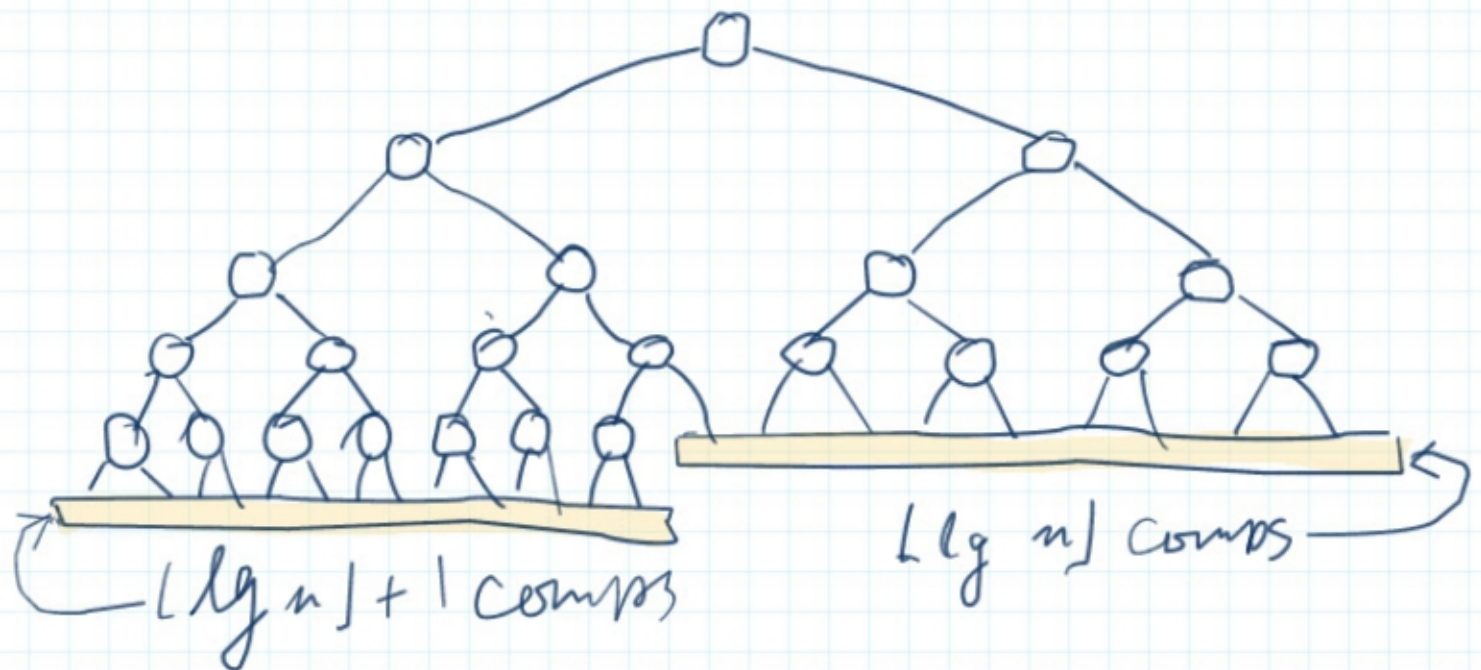


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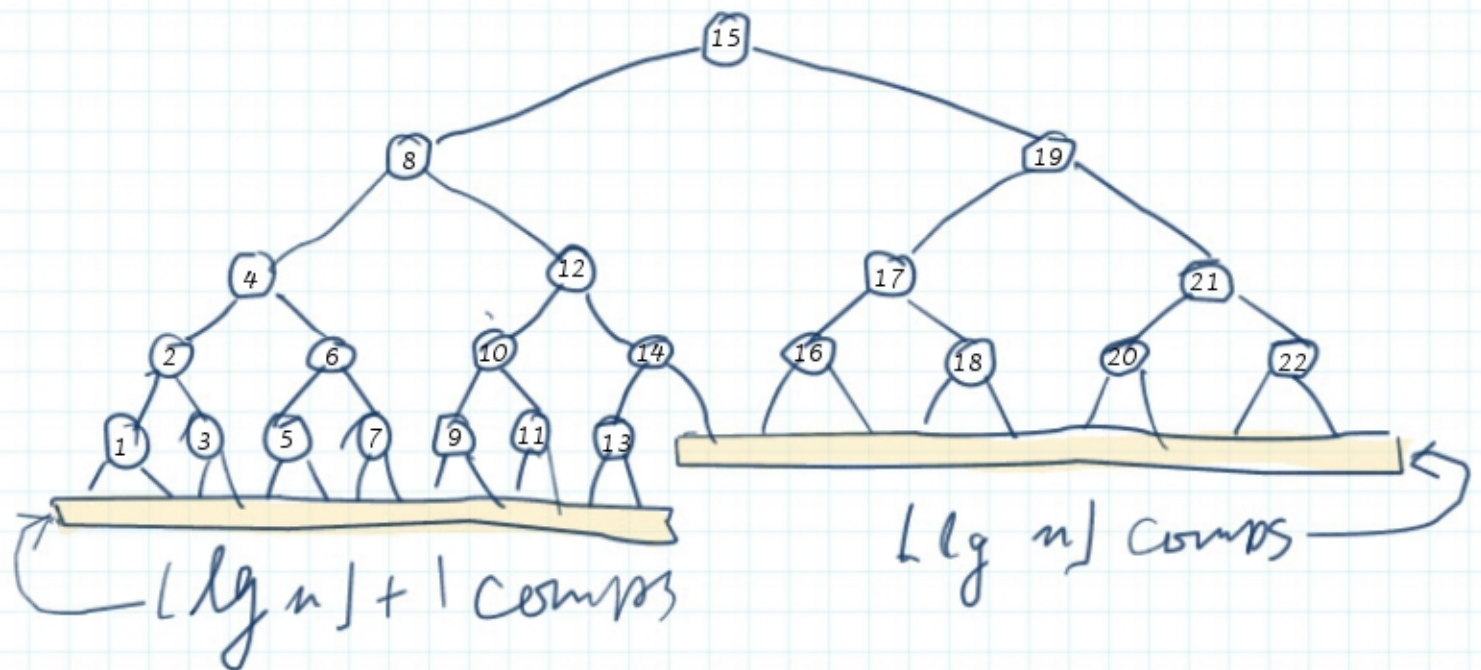
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unsuccessful search
n nodes

