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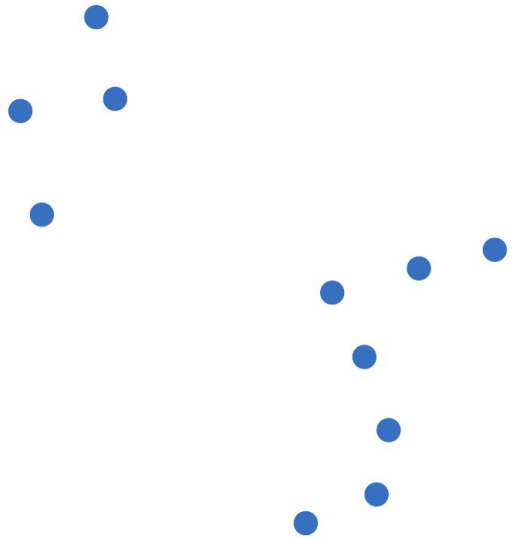

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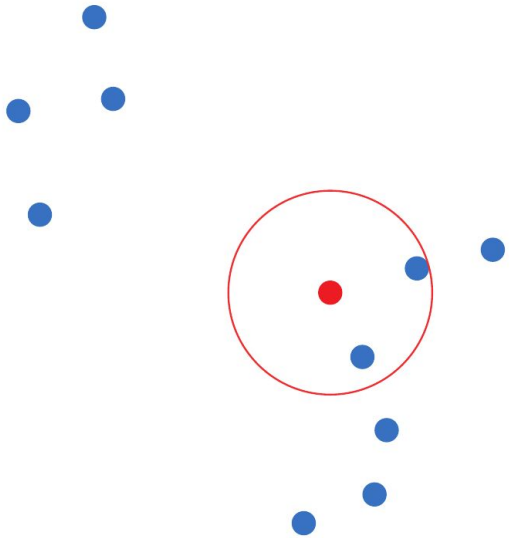

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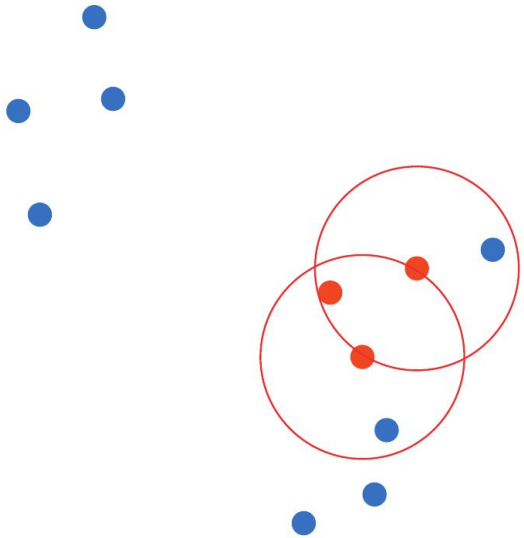

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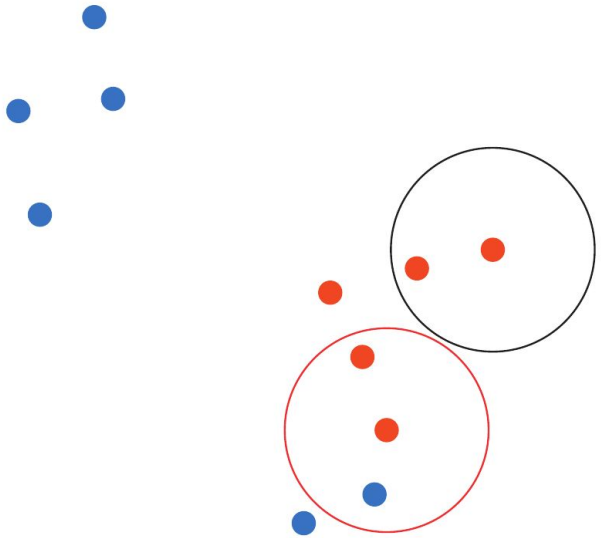

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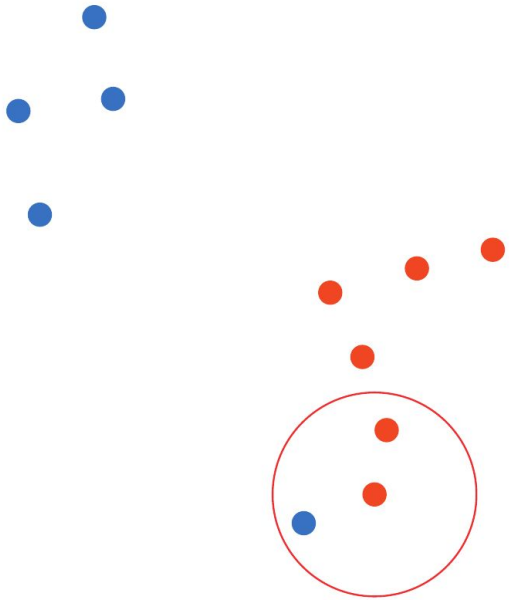

