# 7. Write a program that reads 'n' numbers and stores them in an array in the same order as entered. First, it prints the numbers in their original order. Then, it sorts the array in ascending order and prints the sorted numbers.

## Description:

This program reads **'n' numbers** from the user and **stores them in an array** in the same order they were entered.

• First, the program **prints the numbers in their original order** to show how they were entered.

• Then, it **sorts the array in ascending order** using a simple sorting algorithm (like Bubble Sort or Selection Sort).

• Finally, the program **prints the sorted array** to show the numbers in increasing order.

## Example:

Enter the number of elements: 5

Enter the numbers: 8 3 7 1 5

Sorted array: 1 3 5 7 8

## Algorithm:

Step 1: Start

Step 2: Declare an integer array arr[n] and variables n, i, j, temp.

Step 3: Prompt the user to enter the number of elements (n) and store it in n.

Step 4: Use a loop to read n numbers from the user and store them in the array arr.

Step 5: Print the original array (numbers in the order entered).

Step 6: Sort the array in ascending order using a simple sorting algorithm:
- Use a loop with index i from 0 to n-1.
- Inside this loop, use another loop with index j from i+1 to n.
- If arr[i] > arr[j], swap arr[i] and arr[j].

Step 7: Print the sorted array.

Step 8: Stop.

**Source Code:**

```c
#include <stdio.h>

int main() {
    int n, i, j, temp;

    // Taking input for the number of elements
    printf("Enter the number of elements: ");
    scanf("%d", &n);

    int arr[n];

    // Reading n numbers into the
    array printf("Enter %d
    numbers: ", n); for (i = 0; i
    < n; i++) {
        scanf("%d", &arr[i]);
    }

    // Printing the original
    array printf("Original
    order: "); for (i = 0; i
    < n; i++) {
        printf("%d ", arr[i]);
    }
    printf("\n");

    // Sorting the array in ascending order (Bubble
    Sort) for (i = 0; i < n - 1; i++) {
        for (j = 0; j < n - i - 1; j++) {
            if (arr[j] > arr[j +
                1]) { temp =
                arr[j];
                arr[j] = arr[j +
                1]; arr[j + 1] =
                temp;
            }
        }
    }

    // Printing the sorted
    array printf("Sorted
    order: "); for (i = 0;
    i < n; i++) {
        printf("%d ", arr[i]);
    }
    printf("\n");

    return 0;
}
```

## Sample Output:

```
Enter the number of elements: 5
Enter 5 numbers: 23
2
1
4
6
Original order: 23 2 1 4 6
Sorted order: 1 2 4 6 23
```