TP2 TEST – ALGORITHM – SORT ALGORITHM

Age [6 9 8 2 45 63 81]

- Since in our list we have 3 already sorted values, we going to look at index 8 which has no need to adjust as 8 is less than both children 63 and 81. Heapify from index 1 (value 9), there's no need to adjust as 9 is less than both children 45 and 63. Then we move to Heapify from index 0 (value 6), we swap 6 with the larger child 9 to maintain the heap property. [Initial Array – [6 9 8 2 45 63 81]

- Step 2: Heapify index 1 (value 6), we swap 6 with the larger child 45 to maintain the heap property. After second iteration our age iteration [9, 45, 8, 2, 6, 63, 81].

- Step 3: Continue to heapify index 4 (value 6), so need to adjust as it is a leaf node.

- After third iteration – [9, 45, 8, 2, 6, 63, 81]

- Step 4: Extract elements to sort, swap root 9 with last element 81.

- Heapify remaining array [81, 45, 8, 2, 6, 63]

- After Extraction & Heapifying – ✓

- Continue extraction and heapify until sorted, swap root 81 with 63. Heapify remaining array [63 45 8 2 6 81 9]

- Final Sorted Array [2, 6, 8, 9, 45, 8 63, 81]