How to run:

Open eclipse.

Create package txp172630

Copy file BinaryHeap.java and run

Documentation

1. Names of members in team, purpose of class

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Class Purpose: Implementation of Priority Queue data structure

2. Purpose of each field

pq: priority queue in form of an array that stores elements

size: the size of pq, not necessarily equal length of pq.

len: length of priority queue

comp: stores the definition of comparator, either natural ordering or custom provided by user.

3. Purpose of each method, its parameters, preconditions, return values, post-conditions

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Method | Purpose | Precondition | Return Value | Post Condition |
| add | Add Element to pq | None | Void / error if pq is full | Element is added |
| offer | Add Element to pq | None | Boolean | Element is added |
| remove | Remove Element from pq | None | Element / error if pq is empty | Element is removed |
| poll | Remove Element from pq | None | Element | Element is removed |
| peek | Return top element of pq | None | Element | None |
| percolateUp | Maintaining Heap constraints | PQ has atleast 1 element | Void | Heap Order is correct |
| percolateDown | Maintaining Heap constraints | PQ has atleast 1 element | Void | Heap Order is correct |

4. Usage: I/O specifications

1: Add element

2: Offer element

3: Remove element

4: Poll element

5: Peek element