

# HEAP SORT

## CODE:

```
#include <stdio.h>

void heapify(int arr[], int n, int i) {
    int largest = i;
    int left = 2 * i + 1;
    int right = 2 * i + 2;
    if (left < n && arr[left] > arr[largest])
        largest = left;
    if (right < n && arr[right] > arr[largest])
        largest = right;
    if (largest != i) {
        int temp = arr[i];
        arr[i] = arr[largest];
        arr[largest] = temp;
        heapify(arr, n, largest);
    }
}

void heapSort(int arr[], int n) {
    for (int i = n / 2 - 1; i >= 0; i--)
        heapify(arr, n, i);
    for (int i = n - 1; i > 0; i--) {
        int temp = arr[0];
        arr[0] = arr[i];
        arr[i] = temp;
        heapify(arr, i, 0);
    }
}

int main() {
    int arr[100], n;
```

```
printf("Enter number of elements: ");
scanf("%d", &n);

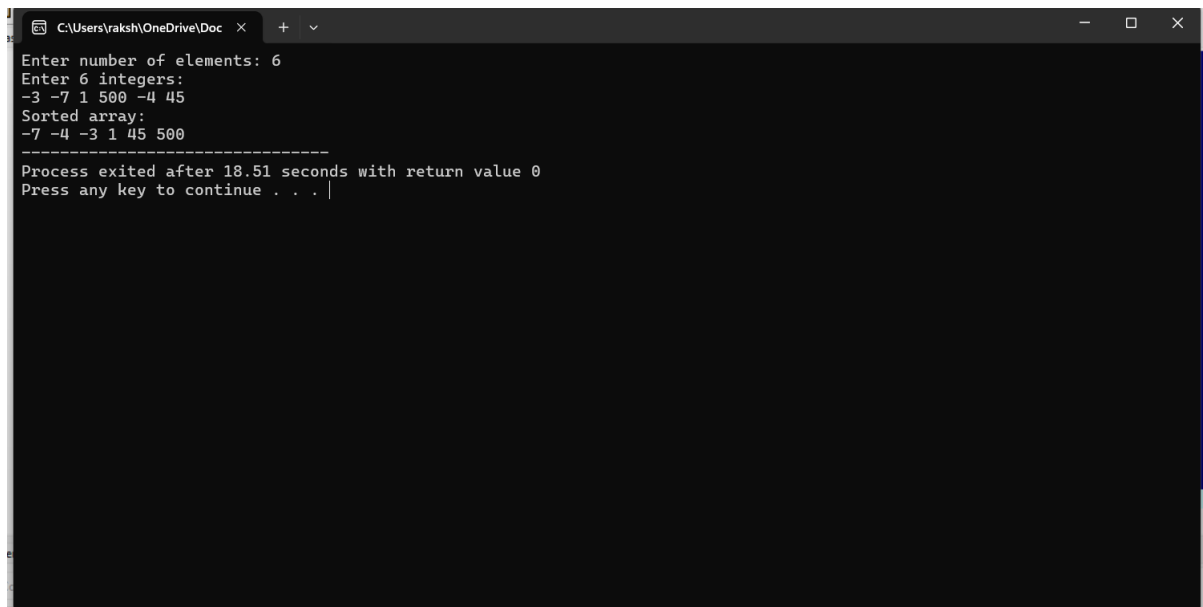
printf("Enter %d integers:\n", n);
for (int i = 0; i < n; i++)
    scanf("%d", &arr[i]);

heapSort(arr, n);

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

return 0;
}
```

## OUTPUT:



```
C:\Users\raksh\OneDrive\Doc x + v
Enter number of elements: 6
Enter 6 integers:
-3 -7 1 500 -4 45
Sorted array:
-7 -4 -3 1 45 500
-----
Process exited after 18.51 seconds with return value 0
Press any key to continue . . . |
```