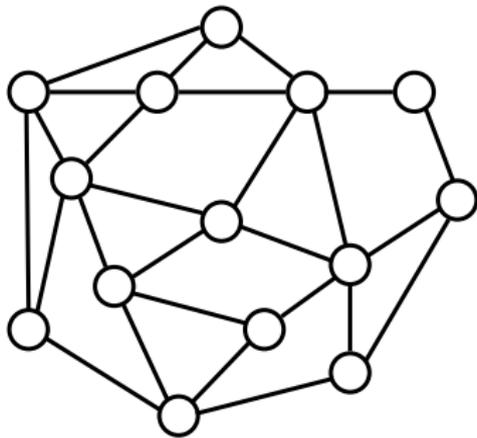


Algorithmes de graphes distribués

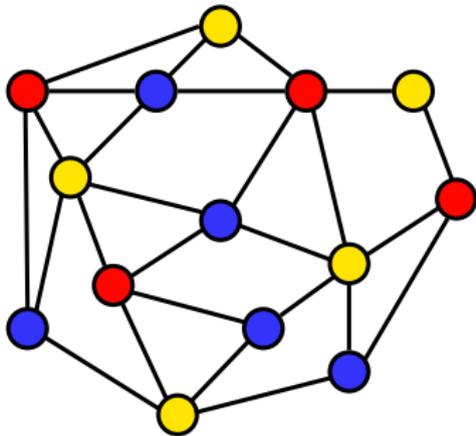
Laurent Feuilloley

Séminaire thésard · 30 mars 2016

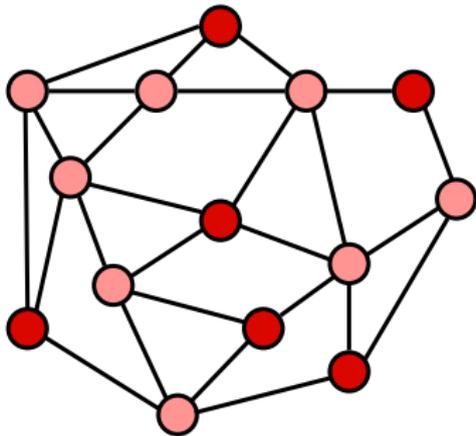
Des graphes



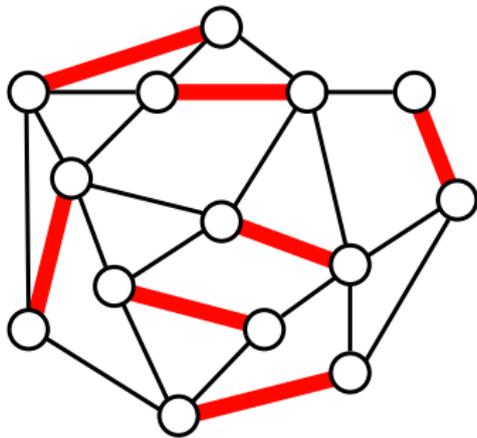
Des problèmes



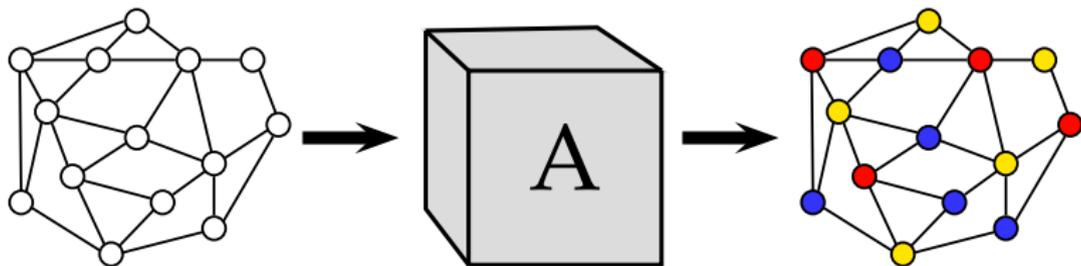
Des problèmes



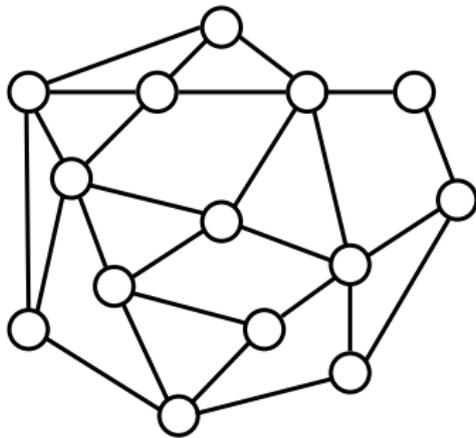
Des problèmes



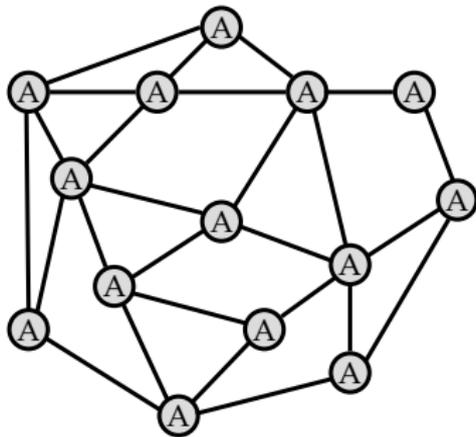
Des algorithmes



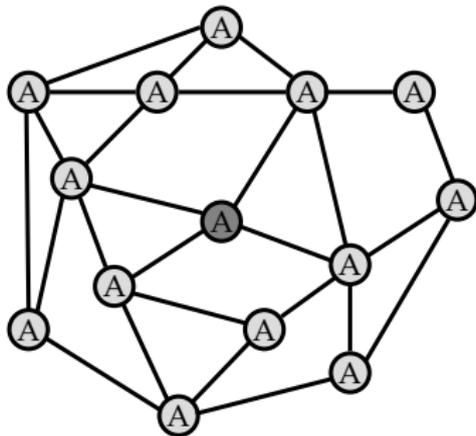
Des algorithmes distribués



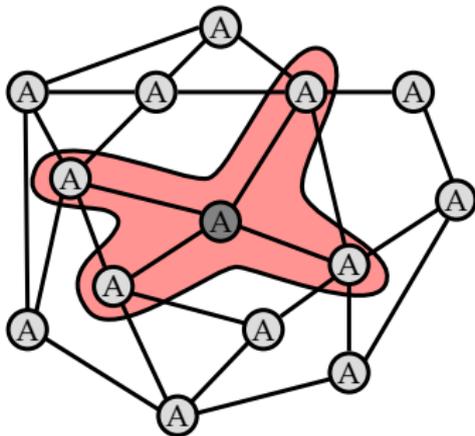
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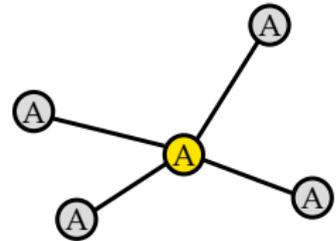
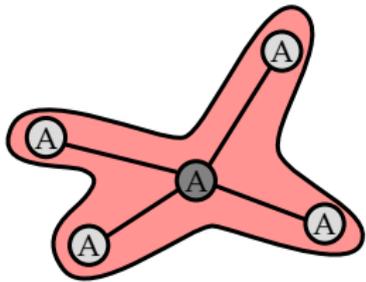
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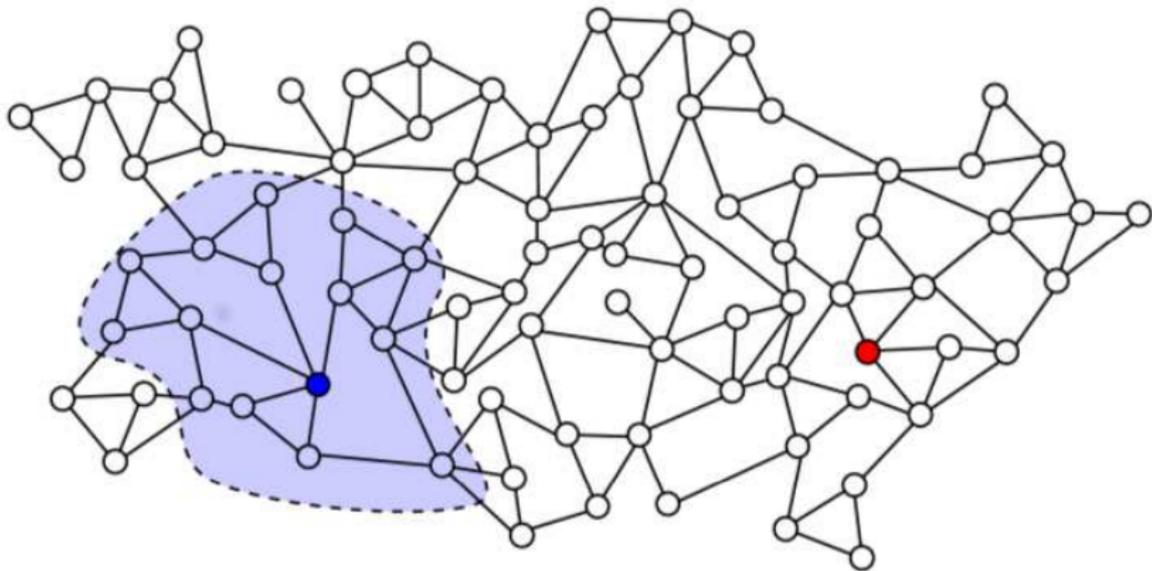
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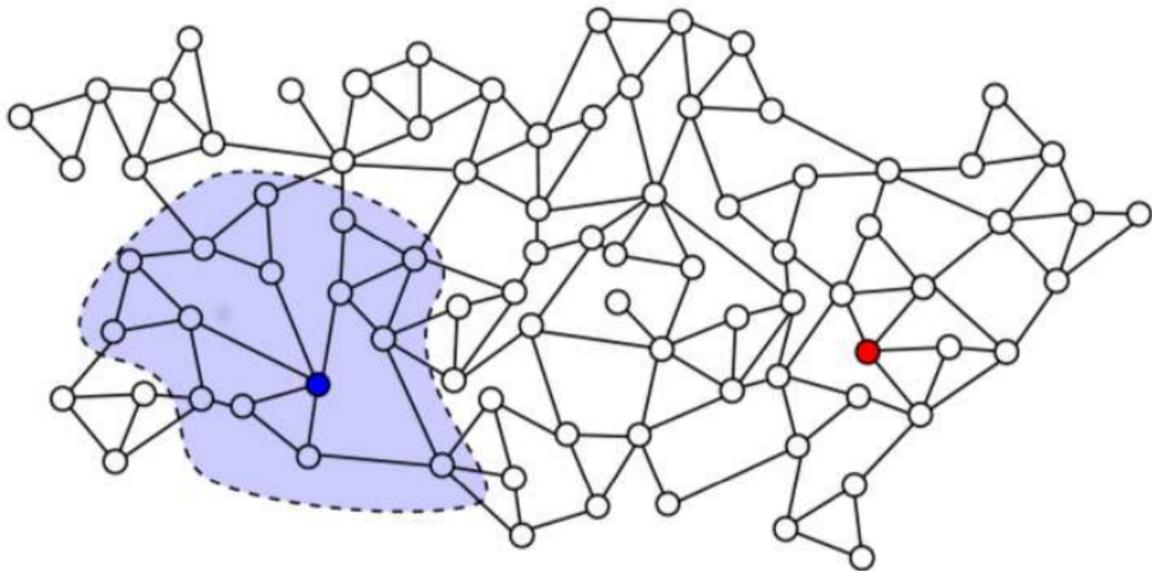
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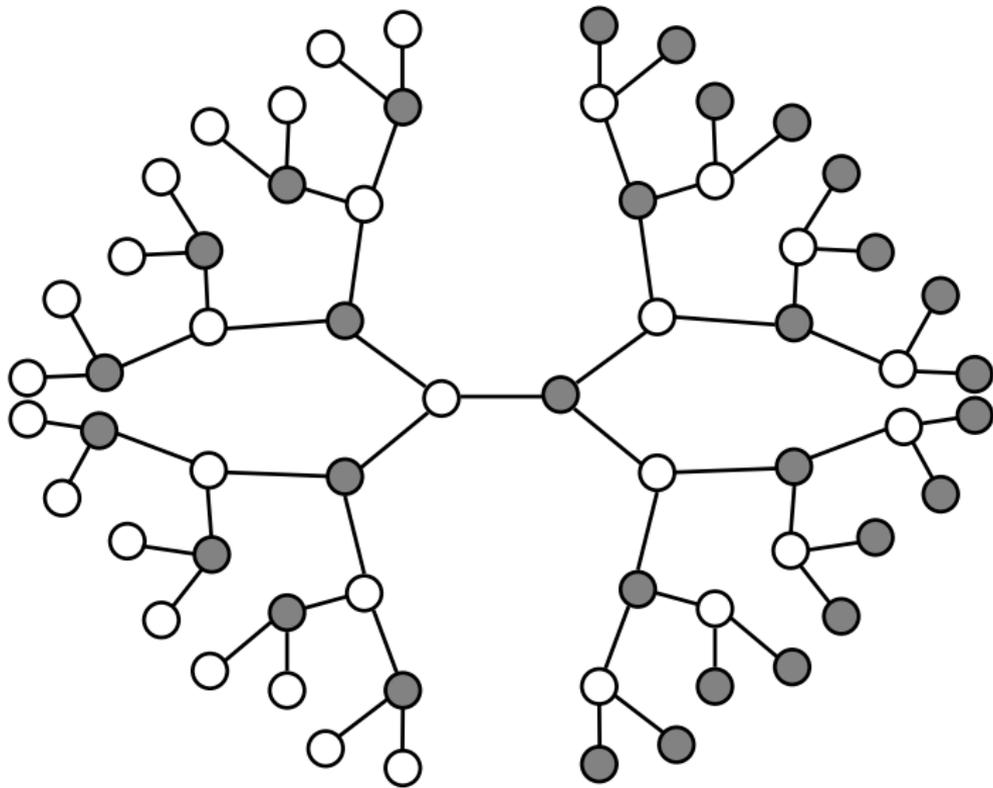
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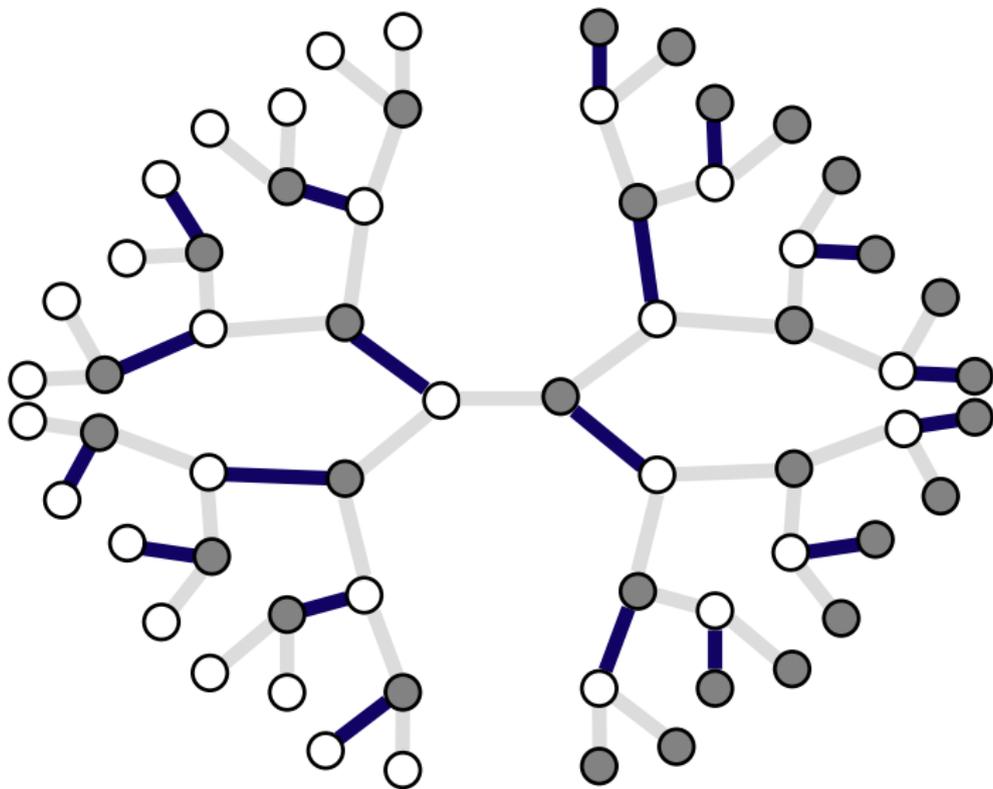
Espace-temps



