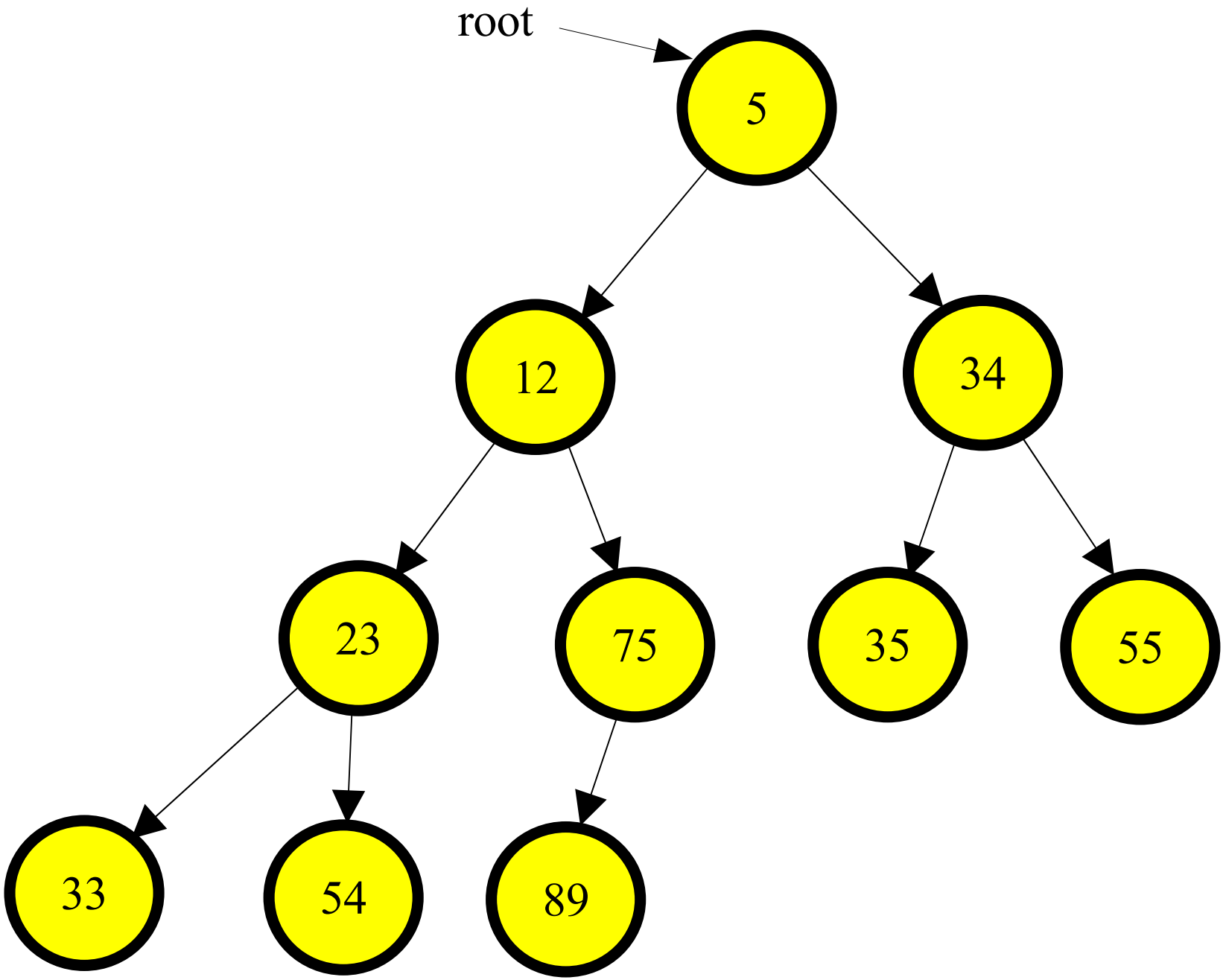
root
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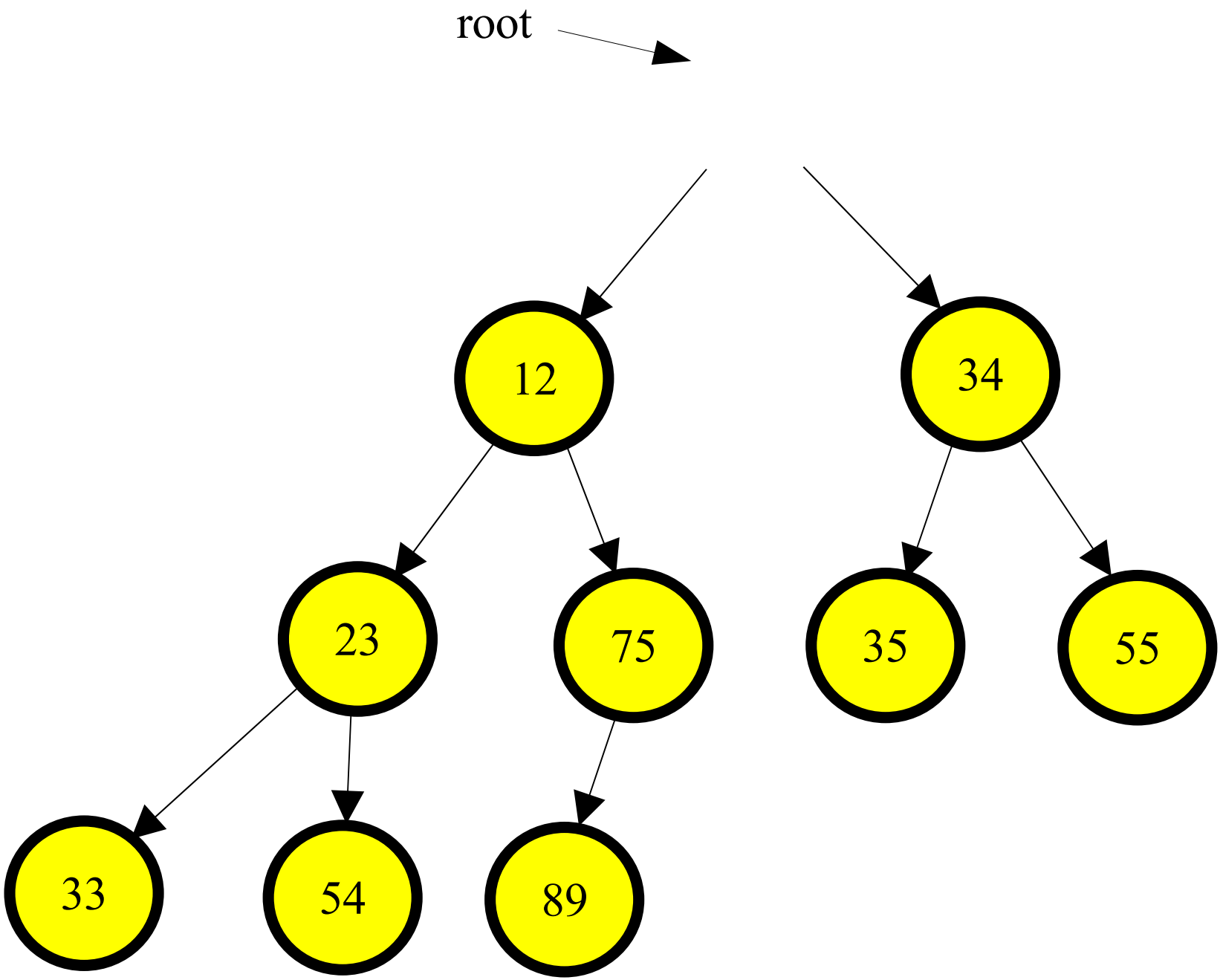
89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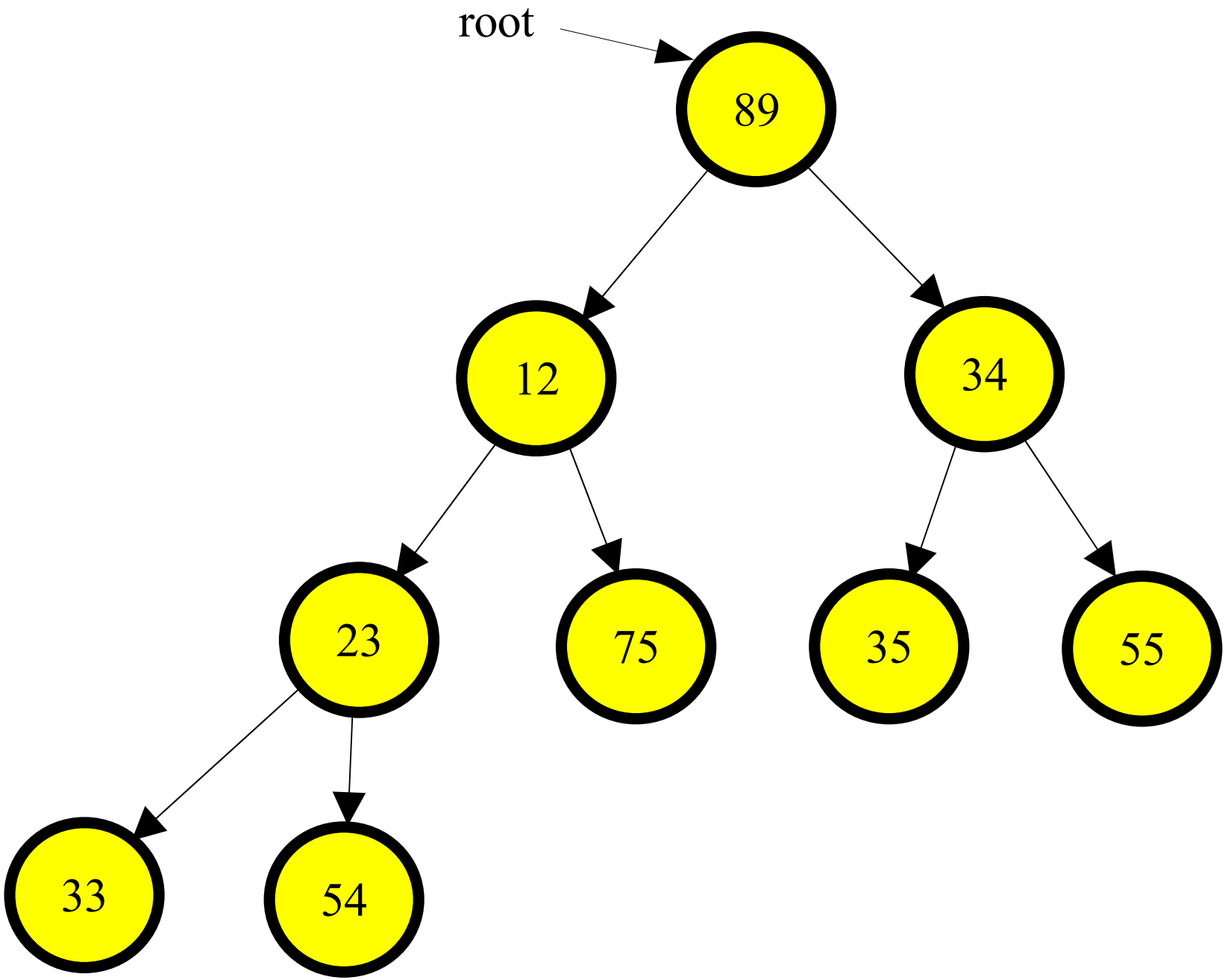
root
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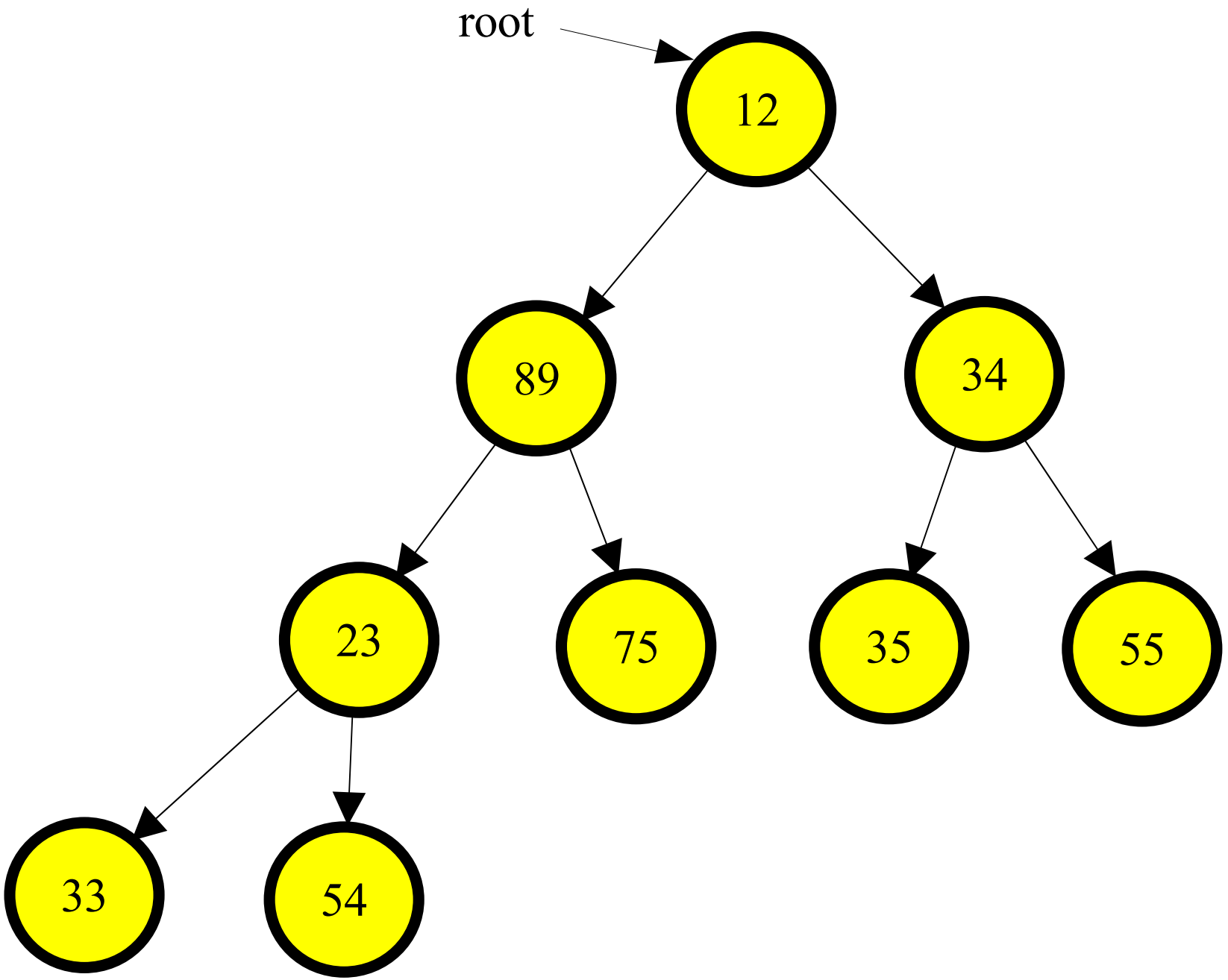
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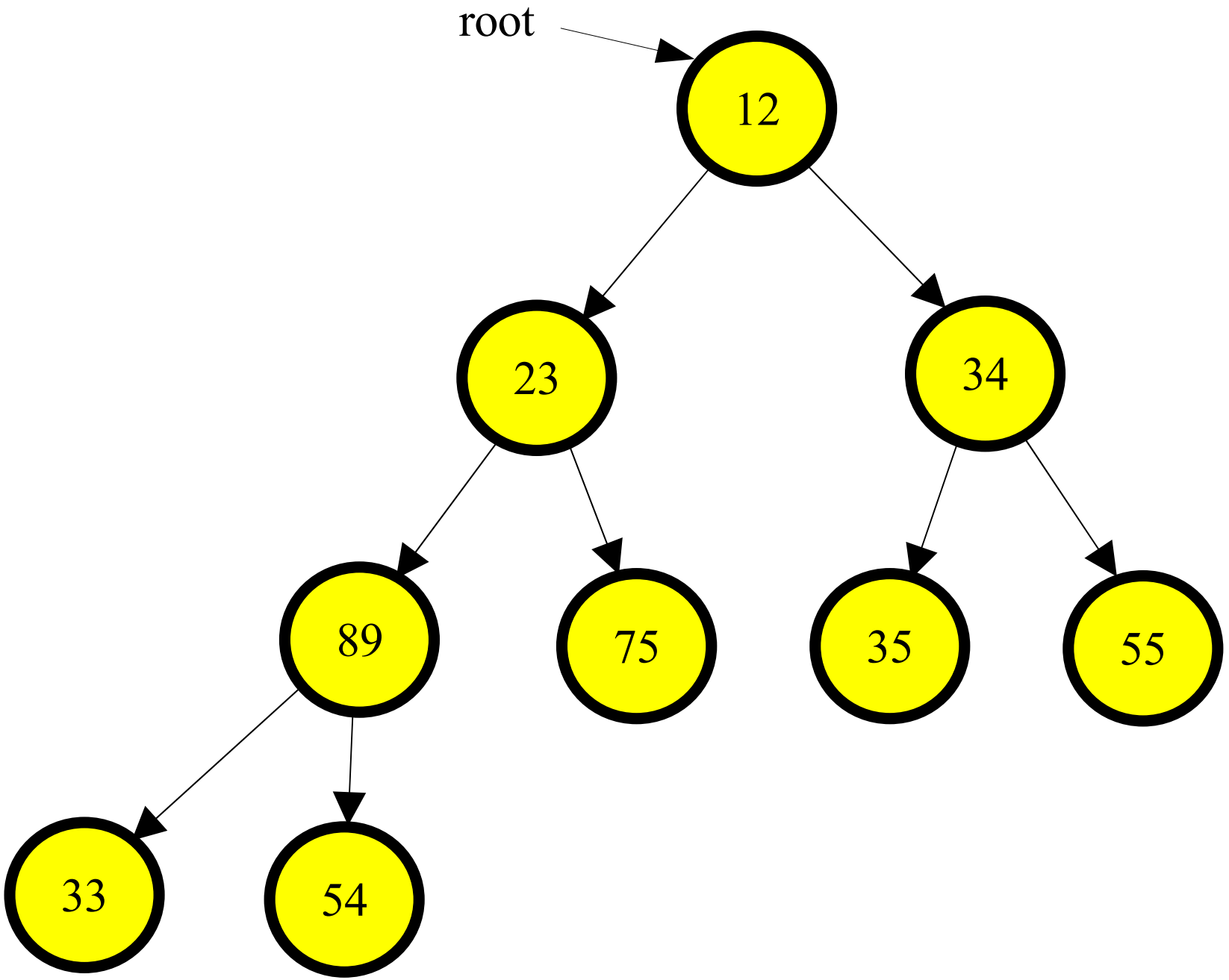
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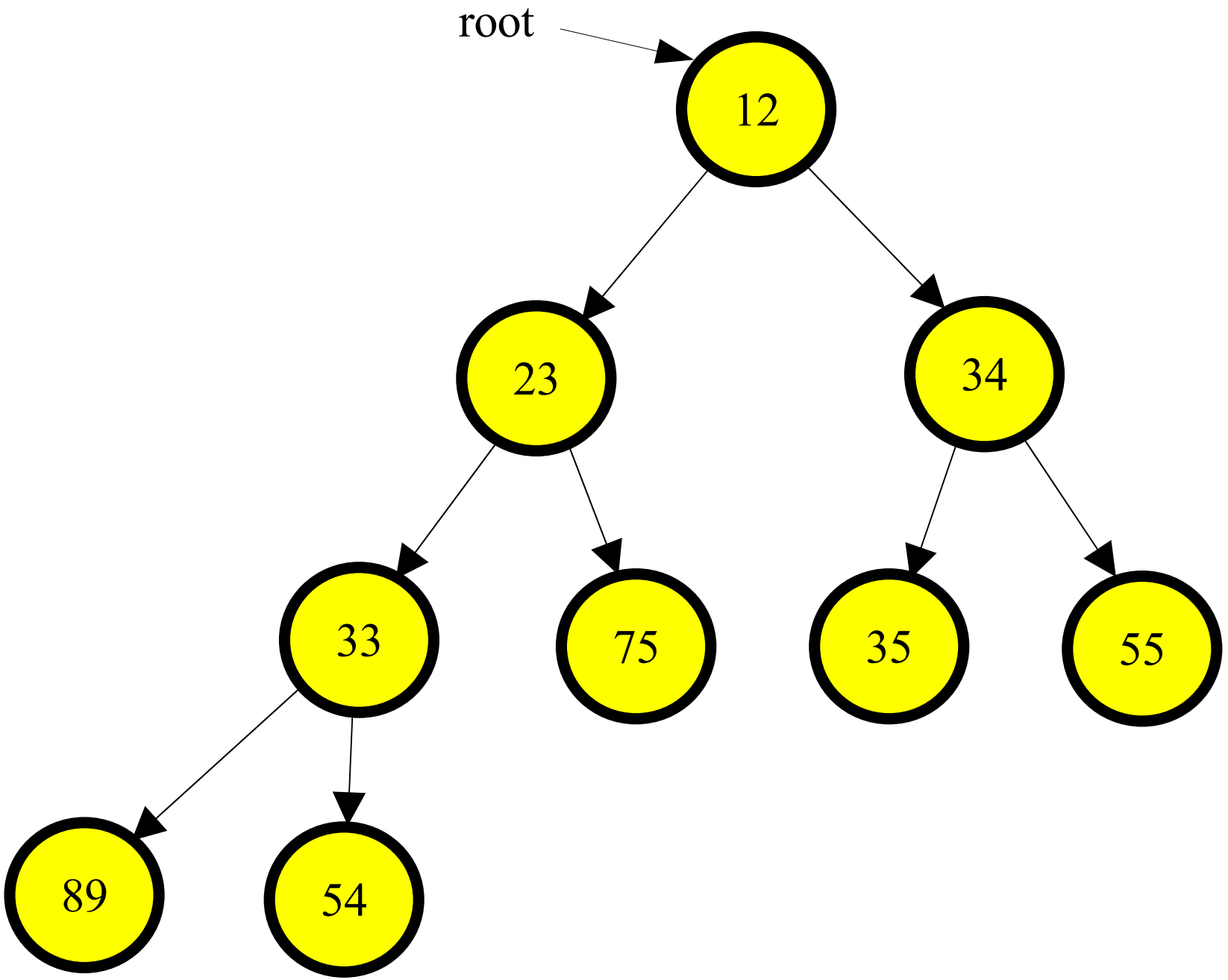
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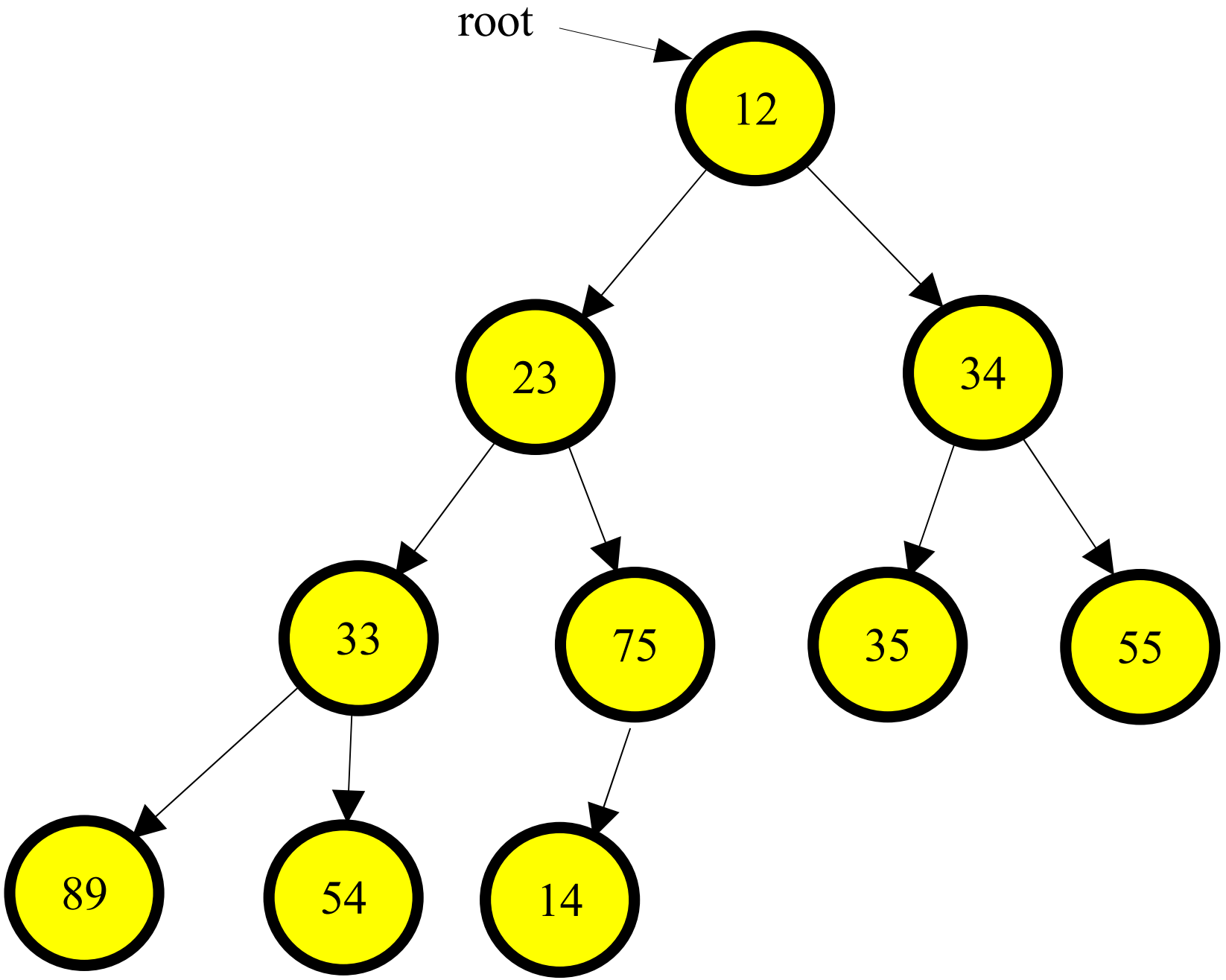
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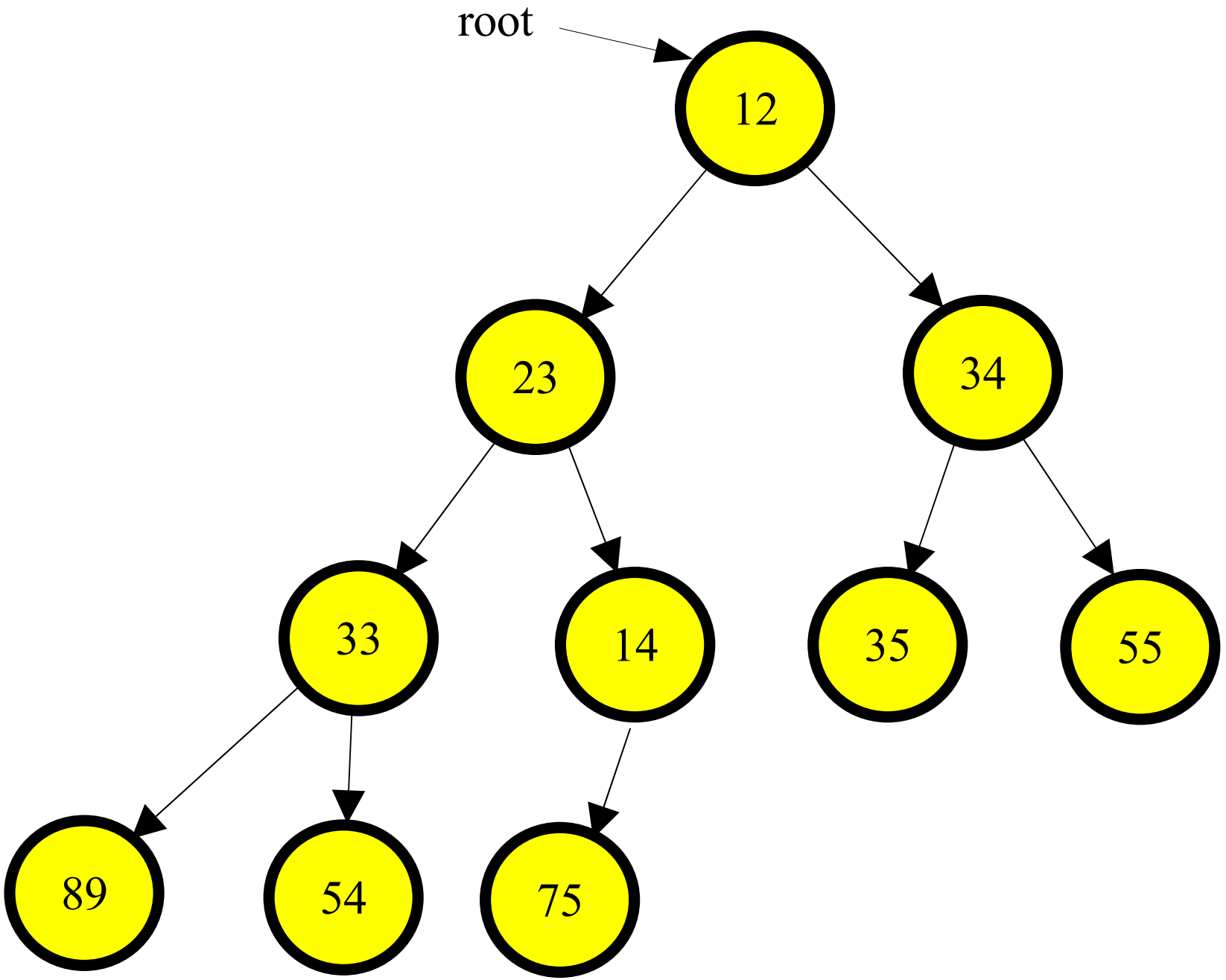
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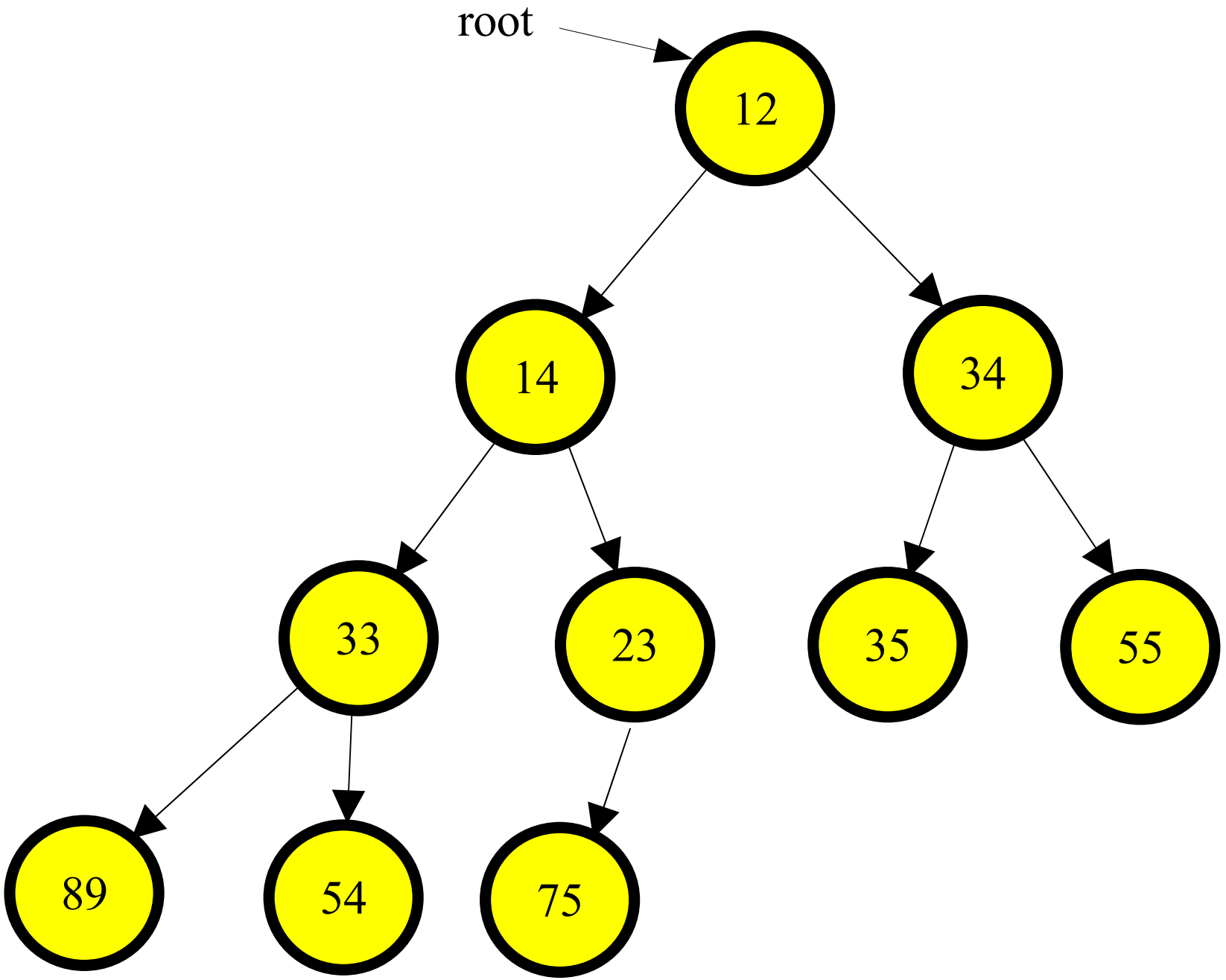
root
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75

