

# Geometric Range Search

kd-Tree: Performance

- Preprocessing Time + Storage

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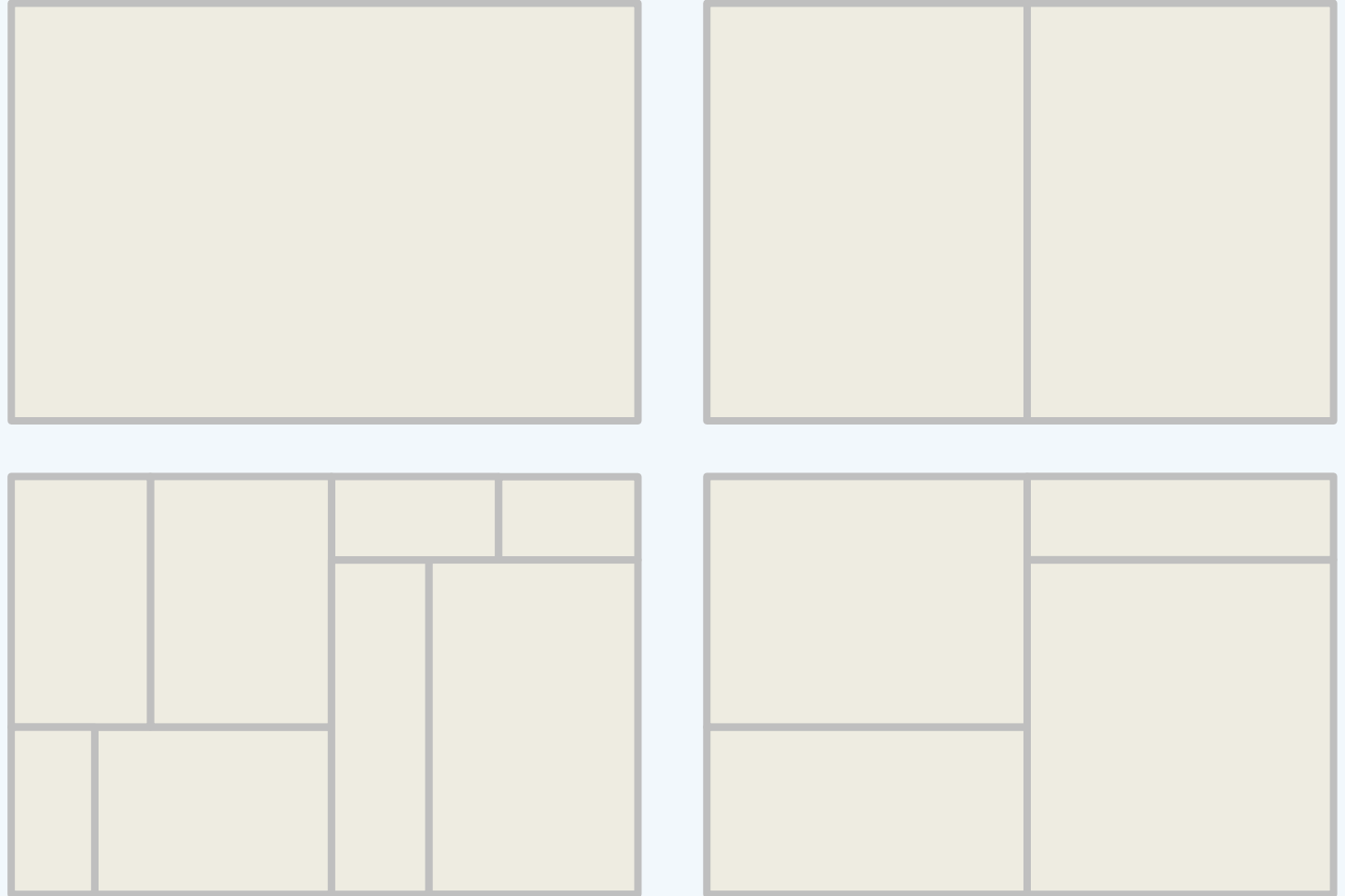
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## Preprocessing

❖  $T(n)$

$$= 2 * T(n/2) + O(n)$$

$$= O(n \log n)$$



## Storage

❖ The tree has a height  
of  $O(\log n)$

$$\begin{aligned} & \times 1 \\ & + 2 \\ & + 4 \\ & + \dots \\ & + O(2^{\log n}) \\ & = O(n) \end{aligned}$$

