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#include <iostream>
using namespace std;
// Heapify function
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)
    {
        swap(arr[i], arr[largest]);
        heapify(arr, n, largest);
    }
}
// Max heap from Array
void buildMaxHeap(int arr[], int n)
{
    for (int i = n / 2 - 1; i >= 0; i--)
    {
        heapify(arr, n, i);
    }
}
// Print Array function
void printArray(int arr[], int n)
{
    for (int i = 0; i < n; ++i)
        cout << arr[i] << " ";
    cout << "\n";
}
// Main Function
int main()
{

```

```
int arr[] = {4, 10, 3, 5, 1};  
int n = sizeof(arr) / sizeof(arr[0]);  
  
cout << "Original Array: ";  
printArray(arr, n);  
  
buildMaxHeap(arr, n);  
  
cout << "Max Heap Constructed: ";  
printArray(arr, n);  
  
return 0;  
}
```