

avatar array sorted according to the x **(or y)** coordinate



$c(\text{left})$ = capacity of the node's left child

$c(\text{right})$ = capacity of the node's right child

$$i \approx n \times \frac{c(\text{left})}{c(\text{left}) + c(\text{right})}$$

split coordinate := avatar[i].getX() **(or getY)**