Introduction To Queue

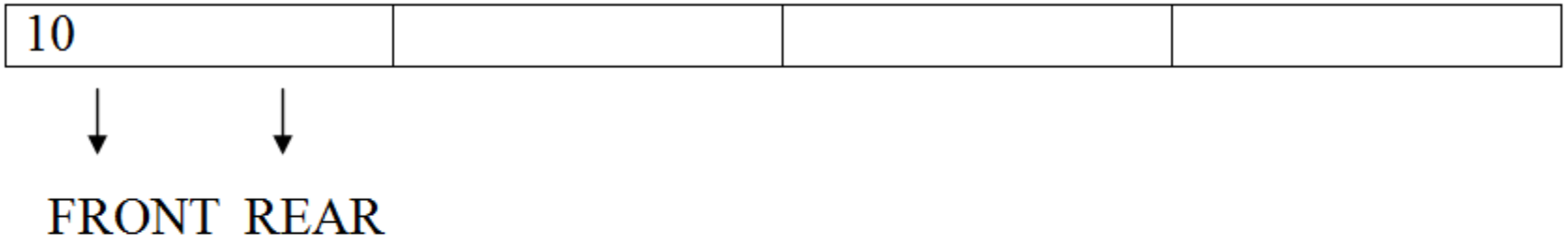
By Yash Gupta

Operations

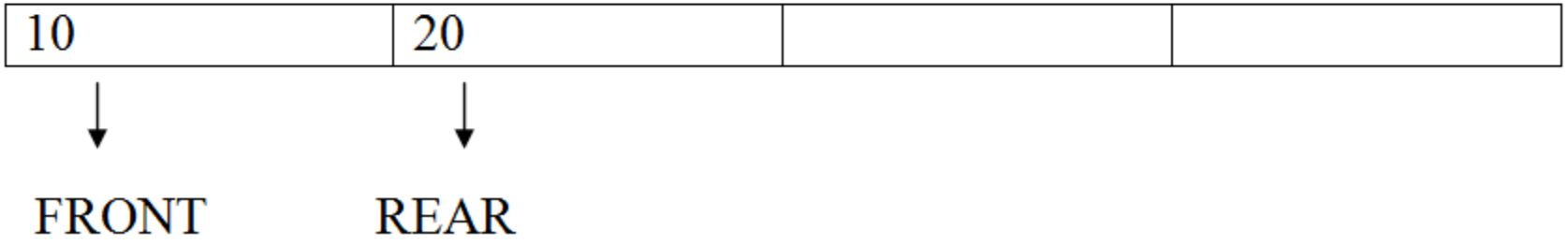
- Enqueue
  - Inserts an item in queue at rear end
- Dequeue
  - Removes an item from queue at front end
- QueueEmpty
  - Checks weather queue is empty
- QueueFull
  - Checks weather queue is full

Linear Queue

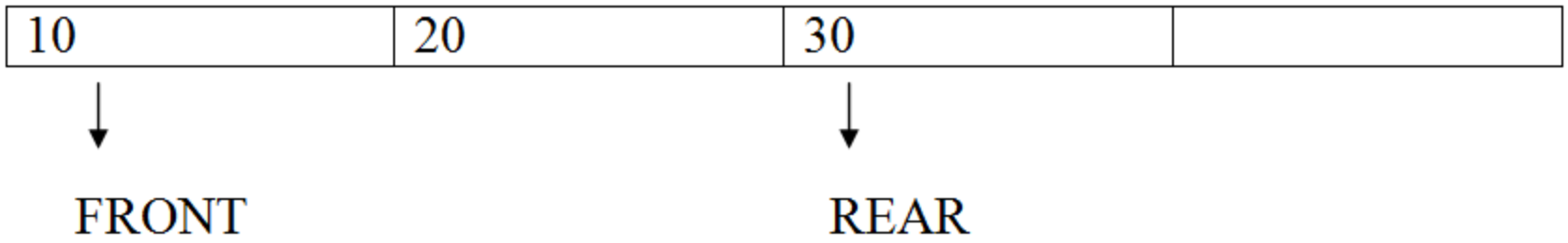
Enqueue(10)



