**Subject Code:** KCS351

**Subject Name:** Data Structure using C Lab

**Semester:** III

**Session:** 2020-21

**LAB-1**

**List Of Programs**

1. WAP to find and print the sum of n numbers using arrays.
2. WAP to reverse an array.
3. WAP to find the largest and smallest elements in array.

**Program Implementation in C:**

1. A program to find and print the sum of n numbers using arrays.

#include<stdio.h>

int main()

{

int n, sum = 0, c, array[100];

printf("Enter the number of integers you want to add: ");

scanf("%d", &n);

printf("\n\nEnter %d integers \n\n", n);

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

{

scanf("%d", &array[c]);

sum += array[c]; // same as sum = sum + array[c]

} printf("\n\nSum = %d\n\n", sum);

return 0;

}

1. A simple program to reverse an array.

#include<stdio.h>

int main()

{

int c, d, n, a[100], b[100];

printf("\n\nEnter number of elements in array :");

scanf("%d", &n);

printf("\n\nEnter %d elements\n", n);

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

scanf("%d", &a[c]);

/\*

temporarily storing elements into array b

starting from end of array a

\*/

for(c = n-1, d = 0; c >= 0; c--, d++)

b[d] = a[c];

/\*

copying reversed array into original.

Here we are modifying original array to reverse it.

\*/

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

a[c] = b[c];

printf("\n\n Resultant array is: ");

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

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

return 0;

}

1. A program to find the largest and smallest elements in array.

#include<stdio.h>

int main()

{

int a[50], size, i, big, small;

printf("\nEnter the size of the array: ");

scanf("%d", &size);

printf("\n\nEnter the %d elements of the array: \n\n", size);

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

scanf("%d", &a[i]);

big = a[0]; // initializing

/\*

from 2nd element to the last element

find the bigger element than big and

update the value of big

\*/

for(i = 1; i < size; i++)

{

if(big < a[i]) // if larger value is encountered

{

big = a[i]; // update the value of big

}

}

printf("\n\nThe largest element is: %d", big);

small = a[0]; // initializing

/\*

from 2nd element to the last element

find the smaller element than small and

update the value of small

\*/

for(i = 1; i < size; i++)

{

if(small>a[i]) // if smaller value is encountered

{

small = a[i]; // update the value of small

}

}

printf("\n\nThe smallest element is: %d", small);

return 0;

}