Implementation Details


Root
Tail
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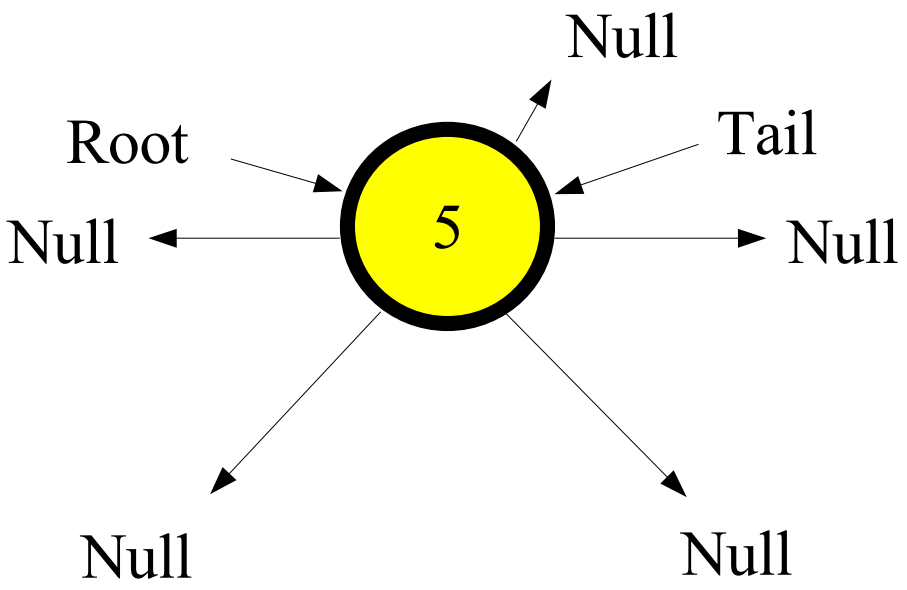
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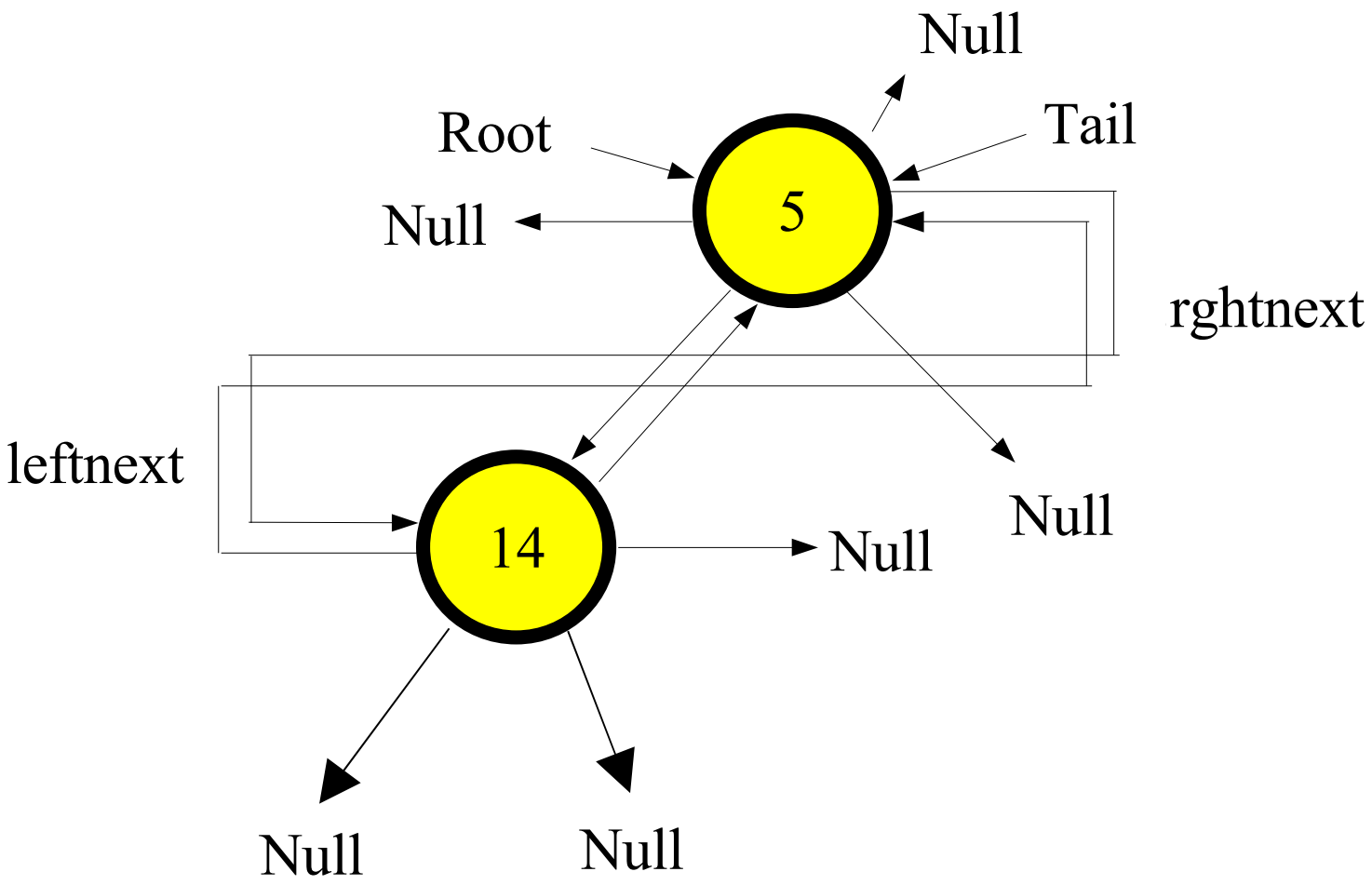
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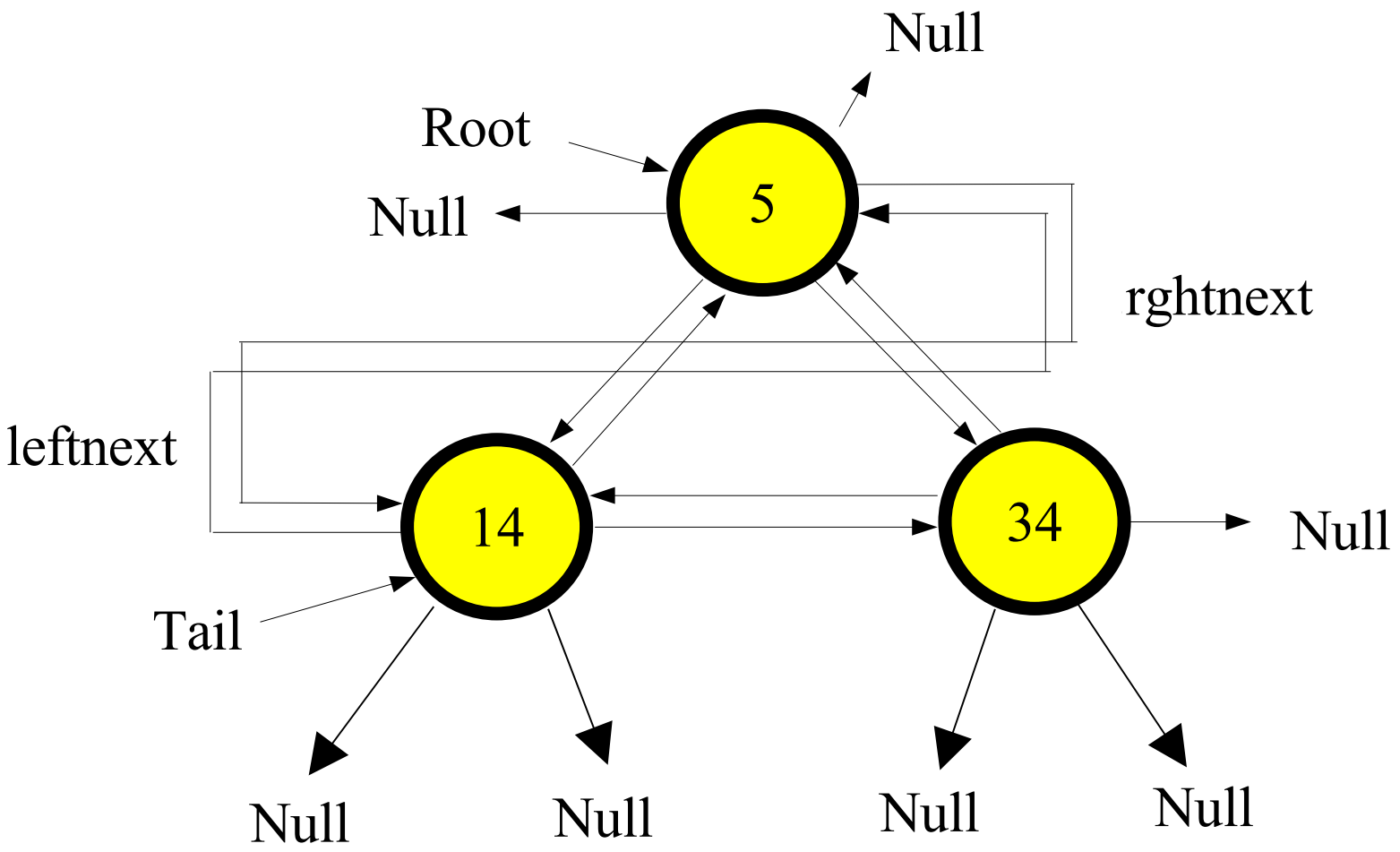
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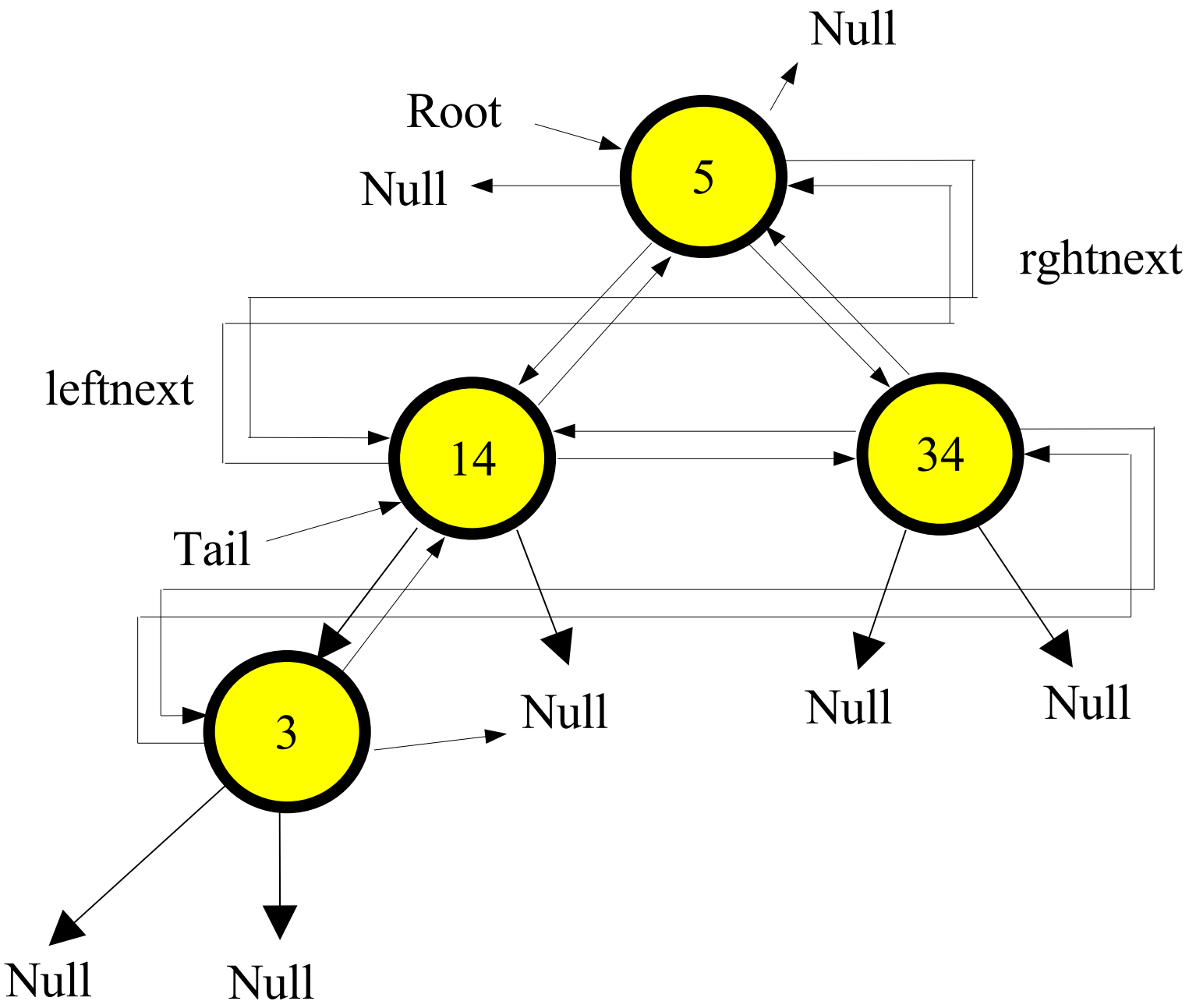
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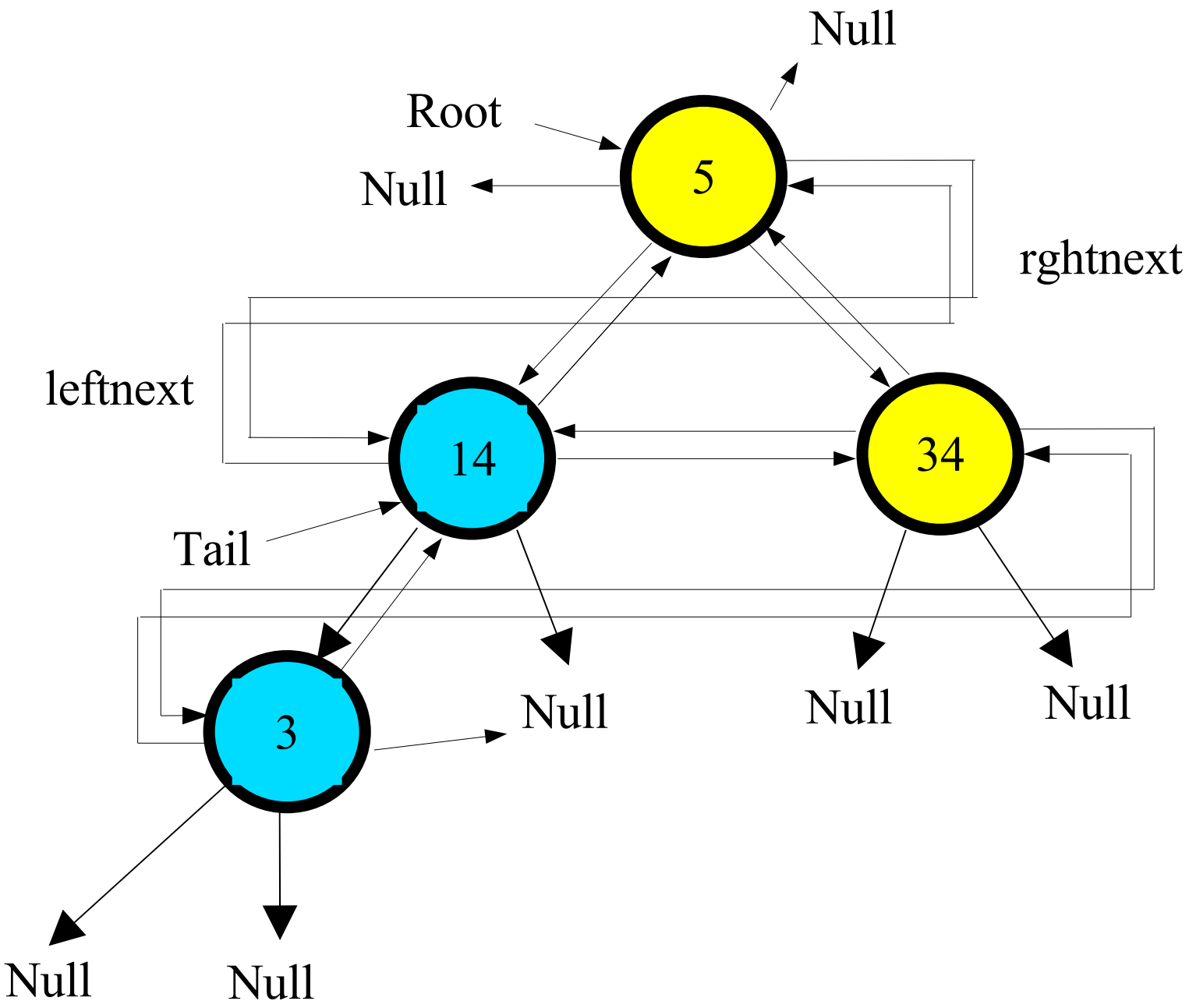
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Tail
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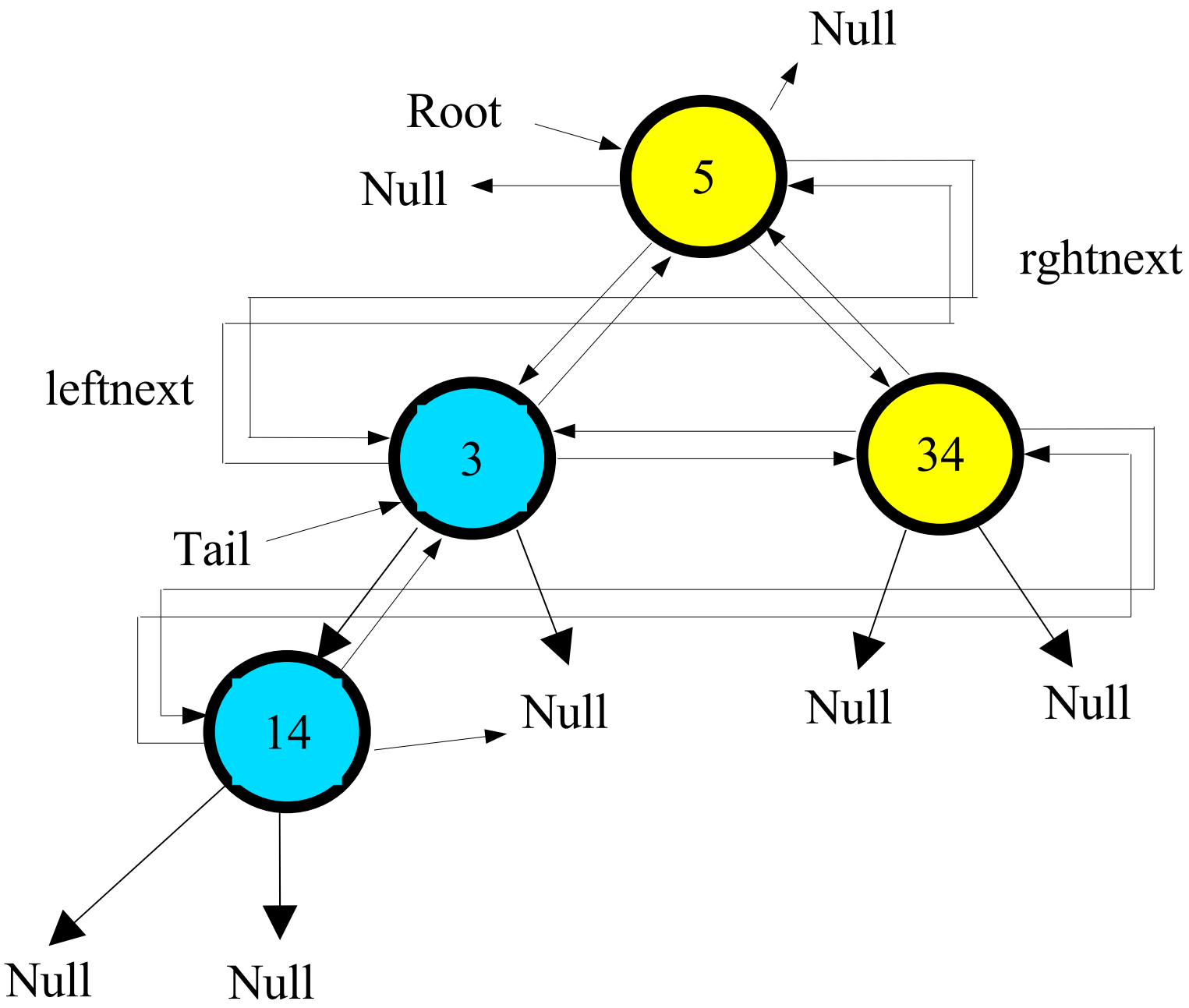
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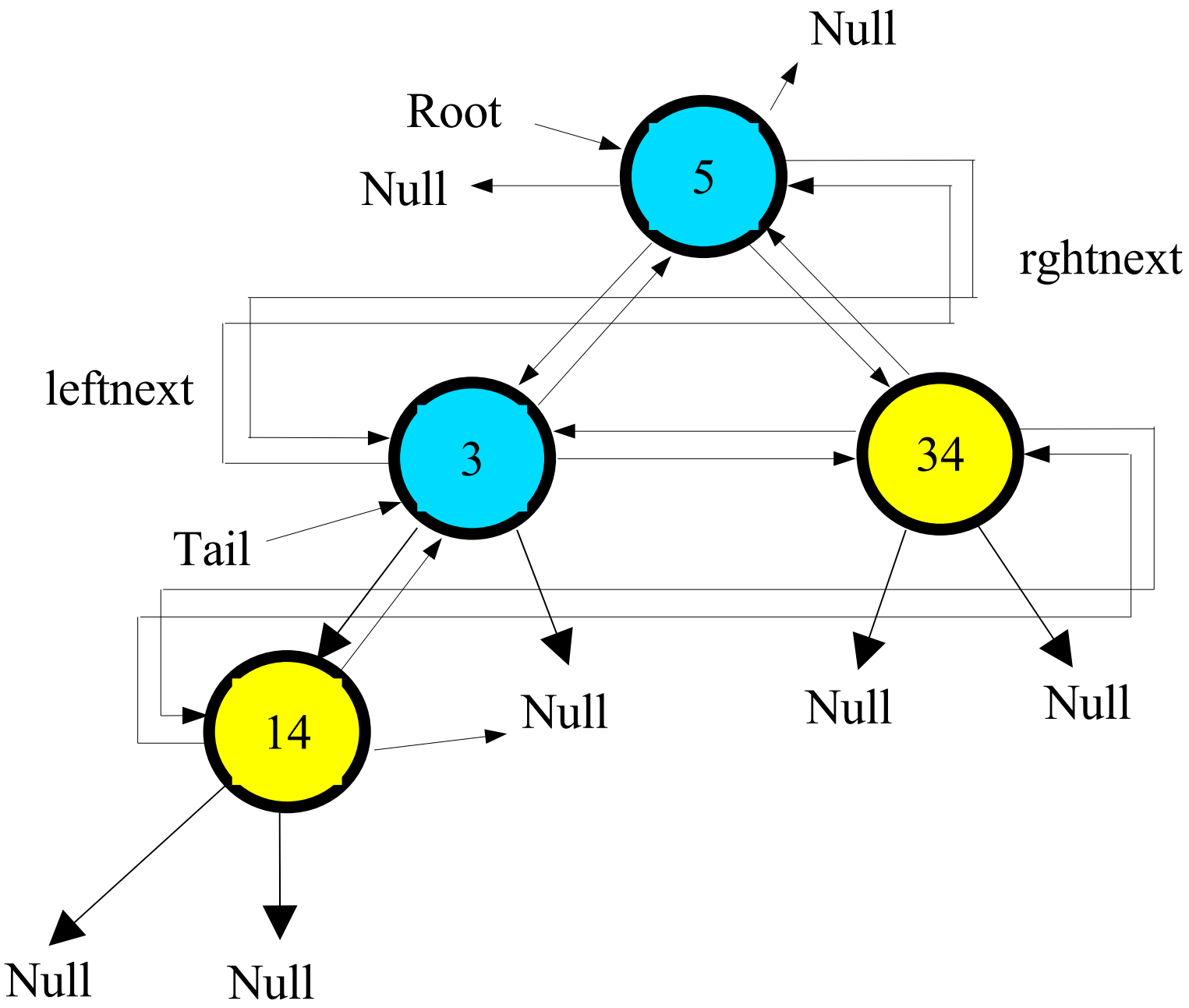
