

Exercise 03

1 Exercise Description

Your task is to implement a binary min-heap and then perform various tree traversals on it. This will help you understand how the heap's structure influences the traversal process and outcomes.

1.1 Implementation Steps

1. Implement a binary min-heap(Creation, insertion and deletion).
2. Populate the heap with a series of integers.
3. Implement in-order, pre-order, post-order, and level-order traversal functions.(Home Work)
4. Perform each traversal on your heap and document the output.(Home Work)

1.2 Implementation Tips

Consider the following C structure for your heap implementation:

```
1 typedef struct Heap {
2     int* array;
3     int size;
4     int capacity;
5 } Heap;
6
7 // Define functions for heap operations: createHeap,
8 // insertHeap, heapify, deleteMin
9 // Define traversal functions: inOrderTraversal,
10 // preOrderTraversal, postOrderTraversal
```