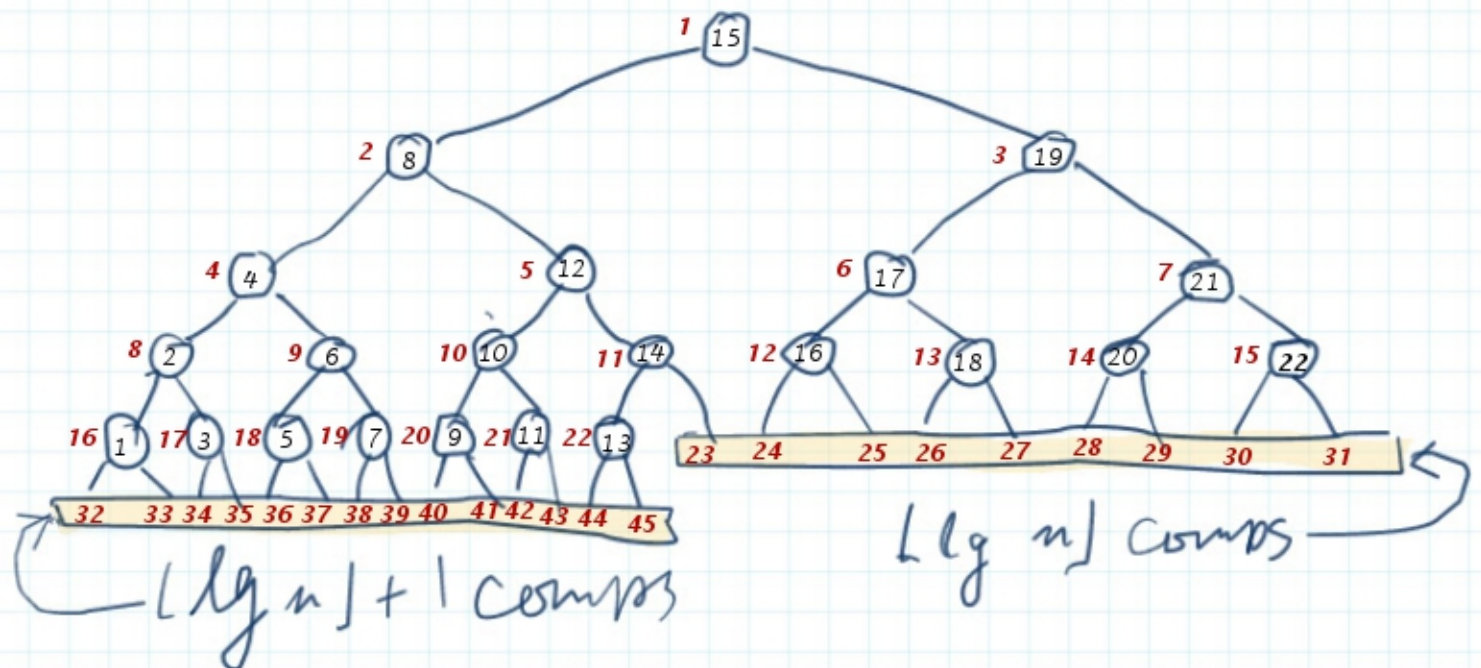


unsuccessful search
in nodes



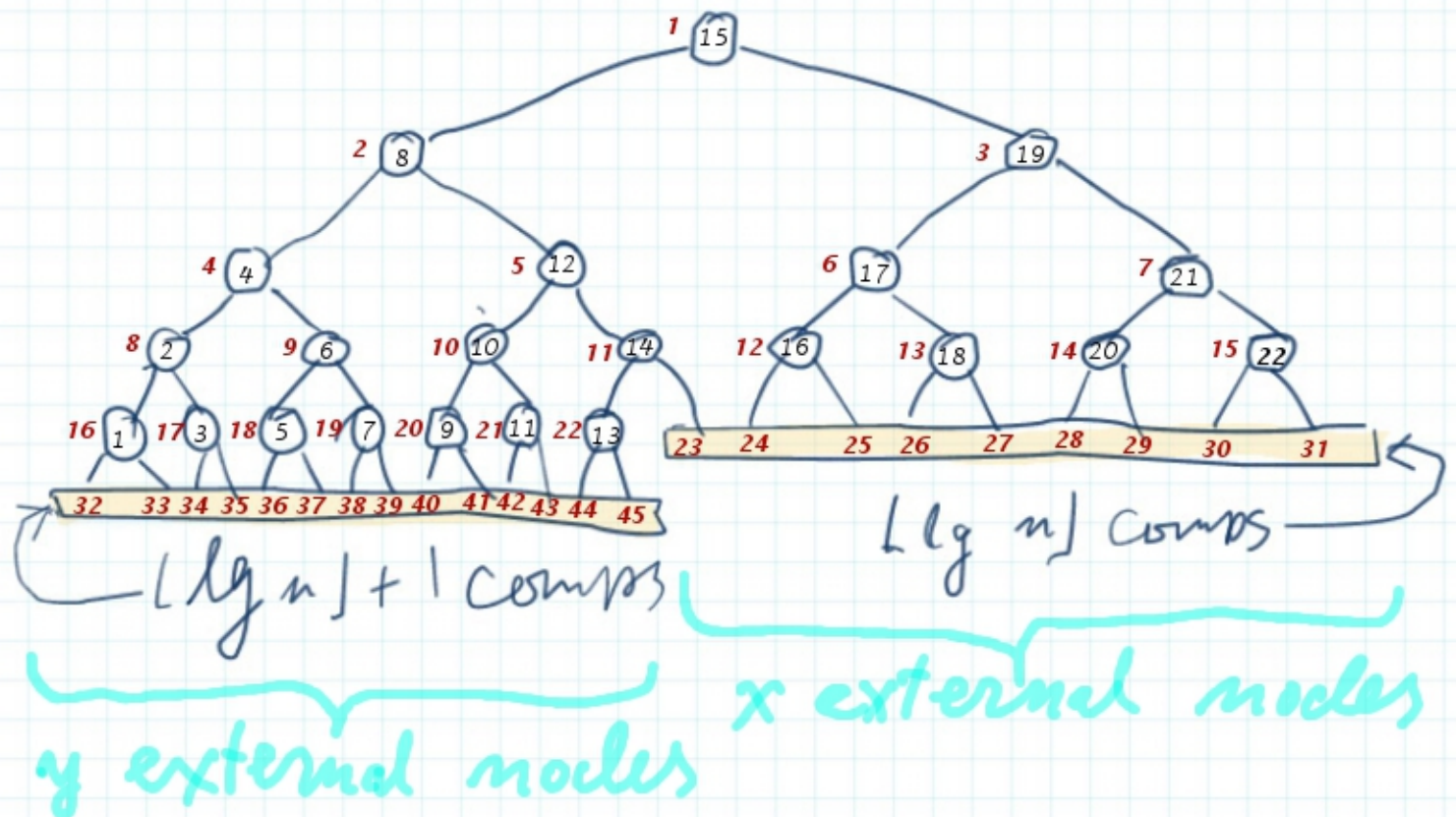
unsuccessful search

$n = 22$ nodes



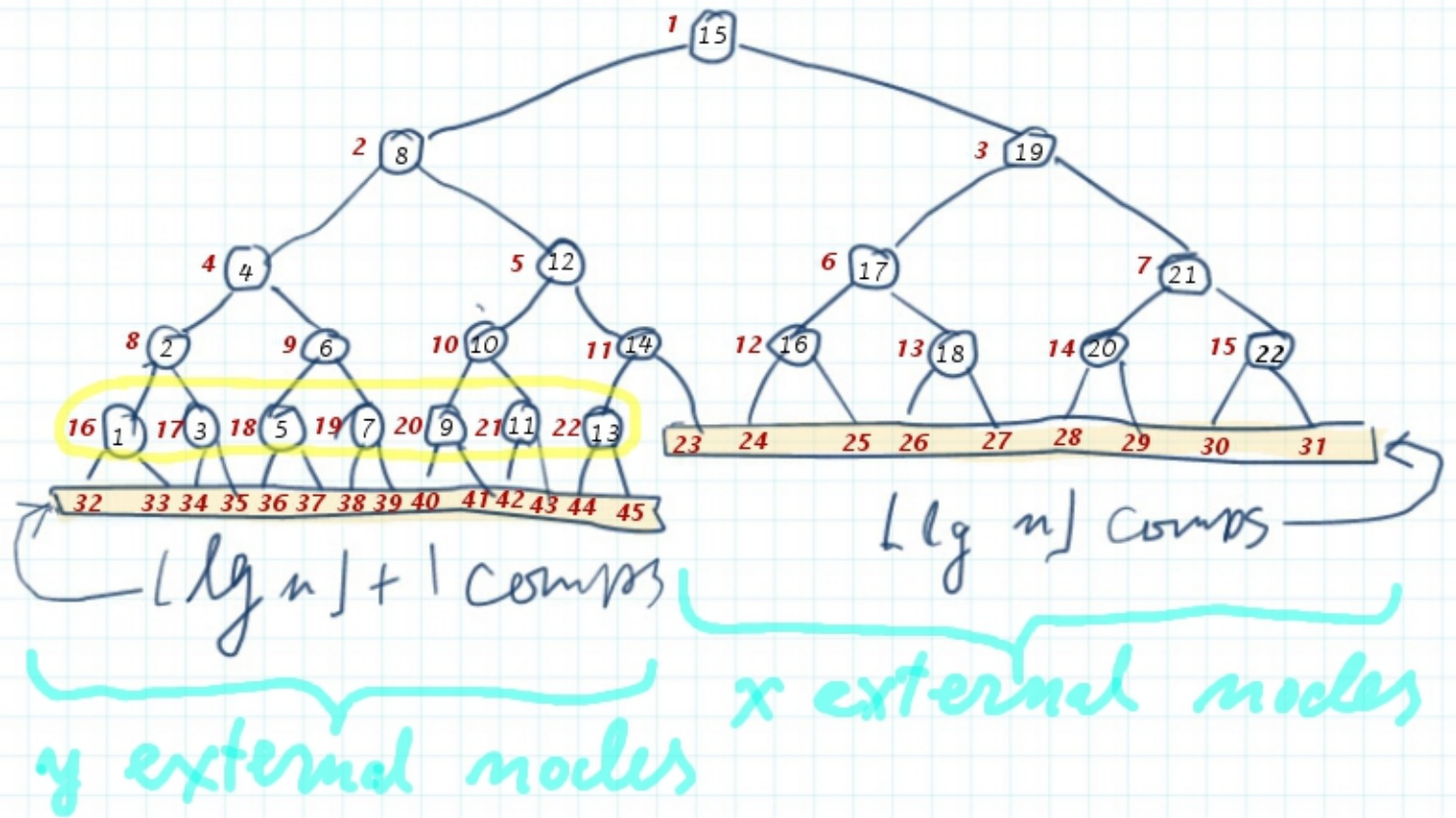
unsuccessful search

$n = 22$ nodes



