

LAB ASSIGNMENT – 10

Class and Method Documentation for Min Heap Implementation

Class: PriorityQueue

1. **__init__(self)**
 - **Parameters:** self
 - **Returns:** None
 - **Description:** Initializes an empty priority queue using a list.
2. **insert(self, item)**
 - **Parameters:** self, item (integer)
 - **Return Type:** None
 - **Description:** Inserts a new item into the priority queue.
3. **peek(self)**
 - **Parameters:** self
 - **Return Type:** integer
 - **Description:** Returns the minimum element without removing it.
4. **extract(self)**
 - **Parameters:** self
 - **Return Type:** integer
 - **Description:** Removes and returns the minimum element.
5. **is_empty(self)**
 - **Parameters:** self
 - **Return Type:** bool
 - **Description:** Returns True if the queue is empty, otherwise False.
6. **length(self)**
 - **Parameters:** self
 - **Return Type:** integer
 - **Description:** Returns the number of elements in the priority queue.