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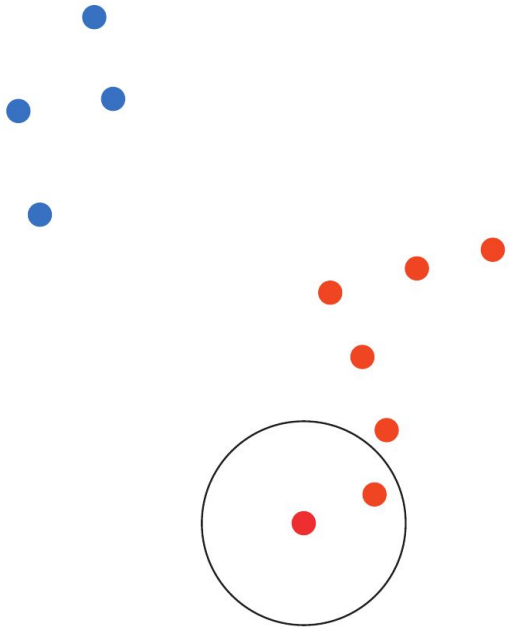

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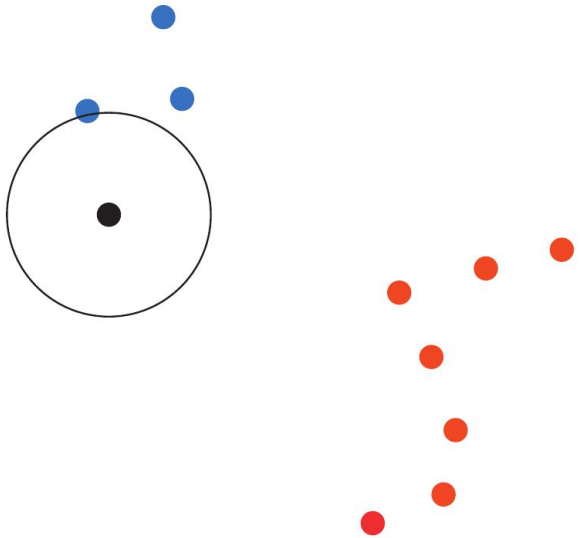

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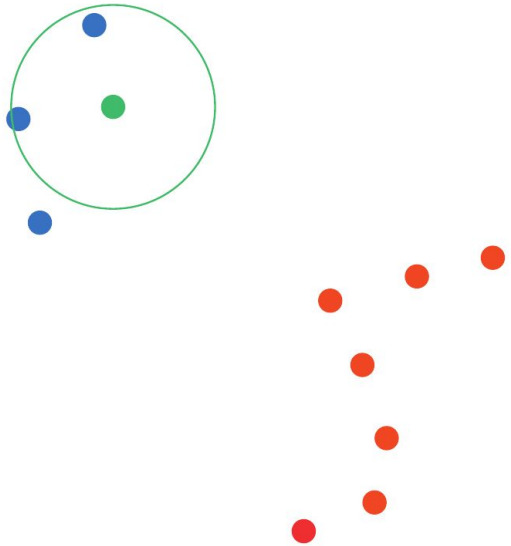

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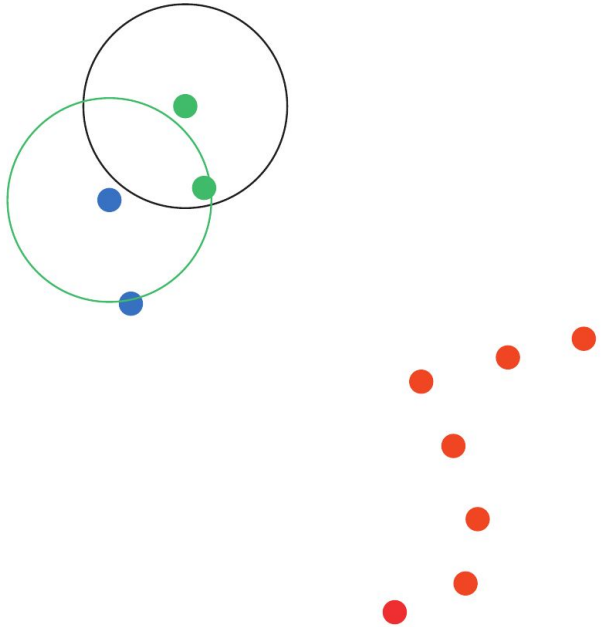

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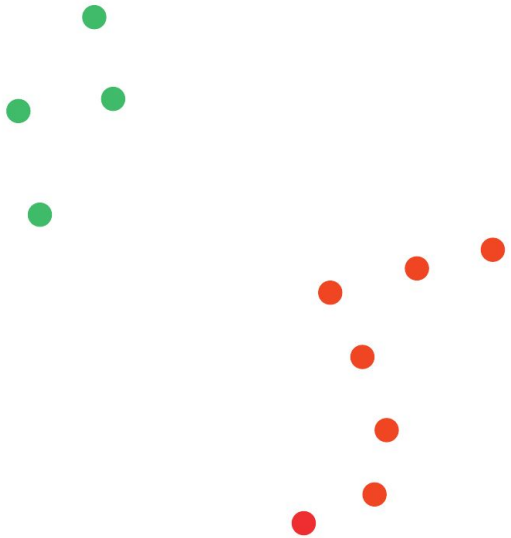

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DBSCAN

- Clusters = Zones of high-density
- Two parameters: min_samples and eps

Algorithm:

- Start at a random point, consider all points within radius eps
- If that covers min_samples, keep that ball
  - Expend by considering esp-balls around every point of the current ball and iterate
- Otherwise mark the point as noise

… let’s see this in action

DBSCAN: pros and cons

Pros

- Clusters are not necessarily globular
- No choice of number of clusters
- Very efficient implementations exist
- Robust to noise

Cons

- The eps and min_samples can be hard to tune
- If clusters have significantly different densities it is hard to find a meaningful eps, min_samples

Hands-on session

dbscan.ipynb

Comparisons of clustering algorithms