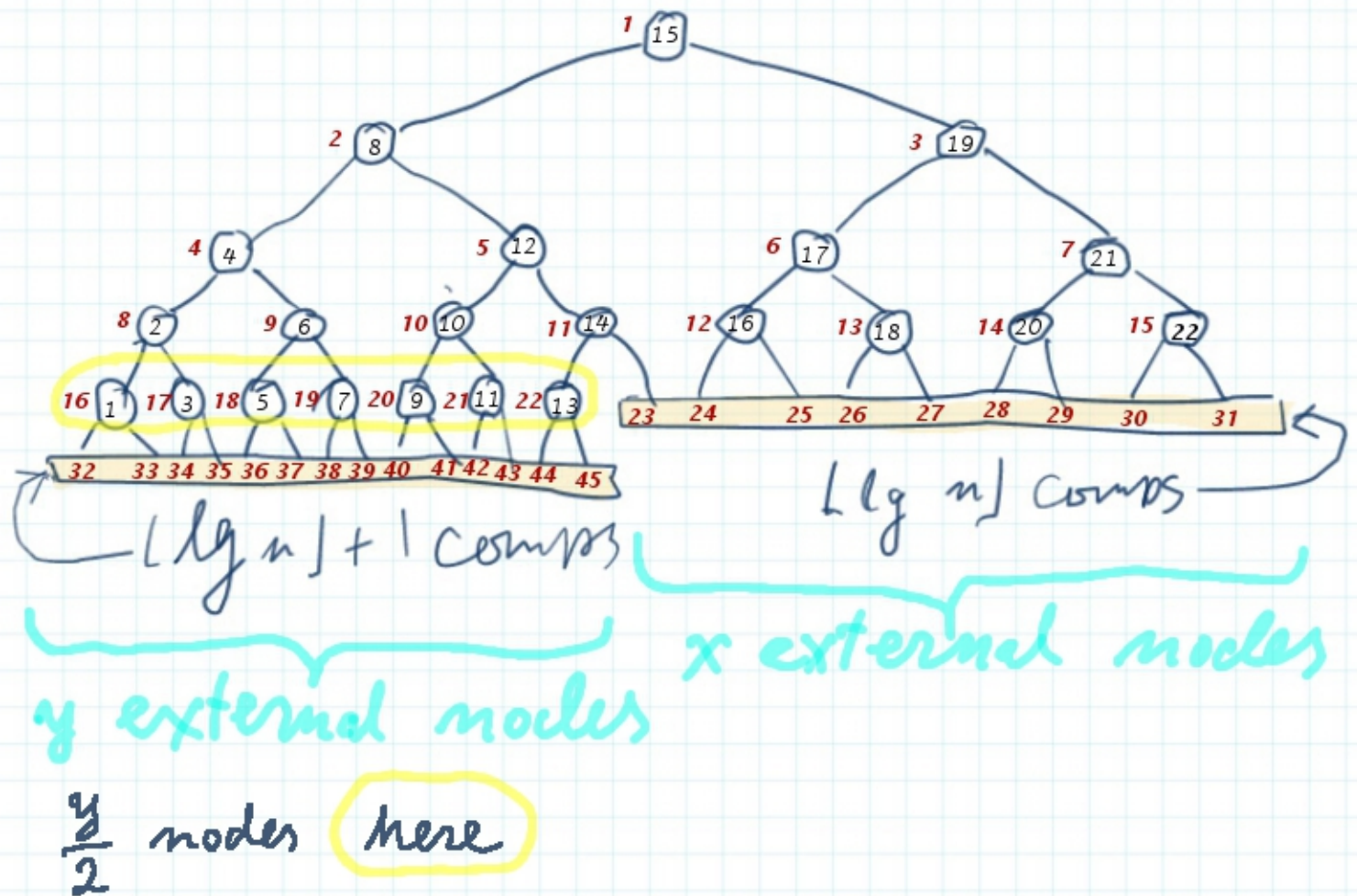
unsuccessful search

$n = 22$ modes



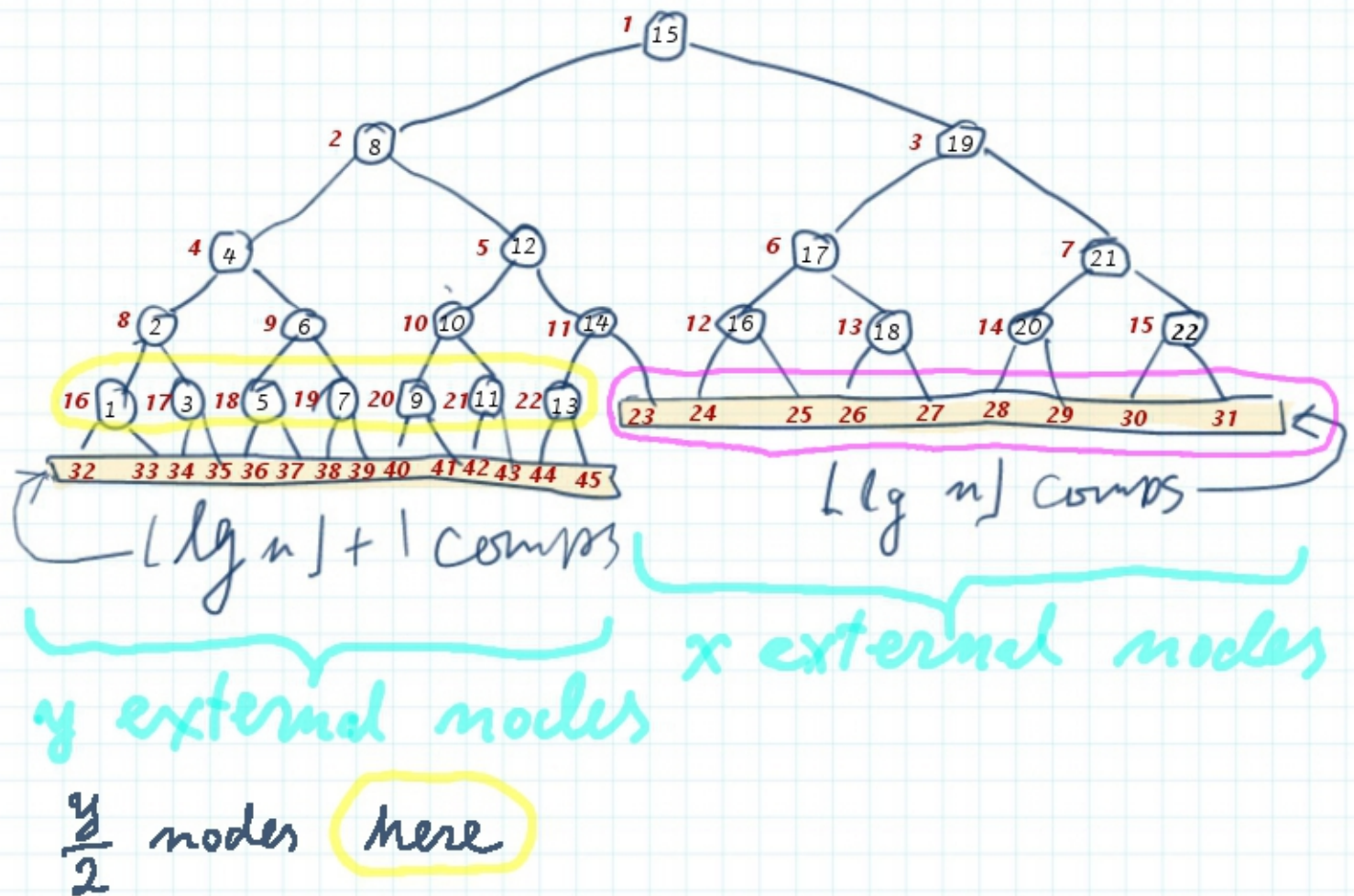
unsuccessful search

$n = 22$ nodes



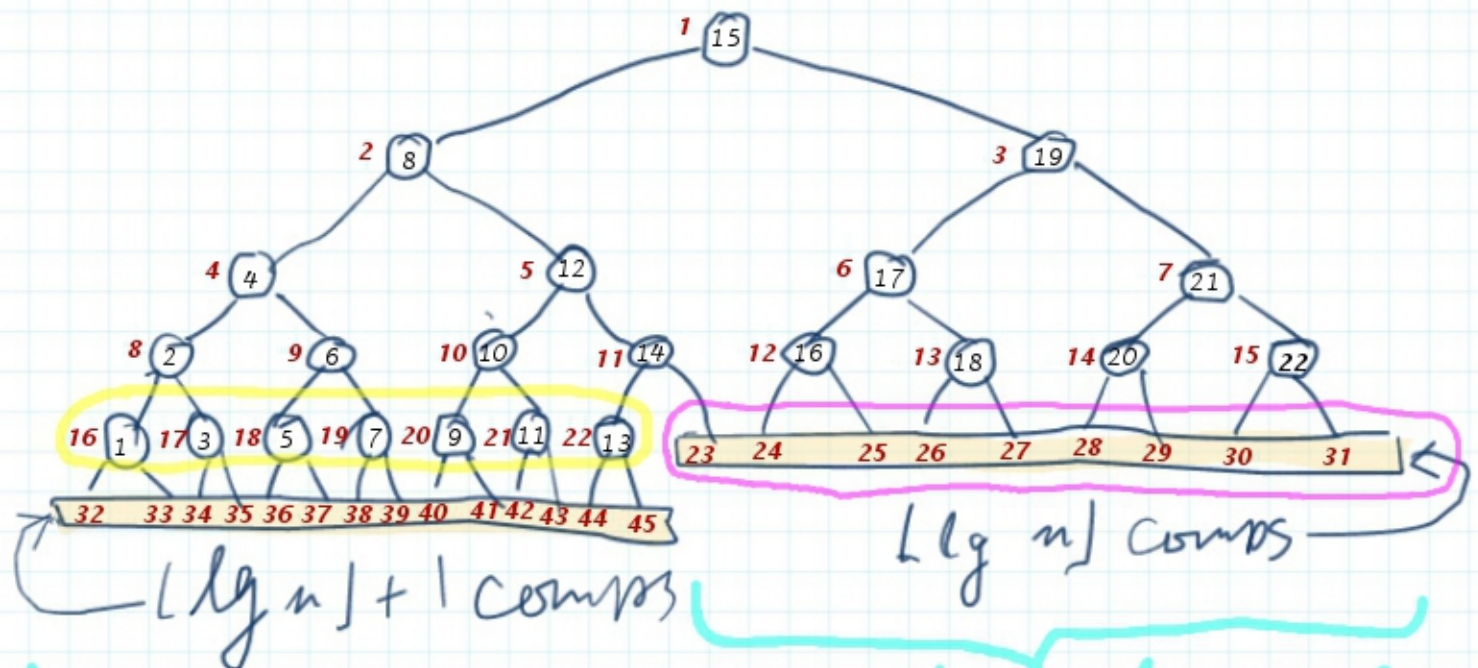
unsuccessful search