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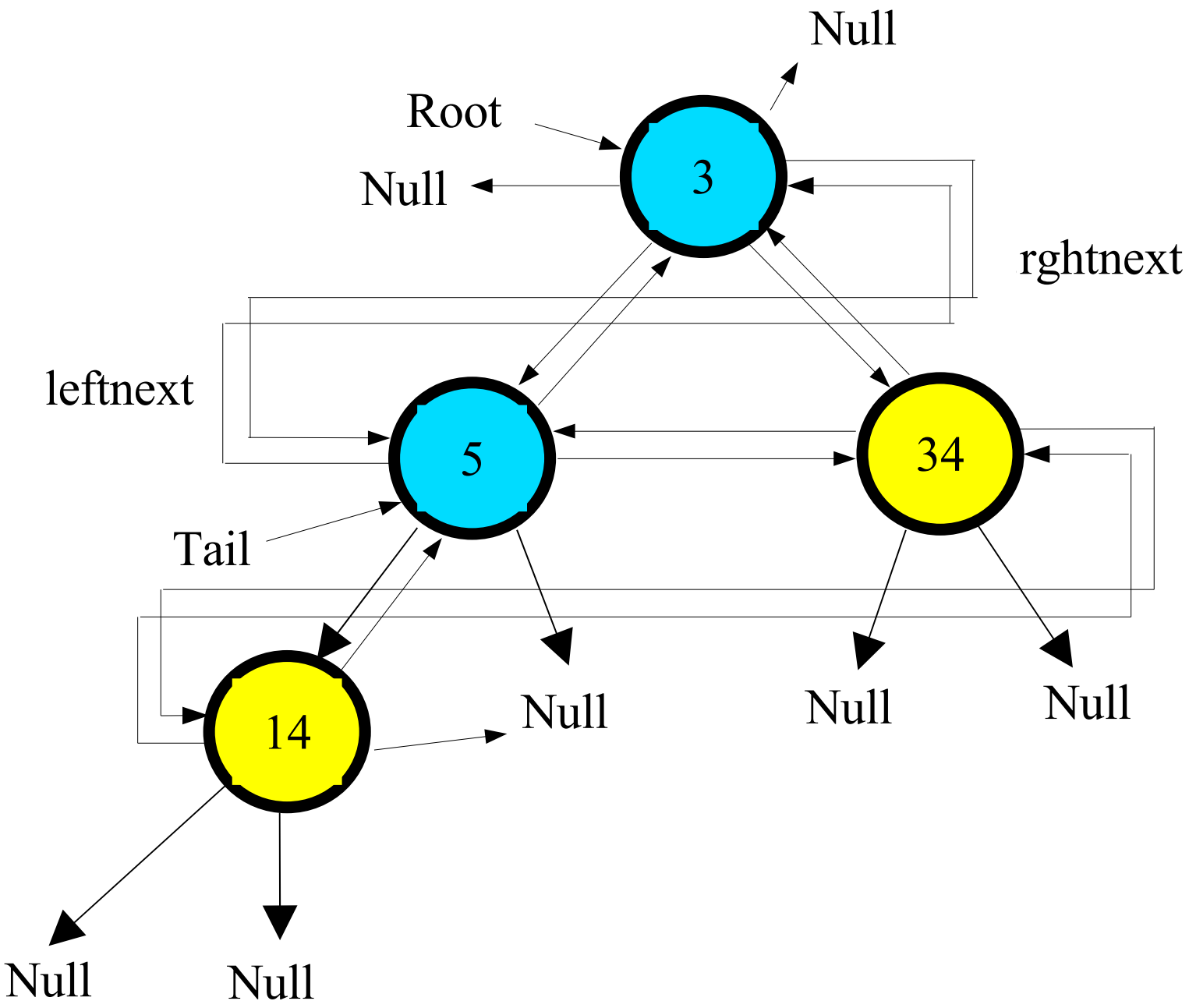
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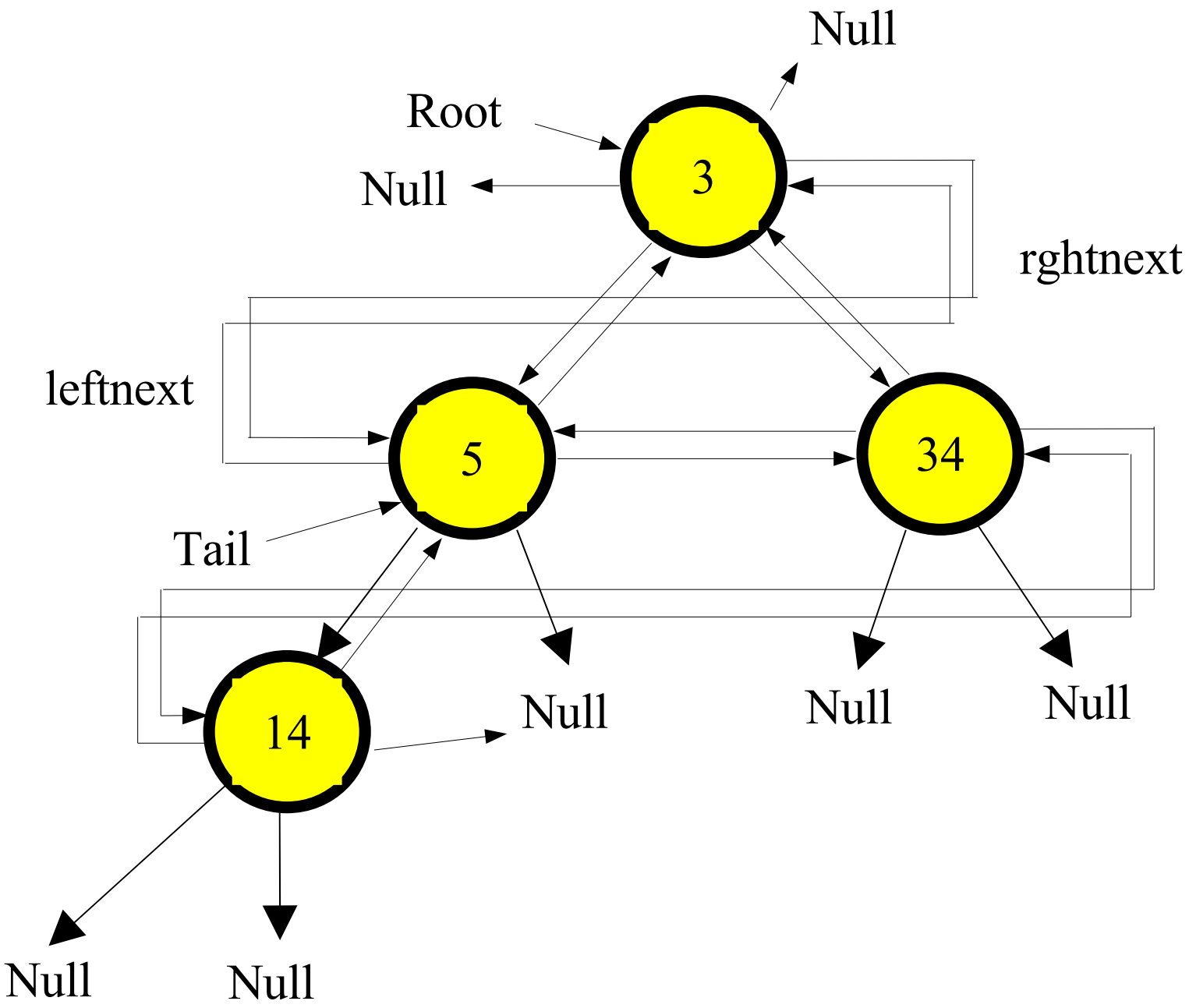
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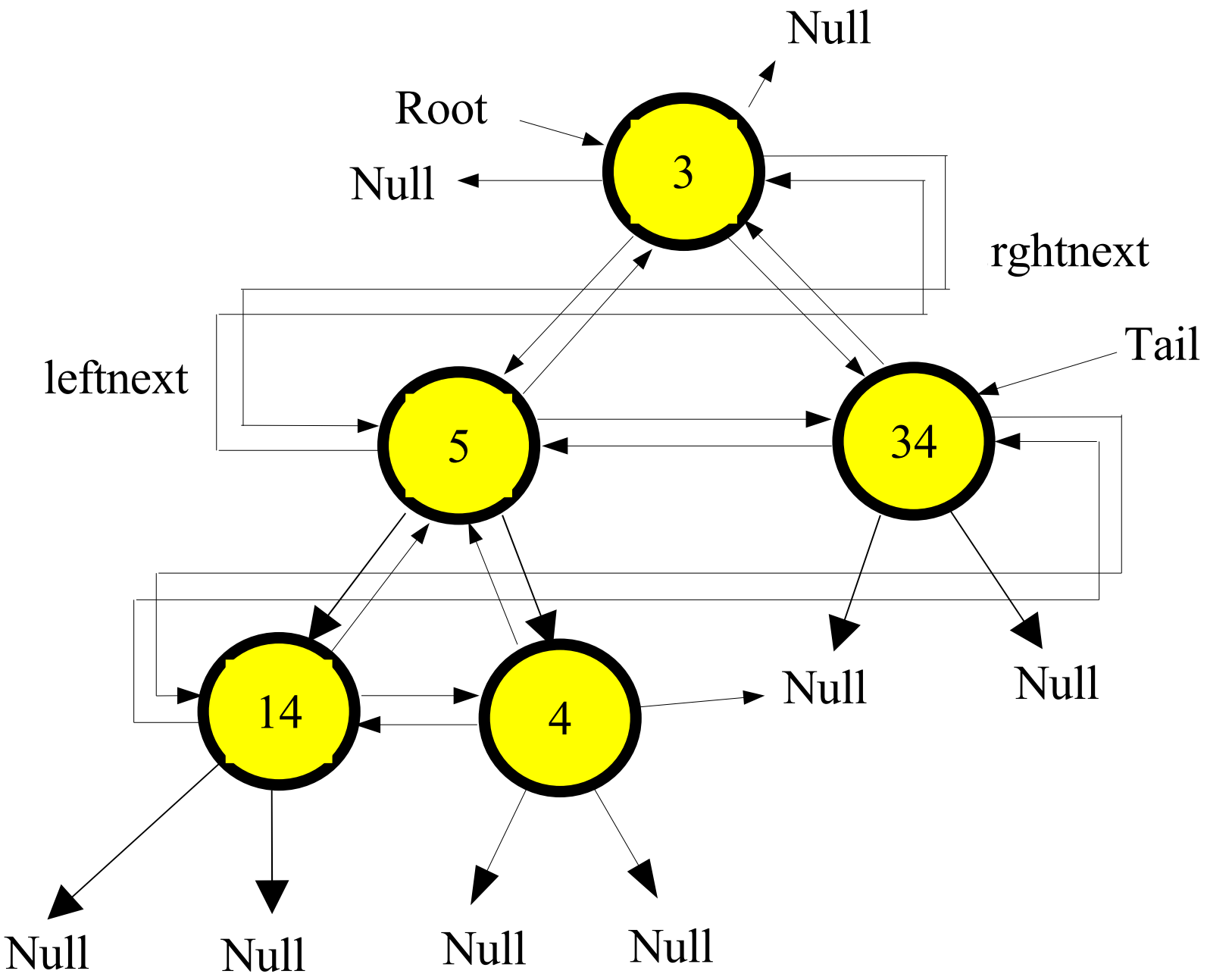
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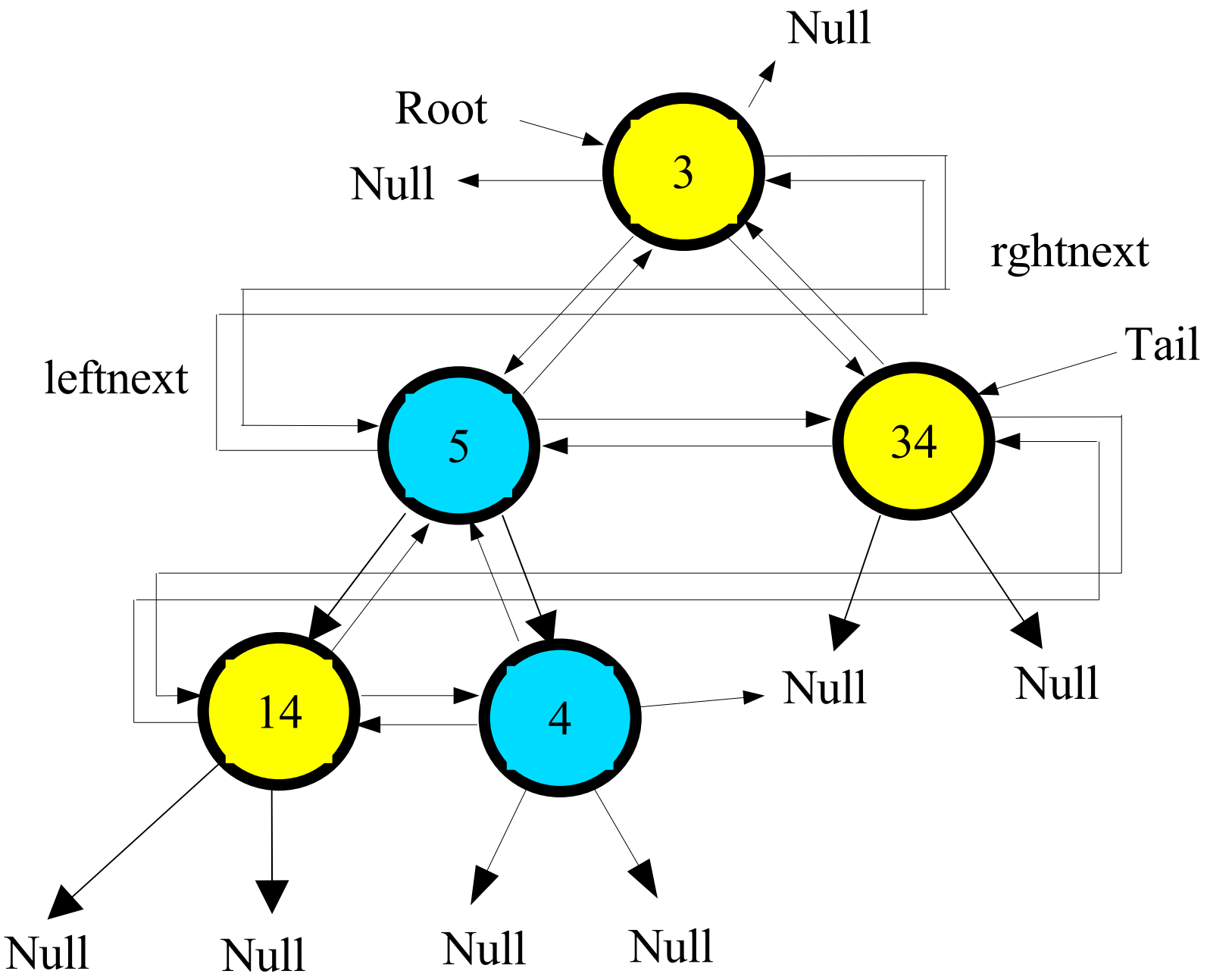
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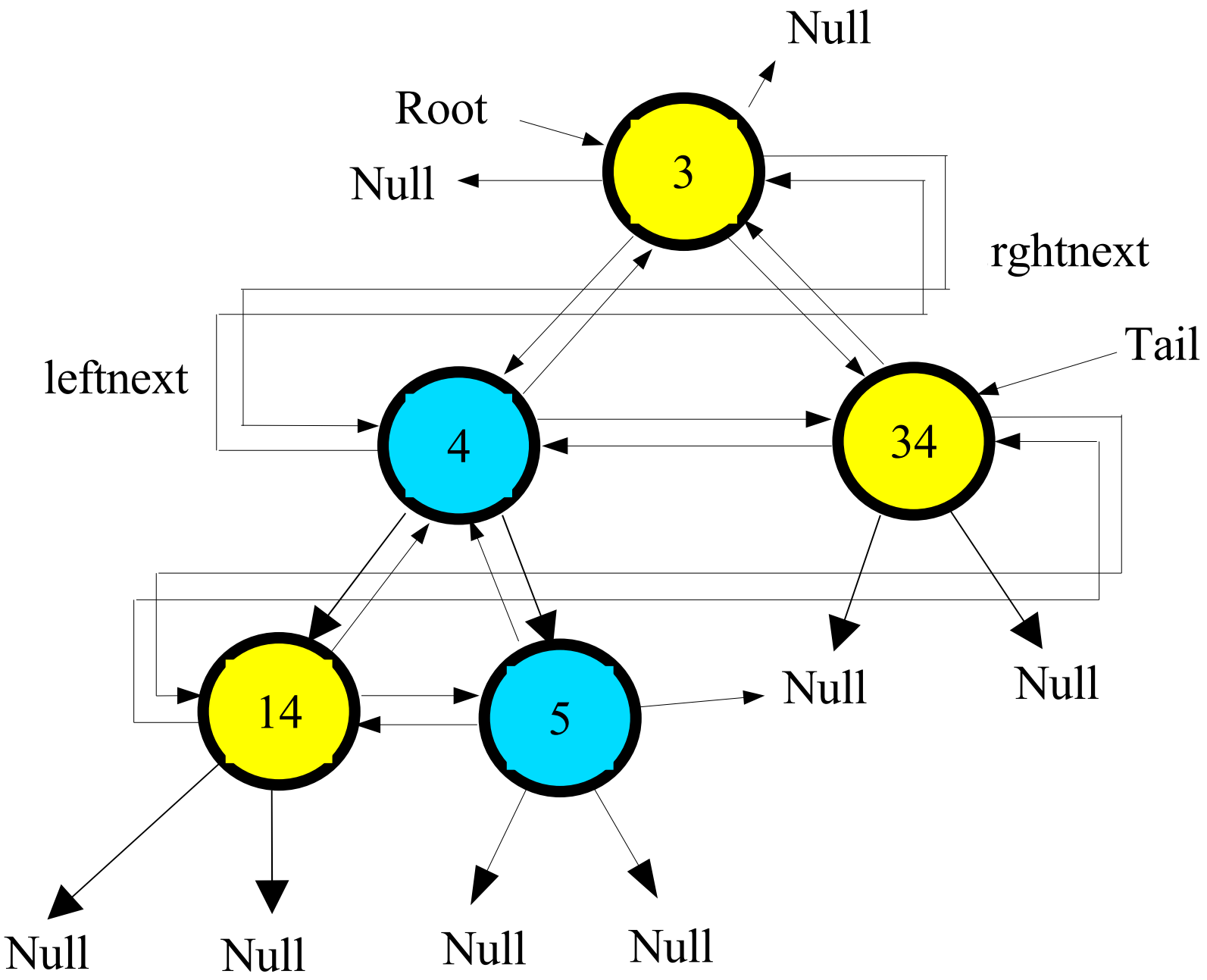
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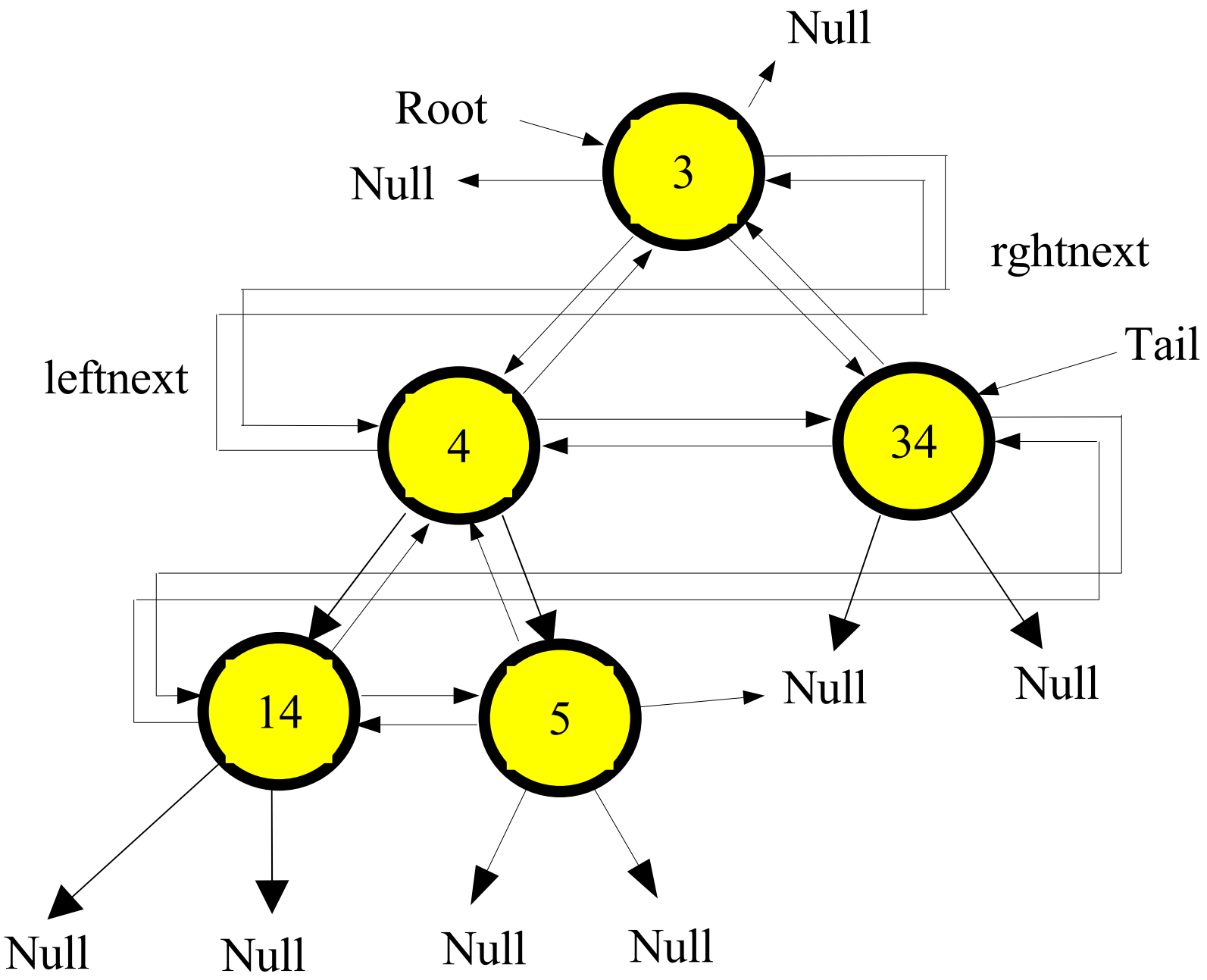
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Tail