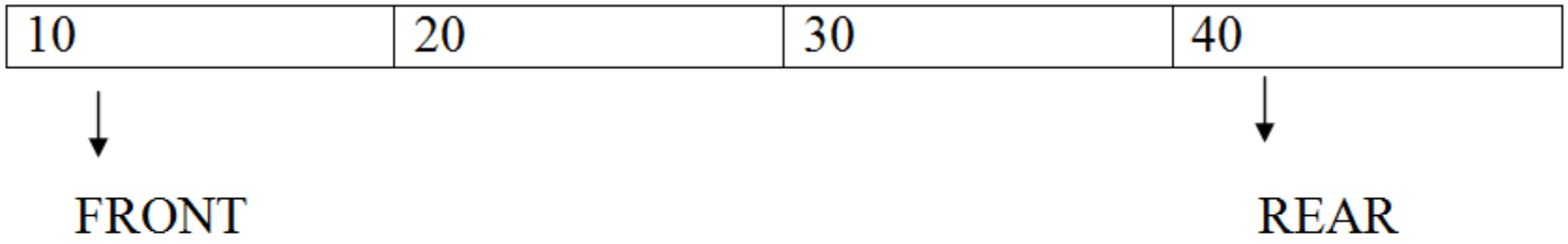
Enqueue(20)



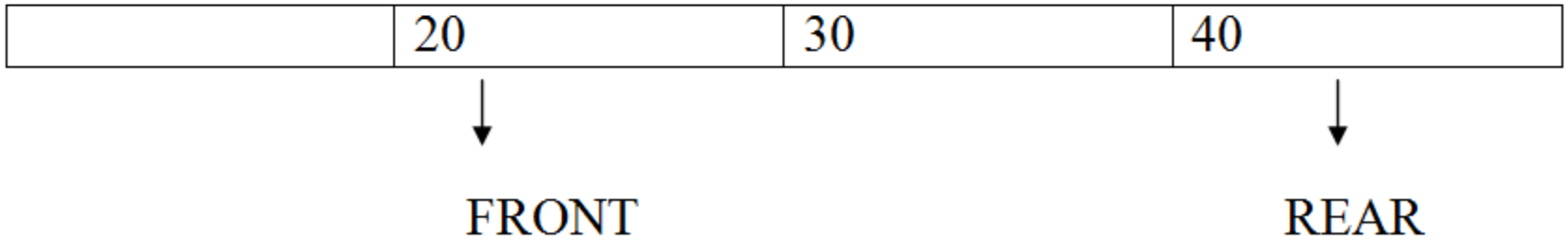
Enqueue(30)



Enequeue(40)

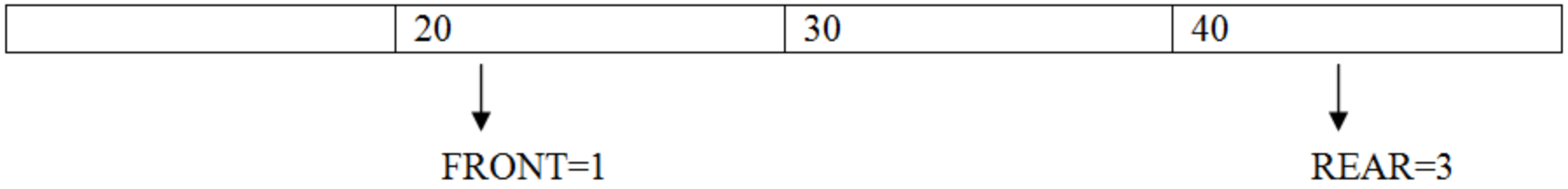


Dequeue()