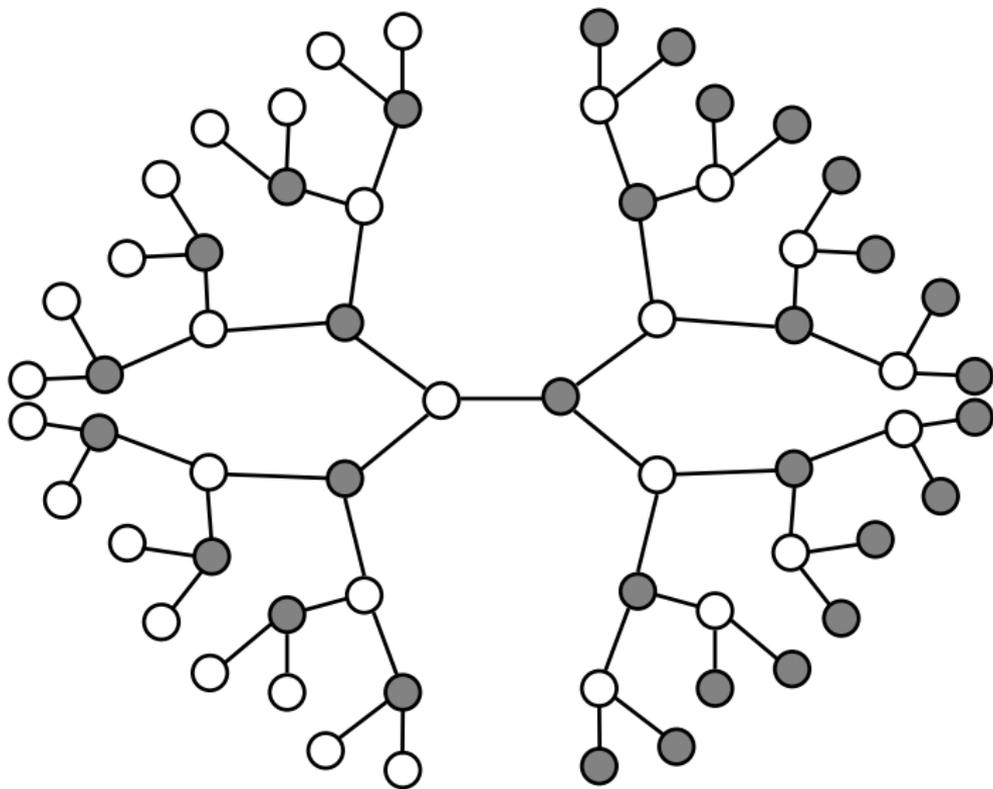
Exemple du couplage



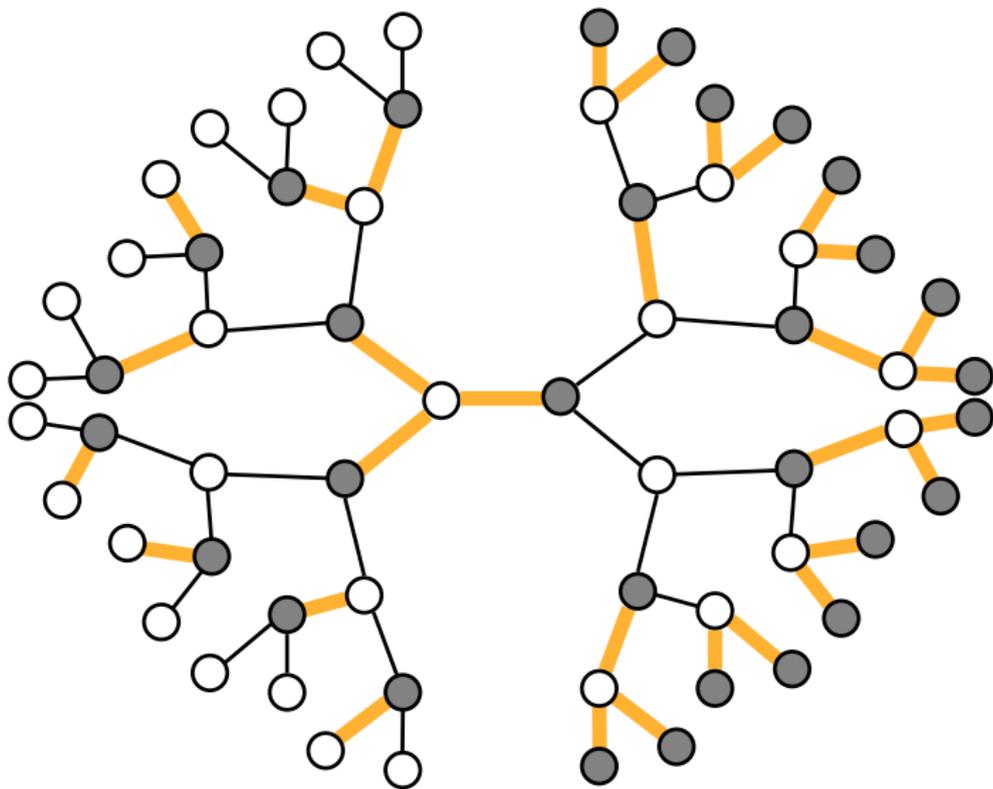
Exemple du couplage



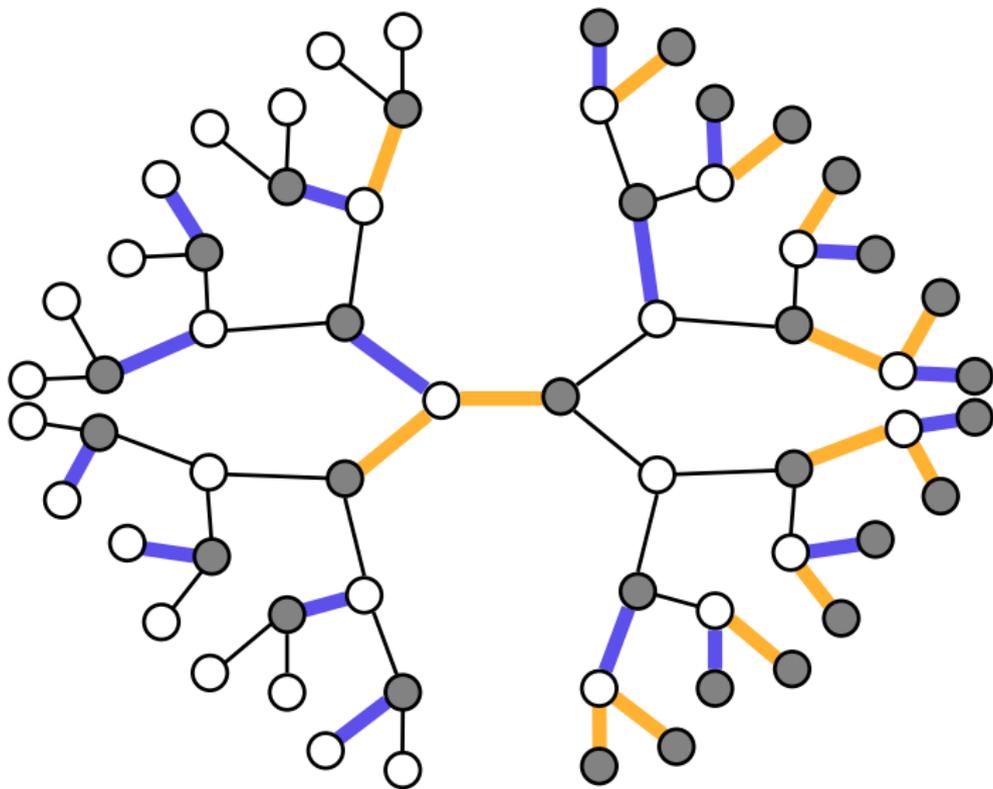
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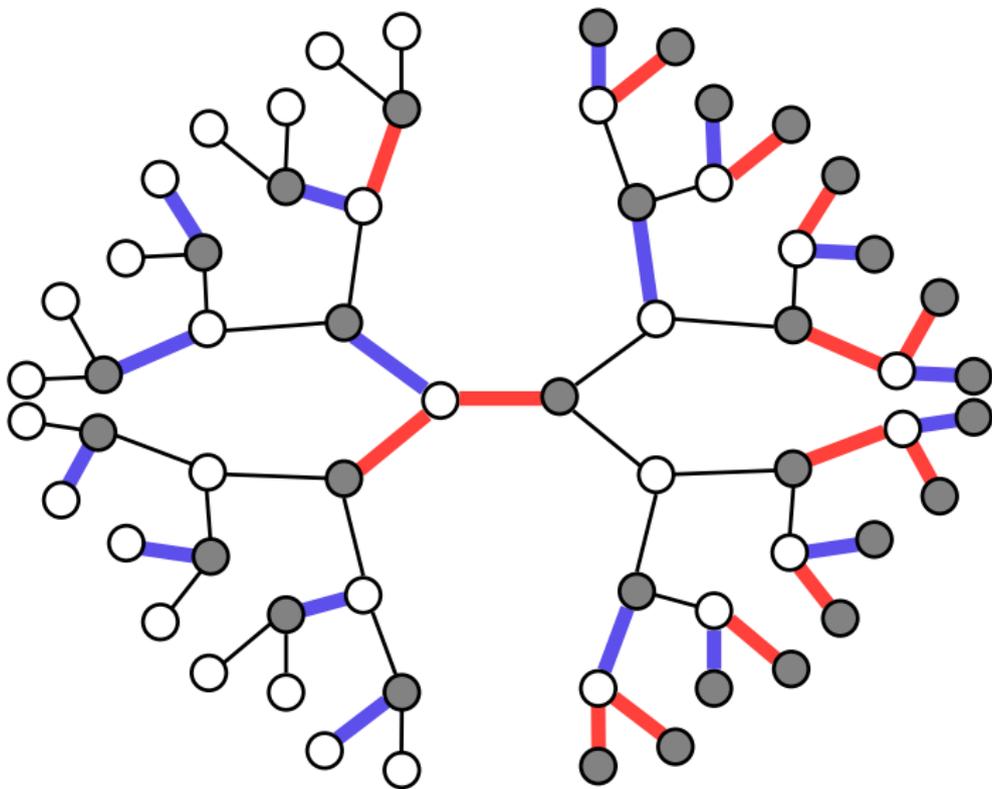
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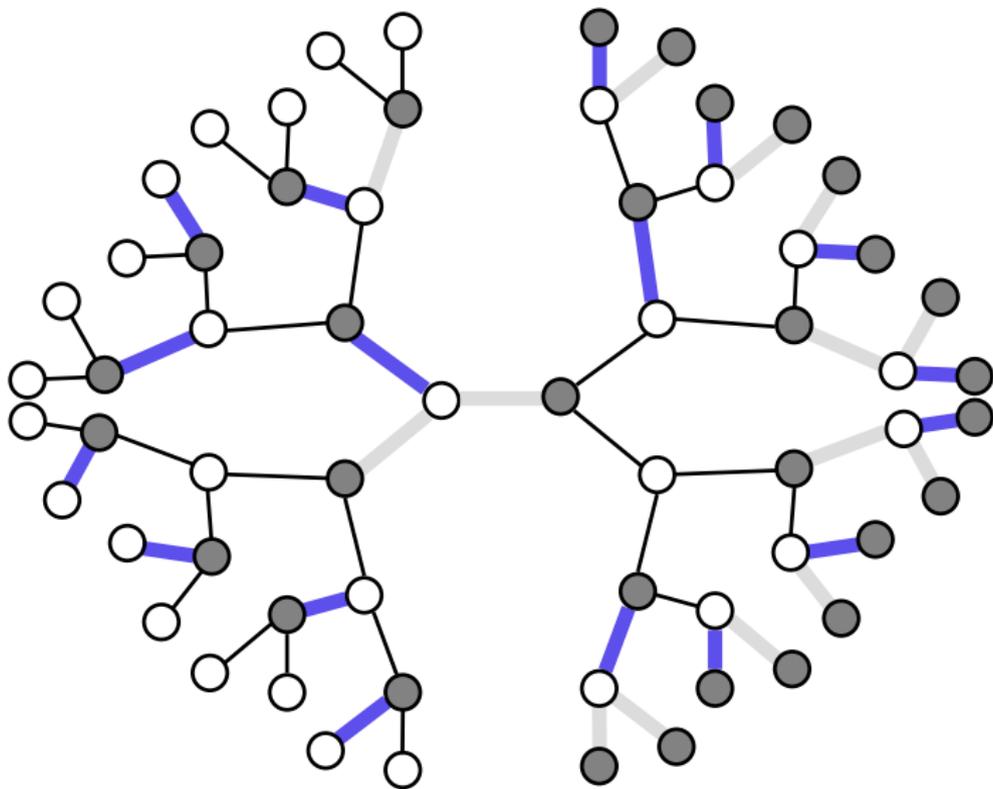
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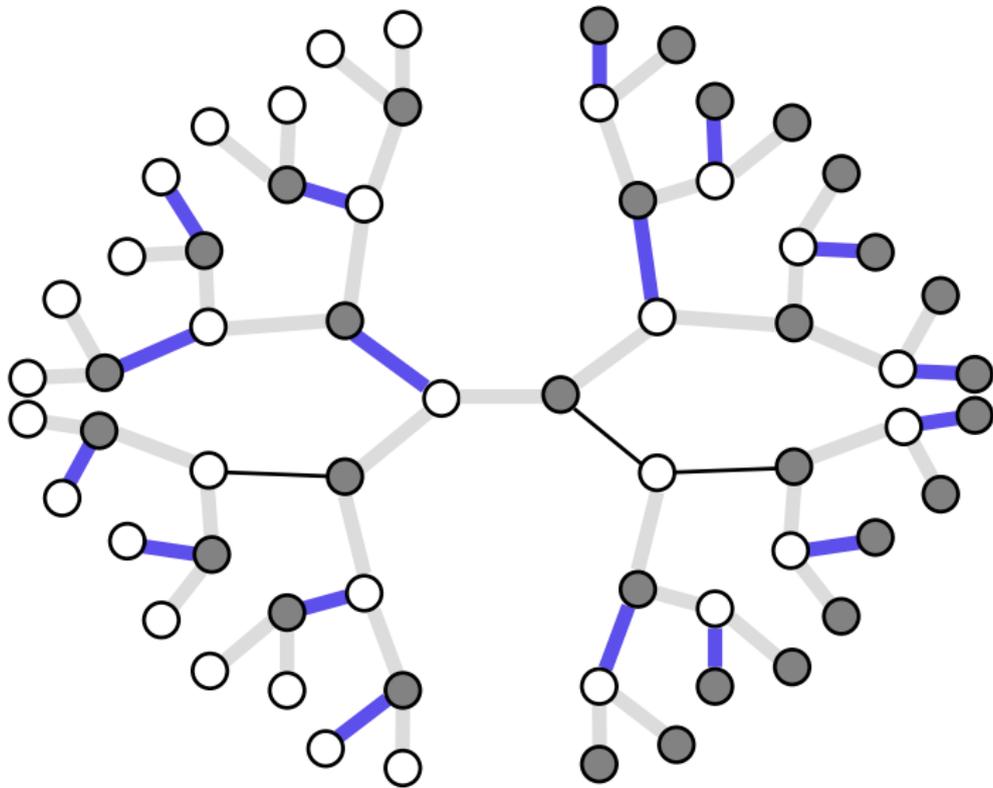
