Geometric Range Search

Range Query

- Brute Force

Junhui DENG

deng@tsinghua.edu.cn

Brute-force

❖ For each point p of P, test if p $\in$ (x_1, x_2]

❖ Thus each query can be answered in $\boxed{O(n)}$ time

❖ Can we do it faster?

It seems we can't, for ...

❖ **In the worst case,**

    the interval contains up to $\mathcal{O}(n)$ points,

    which need $\mathcal{O}(n)$ time to enumerate

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ **X**

X_1 X_2

❖ **However, how if we**

    - ignore the time for enumerating and

    - count only the searching time?