Rebuffering Problem

Enqueue(50) : QueueFull

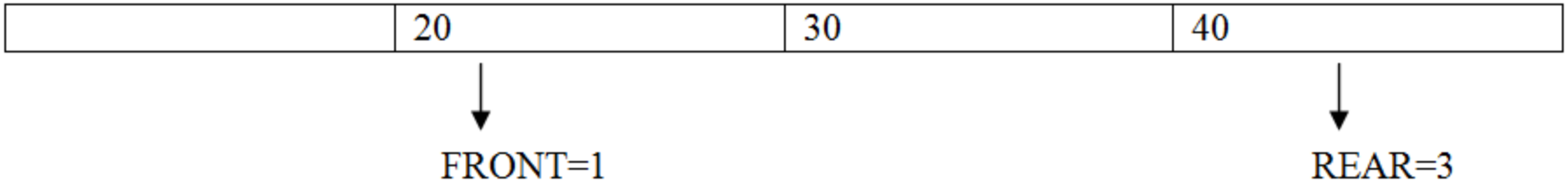


Since (Rear + 1)==MAX

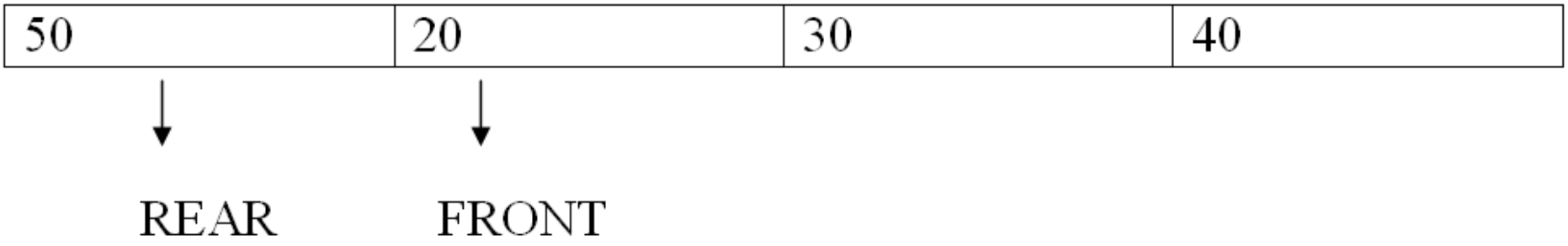
Circular Queue

Queue Full Condition :

