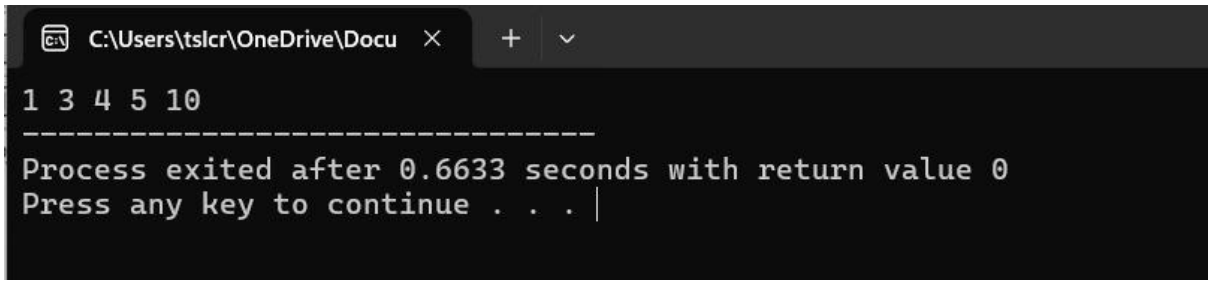
30. Write a C program to implement Heap Sort.

```
#include <stdio.h>
void heapify(int a[], int n, int i) {
   int largest = i, l = 2*i+1, r = 2*i+2;
   if (l < n && a[l] > a[largest]) largest = l;
   if (r < n && a[r] > a[largest]) largest = r;
   if (largest != i) {
      int t = a[i]; a[i] = a[largest]; a[largest] = t;
      heapify(a, n, largest);
   }
}
void heapSort(int a[], int n) {
   for (int i = n/2-1; i >= 0; i--) heapify(a, n, i);
   for (int i = n-1; i >= 0; i--) {
      int t = a[0]; a[0] = a[i]; a[i] = t;
      heapify(a, i, 0);
   }
}
int main() {
   int a[] = {4, 10, 3, 5, 1}, n = 5;
   heapSort(a, n);
   for (int i = 0; i < n; i++) printf("%d ", a[i]);
   return 0;
}
```

OUTPUT


C:\Users\tslcr\OneDrive\Docu
1 3 4 5 10
Process exited after 0.6633 seconds with return value 0
Press any key to continue . . .