

k-Center Facility Location

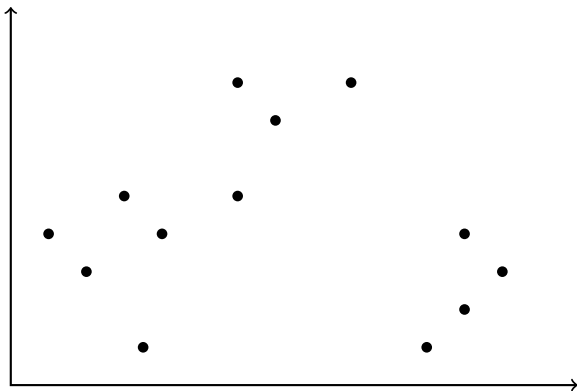
Deterministic Approach

João Valença

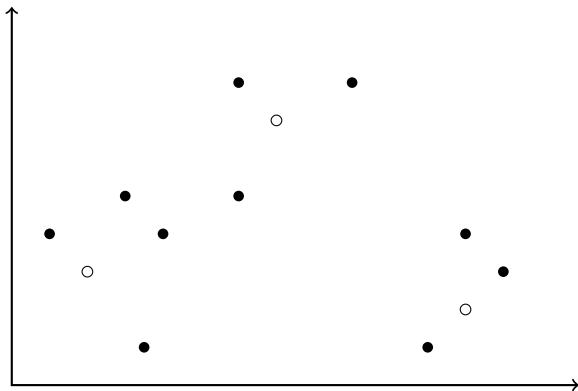
Departamento de Engenharia Informática
Universidade de Coimbra

October 23, 2014

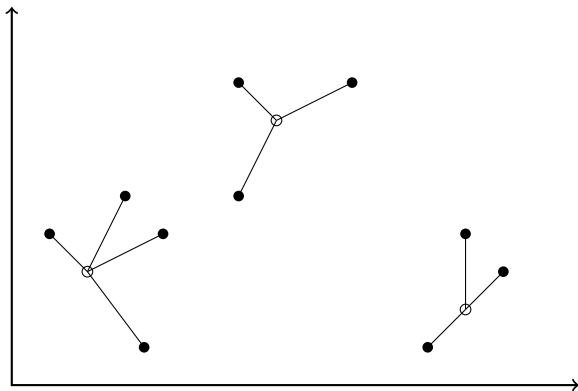
Problem



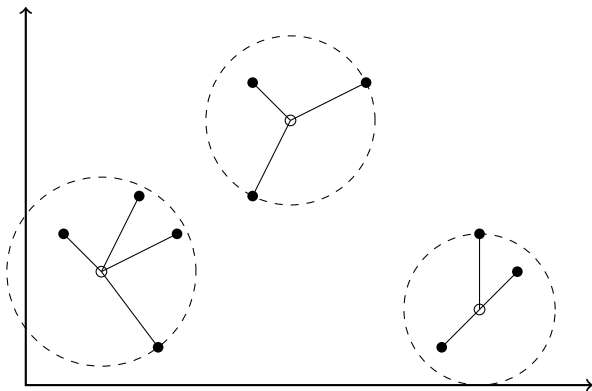
Problem



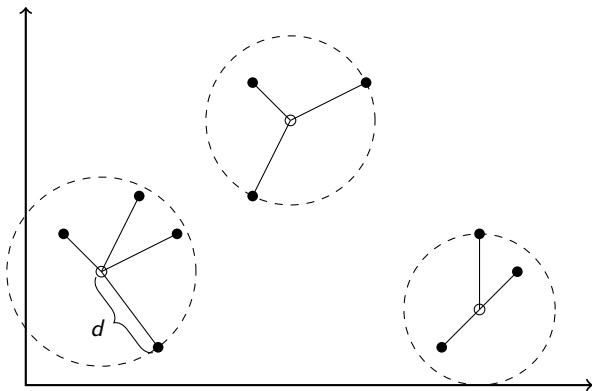
Problem



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$$\min_{\substack{C \subseteq P \\ |C|=k}} \max_{p \in P} \min_{c \in C} \|c - p\|$$

Solution

- ▶ For each point decide if it is a Centroid or not

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- ▶ Centroids can only generate a better solution

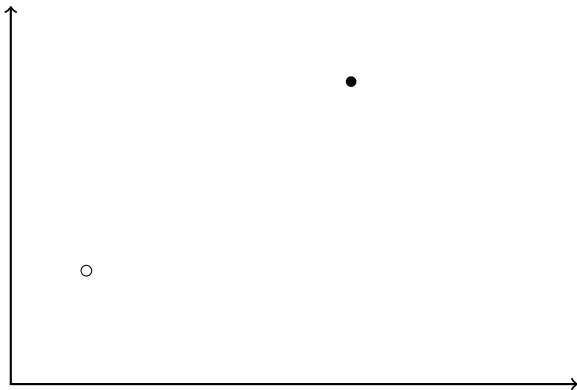
Solution

- ▶ For each point decide if it is a Centroid or not
- ▶ Centroids can only generate a better solution
- ▶ Non-centroids can only generate a worse solution