(REAR + 1) % SIZE == FRONT

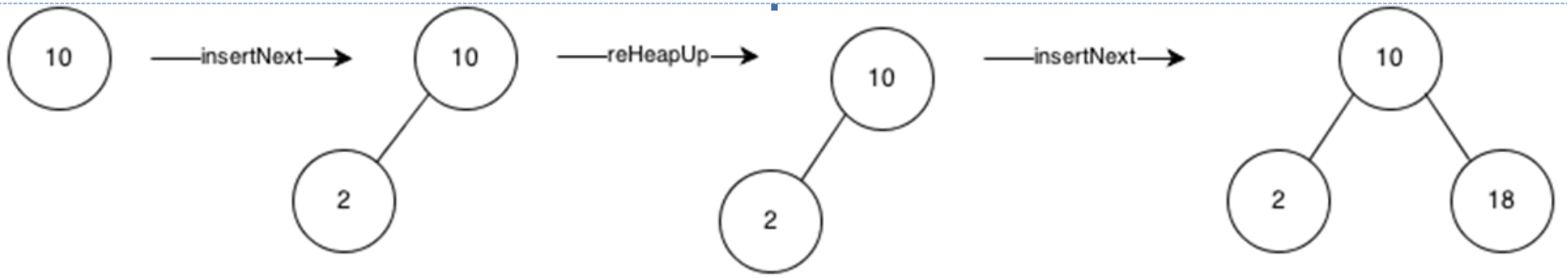


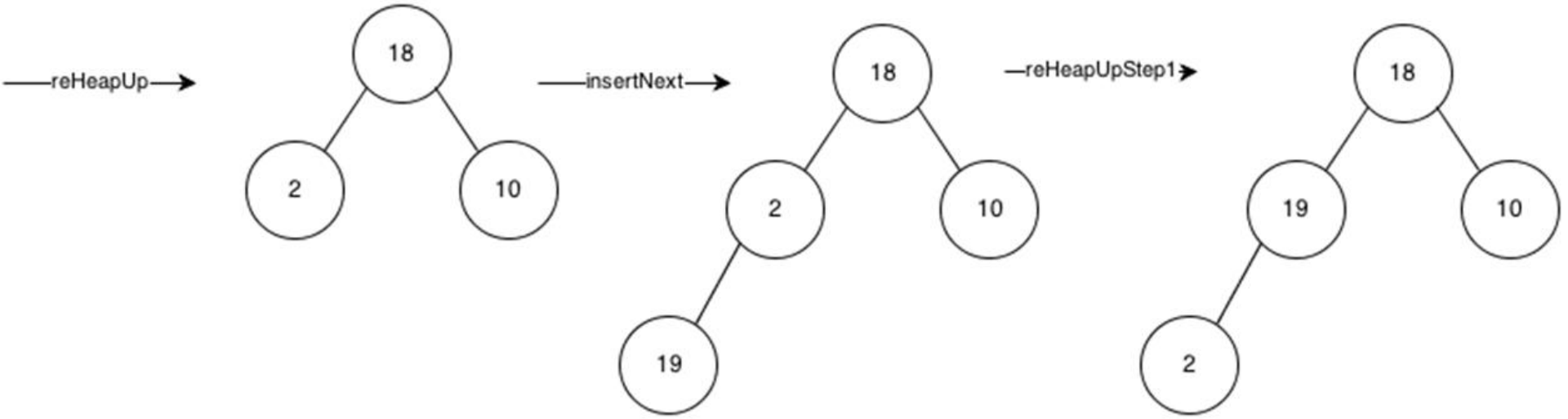
Enqueue(50)

