```

Q7) Write a program to reverse a string

```
1 #include <stdio.h>
2 #include <string.h>
3 int main() {
4     char str[100];
5     int i, len;
6     printf("Enter a string: ");
7     gets(str);
8
9     len = strlen(str);
10
11     for(i = 0; i < len / 2; i++) {
12         char temp = str[i];
13         str[i] = str[len - i - 1];
14         str[len - i - 1] = temp;
15     }
16     printf("Reversed string: %s\n", str);
17     return 0;
18 }
19
```

Compiler Resources Compile Log Debug Find Results
Line: 13 Col: 25 Sel: 0 Lines: 19 Length: 377 Insert Done parsing in 0.016 seconds

OUTPUT

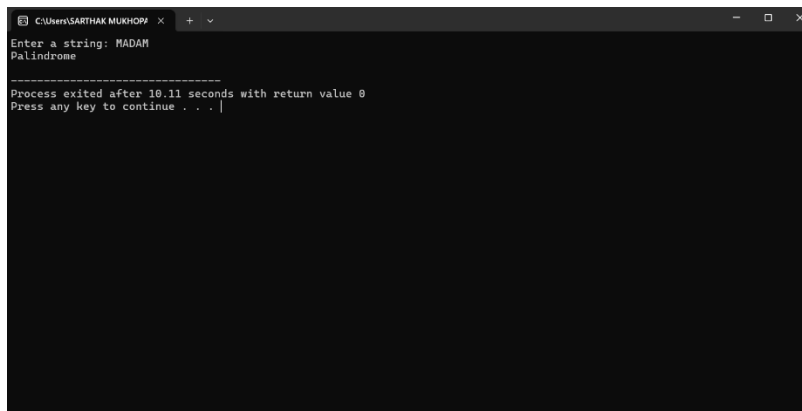
```
C:\Users\SARTHAK MUKHOP... x + v - □ x
Enter a string: Hello World
Reversed string: dlroW olleH

-----
Process exited after 10.25 seconds with return value 0
Press any key to continue . . .
```

Q8) Write a program to check if a string is palindrome

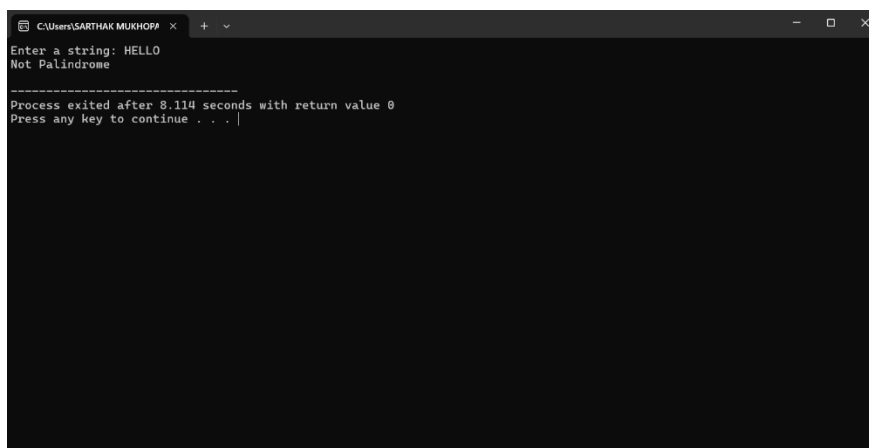
```
1 #include <stdio.h>
2 #include <string.h>
3 int main() {
4     char str[100];
5     printf("Enter a string: ");
6     scanf("%s", str);
7
8     int len = strlen(str), i, flag = 1;
9     for(i = 0; i < len / 2; i++) {
10         if(str[i] != str[len - i - 1]) {
11             flag = 0;
12             break;
13         }
14     }
15     printf("%s\n", flag ? "Palindrome" : "Not Palindrome");
16     return 0;
17 }
```

OUTPUT



C:\Users\SARTHAK MUKHOPPA > Enter a string: MADAM
Palindrome

Process exited after 10.11 seconds with return value 0
Press any key to continue . . .



C:\Users\SARTHAK MUKHOPPA > Enter a string: HELLO
Not Palindrome

Process exited after 8.114 seconds with return value 0
Press any key to continue . . .

Q9) Write a program to count frequency of array elements

```
1 #include<stdio.h>
2 void main(){
3     int i,n,count,j;
4     printf("Enter array size: ");
5     scanf("%d",&n);
6     int arr1[n];
7     int arr2[n];
8     for(i=0;i<n;i++){
9         printf("Enter array elements: ");
10        scanf("%d",&arr1[i]);
11        arr2[i]=-1;
12    }
13    for(i=0;i<n;i++){
14        count=1;
15        for(j=i+1;j<n;j++){
16            if(arr1[i]==arr1[j]){
17                count++;
18                arr2[j]=0;
19            }
20        }
21        if(arr2[i]!=0){
22            arr2[i]=count;
23        }
24    }
25    for(i=0;i<n;i++){
26        if(arr2[i]!=0){
27            printf("%d occurs: %d times\n",arr1[i],arr2[i]);
28        }
29    }
```

OUTPUT

```
C:\Users\SARTHAK MUKHOPPA >
Enter array size: 5
Enter array elements: 2
Enter array elements: 2
Enter array elements: 7
Enter array elements: 5
Enter array elements: 5
2 occurs: 2 times
7 occurs: 1 times
5 occurs: 2 times

-----
Process exited after 12.23 seconds with return value 5
Press any key to continue . . .
```

Q10)Reverse of an array

```
1 #include<stdio.h>
2 int main(){
3     int i,n,j,temp;
4     printf("Enter the size: ");
5     scanf("%d",&n);
6     int a[n];
7     for(i=0;i<n;i++){
8         printf("Enter the elements: ");
9         scanf("%d",&a[i]);
10    }
11    for(i=0,j=n-1;i<n/2;i++,j--){
12        temp=a[i];
13        a[i]=a[j];
14        a[j]=temp;
15    }
16    for(i=0;i<n;i++){
17        printf("%d",a[i]);
18    }
19 }
20 }
```

Compiler Resources Compile Log Debug Find Results
Line: 15 Col: 6 Sel: 0 Lines: 20 Length: 321 Insert Done parsing in 0.016 seconds

OUTPUT

```
C:\Users\SARTHAK MUKHOP... x + -
Enter the size: 5
Enter the elements: 1
Enter the elements: 7
Enter the elements: 5
Enter the elements: 4
Enter the elements: 6
64571
-----
Process exited after 6.412 seconds with return value 5
Press any key to continue . . . |
```