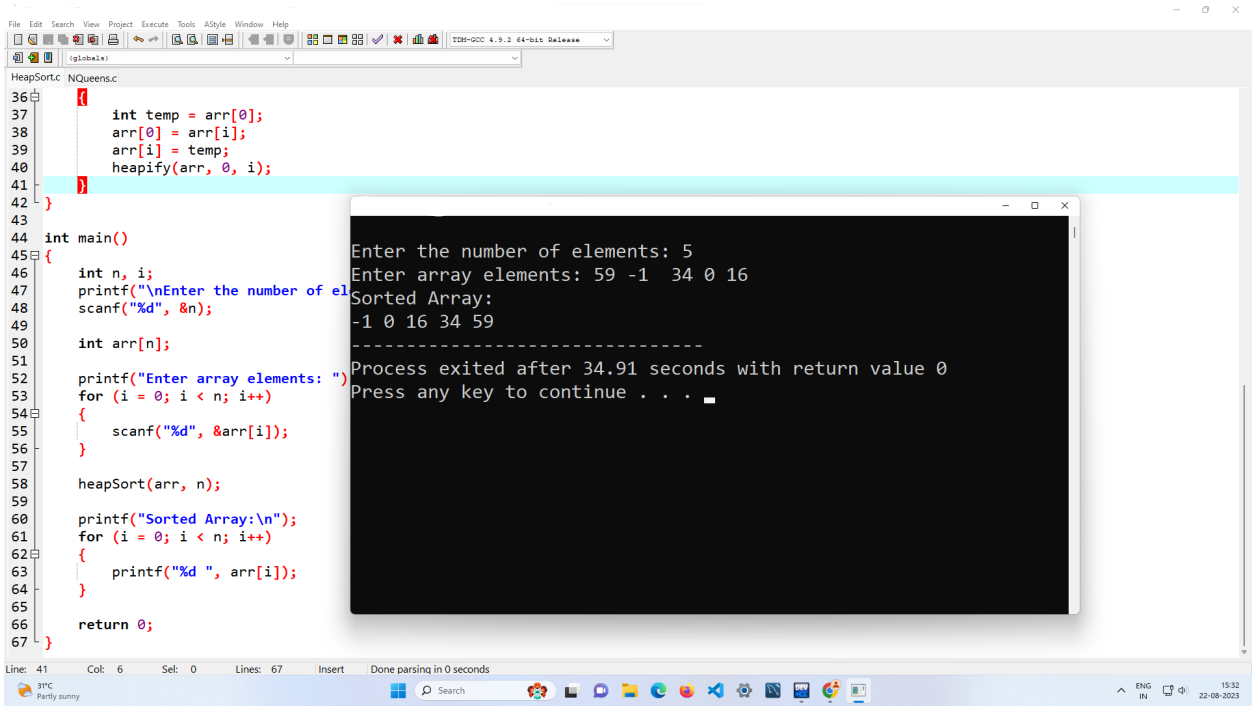
Heap Sort

```
#include <stdio.h>

void heapify(int arr[], int i, int size)
{
   int left = 2 * i + 1;
   int right = 2 * i + 2;
   int maxIdx = i;

   if (left < size && arr[left] > arr[maxIdx])
   {
      maxIdx = left;
   }
   if (right < size && arr[right] > arr[maxIdx])
   {
      maxIdx = right;
   }

   if (maxIdx != i)
   {
      int temp = arr[maxIdx];
      arr[maxIdx] = arr[i];
      arr[i] = temp;
      heapify(arr, maxIdx, size);
   }
}

void heapSort(int arr[], int n)
{
        int i;
   for (i = n / 2; i >= 0; i--)
   {
      heapify(arr, i, n);
```

```
    }

    for (i = n - 1; i >= 0; i--)
    {
        int temp = arr[0];
        arr[0] = arr[i];
        arr[i] = temp;
        heapify(arr, 0, i);
    }
}

int main()
{
    int n, i;
    printf("\nEnter the number of elements: ");
    scanf("%d", &n);

    int arr[n];

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

    heapSort(arr, n);

    printf("Sorted Array:\n");
    for (i = 0; i < n; i++)
    {
        printf("%d ", arr[i]);
    }

    return 0;
}
```

OUTPUT:


HeapSort.c
NQueens.c
Enter the number of elements: 5
Enter array elements: 59 -1 34 0 16
Sorted Array:
-1 0 16 34 59
Process exited after 34.91 seconds with return value 0
Press any key to continue . . .