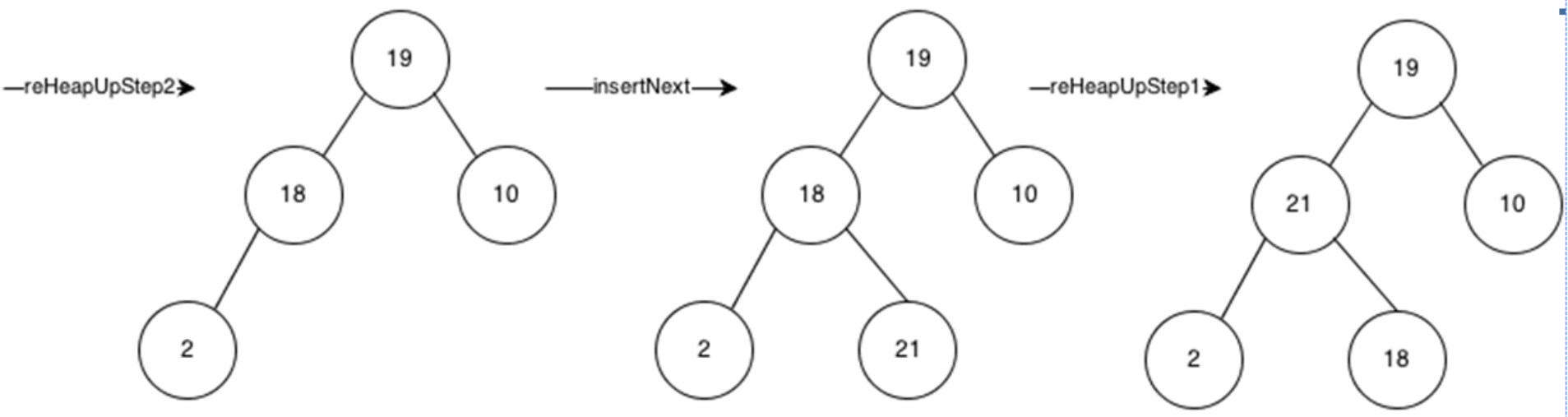


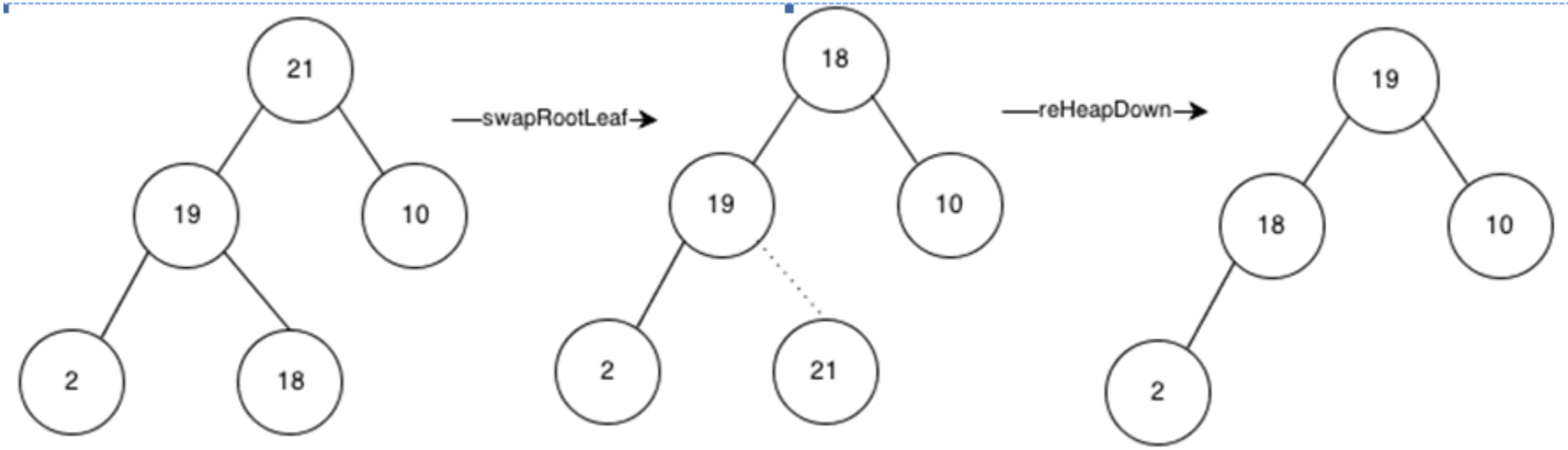
Enqueue(60) -> (0+1) %4 == 1

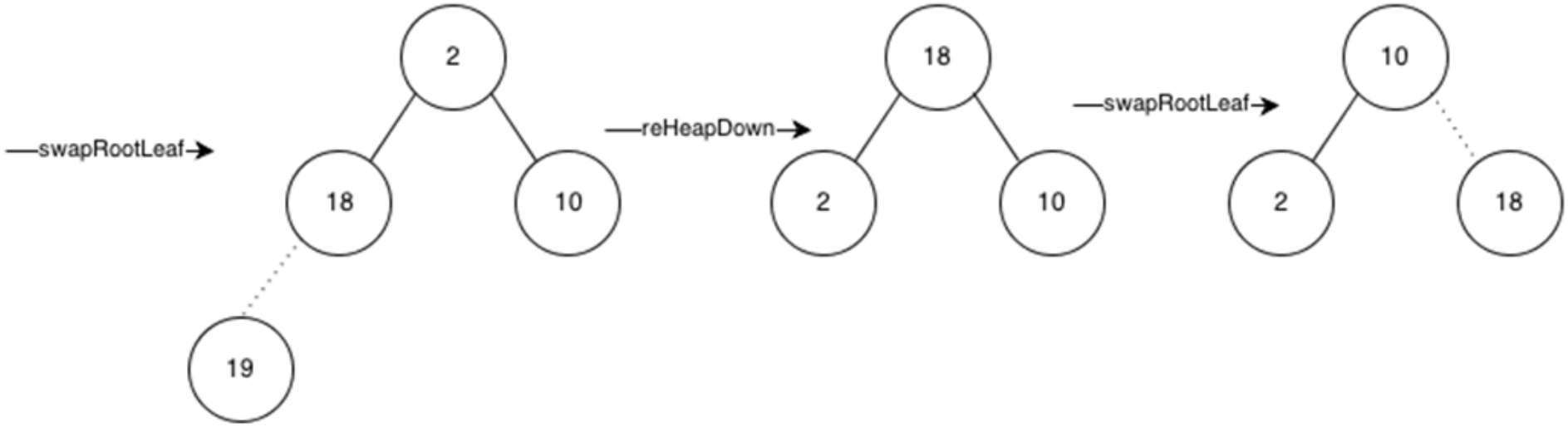
Priority Queue

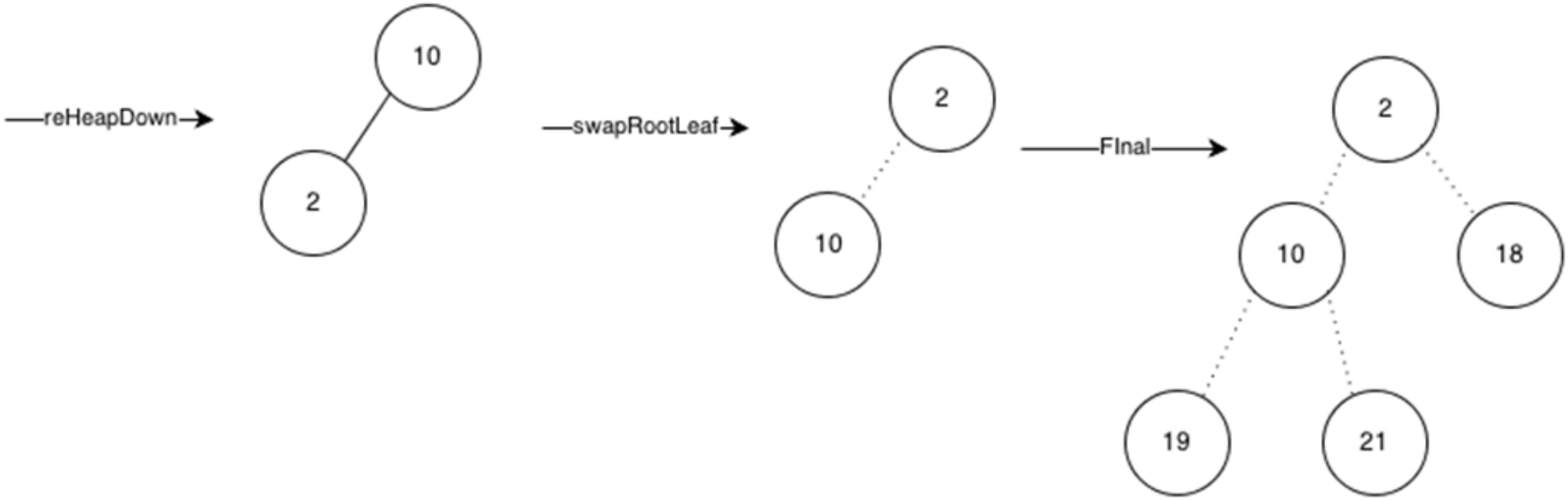



reHeapUp
18
2
10
insertNext
18
2
10
19