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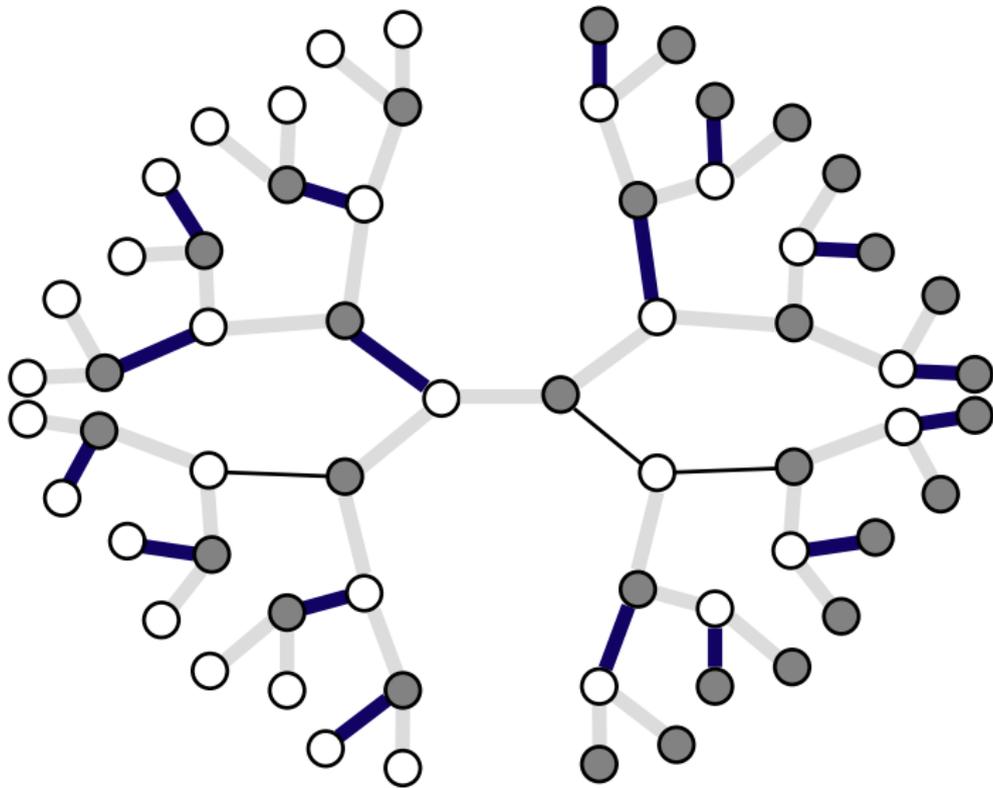
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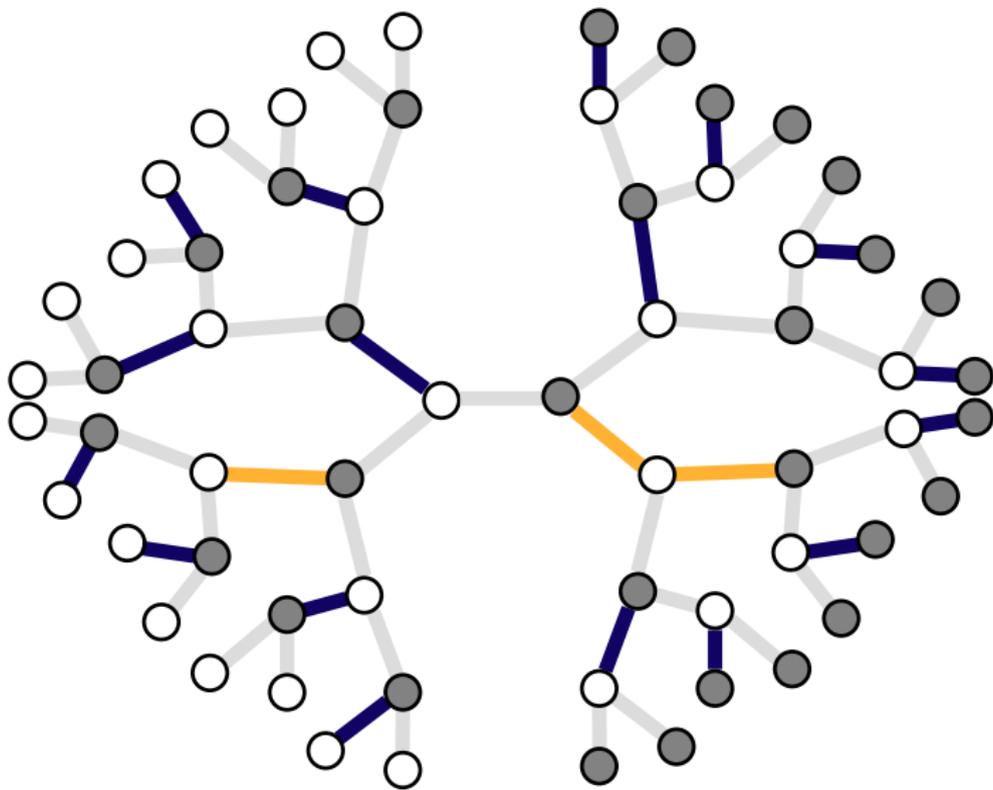
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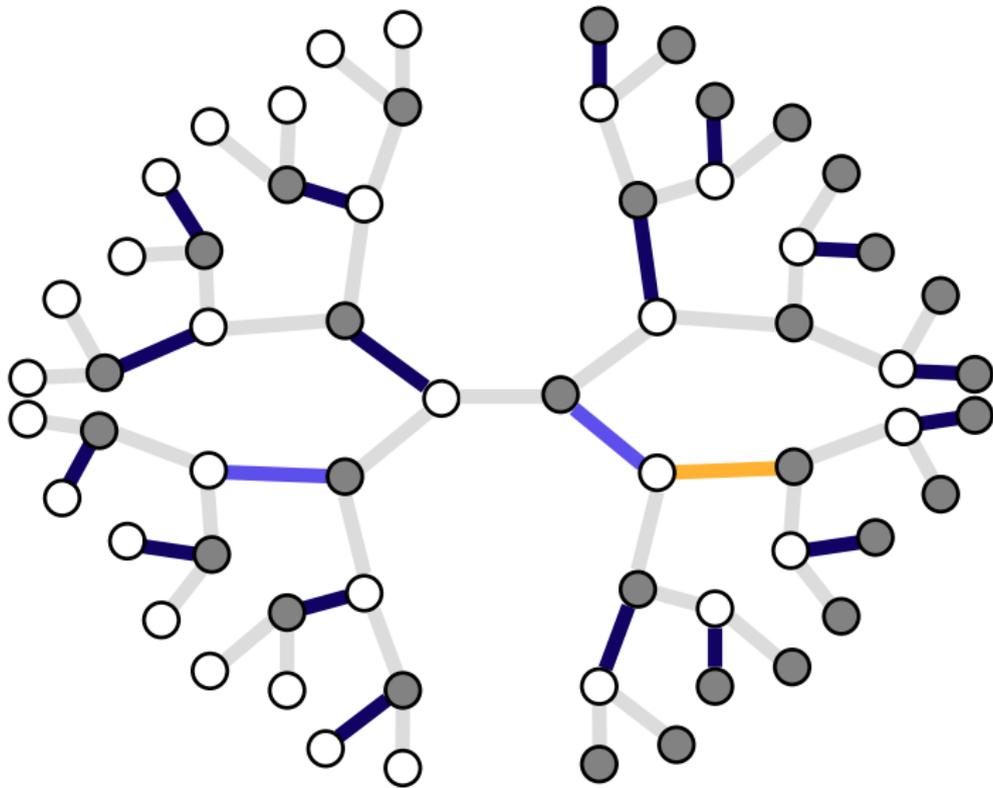
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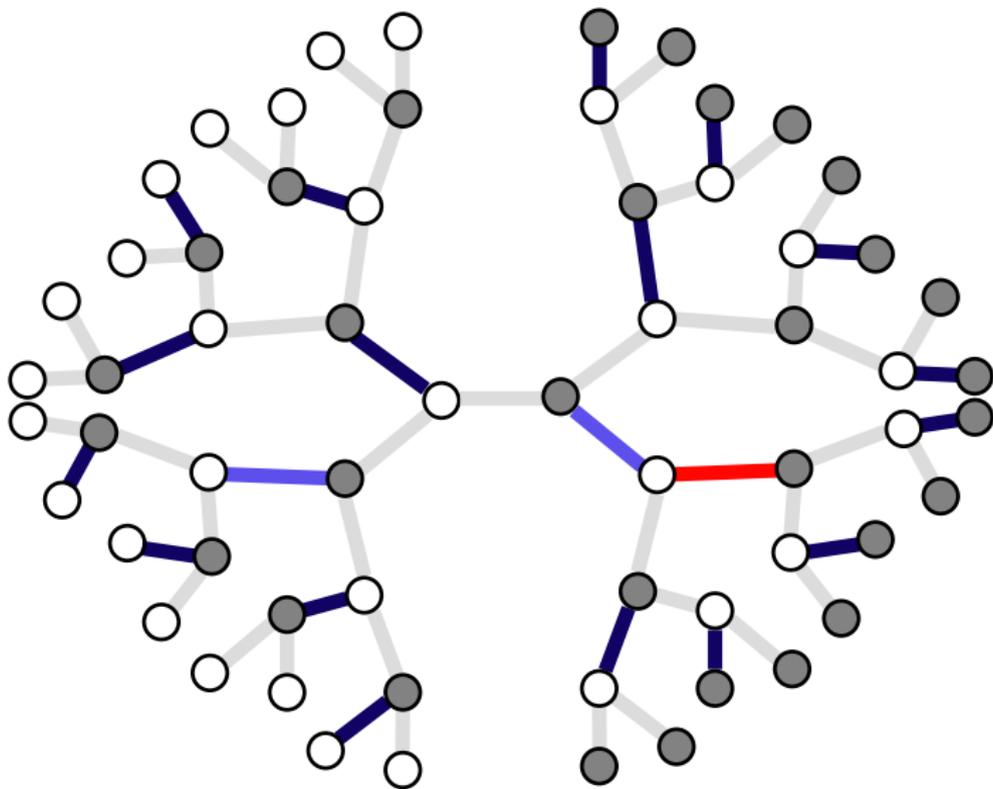
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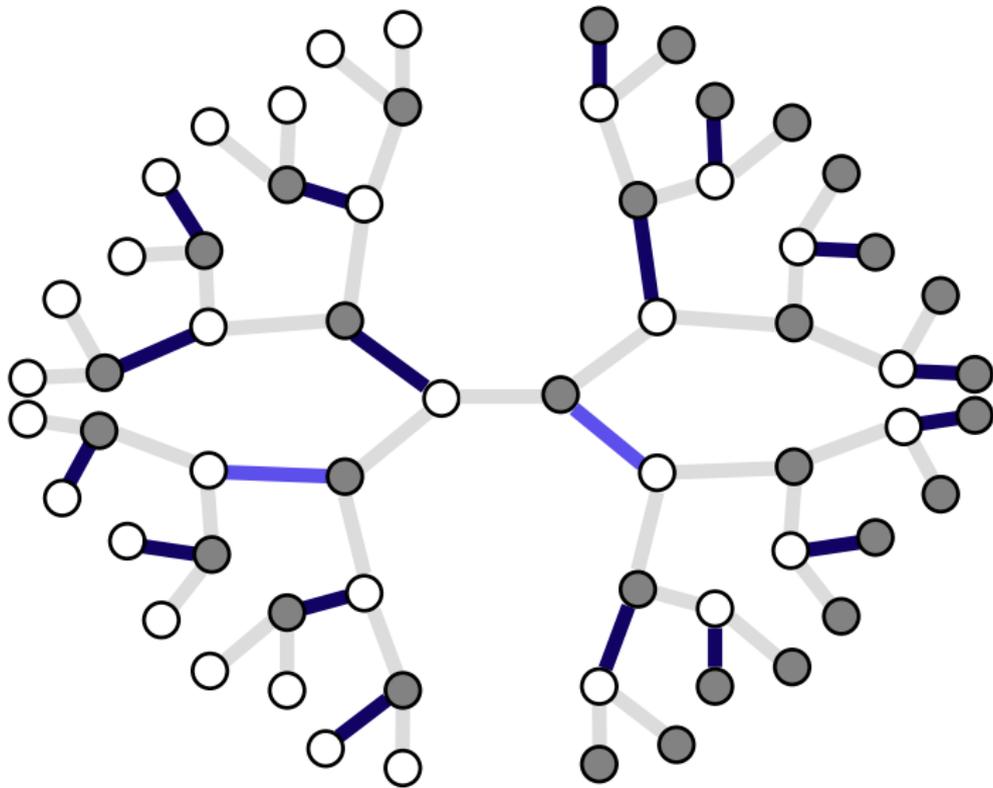
