16. Array Sort – Ascending & Descending

Aim: To sort an array in ascending and descending order.

Algorithm (Bubble Sort):

1. **Read array of n elements.**
2. **Compare adjacent elements.**
3. **Swap if not in order.**
4. **Repeat until sorted.**

C Program:

```
#include <stdio.h>


void sort(int arr[], int n, int order) {
   for(int i=0;i<n-1;i++)
      for(int j=0;j<n-i-1;j++)
         if((order==1 && arr[j]>arr[j+1]) || (order==2 && arr[j]<arr[j+1])) {
            int temp=arr[j]; arr[j]=arr[j+1]; arr[j+1]=temp;
         }
}


int main() {
   int arr[5]={5,2,9,1,6};
   sort(arr,5,1);
   printf("Ascending: ");
   for(int i=0;i<5;i++) printf("%d ",arr[i]);
   printf("\n");
   sort(arr,5,2);
```

```
    printf("Descending: ");
    for(int i=0;i<5;i++) printf("%d ",arr[i]);
}
```

Sample Output:

Ascending: 1 2 5 6 9

Descending: 9 6 5 2 1

Result:

Array elements were successfully sorted in both ascending and descending order.