reHeapUpStep1
18
19
10
2


reHeapUpStep2
19
18
10
2
insertNext
19
18
10
2
21
reHeapUpStep1
19
21
10
2
18

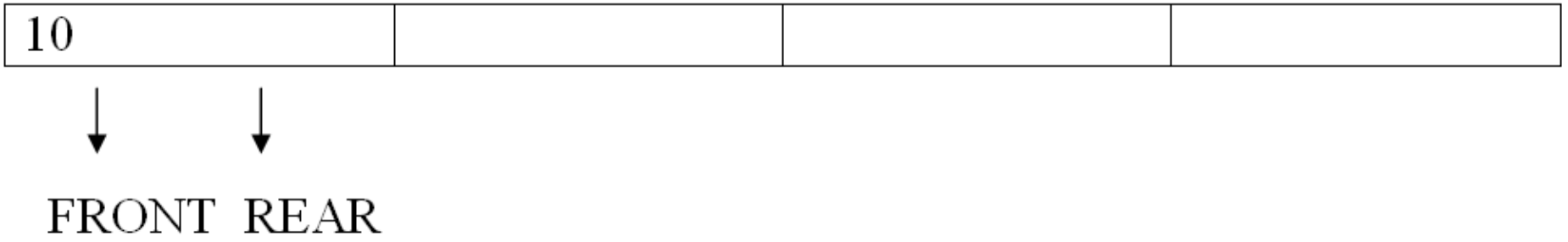

21
19
10
2
18
swapRootLeaf
18
19
10
2
21
reHeapDown
19
18
10
2


2
18
10
19
swapRootLeaf
18
2
10
reHeapDown