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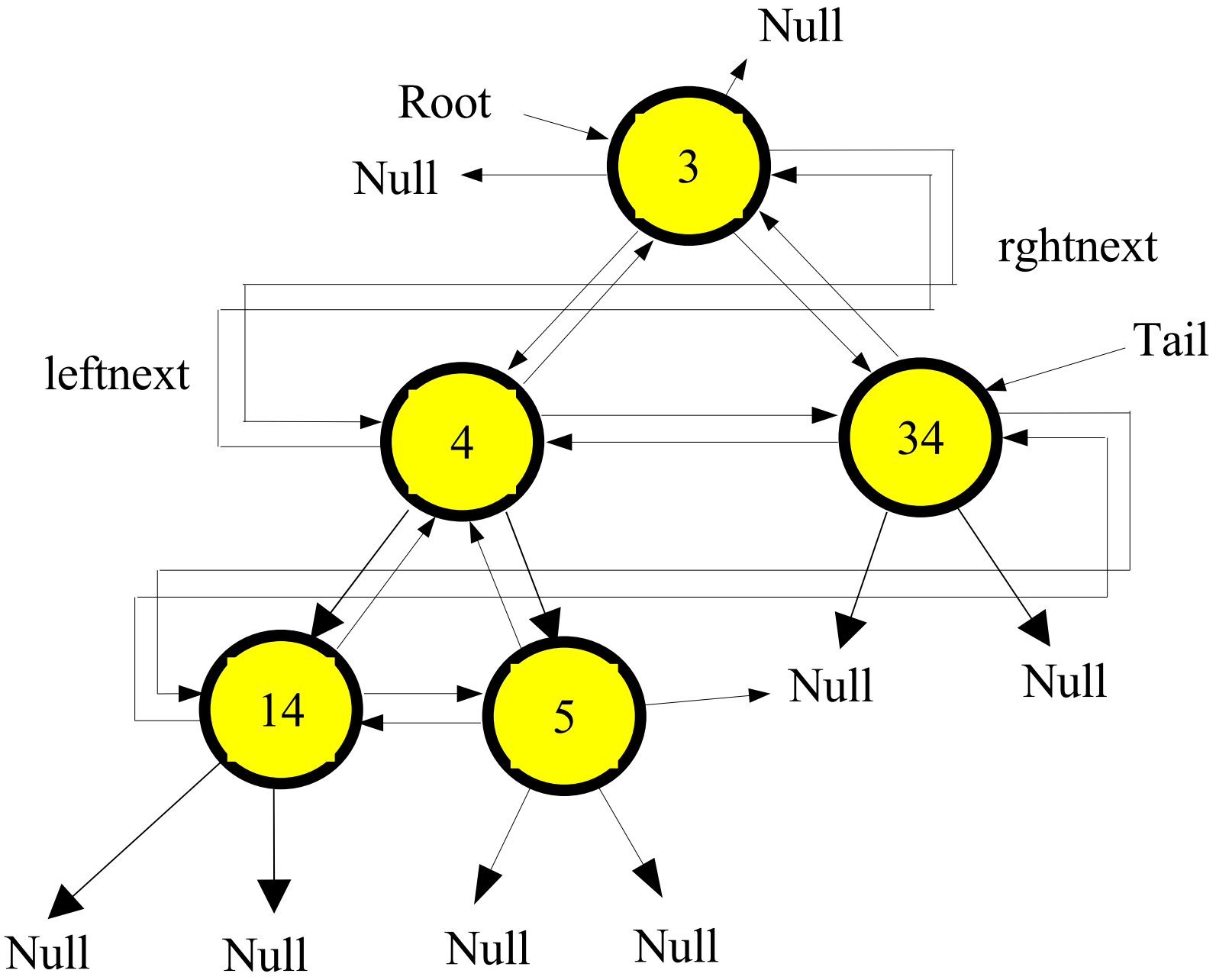
“Pop” an item off the top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Tail
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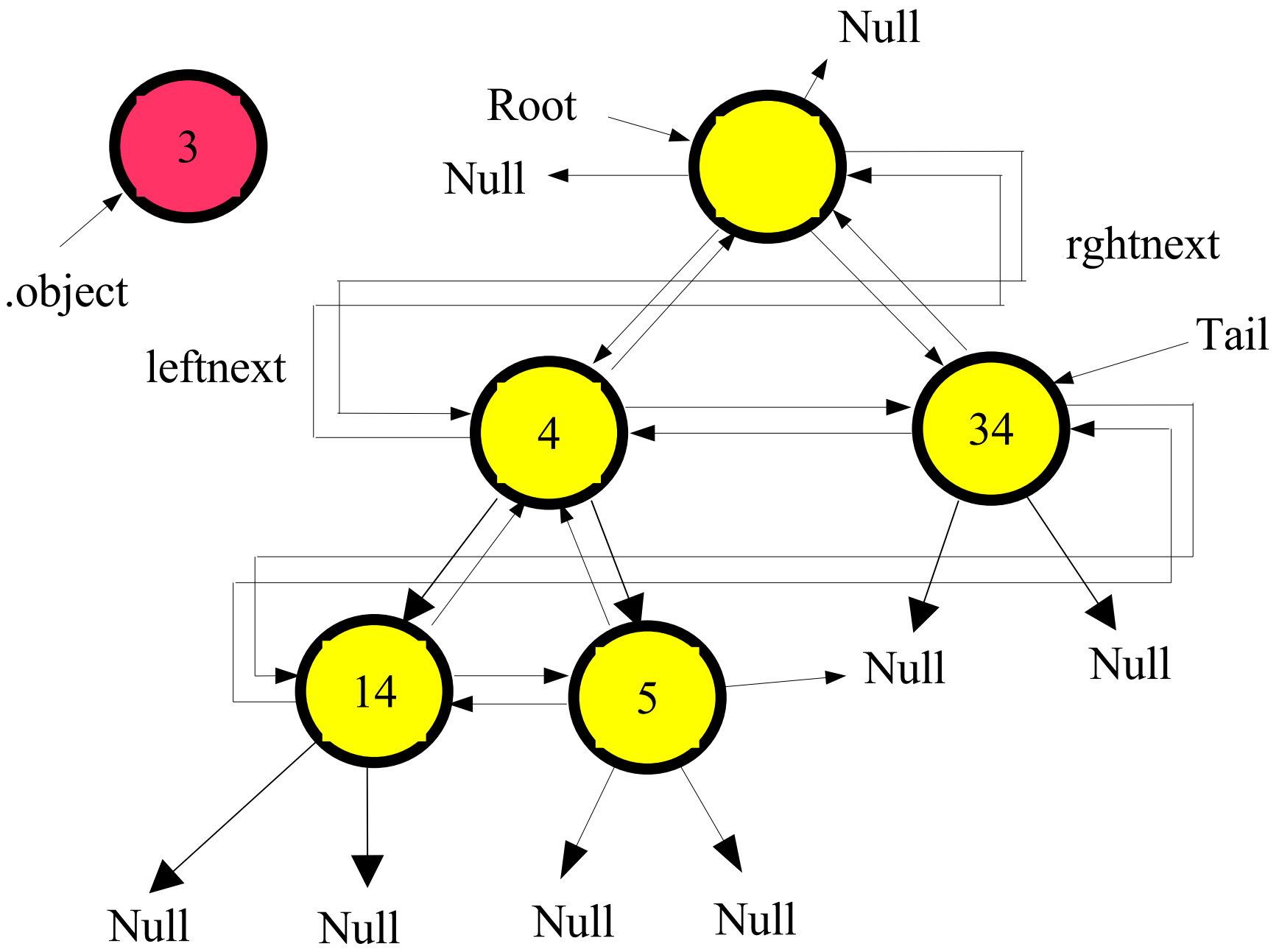
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.object
Tail
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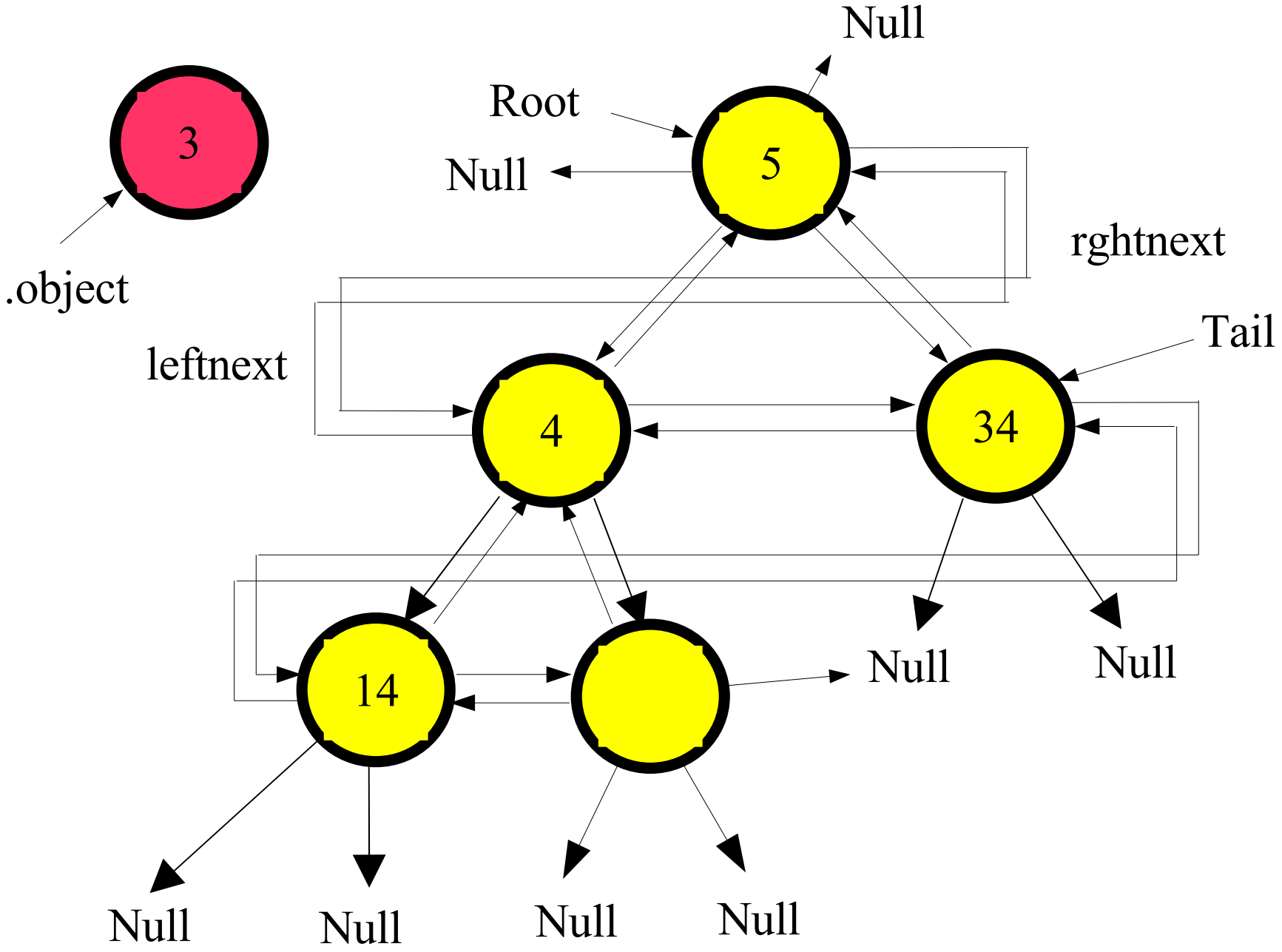
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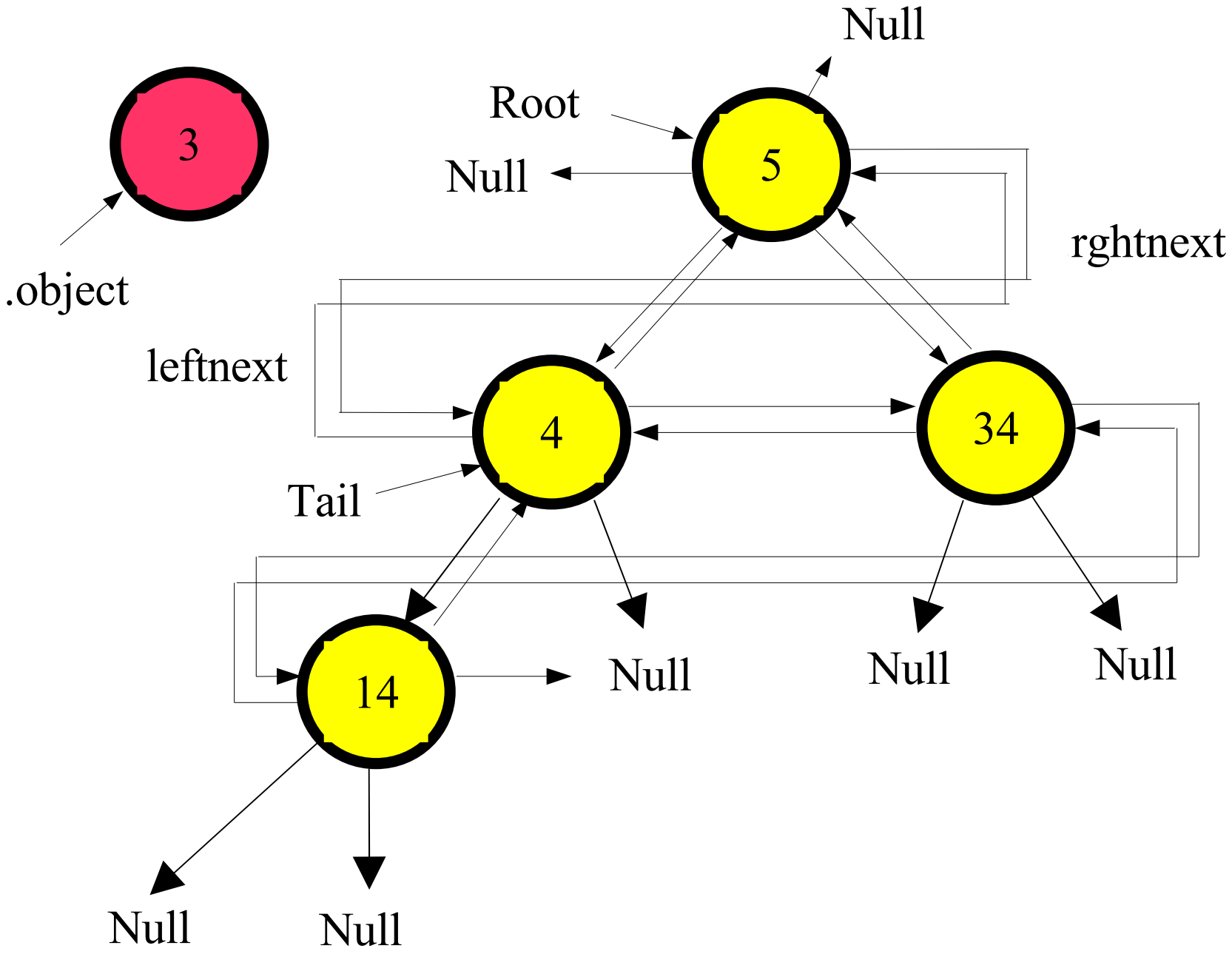
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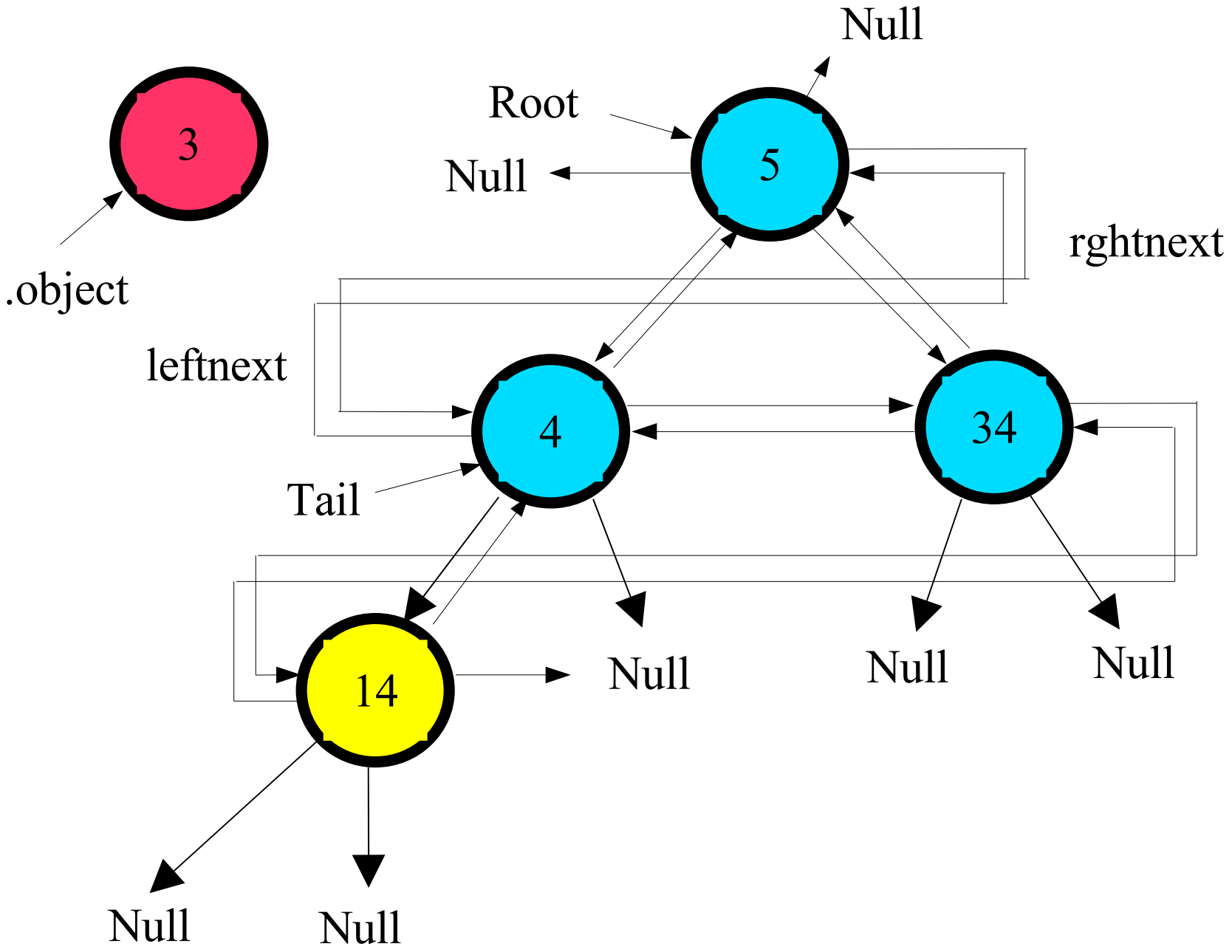
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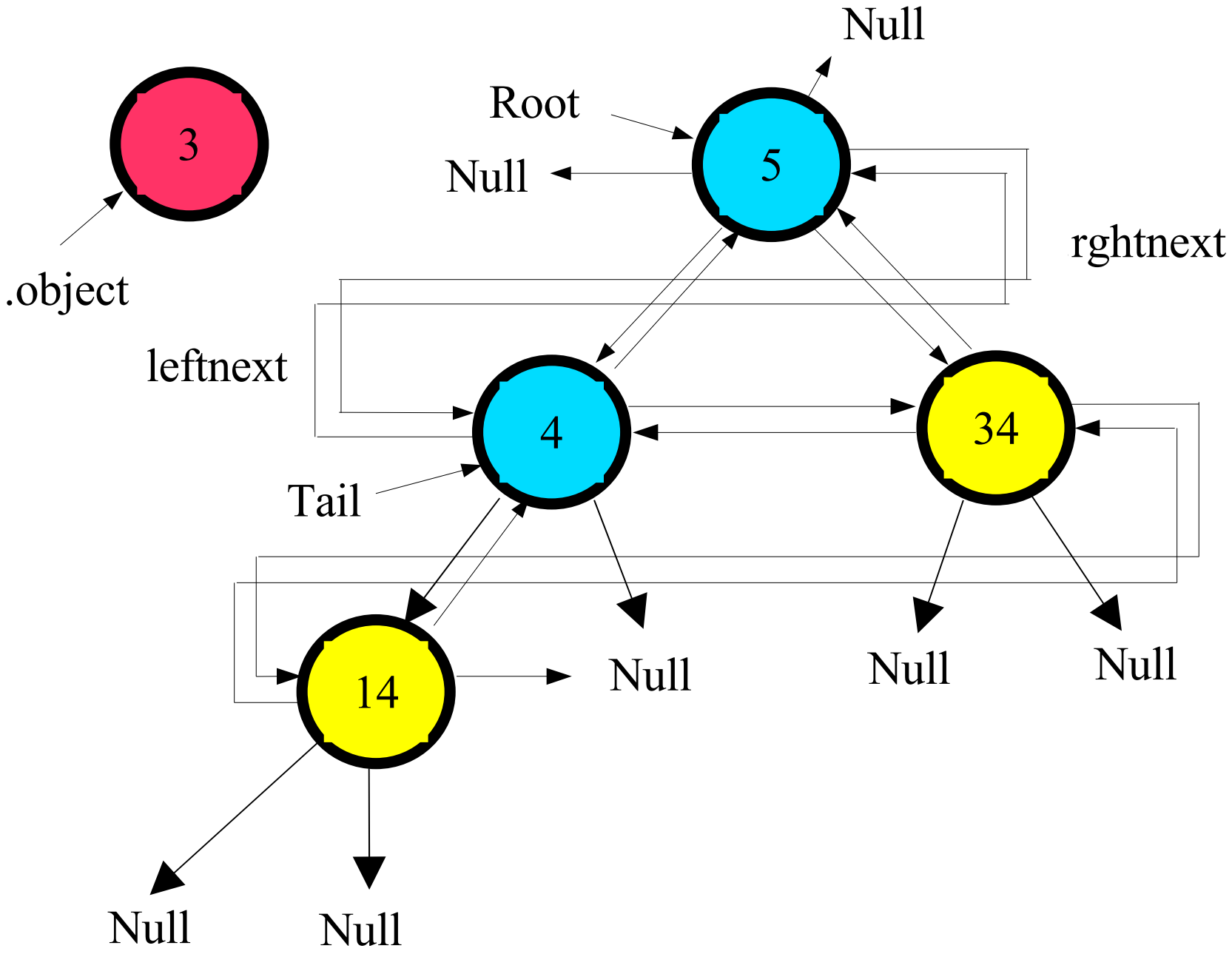