$n = 22$ nodes



unsuccessful search

$n = 22$ nodes



$\frac{y}{2}$ external nodes

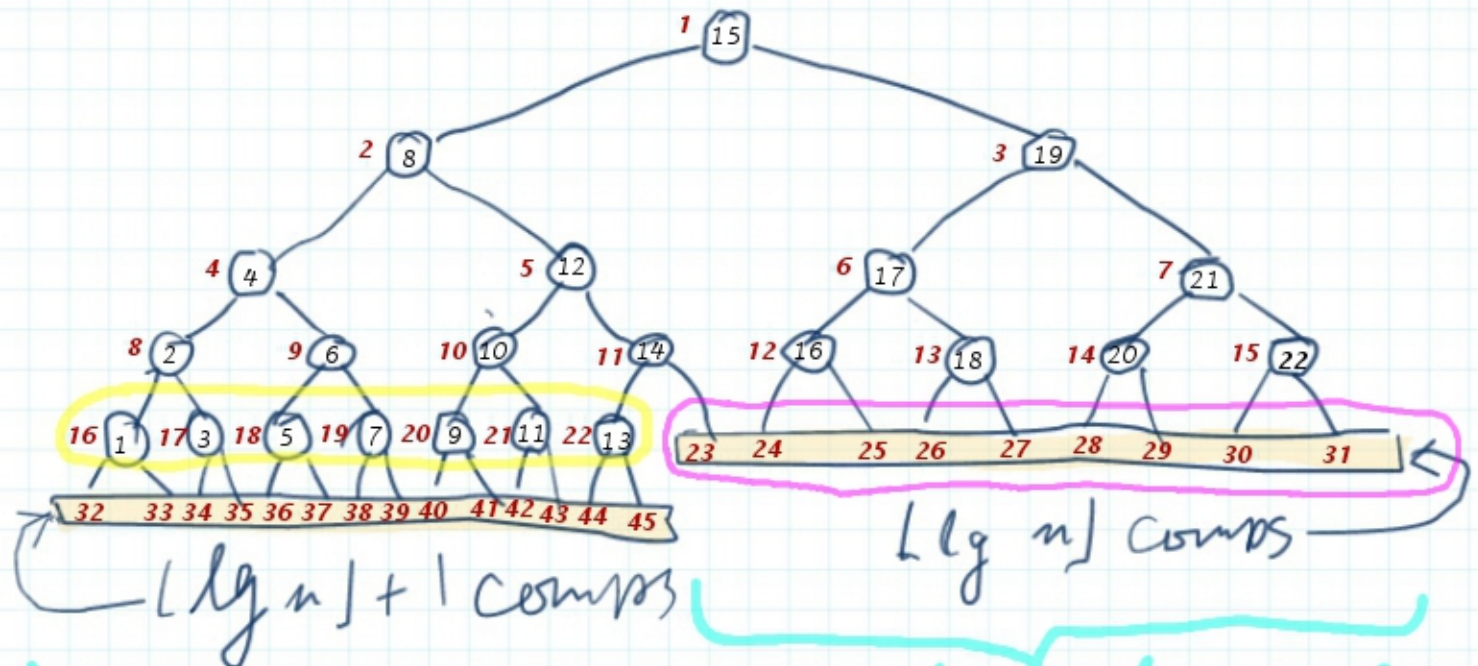
$\frac{y}{2}$ nodes here

x external nodes

x nodes are missing here

unsuccessful search

$n = 22$ nodes