10
2
18
swapRootLeaf

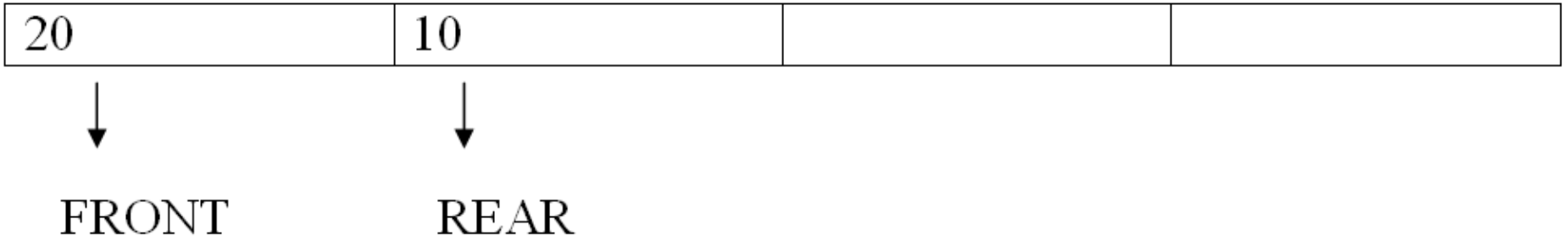

reHeapDown
10
2
swapRootLeaf
2
10
FInal
2
10
18
19
21

Dequeue

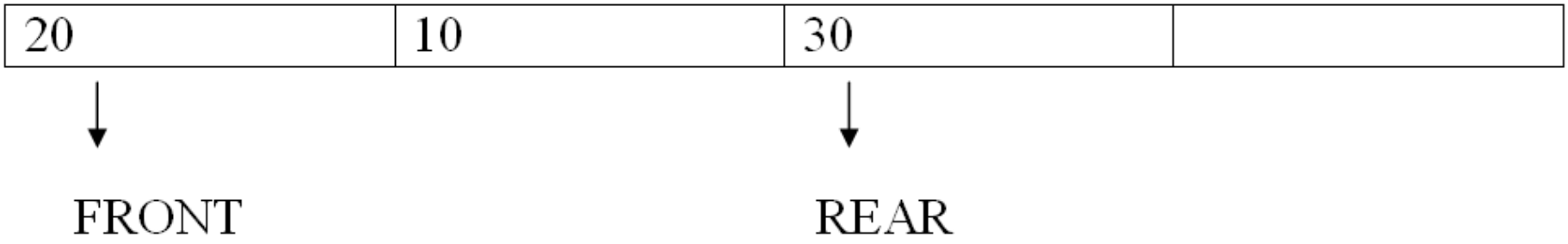
Enqueue(10) at front end



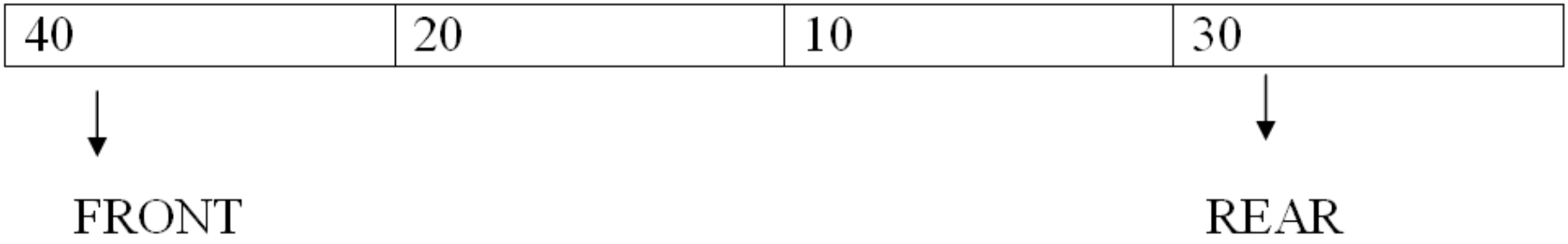
Enqueue(20) at front end