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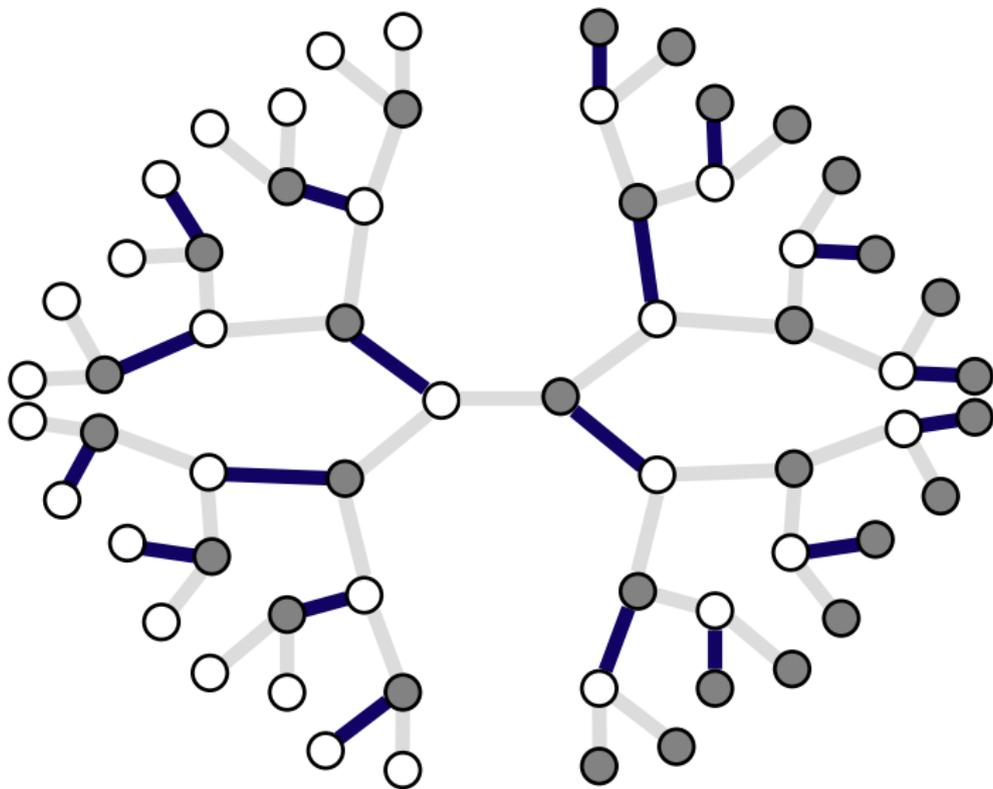
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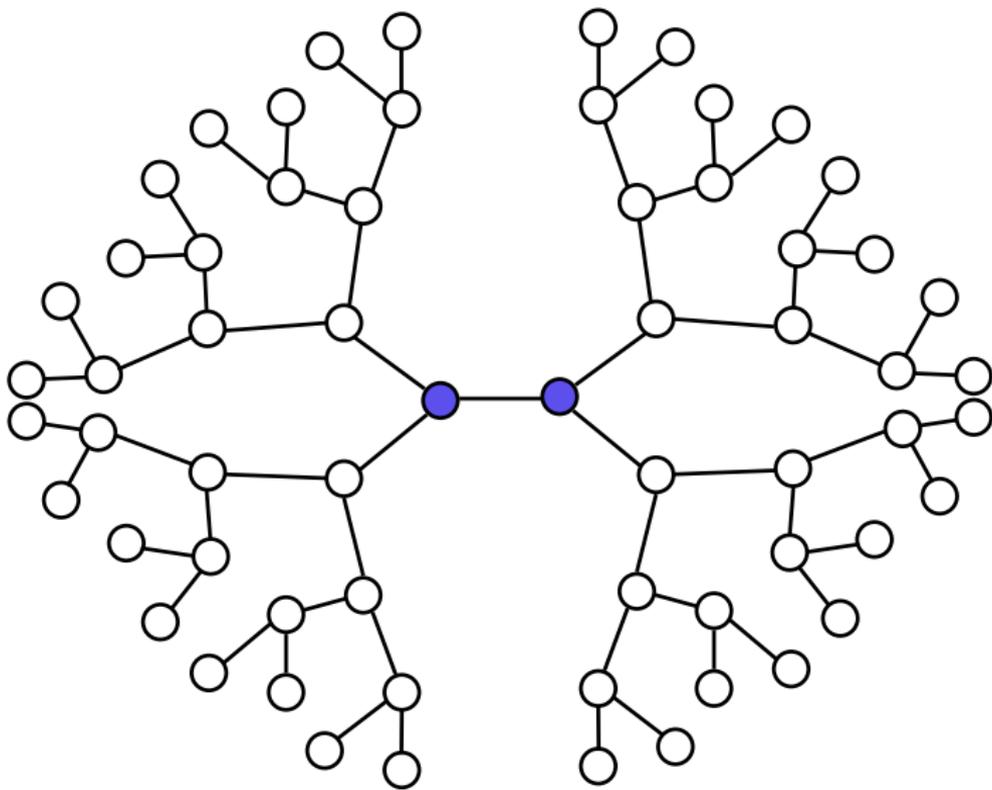
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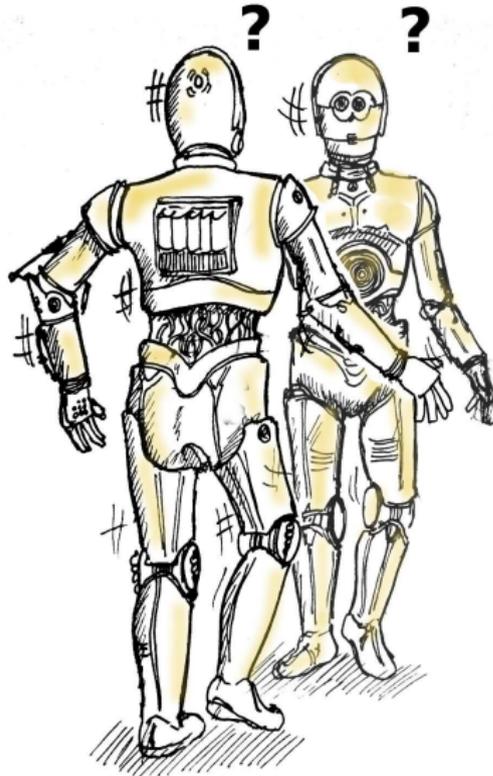
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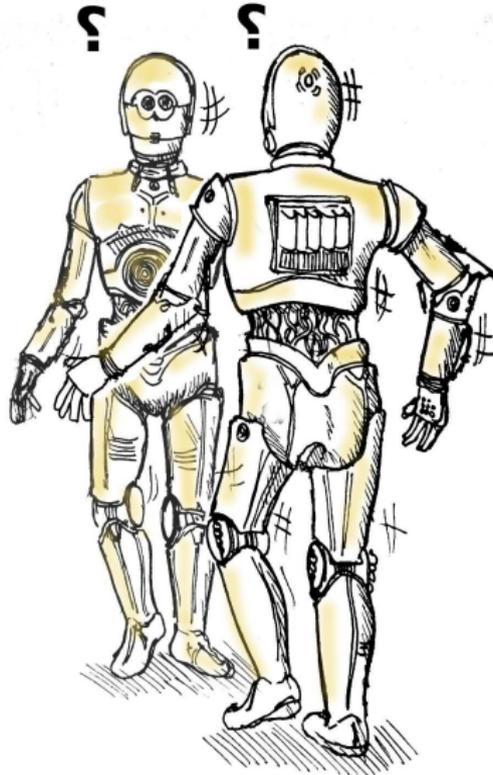
Briser la symétrie



