

Voronoi Diagram

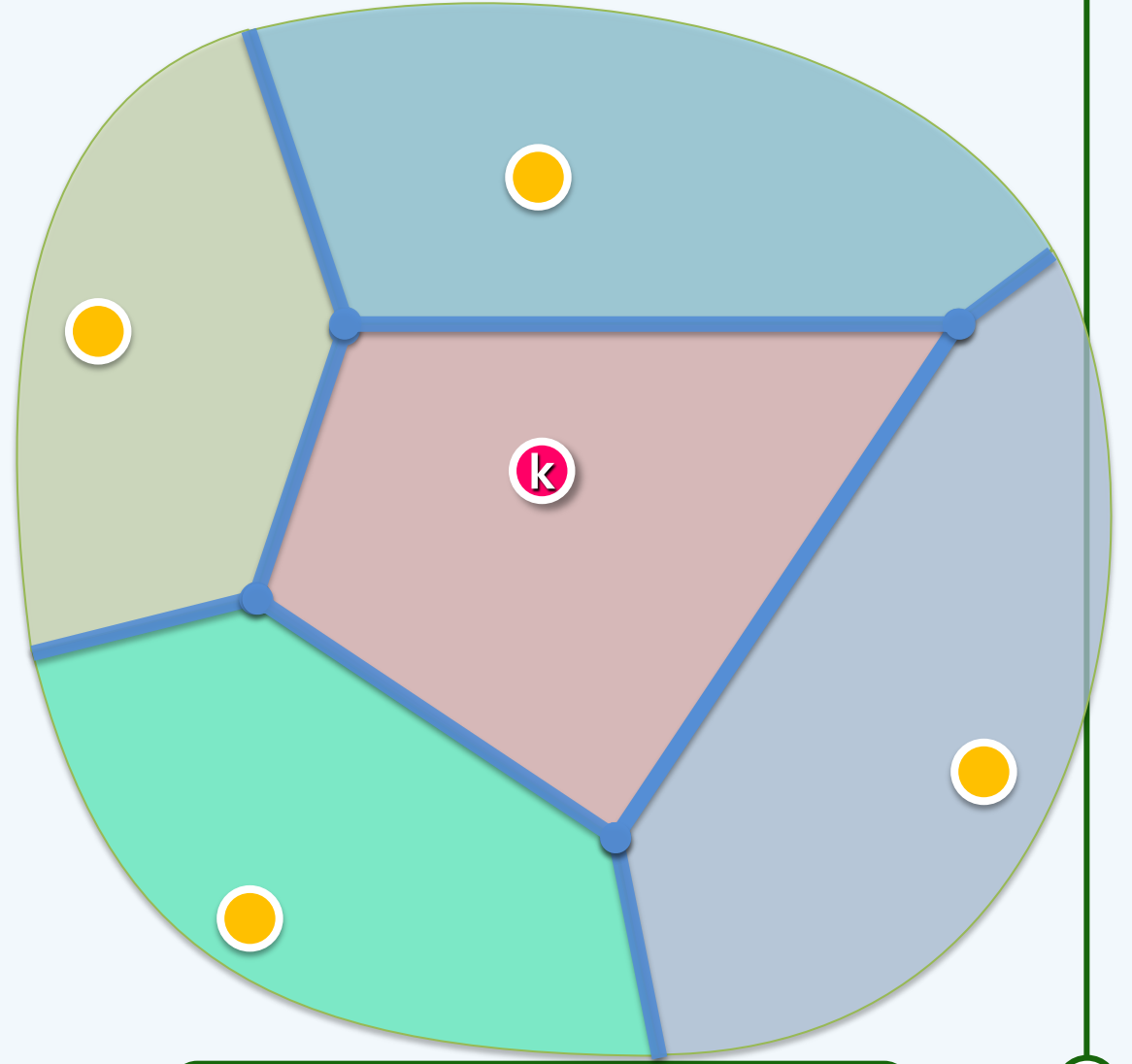
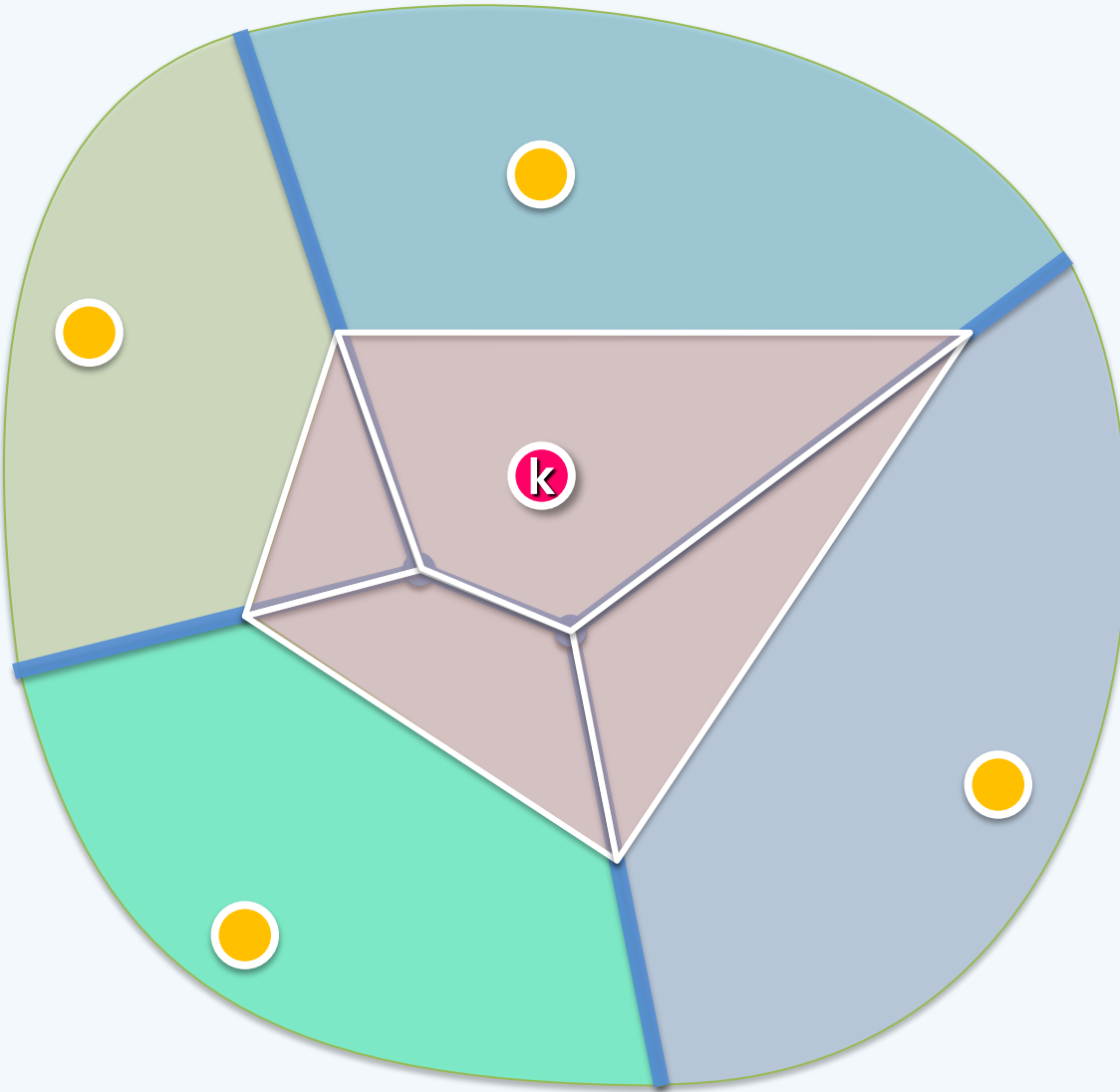
Incremental Construction

- Disjoint Union

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Disjoint Union



Algorithm

Initialize an empty Voronoi diagram, which is represented as a DCEL

For each $p \in S$ *//insert p into the current VD*

 find $\text{Cell}(q_0 = q)$ in the current VD containing p *//how to?*

 repeat

 let b = the bisector between p and q

$\text{Cell}(q) = \text{Cell}(q) \cap b^+$ *//halfplane b^+ is bounded by b and excludes p*

 let $\{v, u\} = b \cap \partial\text{Cell}(q)$ *//intersecting b with boundary of $\text{Cell}(q)$*

 add (v, u) to $\partial\text{Cell}(p)$ as a Voronoi edge *//DCEL operations*

 let $q =$ the site sharing v on the boundary with q *//twin edge*

until $q = q_0$

Example