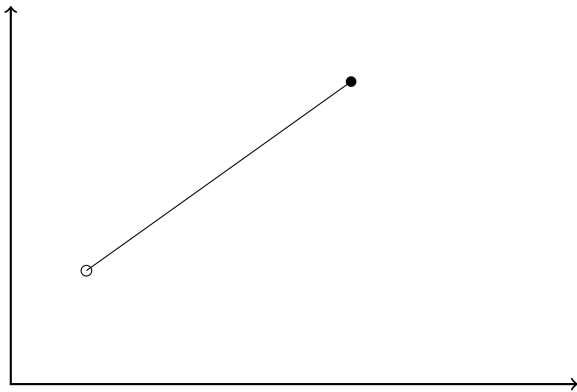
Solution



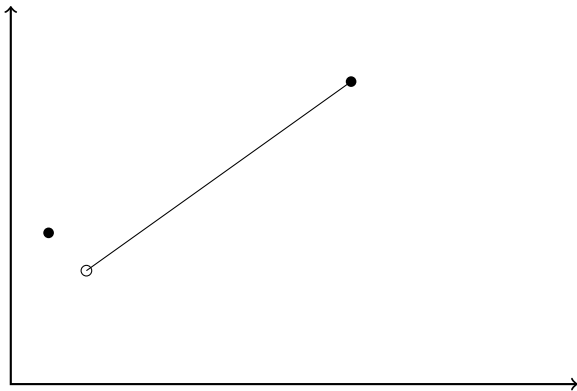
Solution



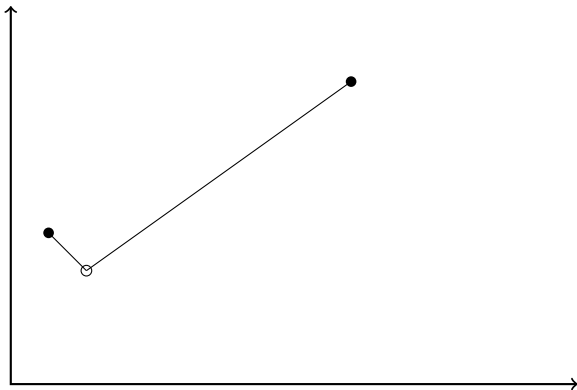
Solution



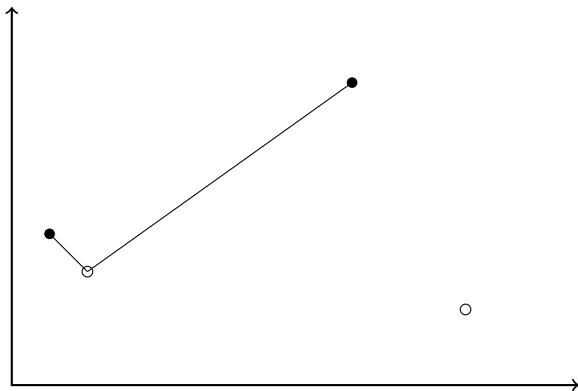
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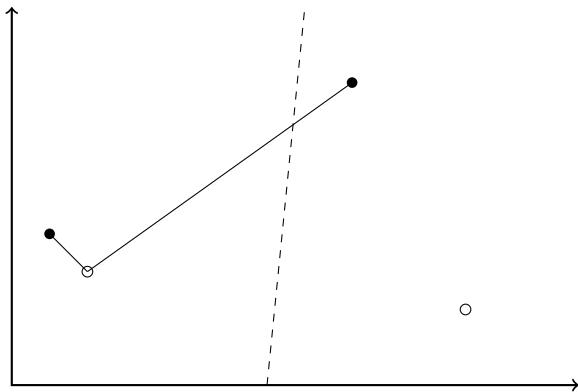
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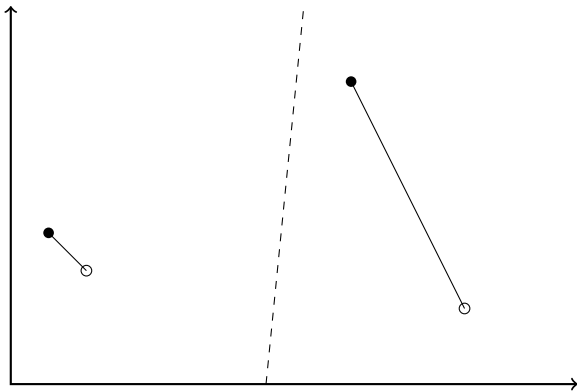
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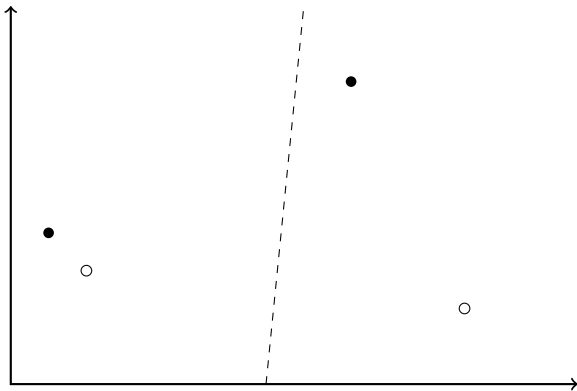
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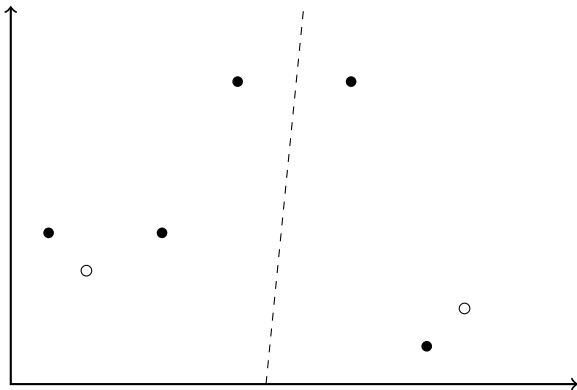
Solution



