

Geometric Range Search

Range Tree: Optimization

- Y-Lists

Junhui DENG

deng@tsinghua.edu.cn

BBST<BBST<T>>

While we descend the search in the x -tree,

for each node, we need to

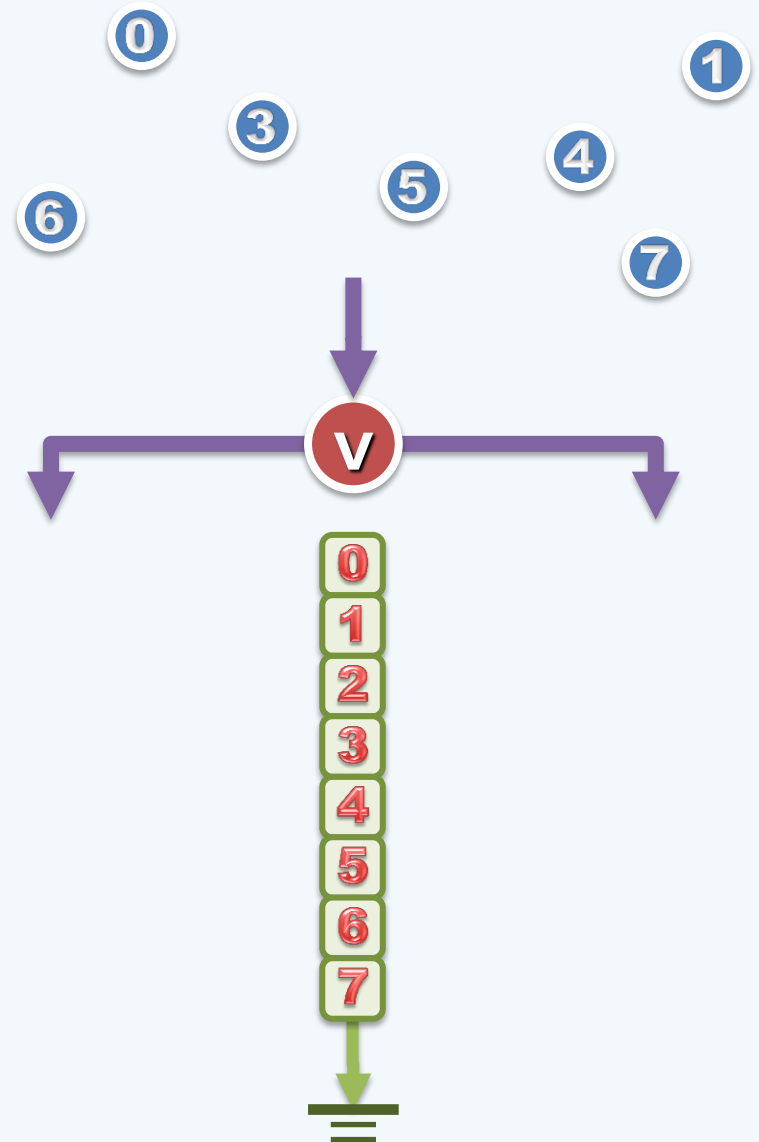
search the corresponding y -tree

It is this combination that leads to

the squaring of the logarithms

If each y -tree can be searched in $O(1)$ time,

the second $\log n$ factor will be eliminated!



BBST<Vector<T>>

❖ For an easier visualization,

let's regard each y -tree, equivalently,

as a sorted array (called y -list)

❖ Actually, this is also

a more efficient way

to implement all y -trees

