```
#include <stdio.h>
void swap(int *x, int *y)
{
   int t = *x;
   *x = *y;
   *y = t;
}

void heapify(int arr[], int n, int i)
{
   int largest = i; // Initialize largest as root
   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) // if largest is not root
   {
      swap(&arr[i], &arr[largest]);
      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--)
    {
        swap(&arr[0], &arr[i]);
        heapify(arr, i, 0);
    }
}

int main()
{
    int arr[100], size;
    printf("\nEnter size ");
    scanf("%d", &size);
    printf("\nEnter array\n");
    for (int i = 0; i < size; i++)
        scanf("%d", &arr[i]);

    heapSort(arr, size);

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

    return 0;
}
```

```
Enter size 6

Enter array
90
34
23
56
78
12

Sorted array
12 23 34 56 78 90
```