

Assignment - 3

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Code:

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

void heapSort(vector<int>& v, int n) {
    for(int i = n / 2 - 1; i >= 0; i--){
        heapify(v, n, i);
    }
    for(int i = n - 1; i > 0; i--){
        swap(v[0], v[i]);
```

```
        heapify(v, i, 0);  
    }  
}
```

Output:

```
PS C:\Users\Dhairya Arora\OneDrive\Desktop\C++> cd "c:\Users\Dhairya Arora\OneDrive\Desktop\C++\" ; if ($?) { g++ DAAAssignment-1.cpp -o DAAa  
ssignment-1 } ; if ($?) { .\DAAAssignment-1 }  
Original array: 64 34 25 12 22 11 90  
Heap Sort: 11 12 22 25 34 64 90  
PS C:\Users\Dhairya Arora\OneDrive\Desktop\C++>
```