Lab Report – Week 8

CS2023 Data Structures and Algorithms
Dept. of Computer Science and Engineering, University of Moratuwa

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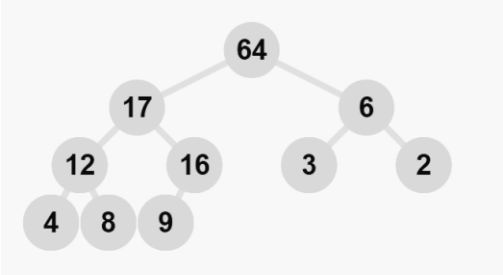
Exersise

GitHub Link : [Tharindu6516/UoM-DSA-S2-Labs: Lab tika (github.com)]

Terminal Output

```
PS C:\Users\thari\UoM-DSA-S2-Labs\Lab8> g++ -o bin\app.exe heap.cpp
PS C:\Users\thari\UoM-DSA-S2-Labs\Lab8> ./bin/app.exe
4 17 3 12 9 6 2 8 16 64
Input array:
4 17 3 12 9 6 2 8 16 64
Sorted array:
2 3 4 6 8 9 12 16 17 64
PS C:\Users\thari\UoM-DSA-S2-Labs\Lab8>
```

MAX Heap



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Discussion on Time Complexity of Heap Sort Algorithm

Two main operations of Heap Sort is Build heap and Heapify. Build heap function is in of order O(n). Heapify functions is O(log n) and is recursed n-1 times which makes the it O(n log n). Hence the Time complexity of the Sorting algorithm is O(n log n).