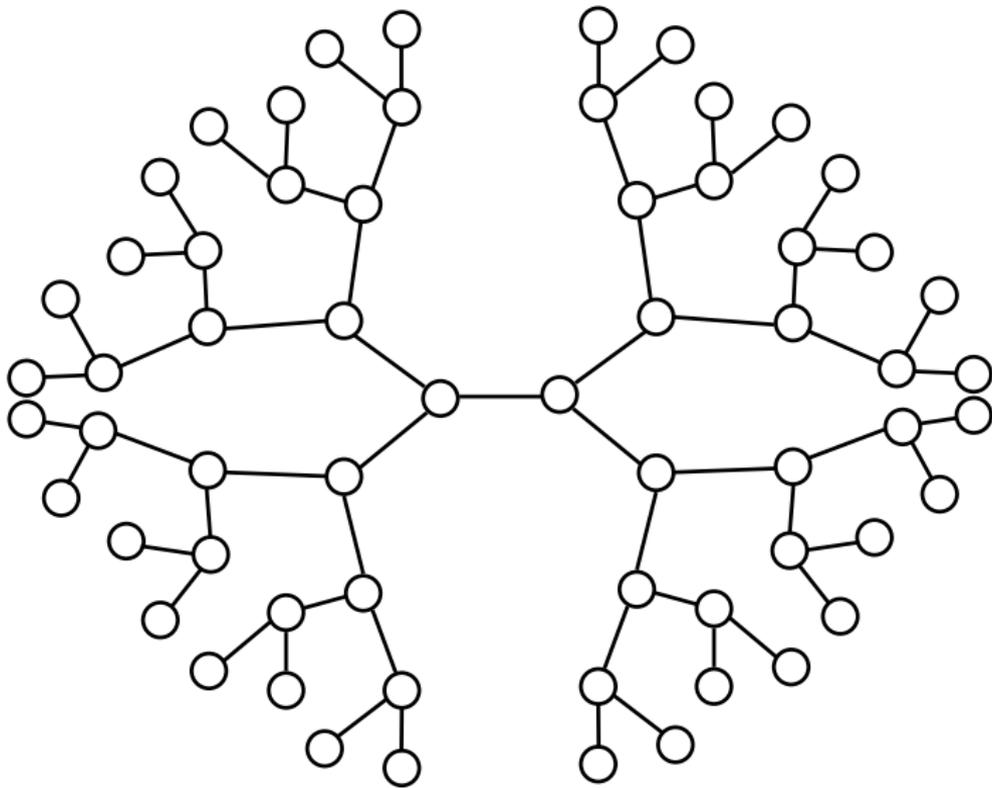
Briser la symétrie



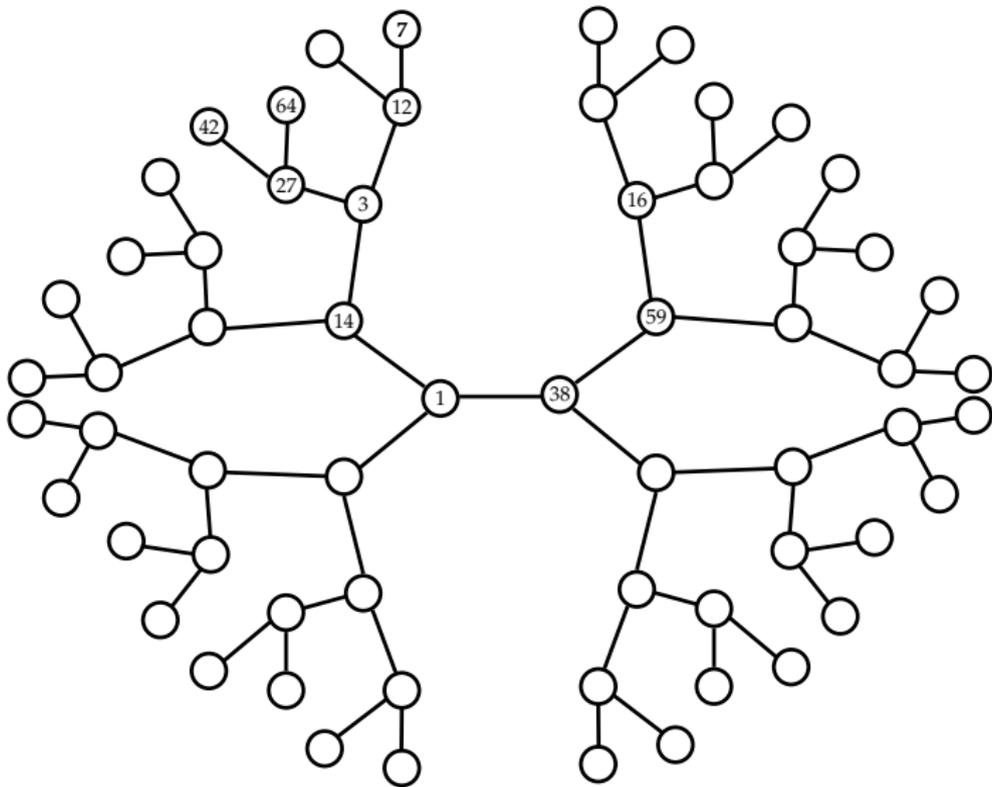
Briser la symétrie



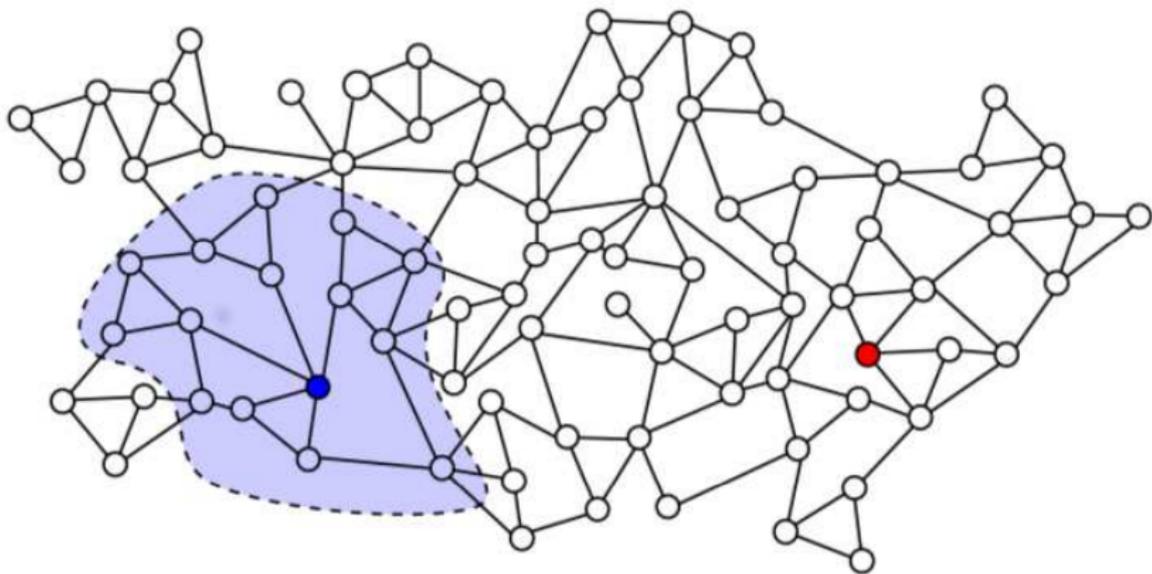
Briser la symétrie



Briser la symétrie



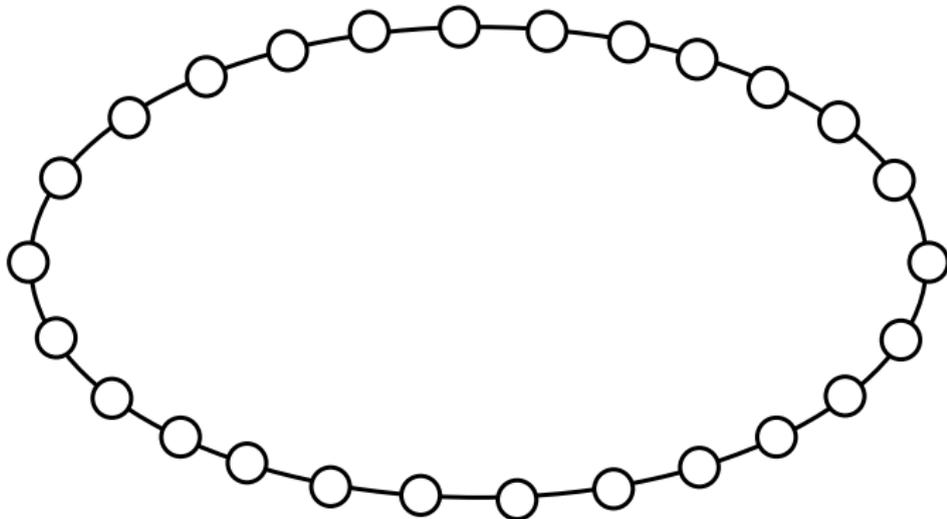
Mesurer la localité



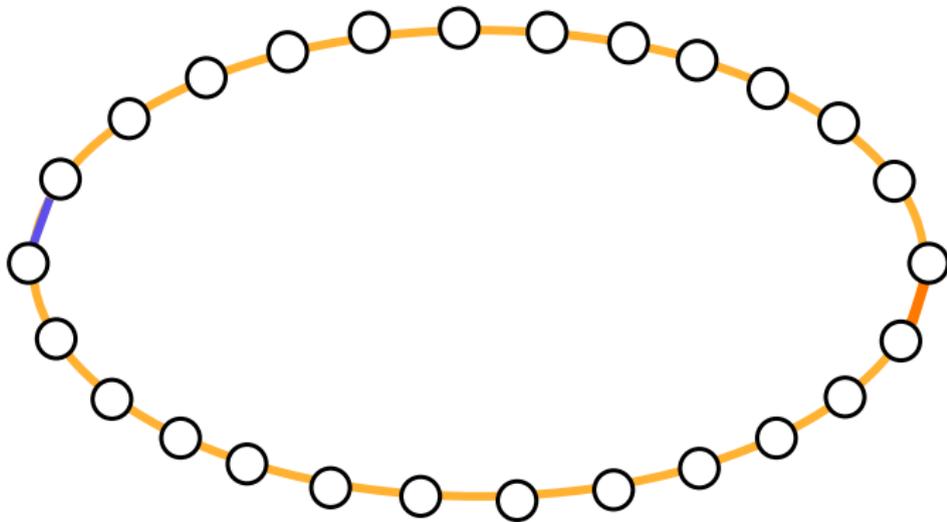
Mesurer la localité

- Temps constant : le vrai local, dépendance en le degré
- Temps $\log \log(n)$, $\log^*(n)$, $\log(n)$
- Temps similaire au diamètre : non local