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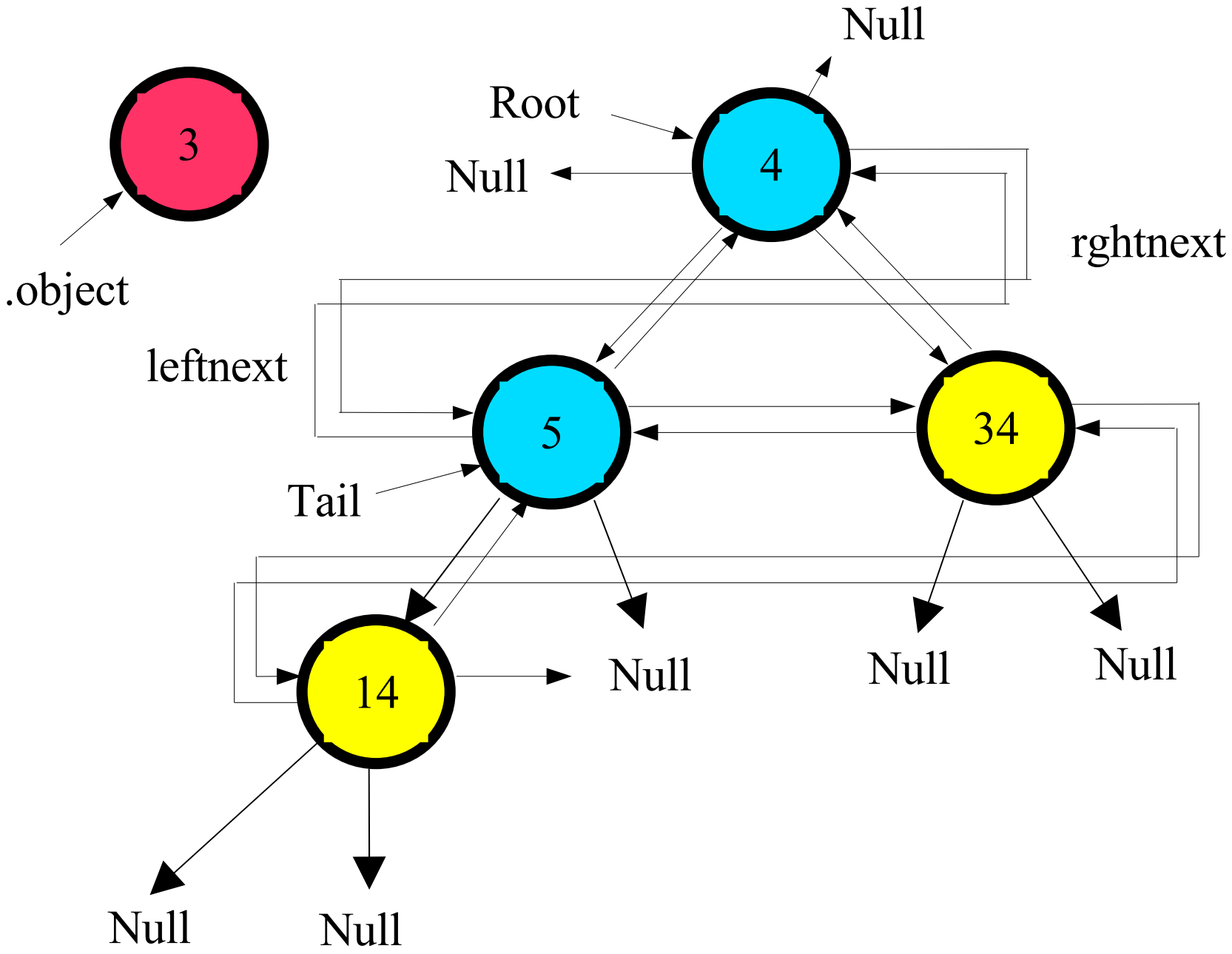
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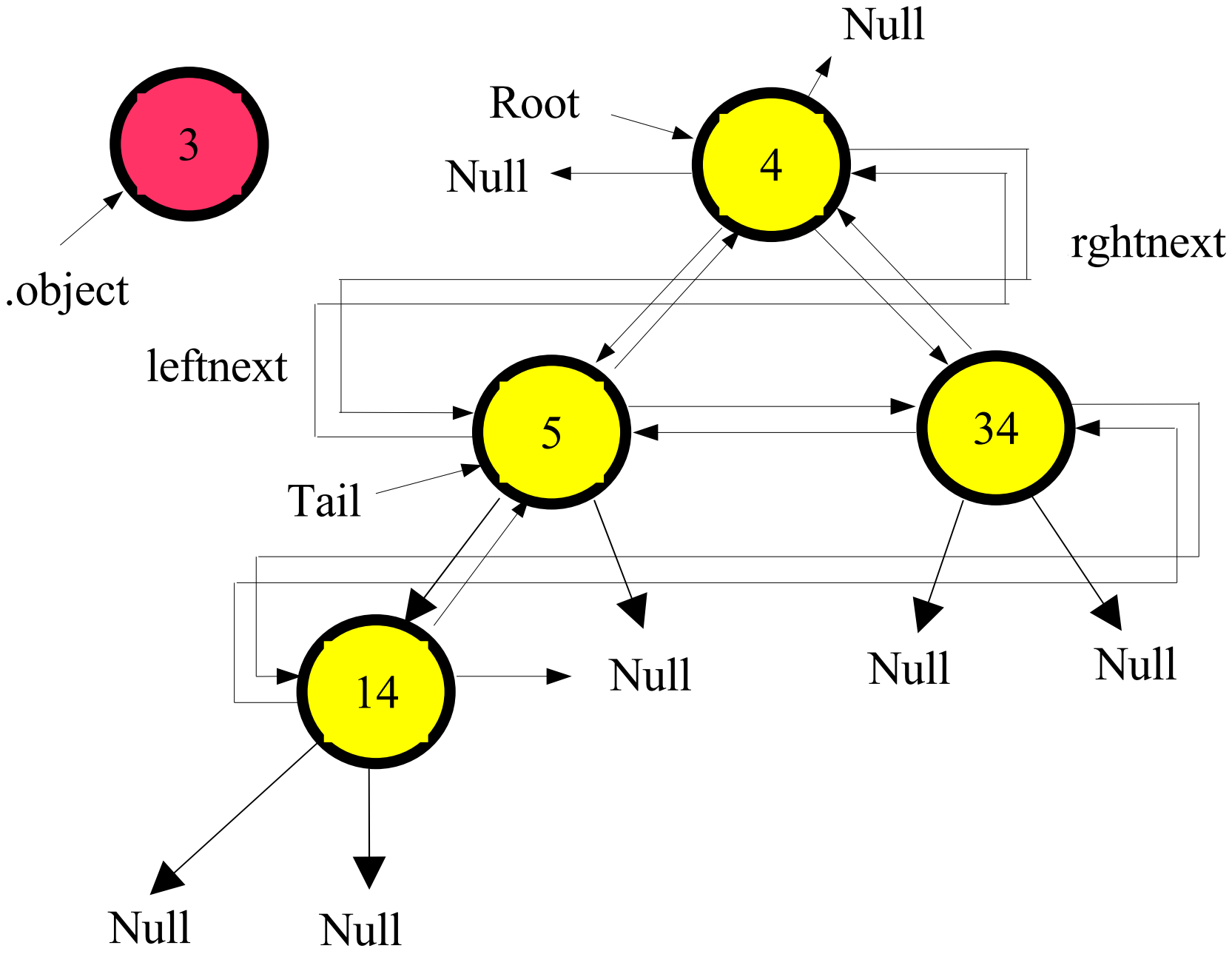
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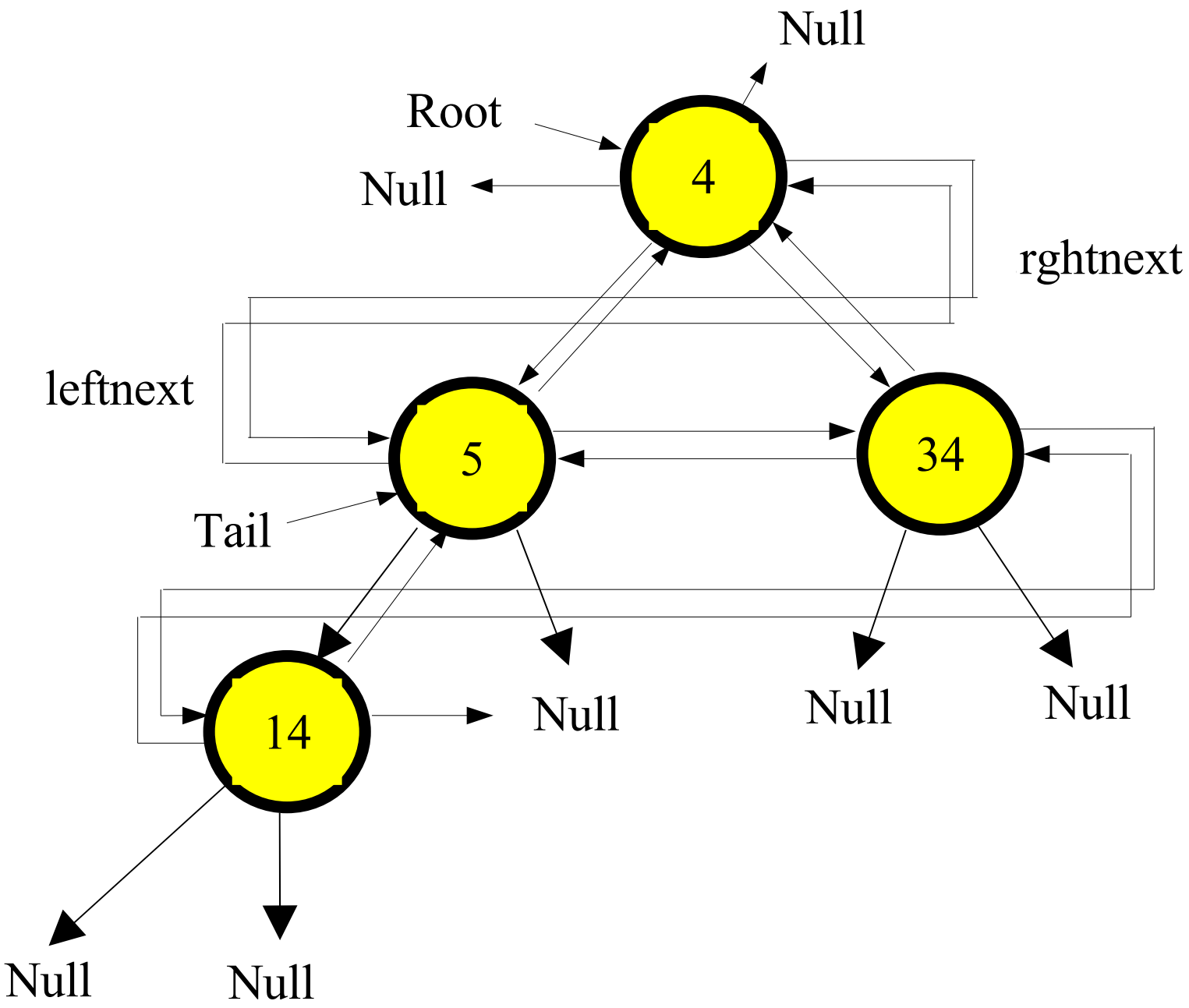
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leftnext
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34
Tail
14
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Null
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Null
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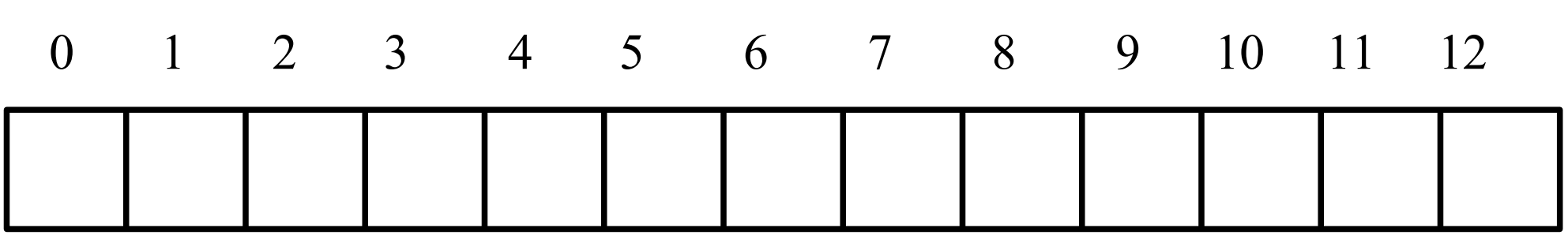
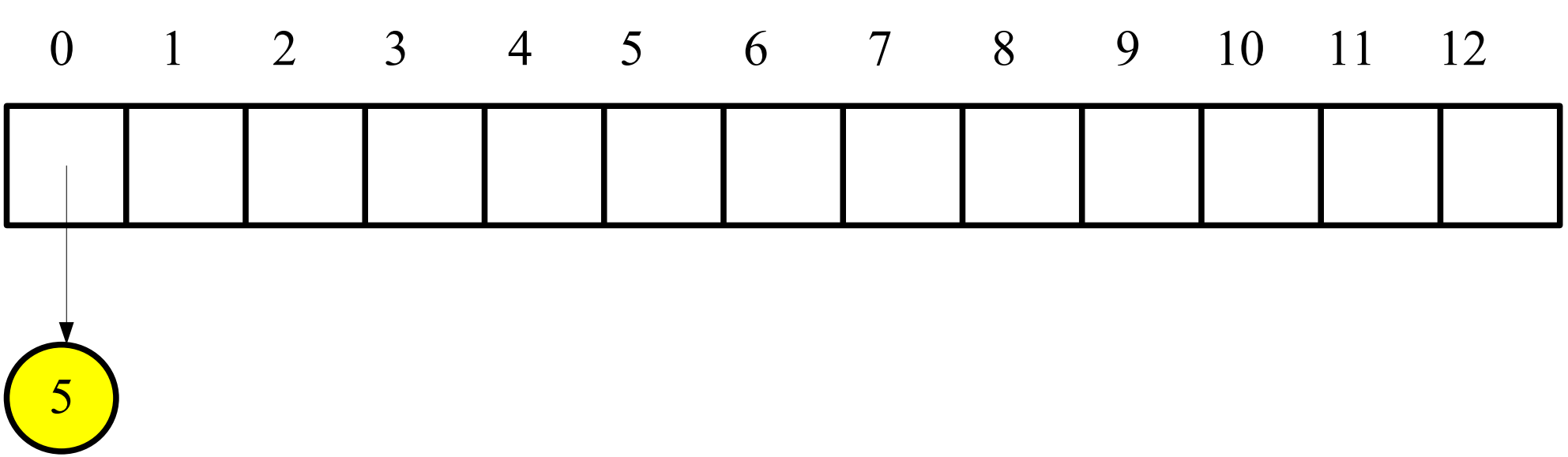
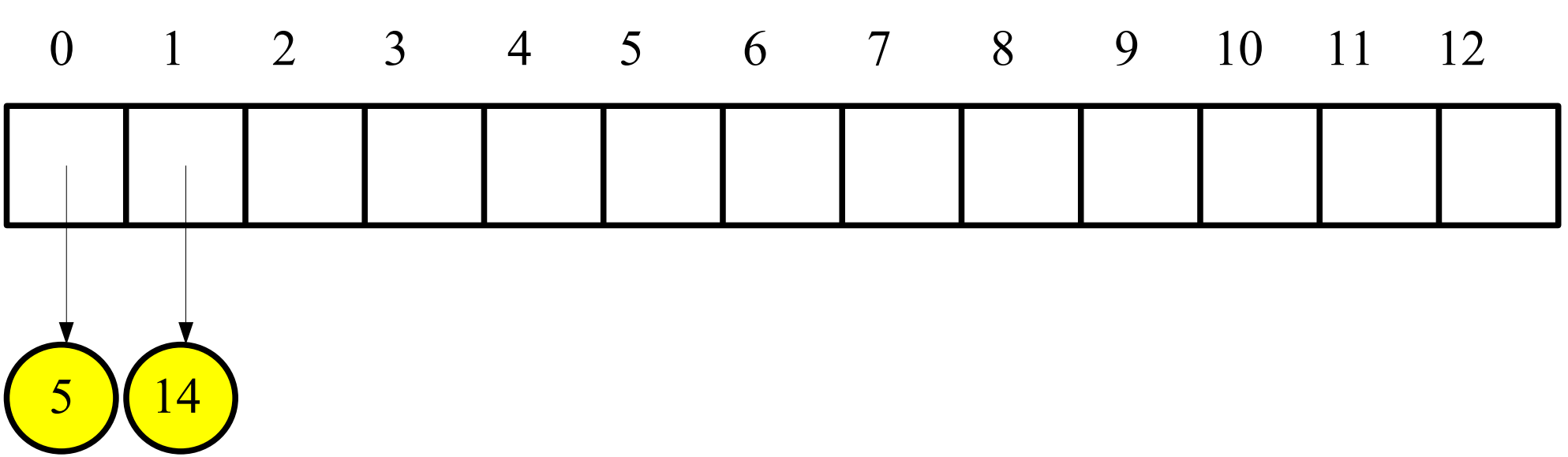
Implementation using an array of pointers



