



maintain two priority queues,

- max queue for elements smaller than median.
- min queue for elements greater than median

1. When adding a new number, we need to decide which queue to go.

to go left: $\text{num} \leq \text{max of max queue}$
 or num is between max of max queue
 and min of min queue

2. After insertion, we need to balance two queue

So that $\text{maxQueue.length} \geq \text{minQueue.length}$

and $\text{maxQueue.length} - \text{minQueue.length} < 2$