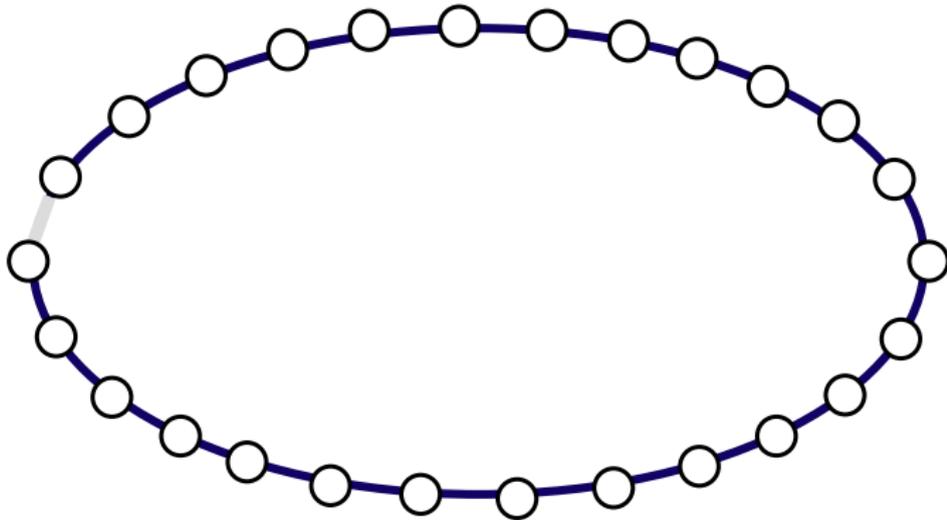
Non localité : ACM



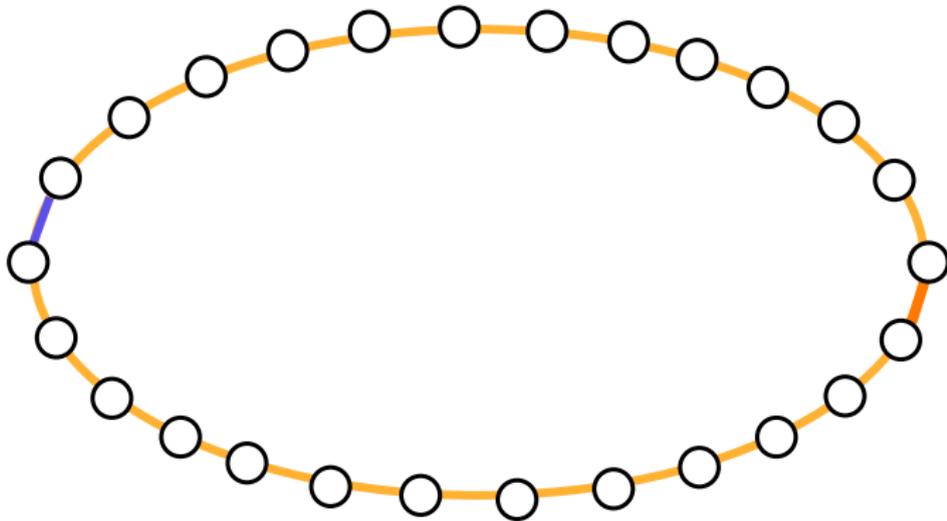
Non localité : ACM



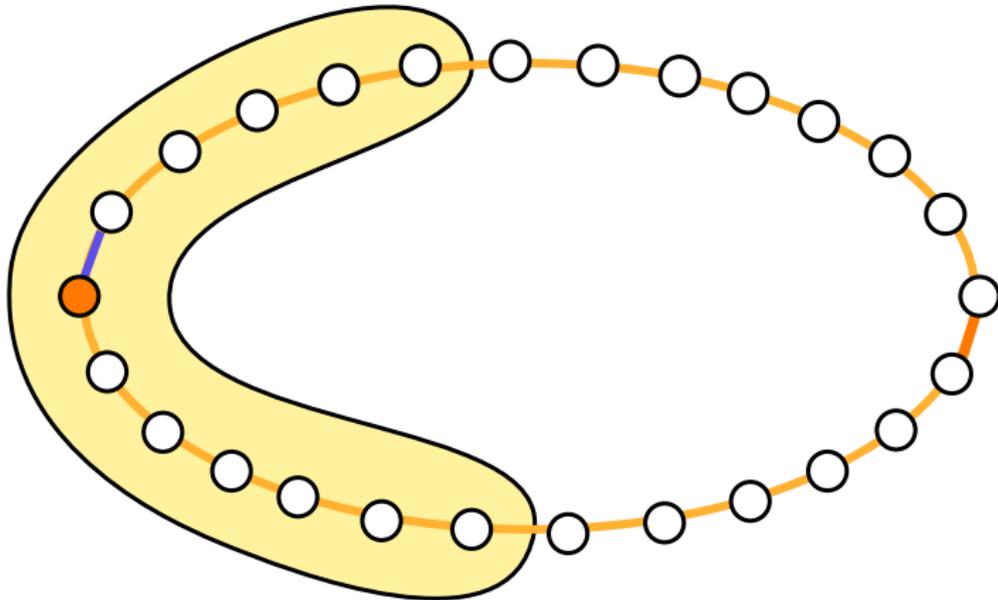
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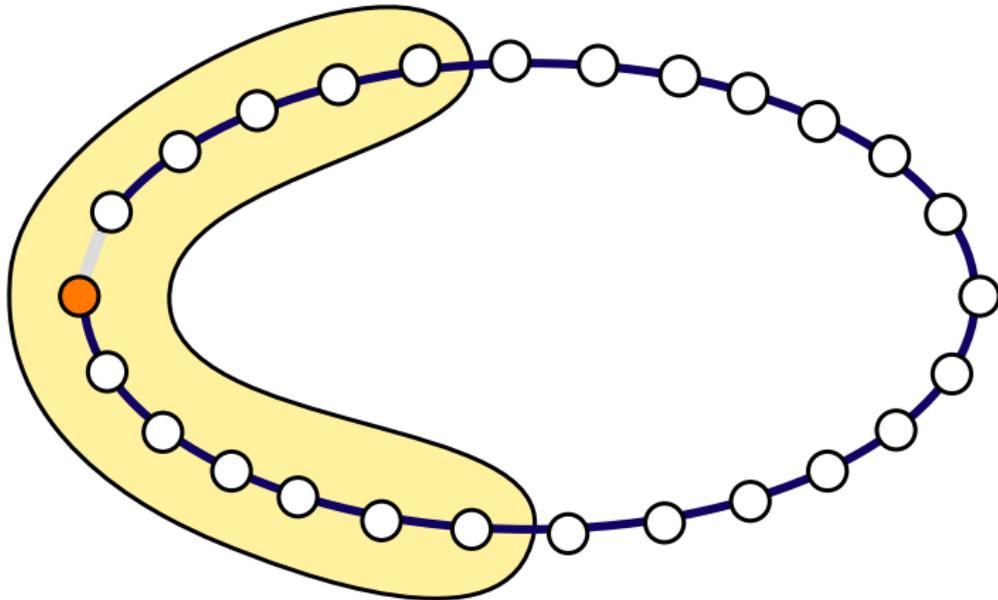
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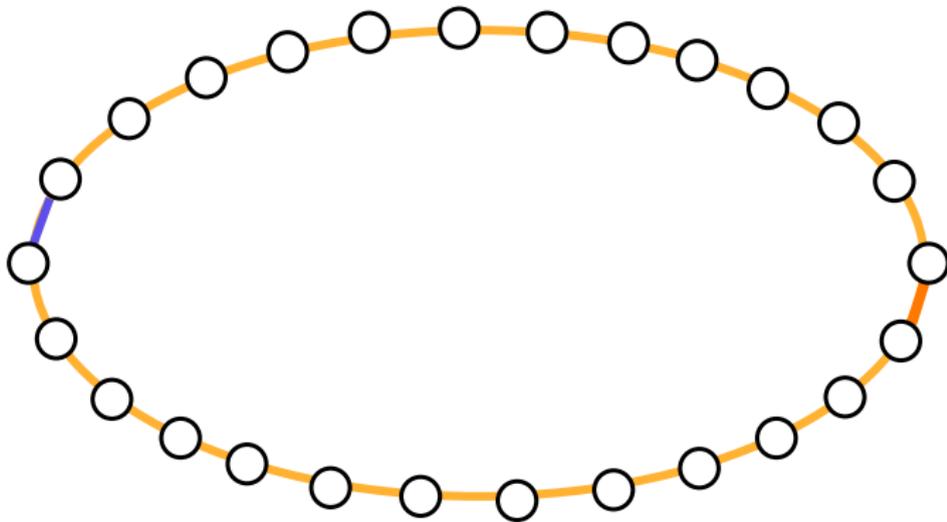
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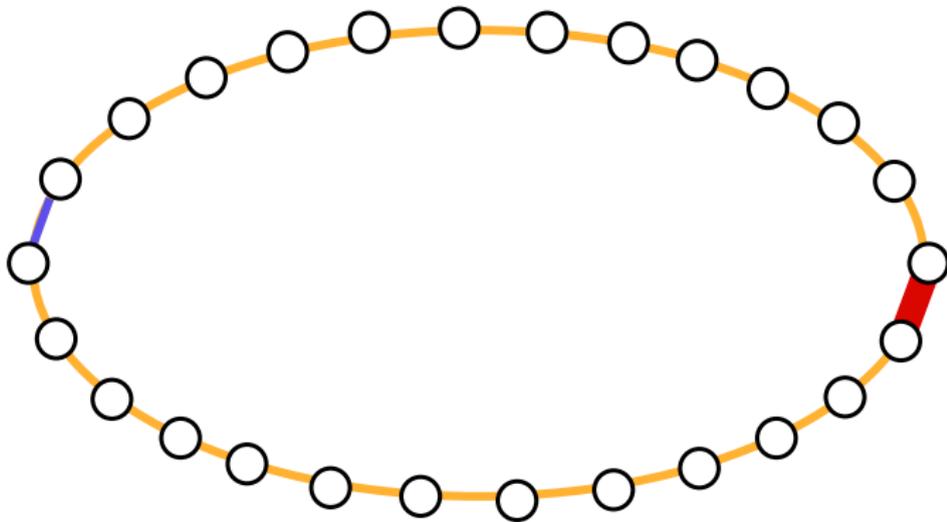
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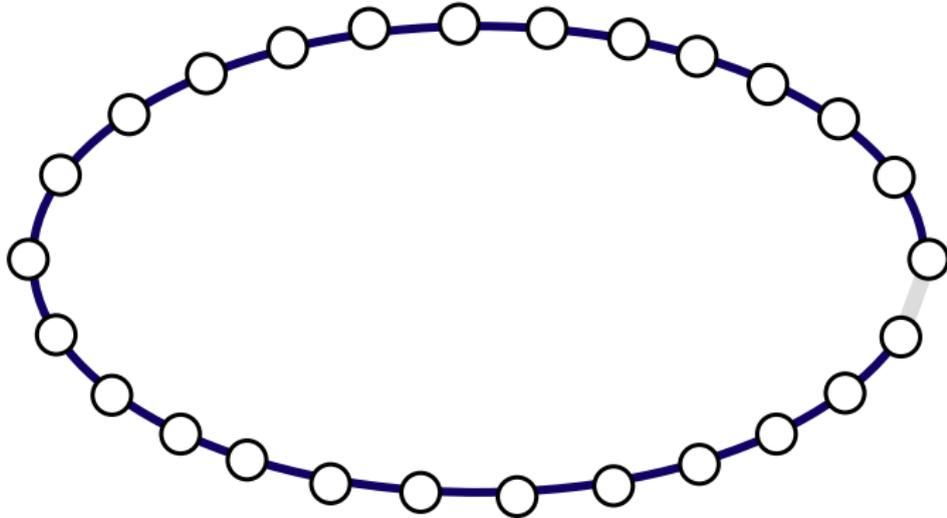
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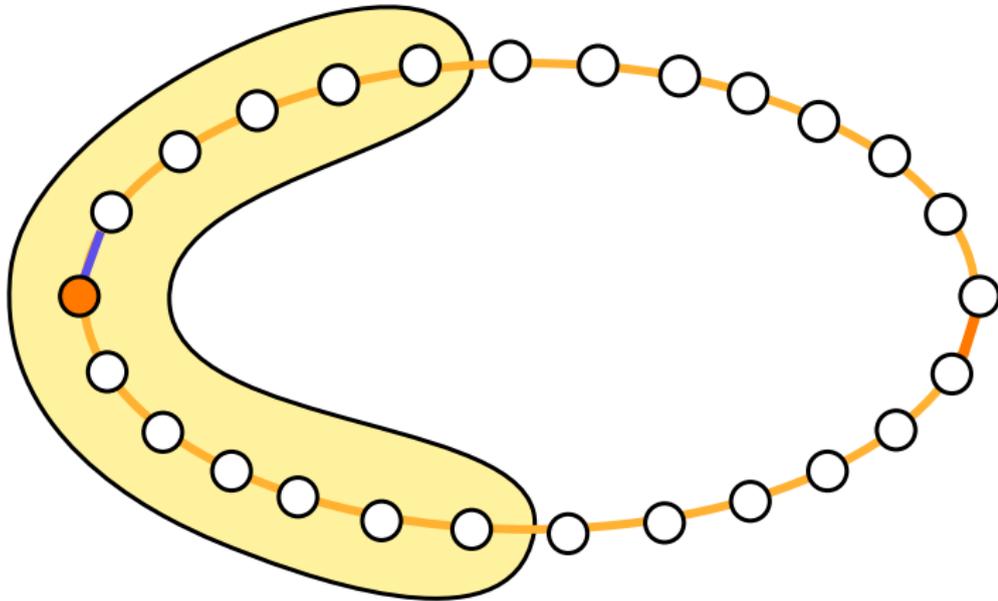
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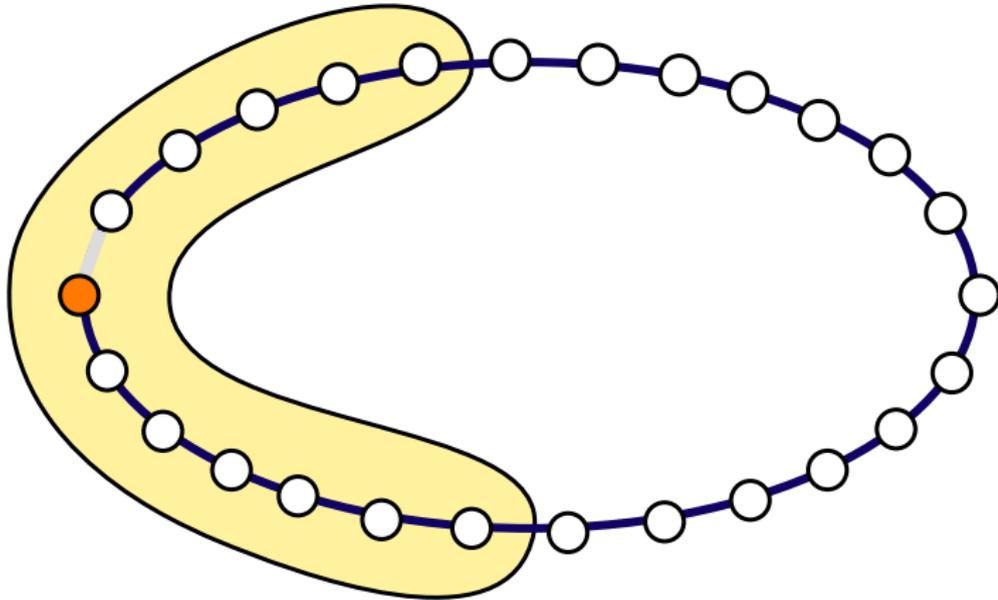
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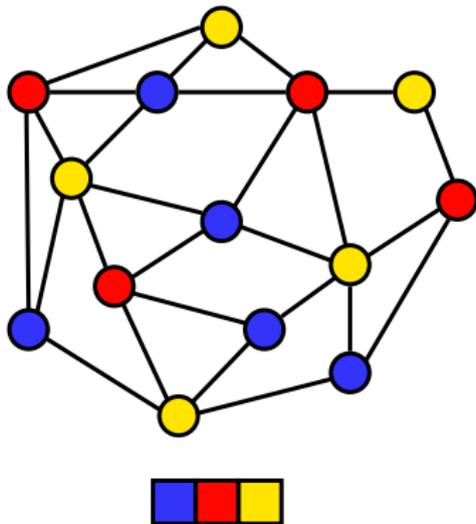