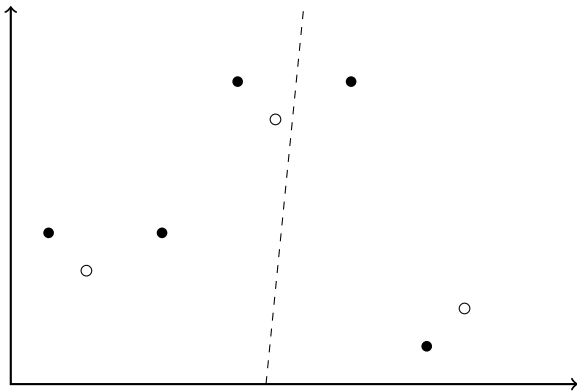
Solution



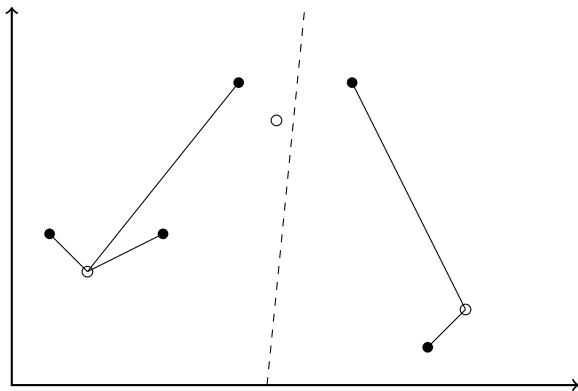
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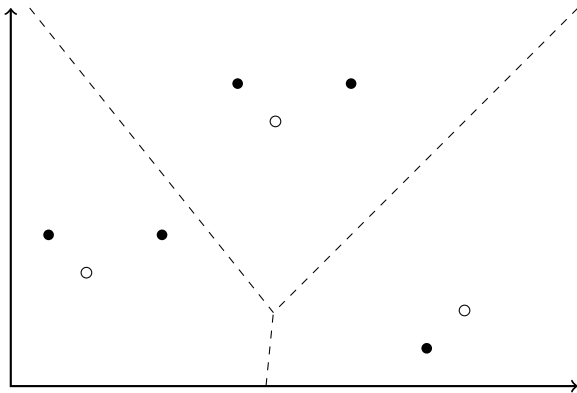
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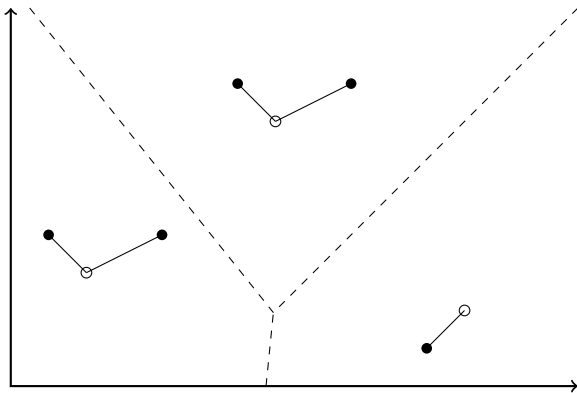
Solution



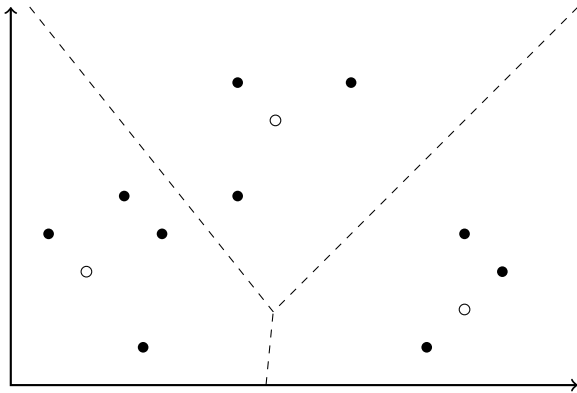
Solution



Solution



Solution



Solution