y external nodes

x external nodes

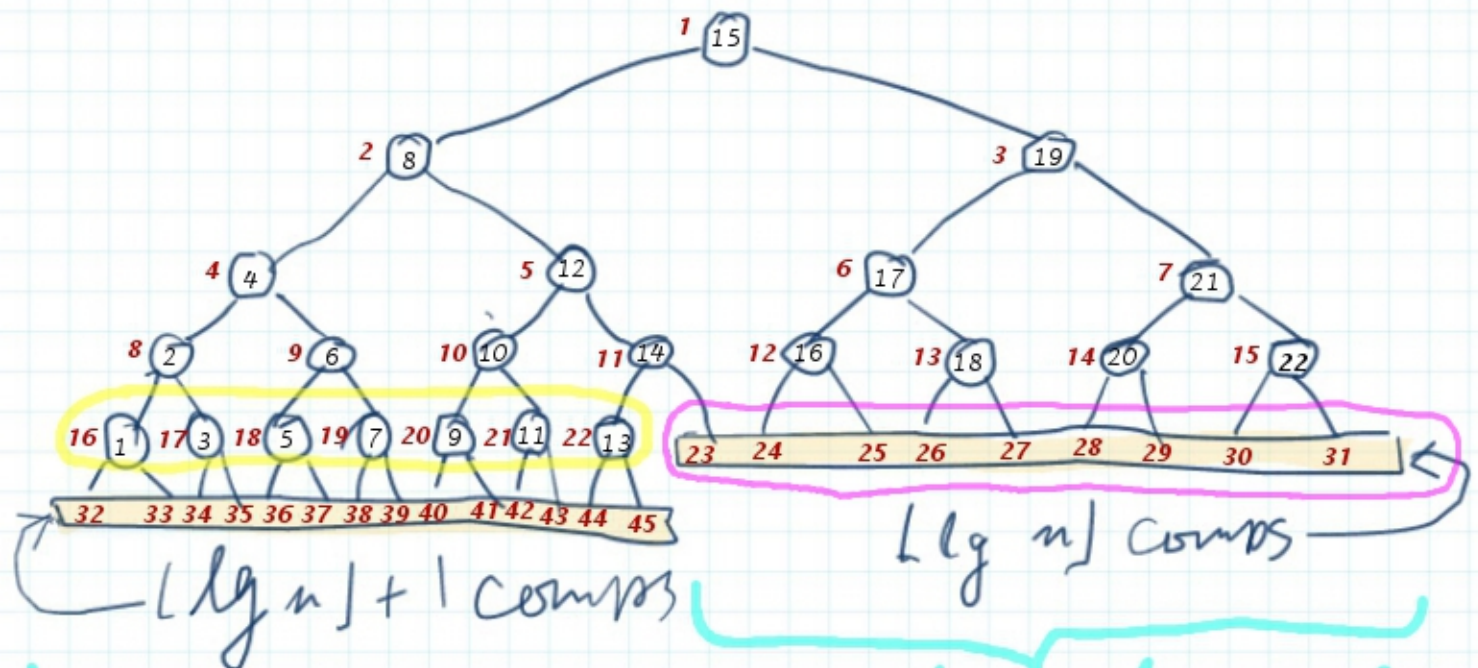
$\frac{y}{2}$ nodes here

x nodes are missing here

$$x + y =$$

unsuccessful search

$n = 22$ nodes



y external nodes

$\frac{y}{2}$ nodes here