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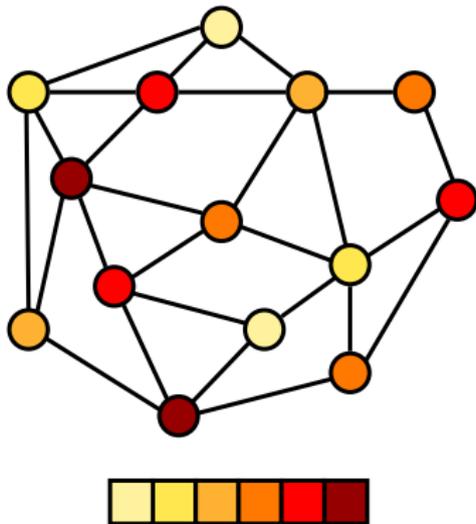
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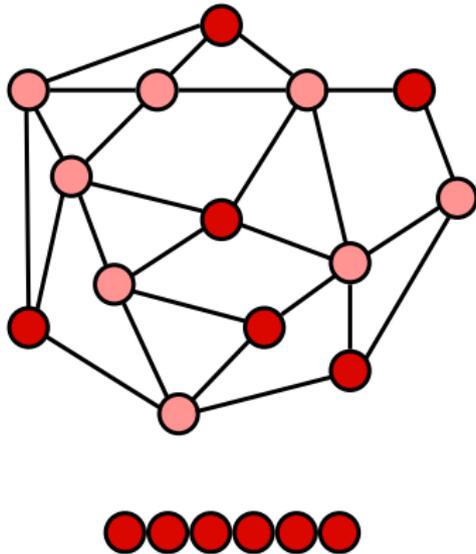
Des tâches faciles



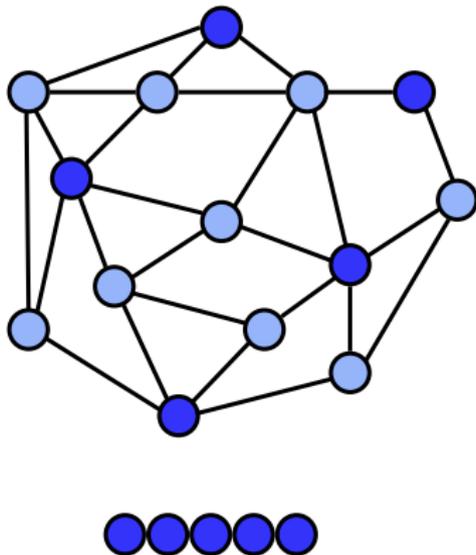
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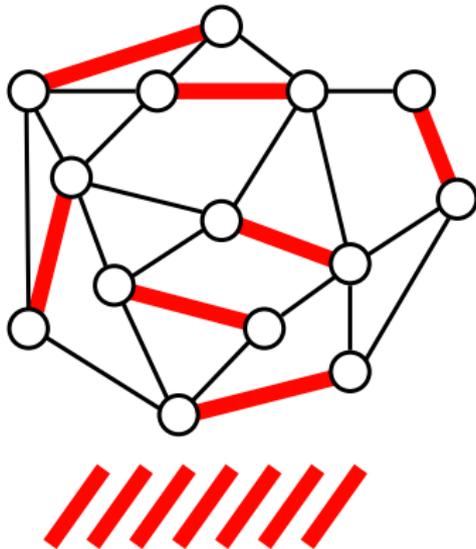
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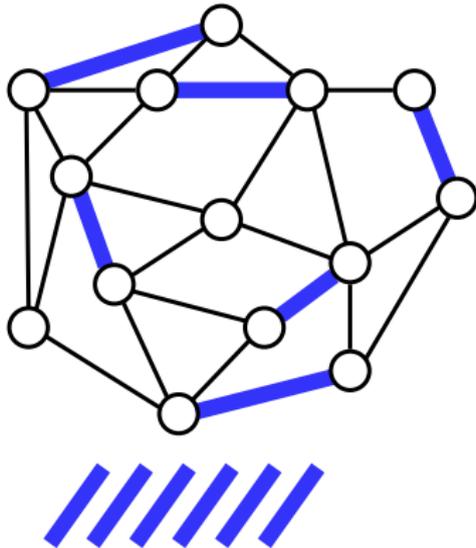
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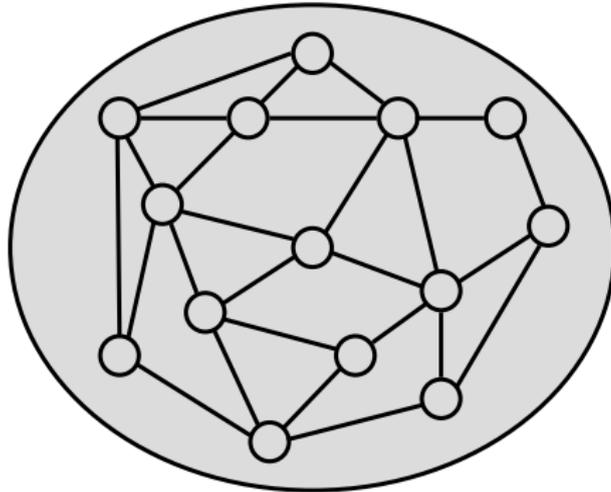
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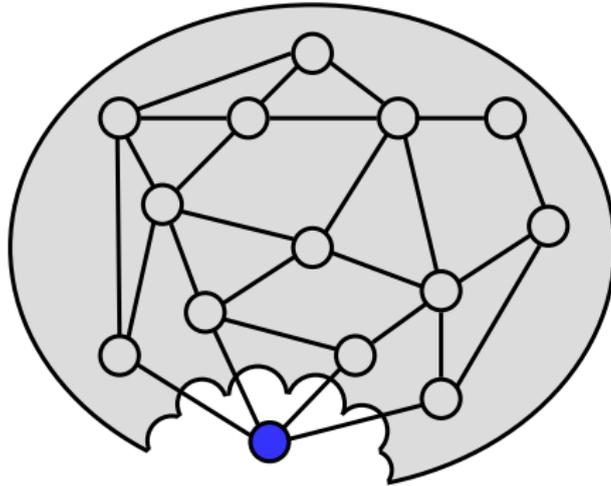
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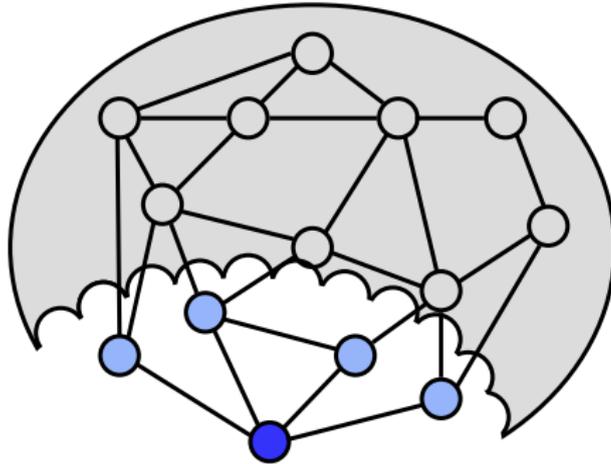
Glouton



