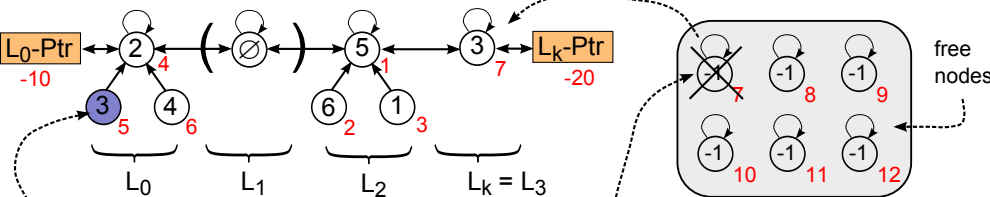


page 3 is requested:

A new node is used to insert  
a new node with page value 3.



Node 5 with page value 3 is marked.

address	page value	1	2	3	4	5	6
array	node id	3	4	7	6	1	2

page value 3 is now in  
the newly inserted node 7:  
address[3]=7

The queue tells us that node 7 was free:

$Q = [\text{X} 8, 9, 10, 11, 12]$

A dequeue yields:

$Q = [8, 9, 10, 11, 12]$

node id	1	2	3	4	5	6	7	8	9	10	11	12
page value	5	6	1	2	3	4	3	-1	-1	-1	-1	-1
parent	1	1	1	4	4	4	7	-1	-1	-1	-1	-1
left	4	-1	-1	-10	-1	-1	1	-1	-1	-1	-1	-1
right	7	-1	-1	1	-1	-1	-20	-1	-1	-1	-1	-1
count	1	0	0	0	0	0	0	-1	-1	-1	-1	-1
marked	0	0	0	0	1	0	0	-1	-1	-1	-1	-1
rank	1	0	0	1	0	0	0	-1	-1	-1	-1	-1

We set right[1]=7 and  
count[1] = count[1]-1 = 1.

Column 7 describes the newly  
inserted node 7.

The variable Lk-Ptr  
is updated. Lk-Ptr now  
points to node 7.

L0-Ptr = 4  
Lk-Ptr = 7

----- We mark node 5  
by setting  
marked[5]=1.

Here, we can see why we need the address array. E.g. how did we know  
that upon request to page 3 we had to mark node 5?

Well, address[3] returned node id 5 in the previous address array.

We also recognize that a column in the table represents a node, e.g.  
column 7 describes node 7.