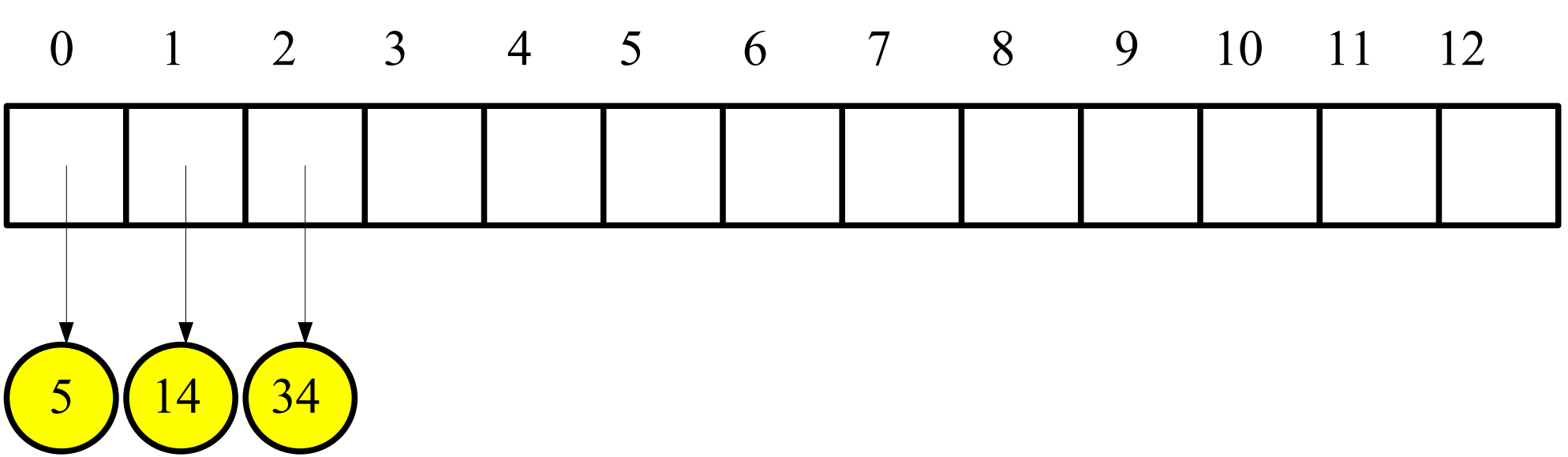
root = 0
tail = 0



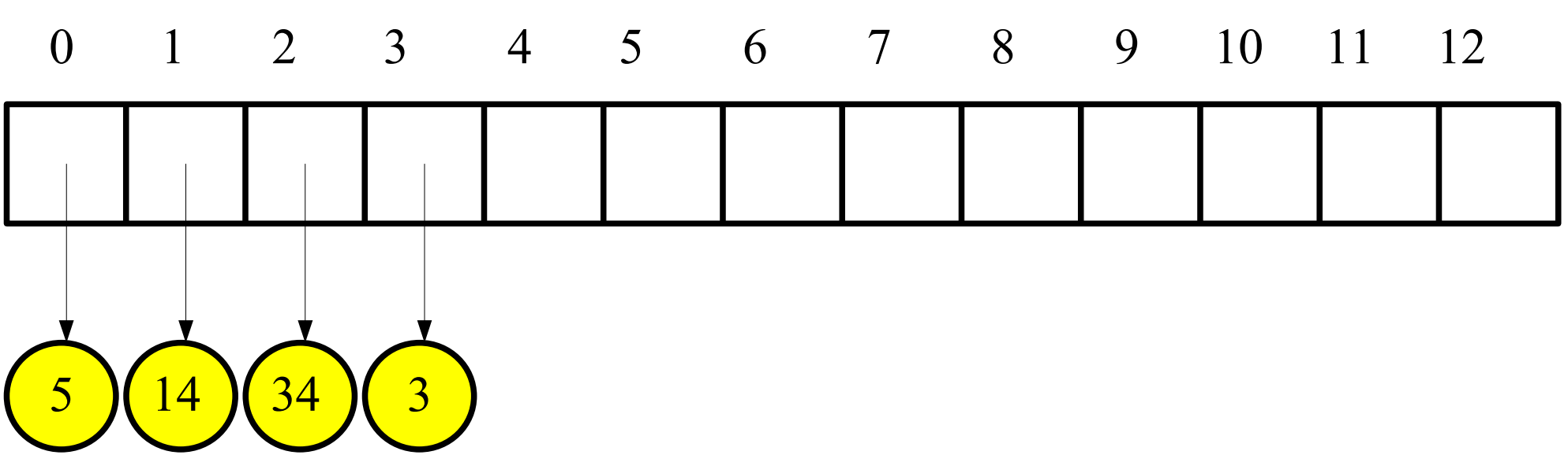
root = 0
tail = 1



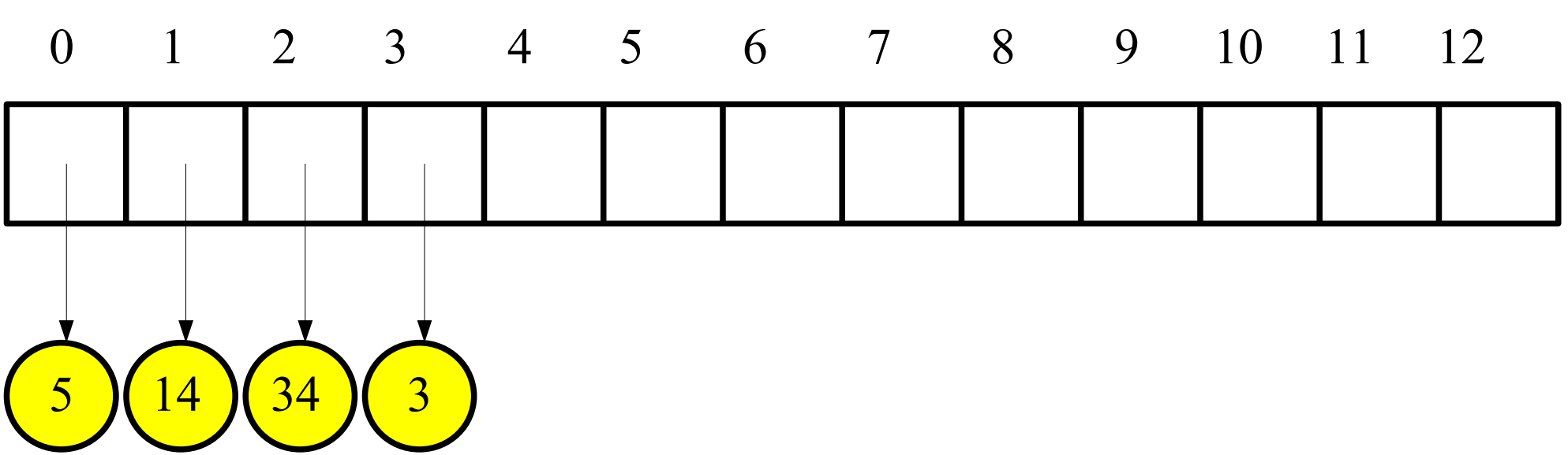
root = 0
tail = 2



root = 0
tail = 3



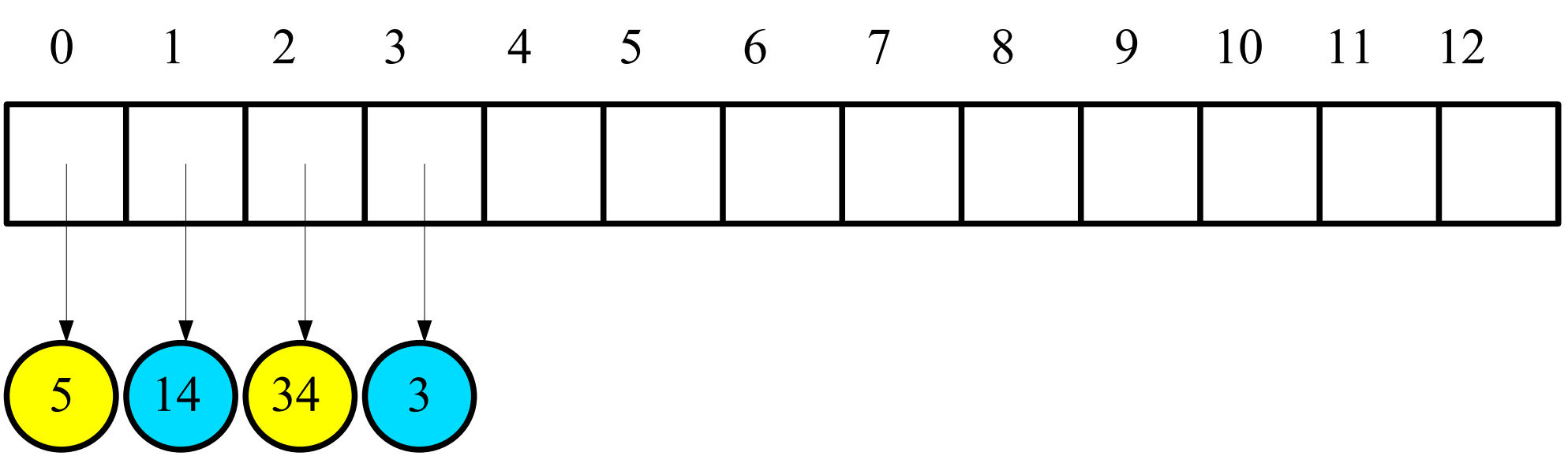
root = 0
tail = 4



root = 0
tail = 4

Parent of “3” node is determined by subtracting the index of that node by 1 and dividing by 2. In this case its

(3-1)/2 = 1

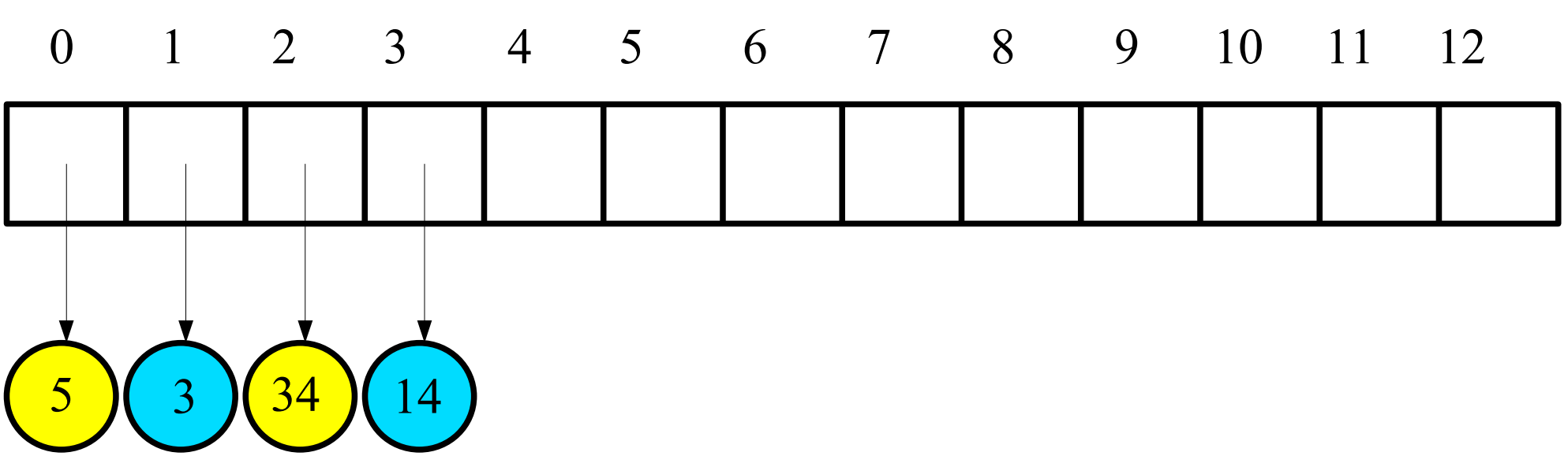


root = 0
tail = 4

Parent of “3” node is determined by subtracting the index of that node by 1 and dividing by 2. In this case its

(3-1)/2 = 1

Compare parent with child.

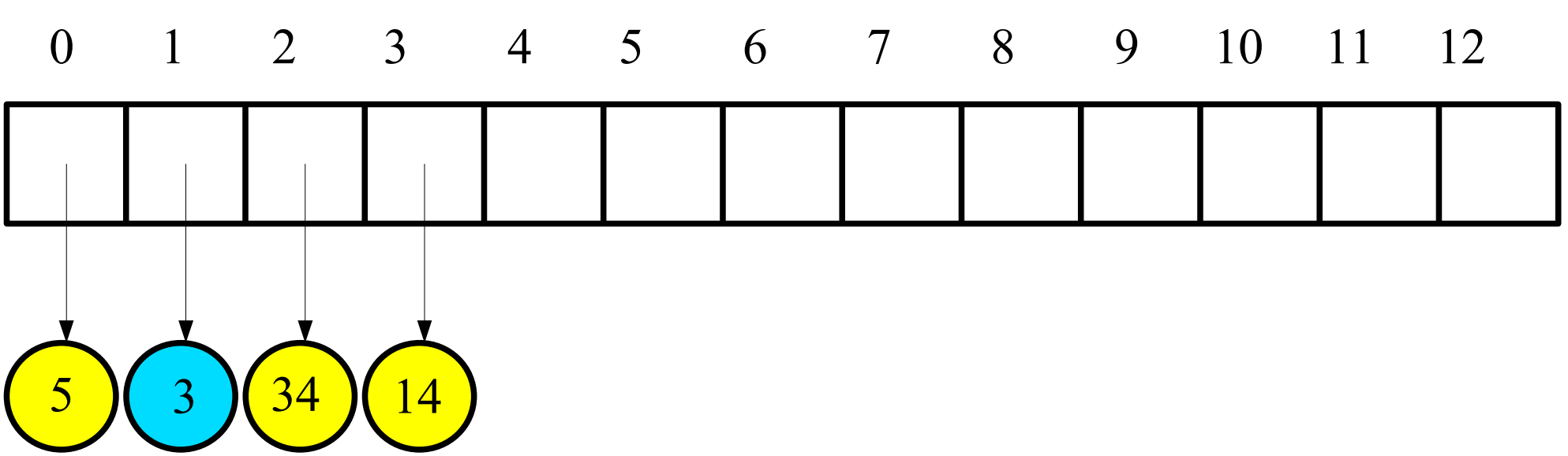


root = 0
tail = 4

Parent of “3” node is determined by subtracting the index of that node by 1 and dividing by 2.
In this case its

(3-1)/2 = 1

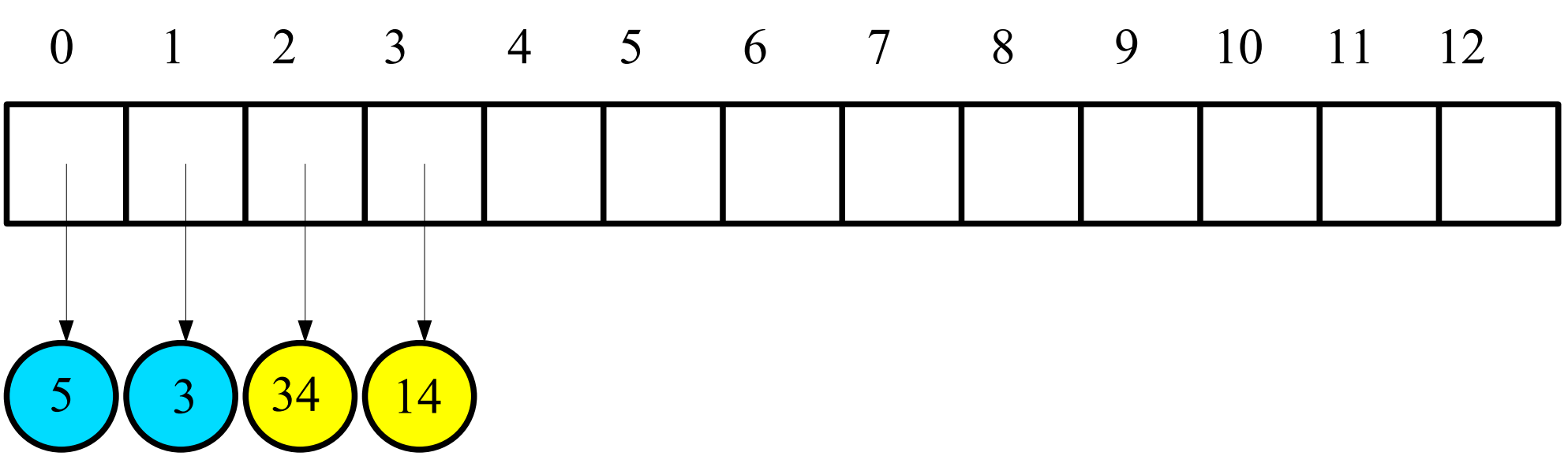
Compare parent with child.
Move the child up by one level.



root = 0
tail = 4

Parent of “3” node is determined by subtracting the index of that node by 1 and dividing by 2. In this case its

(1-1)/2 = 0

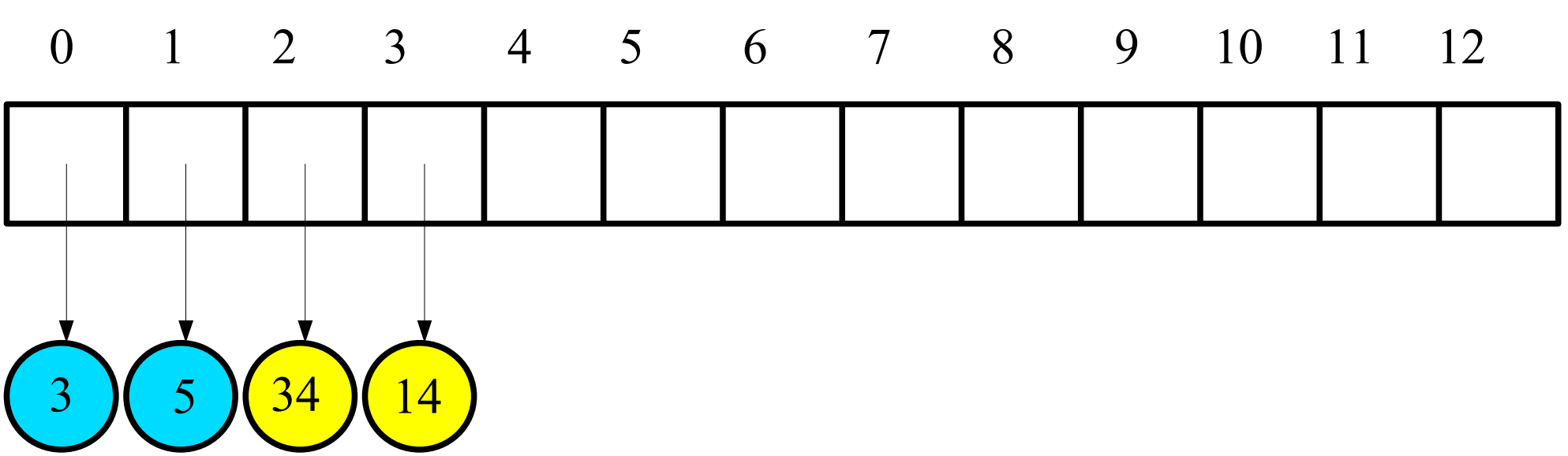


root = 0
tail = 4

Parent of “3” node is determined by subtracting the index of that node by 1 and dividing by 2.
In this case its

(1-1)/2 = 0

Compare parent and child.