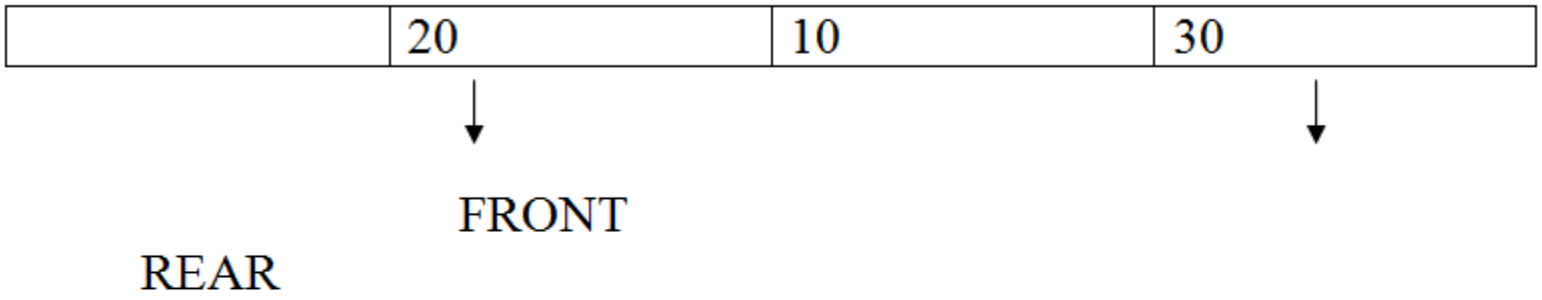
Enqueue(30) at rear end



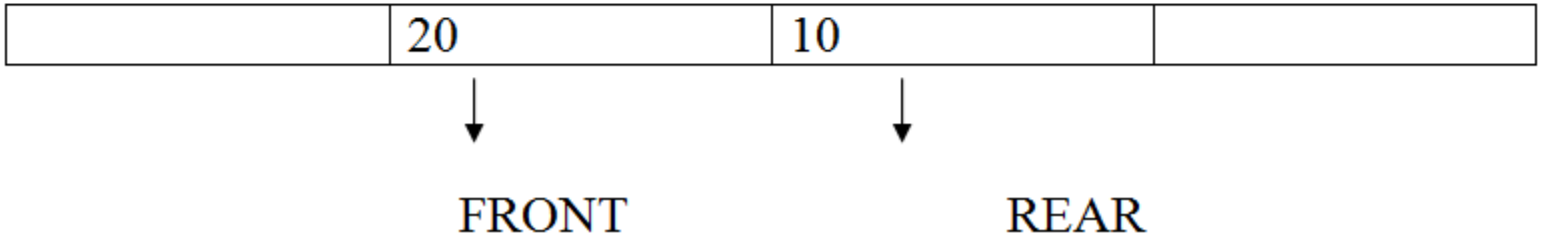
Enequeue(40) at front end



Dequeue() at front end



Dequeue() at rear end



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