Voronoi Diagram

Sorted Sets

- CH Made Easier

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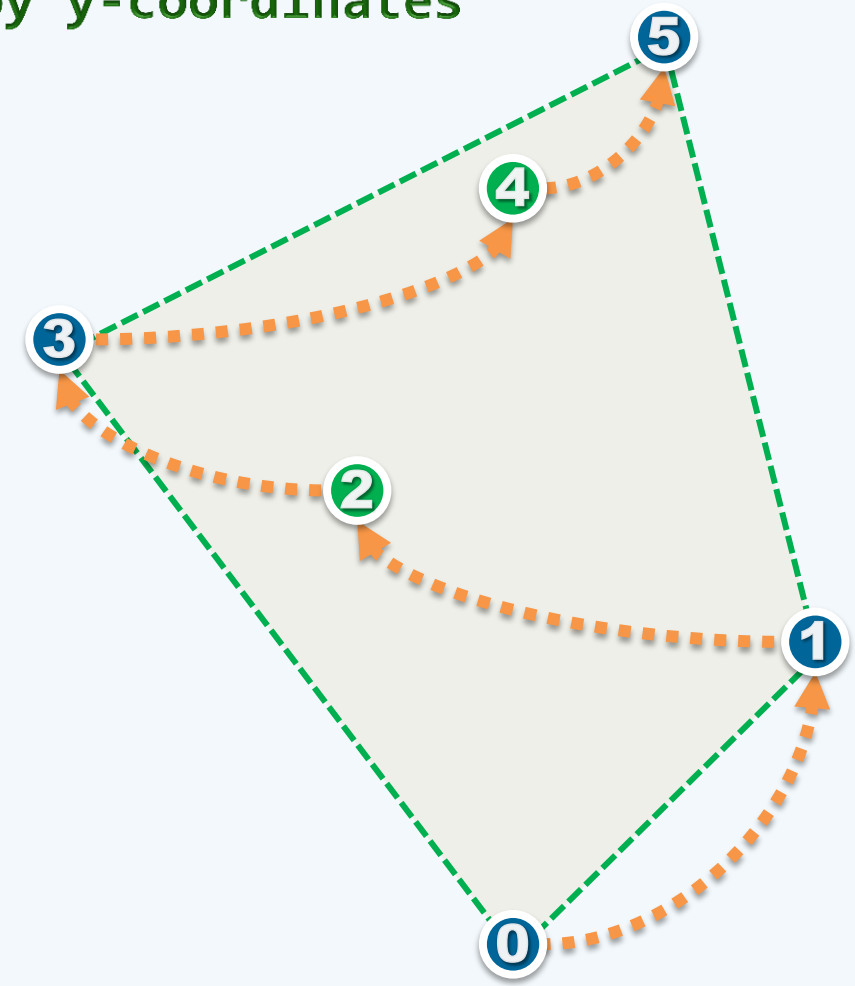
CH_{SORTED}

- Let S be a planar set of n points sorted by y-coordinates
- We have seen that

  CH(S) can be computed in $O(n)$ time

  by, say, Graham scan
- Is it still the case for Voronoi diagram?

  Can VD(S) be computed in $o(n\log n)$ time?



VD_{SORTED}

- Unluckily, it has been proved that

  VD would NOT be made easier by sorting

- [Zhu & Mirzaian, 1991]

  [Djidjev & Lingas, 1991]

  It takes $\Omega(n\log n)$ time

  to construct VD of n sites $p_1, \ldots, p_n$

  whose y-coordinates are **strictly increasing**