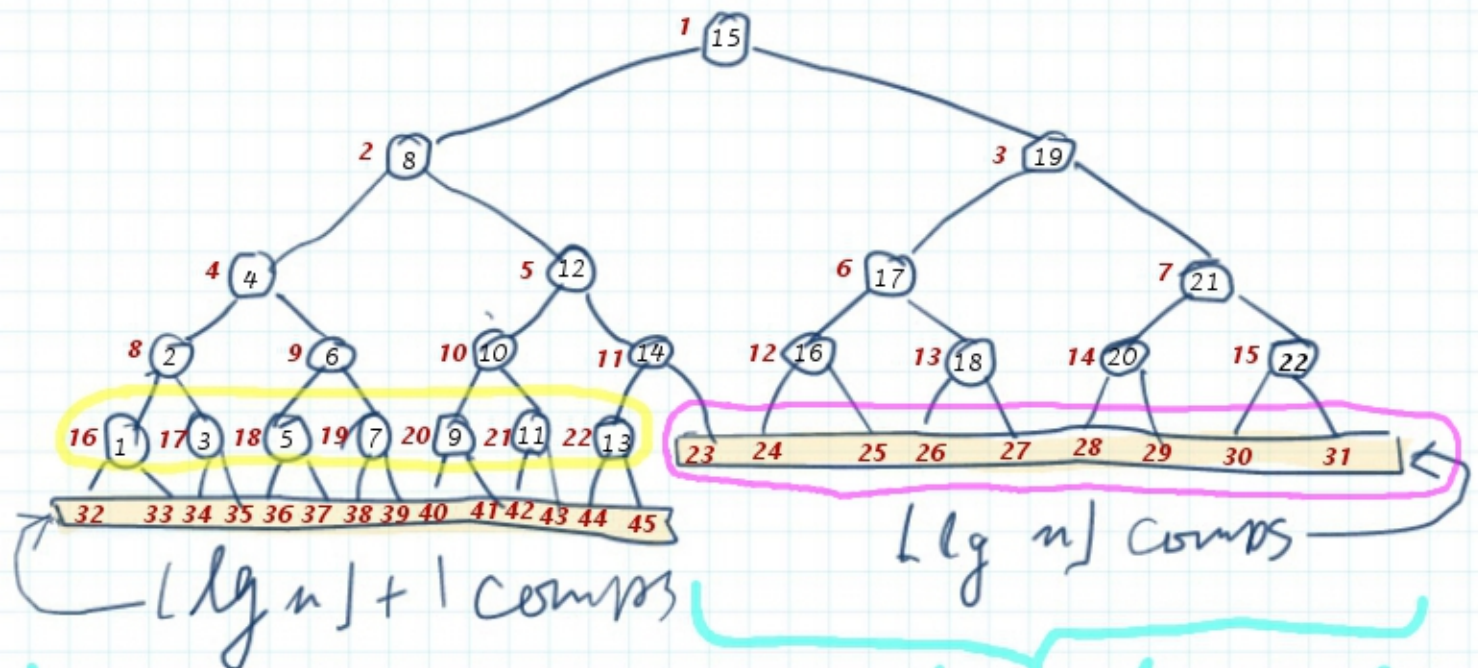
$$x + y = n + 1$$

x external nodes

x nodes are missing here

unsuccessful search

$n = 22$ nodes



y external nodes

$\frac{y}{2}$ nodes here

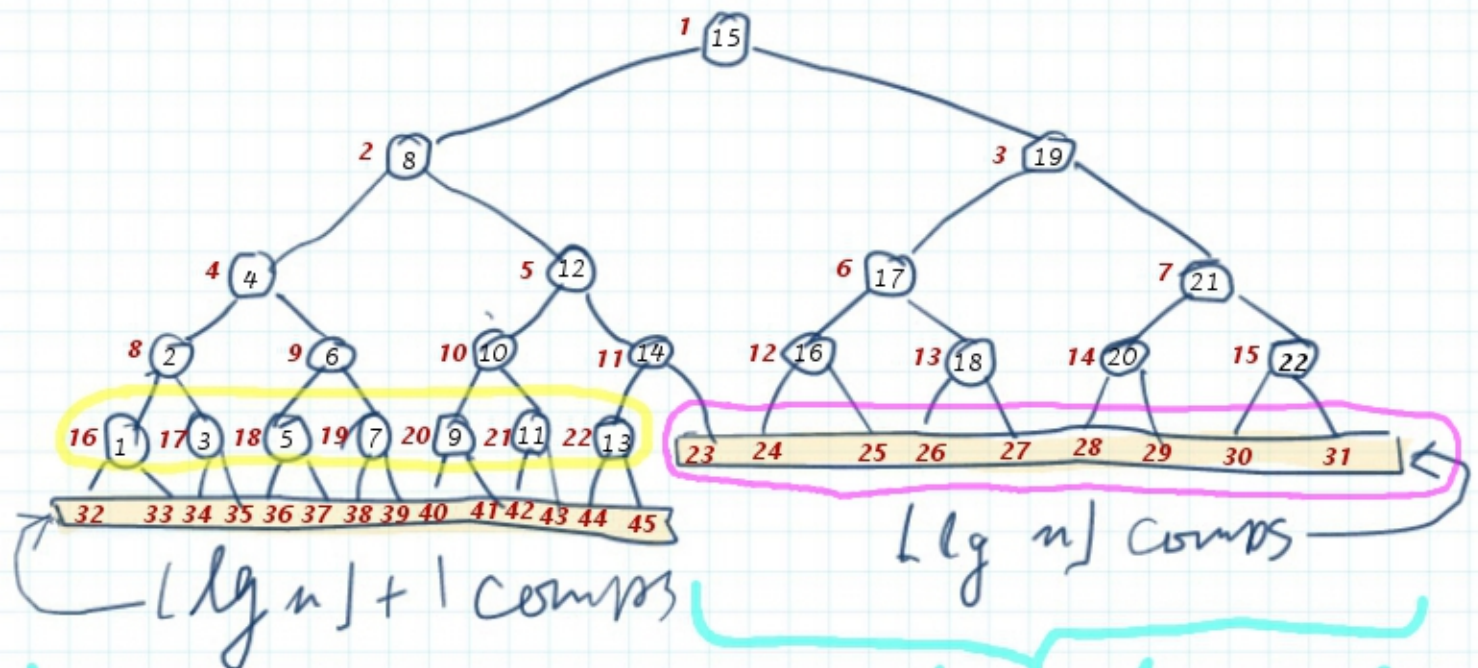
x external nodes