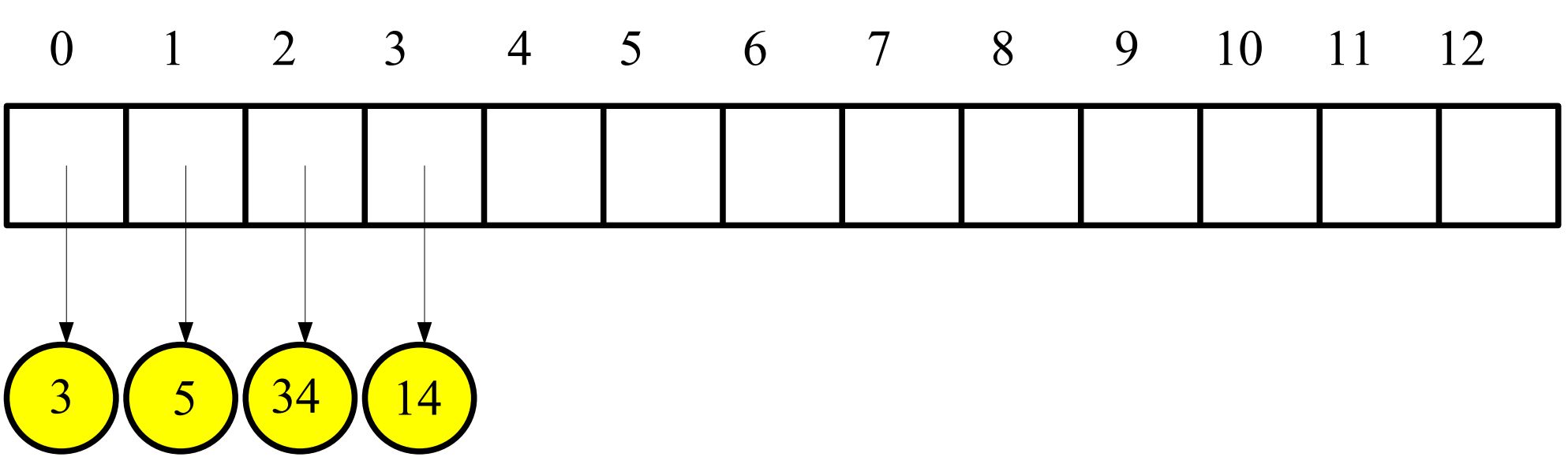


root = 0
tail = 4

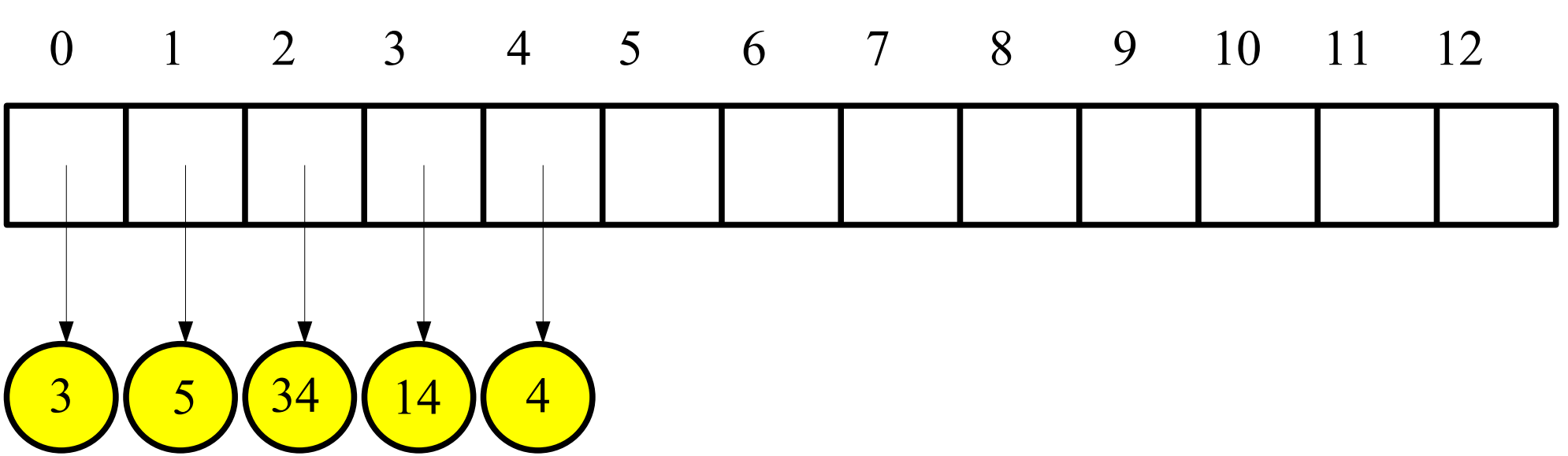
Parent of “3” node is determined by subtracting the index of that node by 1 and dividing by 2.
In this case its

(1-1)/2 = 0

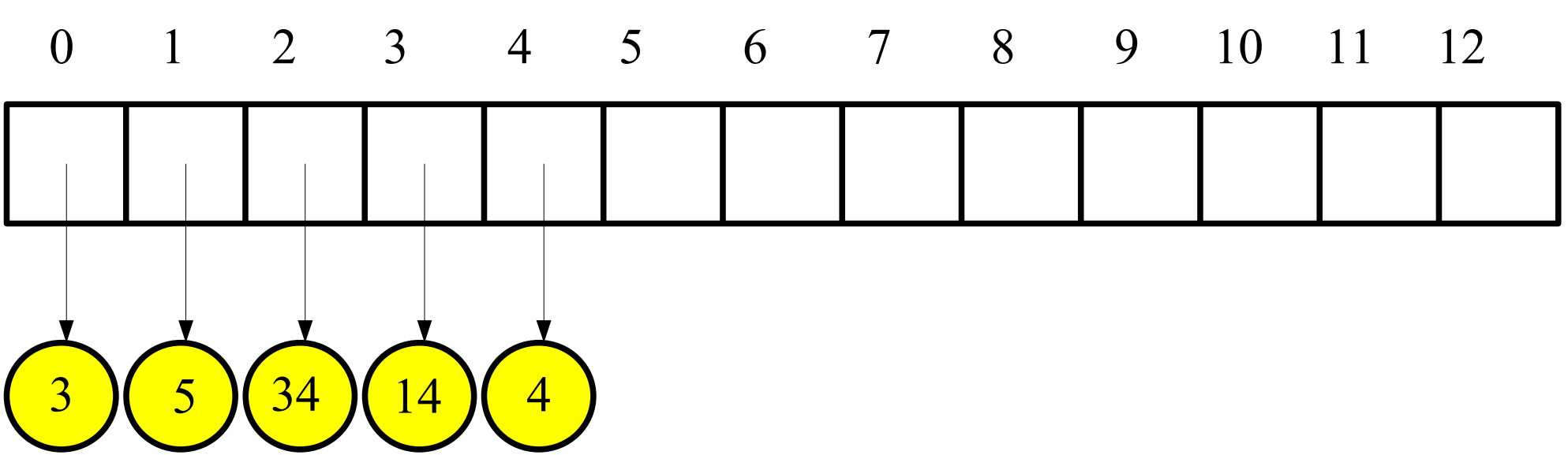
Compare parent and child.
Move child up one level.



root = 0
tail = 4



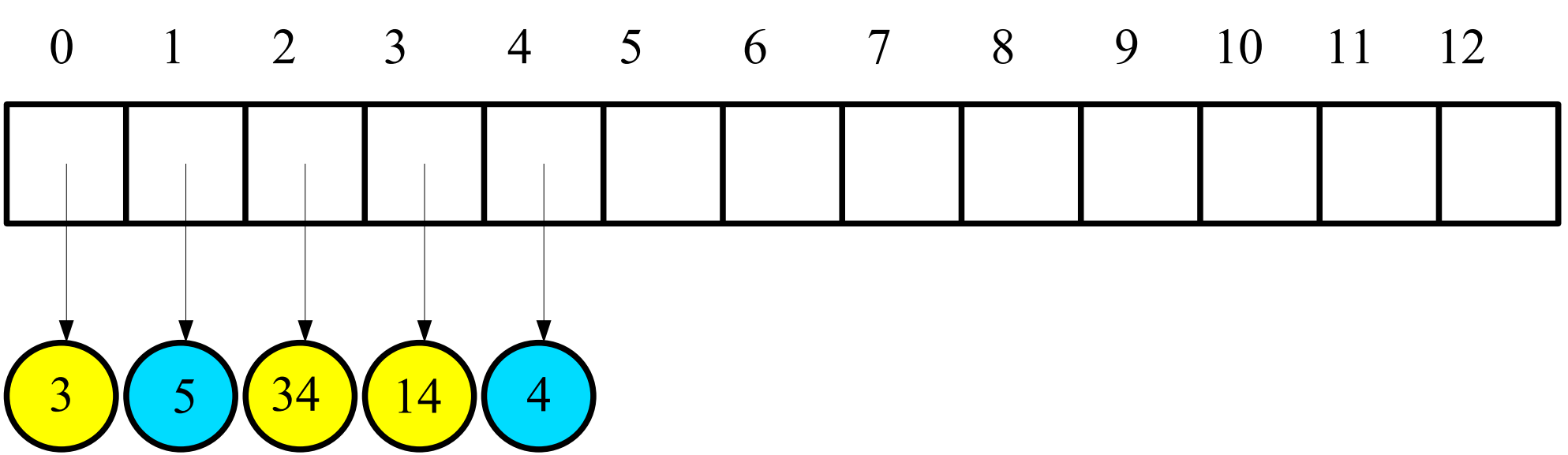
root = 0
tail = 5



root = 0
tail = 5

Parent of “4” node is determined by subtracting the index of that node by 1 and dividing by 2. In this case its

(4-1)/2 = 1

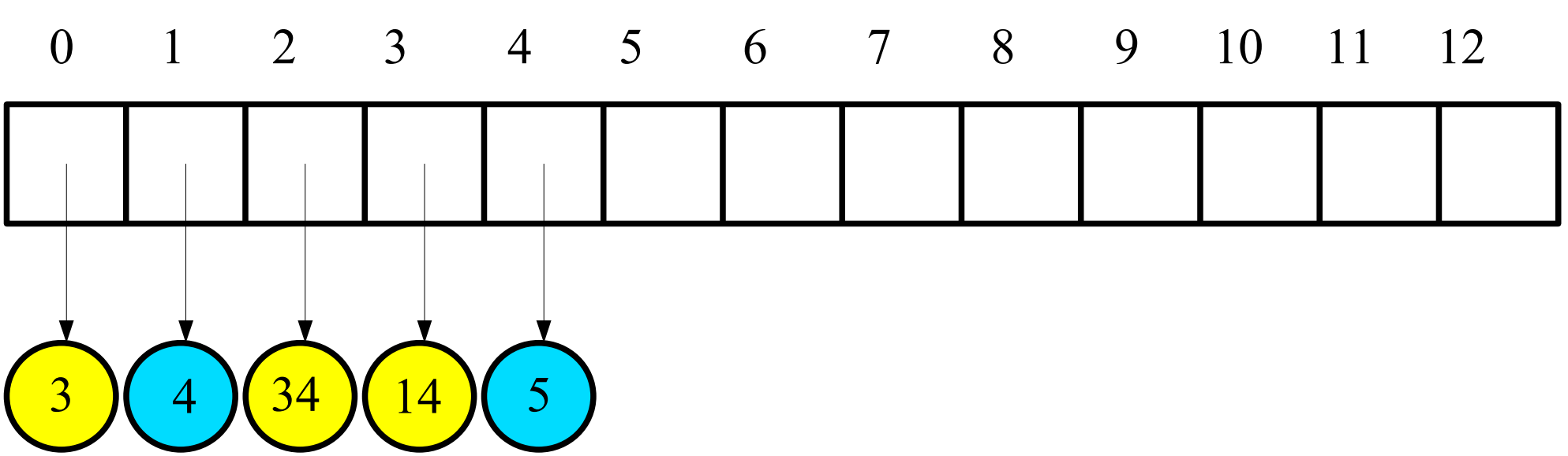


root = 0
tail = 5

Parent of “4” node is determined by subtracting the index of that node by 1 and dividing by 2. In this case its

(4-1)/2 = 1

Compare parent and child.

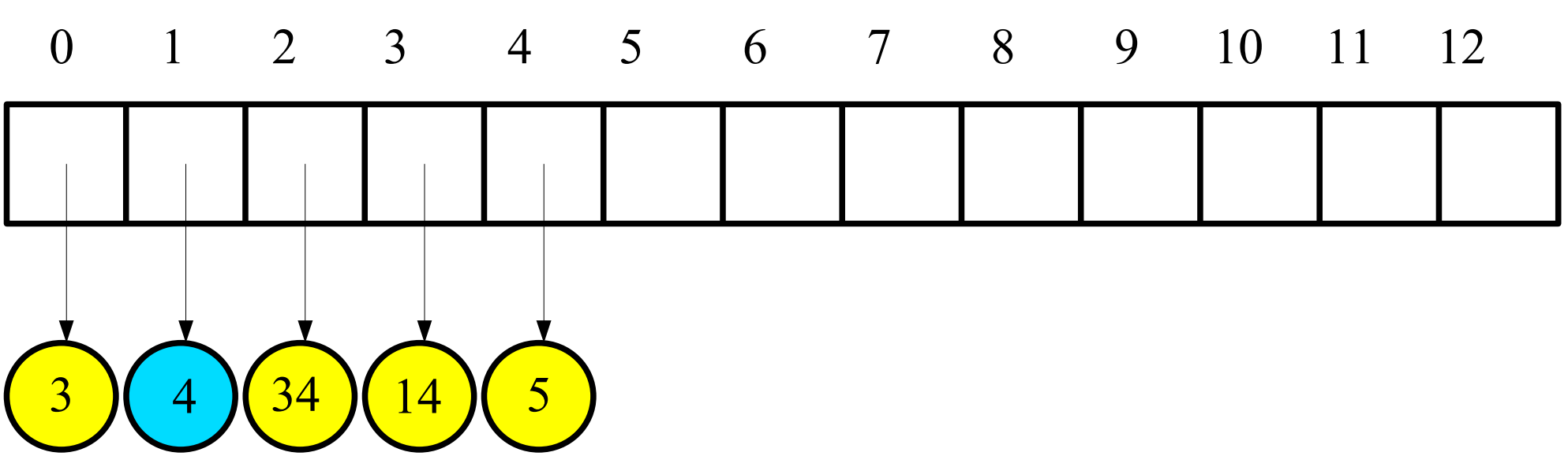


root = 0
tail = 5

Parent of “4” node is determined by subtracting the index of that node by 1 and dividing by 2.
In this case its

(4-1)/2 = 1

Compare parent and child.
Move child up one level.

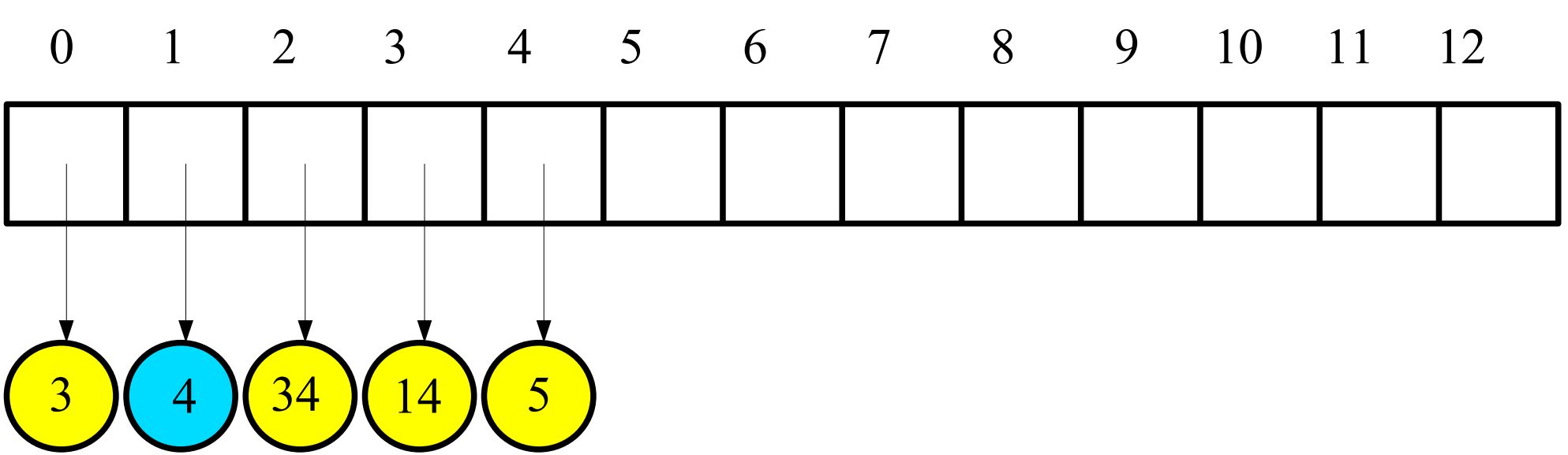


root = 0
tail = 5

Parent of “4” node is determined by subtracting the index of that node by 1 and dividing by 2.
In this case its

(4-1)/2 = 1

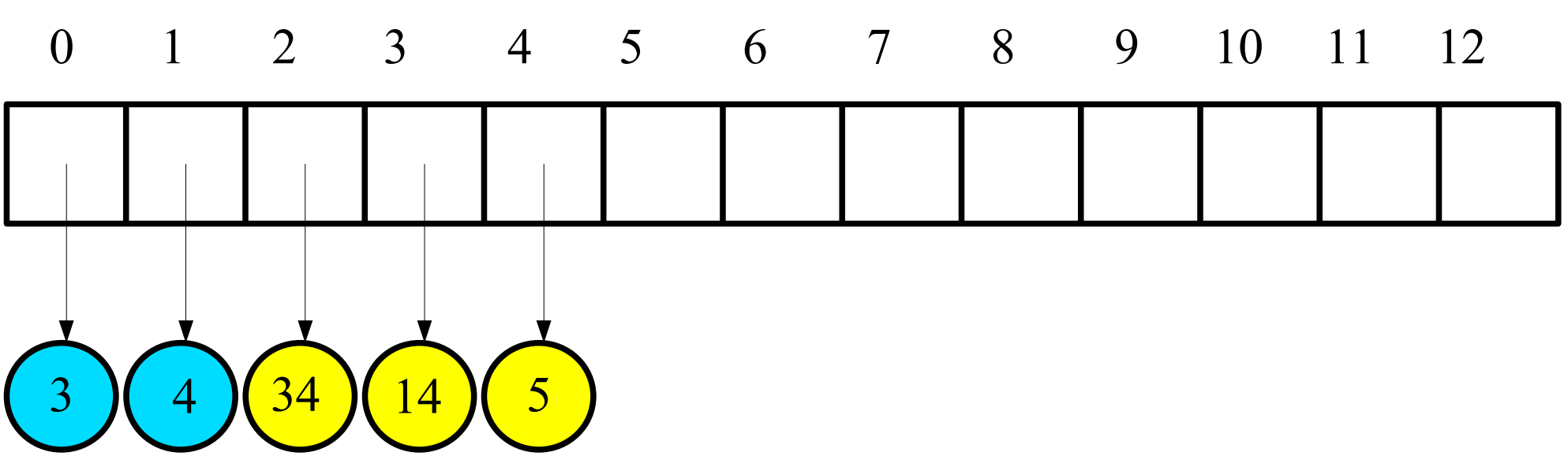
Compare parent and child.
Move child up one level.



root = 0
tail = 5

Parent of “4” node is determined by subtracting the index of that node by 1 and dividing by 2. In this case its

(1-1)/2 = 0

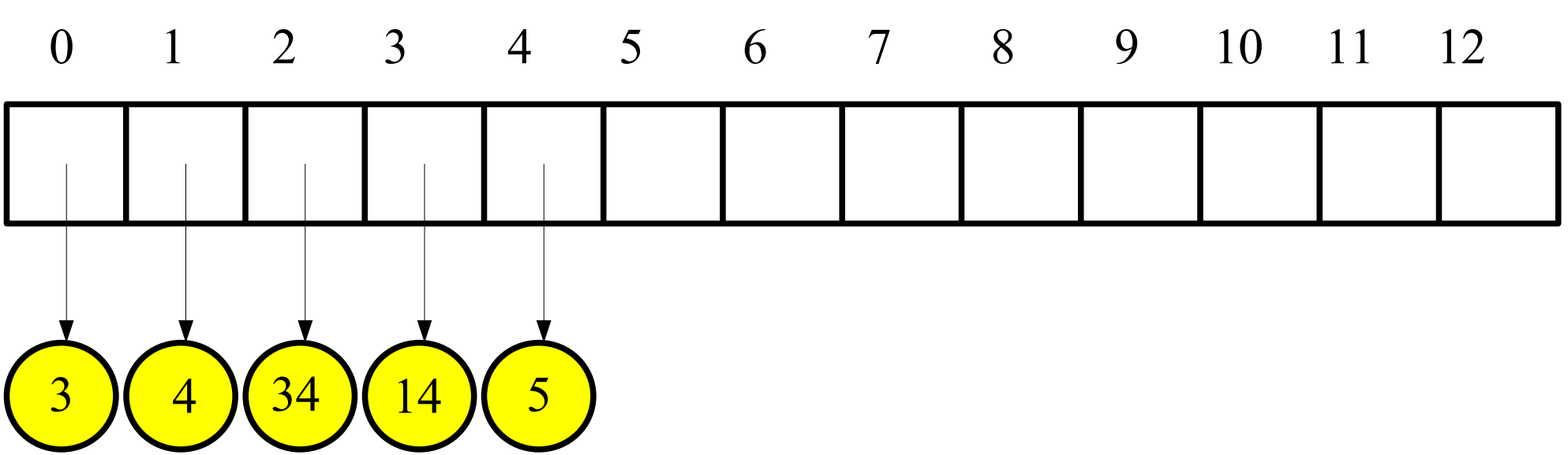


root = 0
tail = 5

Parent of “4” node is determined by subtracting the index of that node by 1 and dividing by 2. In this case its

(1-1)/2 = 0

Compare parent and child.



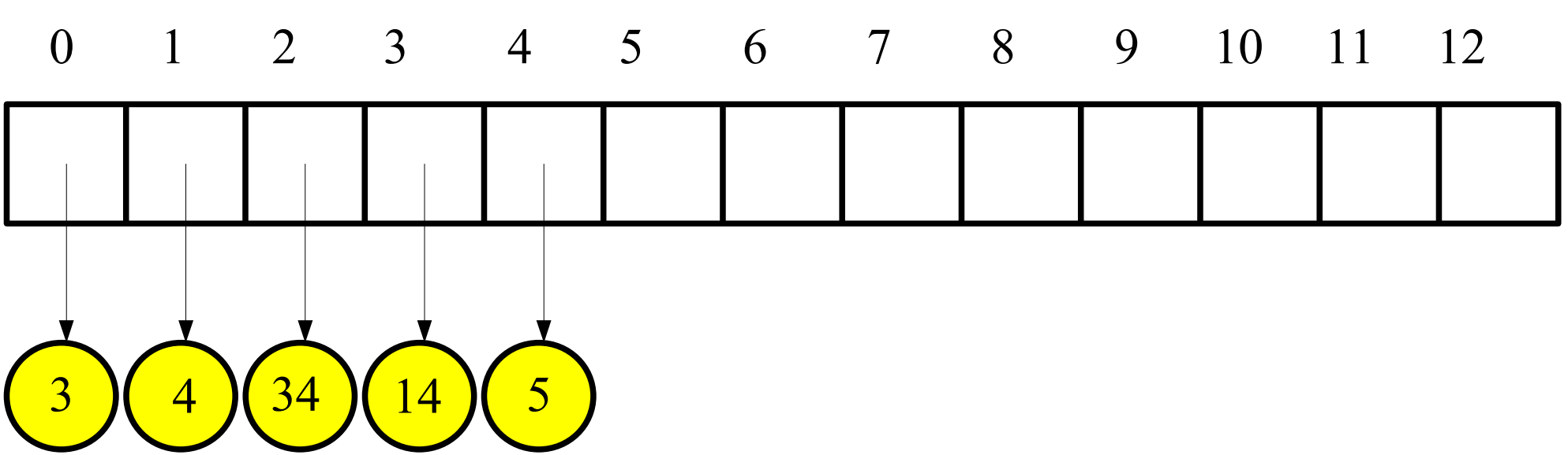
root = 0
tail = 5

Parent of “4” node is determined by subtracting the index of that node by 1 and dividing by 2.
In this case its

(1-1)/2 = 0

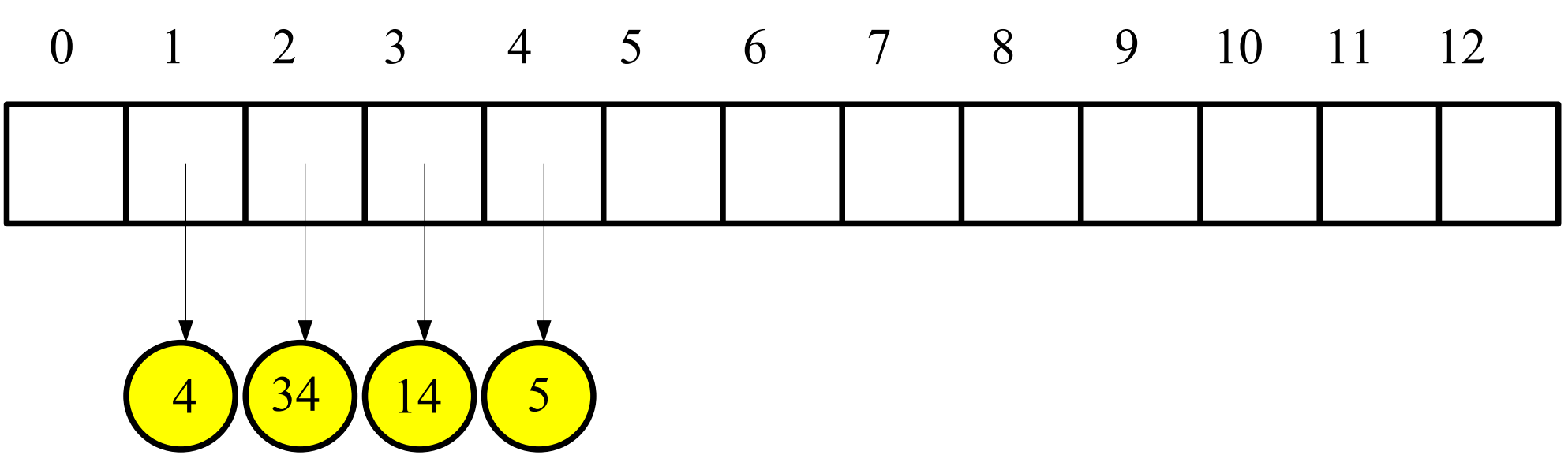
Compare parent and child.
Leave child alone.