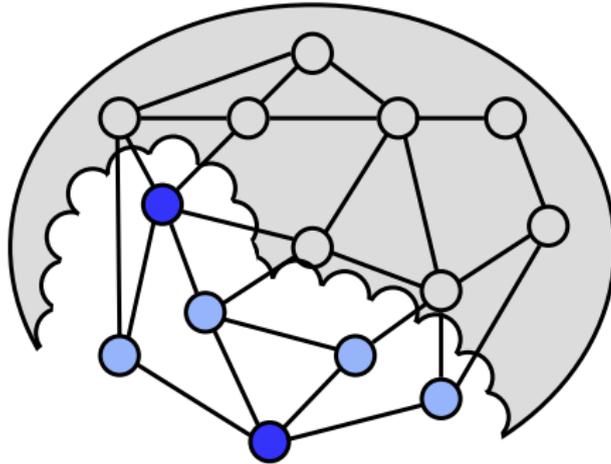
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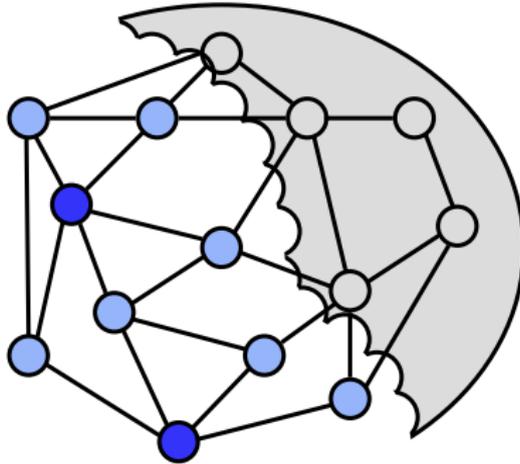
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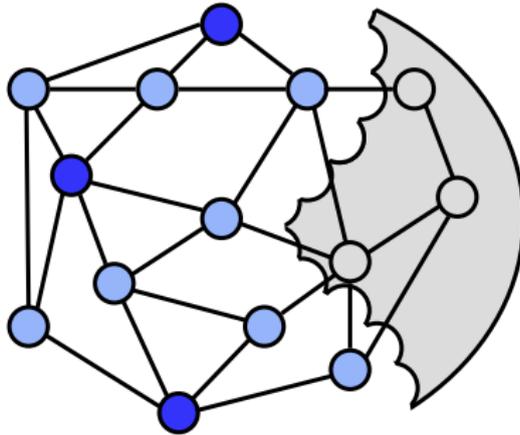
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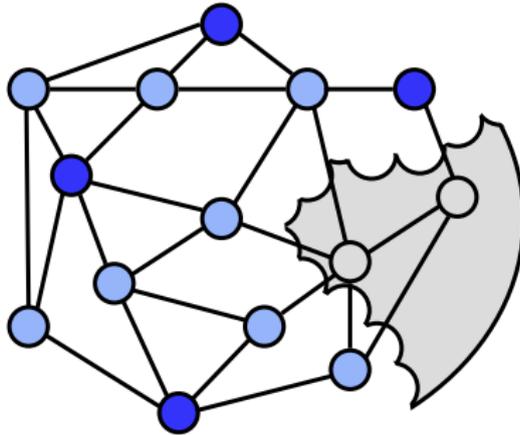
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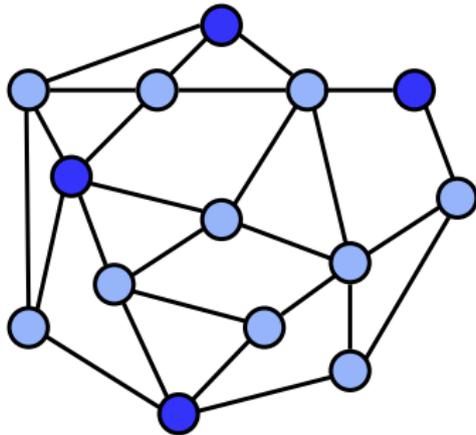
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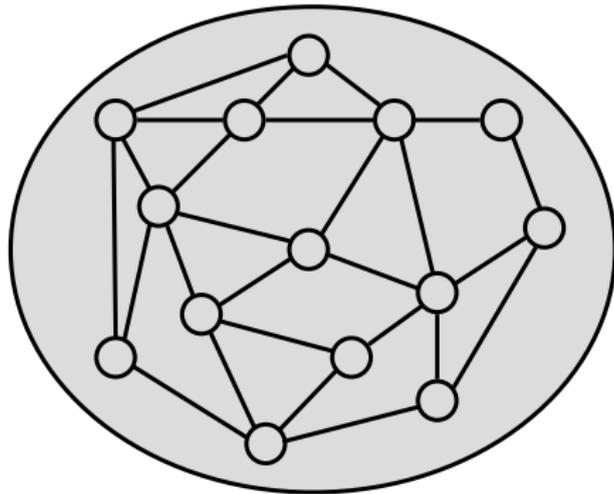
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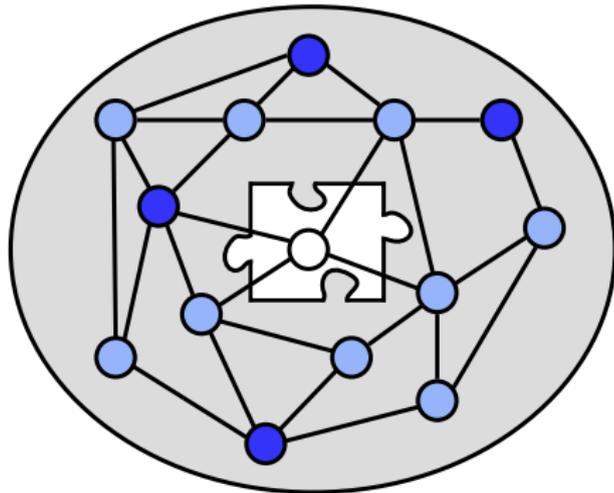
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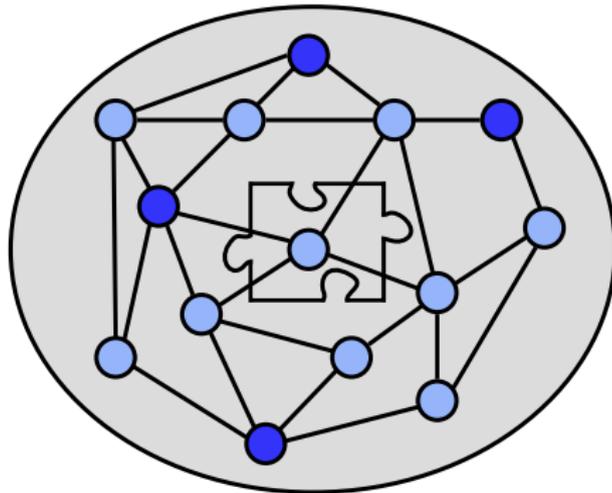
Compléter une solution



Compléter une solution



Compléter une solution



Changement de phase

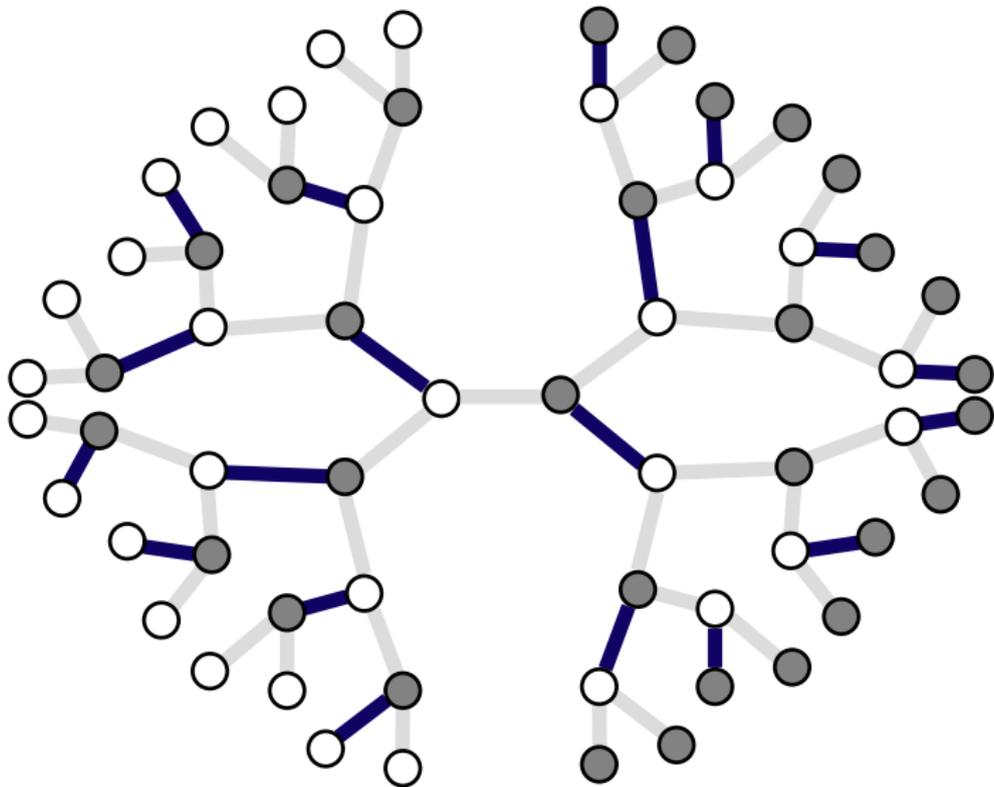
- problème « maximal », ou « en $\Delta + 1$ » : beaucoup de solutions, complétion possible \rightarrow local et glouton basique
- problème « maximum », ou paramètre « juste » : peu de solutions, loin les unes de autres \rightarrow structure rigide, parfois NP-complet, nécessite une vue globale

La morale locale

Pour des formulations « relâchées » des problèmes de graphes, on peut passer à des algorithmes distribués locaux.

Quand le modèle est décentralisé, on doit réduire les objectifs.

$\log^*(n) ? !$



Sur la face probabiliste de la lune

- A priori utile pour briser la symétrie
- Très récemment une vraie séparation a été montrée

Des gens

