

Advanced Balanced Search Tree

Range Query

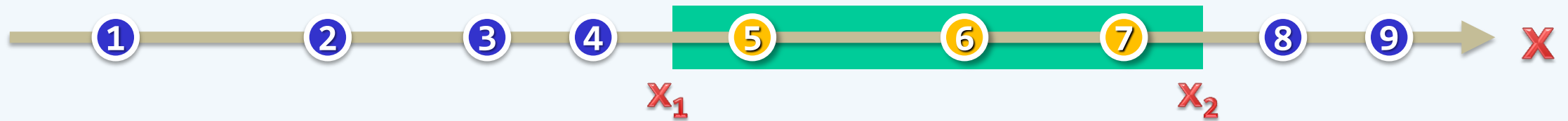
1-Dimensional Range Query

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Query Types

❖ Let $P = \{ p_1, \dots, p_n \}$ be a set of n points on the x -axis

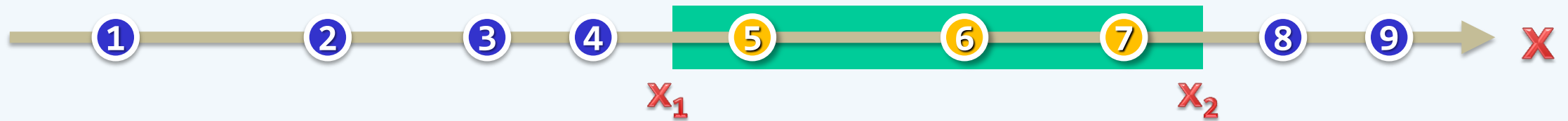


❖ For any given interval $I = (x_1, x_2]$ //left open & right closed

- **Counting** : how many points of P lies in the interval?
- **Reporting** : enumerate all points in $I \cap P$ (if not empty)

Online Query

❖ P is **fixed** while I is **randomly and repeatedly** given



❖ How to **preprocess** P into a certain data structure s.t.

the queries can be answered efficiently?