x nodes are missing here

$$x + y = n + 1$$

$$x + \frac{y}{2} =$$

unsuccessful search

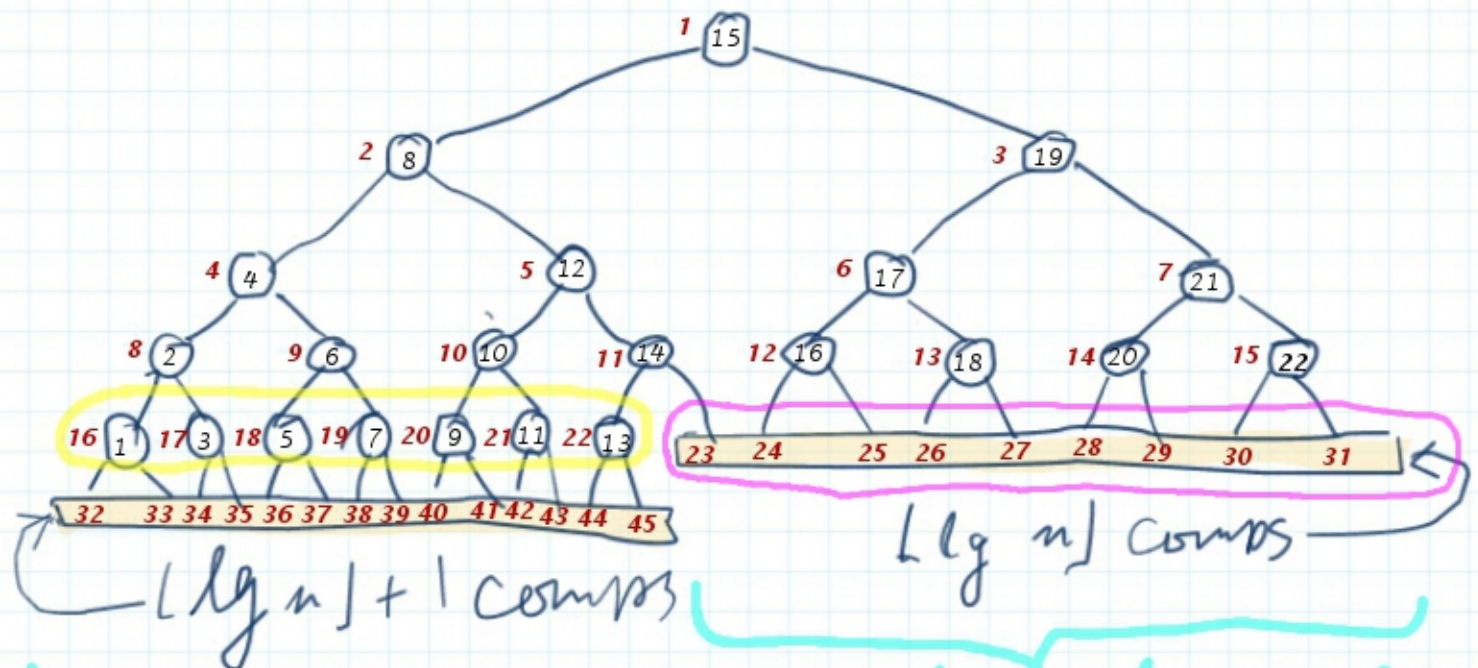
 $n = 22$ nodes y external nodes $\frac{y}{2}$ nodes here x nodes are missing here

$$x + y = n + 1$$

$$x + \frac{y}{2} = 2^D$$

unsuccessful search

$n = 22$ nodes



y external nodes

x external nodes

$\frac{y}{2}$ nodes here

x nodes are missing here

$$x + y = n + 1$$

$$x + \frac{y}{2} = 2^D = 2^{\lfloor \lg n \rfloor}$$