Now “pop” the “lowest” valued object



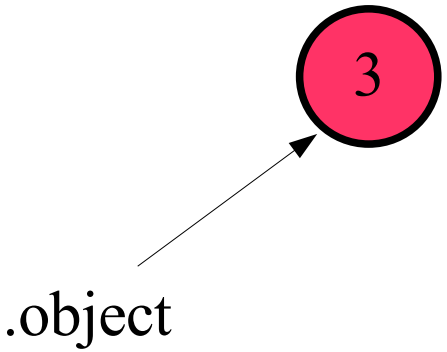
root = 0
tail = 5

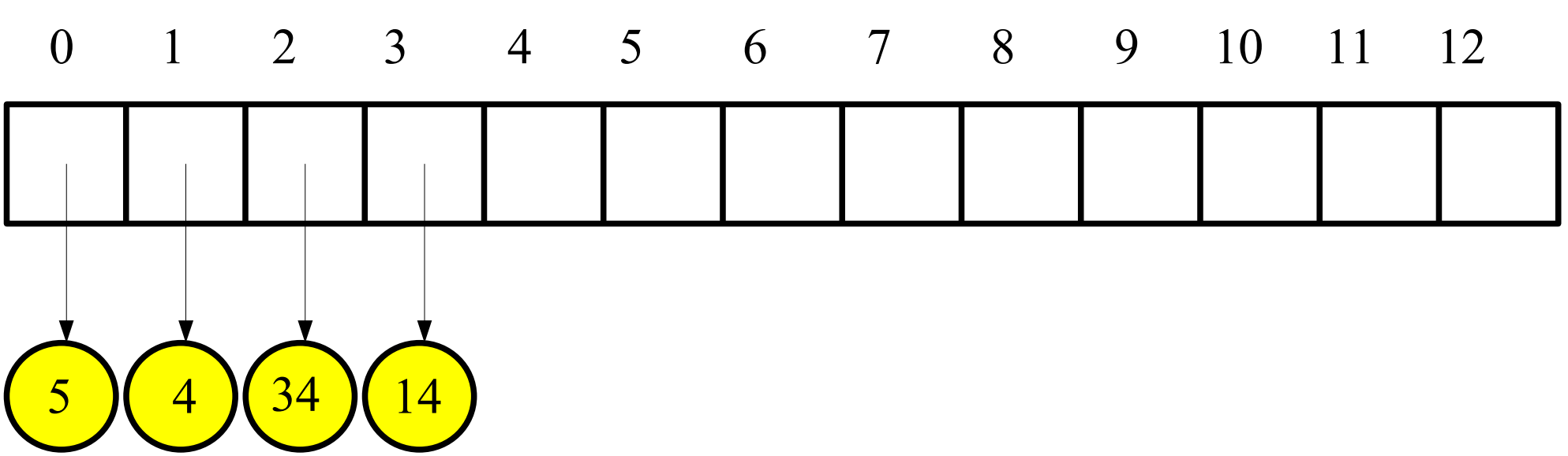
Now to “pop” the root node



root = 0
tail = 5

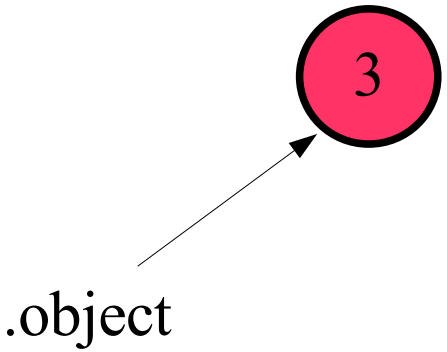
Now to “pop” the root node.

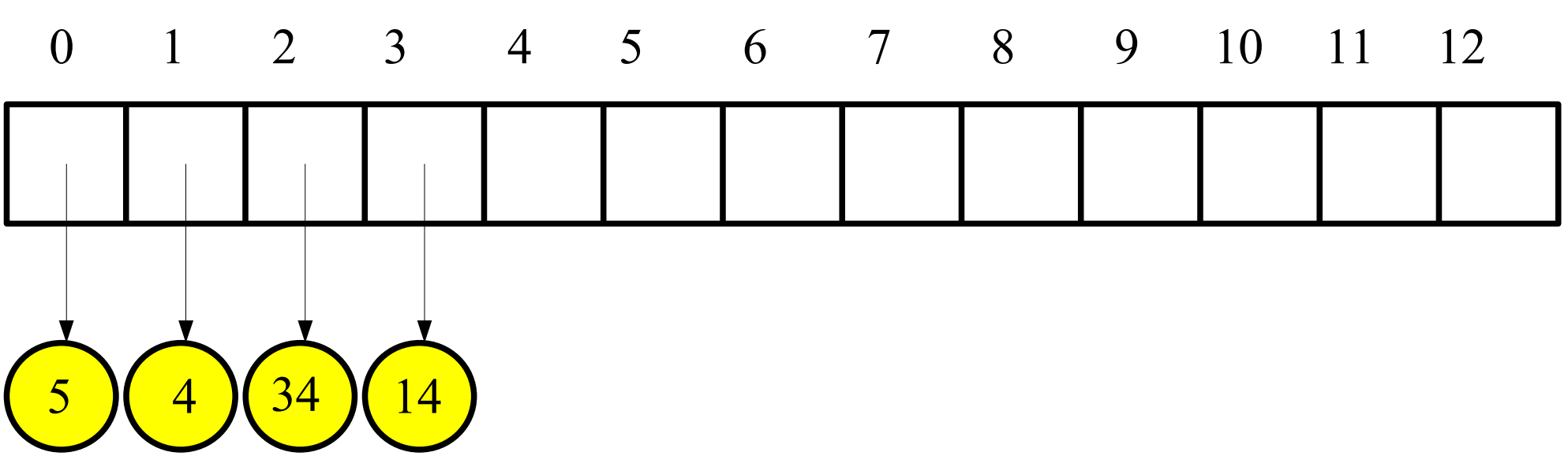




root = 0
tail = 5

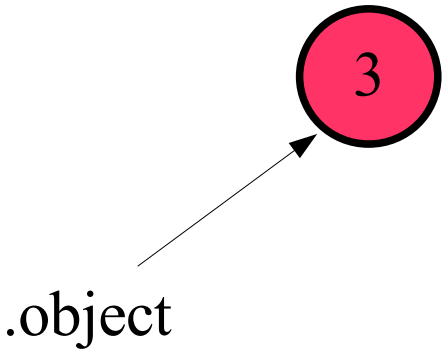
Now to “pop” the root node.
Move “tail” object to root.

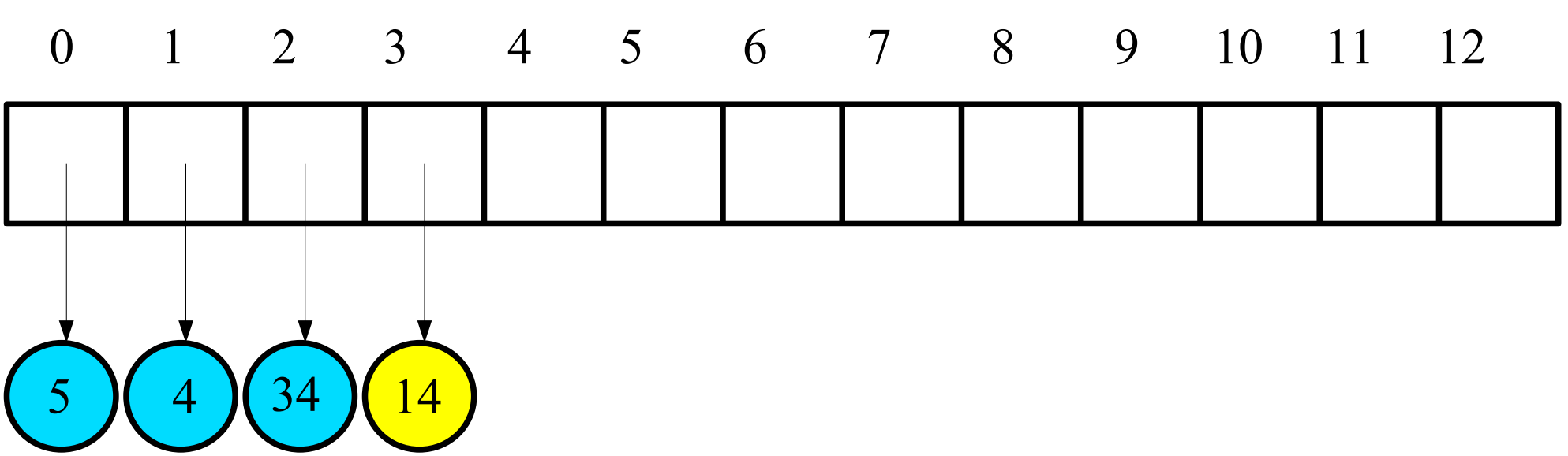




root = 0
tail = 4

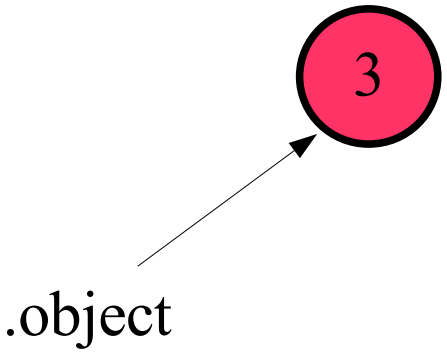
Now to “pop” the root node.
Move “tail” object to root.
Change the “tail” index

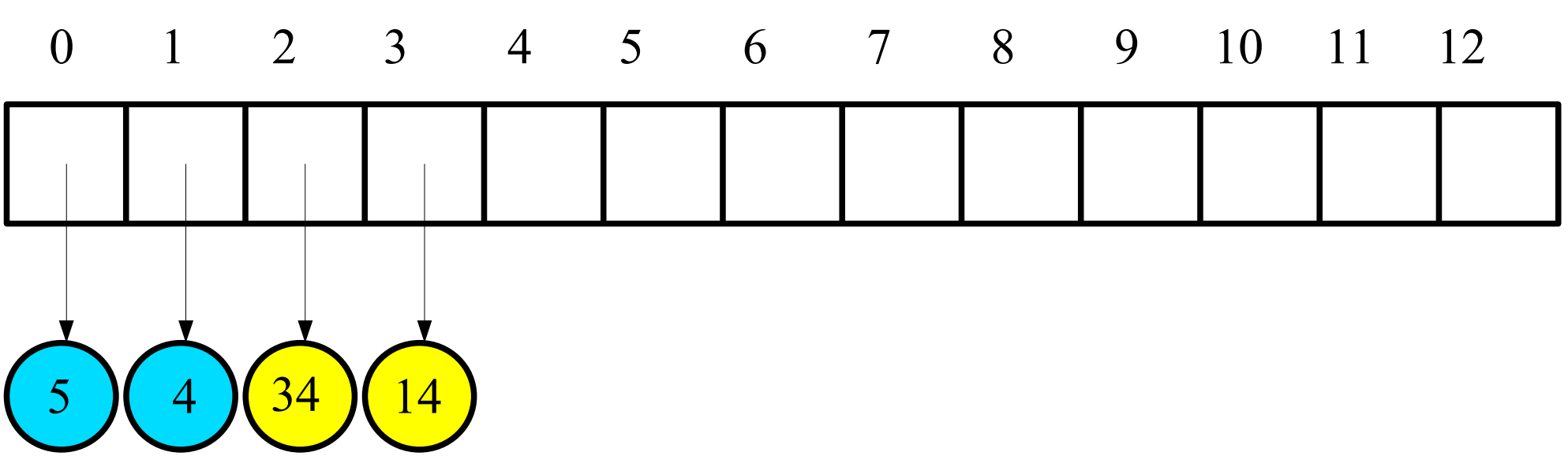




root = 0
tail = 4

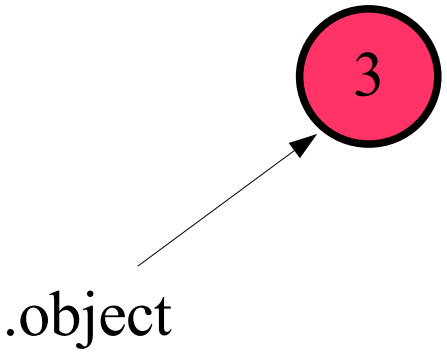
Now to “pop” the root node.
Move “tail” object to root.
Change the “tail” index
Compare root with two children

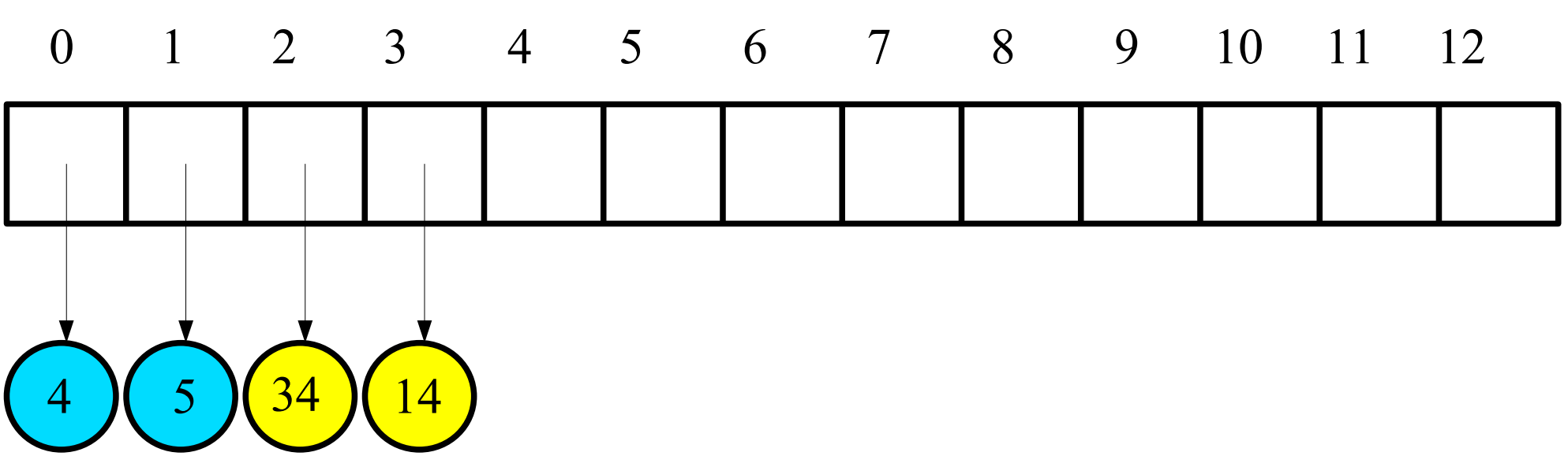




root = 0
tail = 4

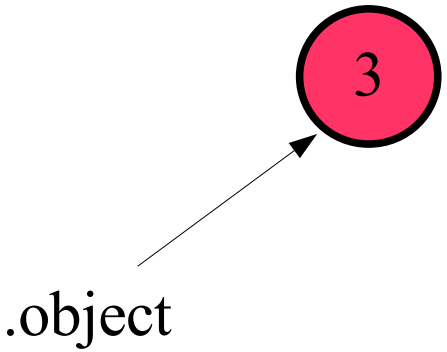
Now to “pop” the root node.
Move “tail” object to root.
Change the “tail” index
Compare root with two children
If greater, swap with smallest of the children

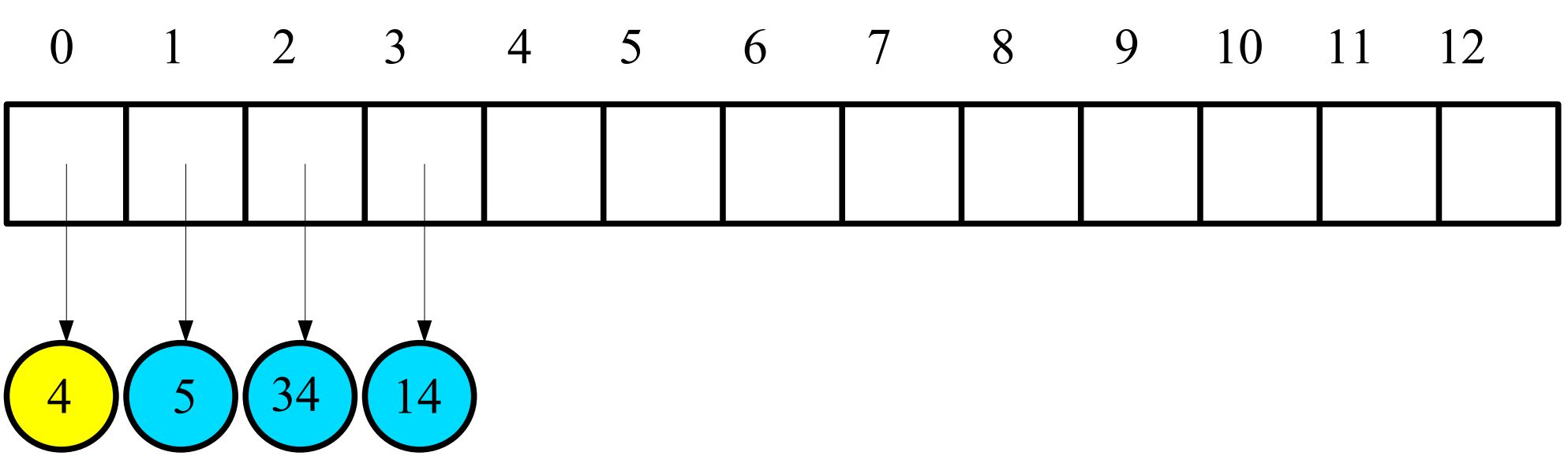




root = 0
tail = 4

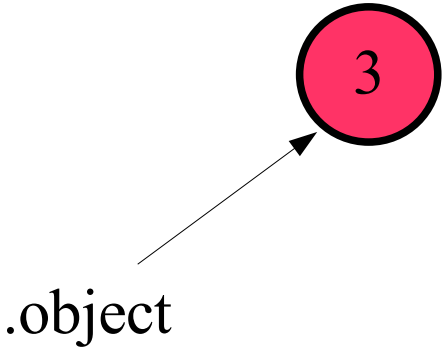
Now to “pop” the root node.
Move “tail” object to root.
Change the “tail” index
Compare root with two children
If greater, swap with smallest of the children

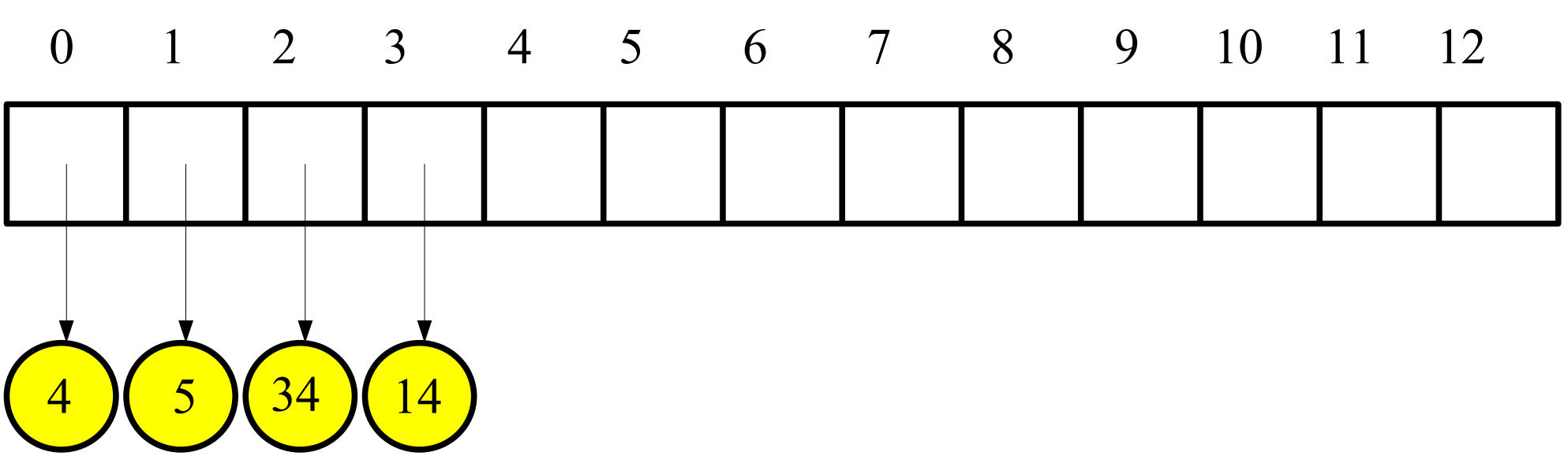




root = 0
tail = 4

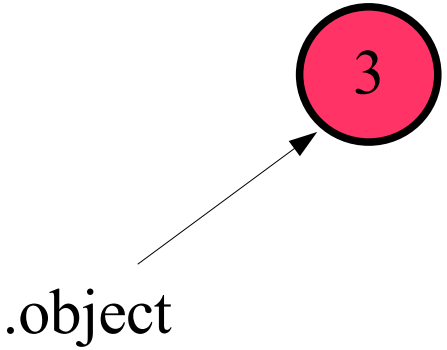
Now to “pop” the root node.
Move “tail” object to root.
Change the “tail” index
Compare root with two children
If greater, swap with smallest of the children
Compare swapped object with children
at indices 1*2+1=3 and 1*2+2=4

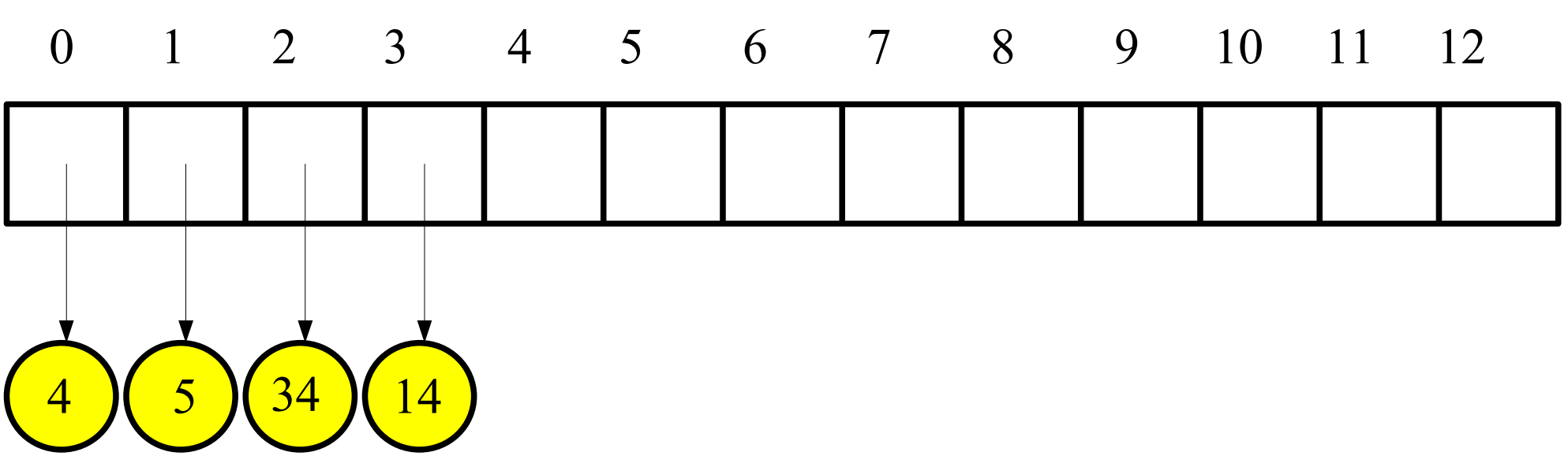




root = 0
tail = 4

Now to “pop” the root node.
Move “tail” object to root.
Change the “tail” index
Compare root with two children
If greater, swap with smallest of the children
Compare swapped object with children
at indices 1*2+1=3 and 1*2+2=4
Node is smaller than both: stop





root = 0
tail = 4

Now to “pop” the root node.
Move “tail” object to root.
Change the “tail” index
Compare root with two children
If greater, swap with smallest of the children
Compare swapped object with children
at indices 1*2+1=3 and 1*2+2=4
Node is smaller than both: stop
Return the object