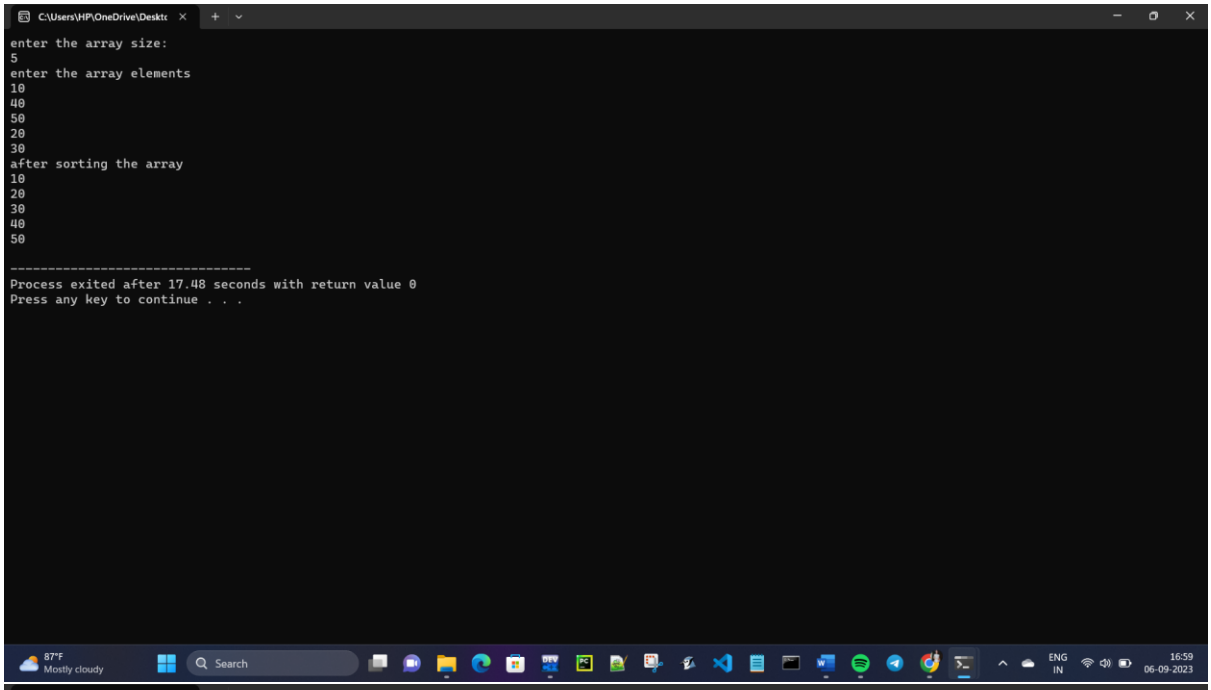
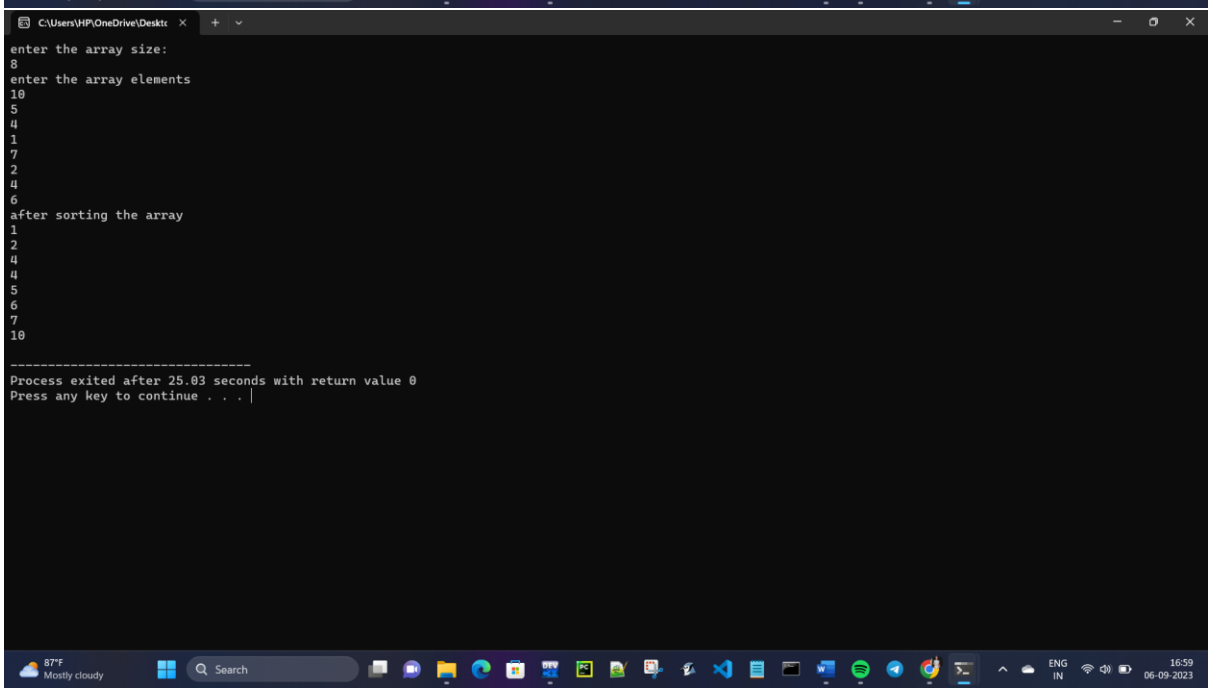
/*quick sort*/

```
#include<stdio.h>
void quick_sort(int arr[],int low,int high);
int partition(int arr[],int low,int high);
int main(){
        int n,i;
        printf("enter the array size:\n");
        scanf("%d",&n);
        int arr[n];
        printf("enter the array elements\n");
        for(i=1;i<=n;i++){
                scanf("%d",&arr[i]);
        }
        quick_sort(arr,1,n);
        printf("after sorting the array\n");
  for(i=1;i<=n;i++){
        printf("%d\n",arr[i]);
  }
}
void quick_sort(int arr[],int low,int high)
{
   if(low<high){  //must have 2 elements ,if low<=high,so if there is 1 element in array it will run for once but no need of that as 1 element then what is the need to sort
      int q=partition(arr,low,high);
      quick_sort(arr,low,high-1);
      quick_sort(arr,low+1,high);
   }
}
int partition(int arr[],int low,int high){
        int i,j;
        int pivot=arr[high];
```

```
        i=low-1;
        for(j=low;j<=high-1;j++){
                if(arr[j]<=pivot){
                        i++;
                        int temp=arr[i];
                        arr[i]=arr[j];
                        arr[j]=temp;
                }
        }
        int temp=arr[i+1];
        arr[i+1]=arr[high];  //pivot =arr[high];
        arr[high]=temp;
        return (i+1);
}
```


C:\Users\HP\OneDrive\Deskto
enter the array size:
5
enter the array elements
10
40
50
20
30
after sorting the array
10
20
30
40
50

Process exited after 17.48 seconds with return value 0
Press any key to continue . . .
87°F
Mostly cloudy
Search
ENG
IN
16:59
06-09-2023


C:\Users\HP\OneDrive\Deskto
enter the array size:
8
enter the array elements
10
5
4
1
7
2
4
6
after sorting the array
1
2
4
4
5
6
7
10

Process exited after 25.03 seconds with return value 0
Press any key to continue . . .
87°F
Mostly cloudy
Search
ENG
IN
16:59
06-09-2023