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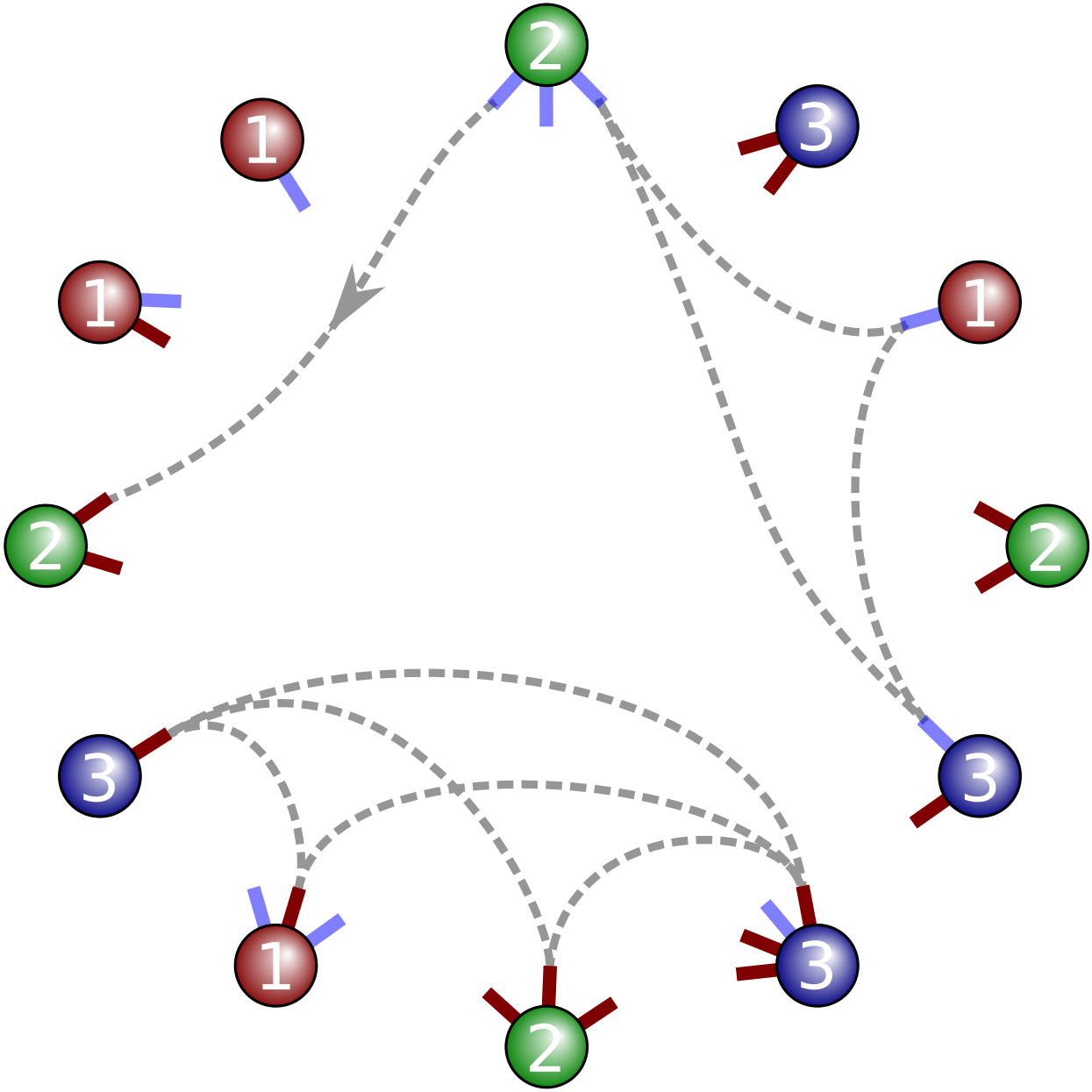
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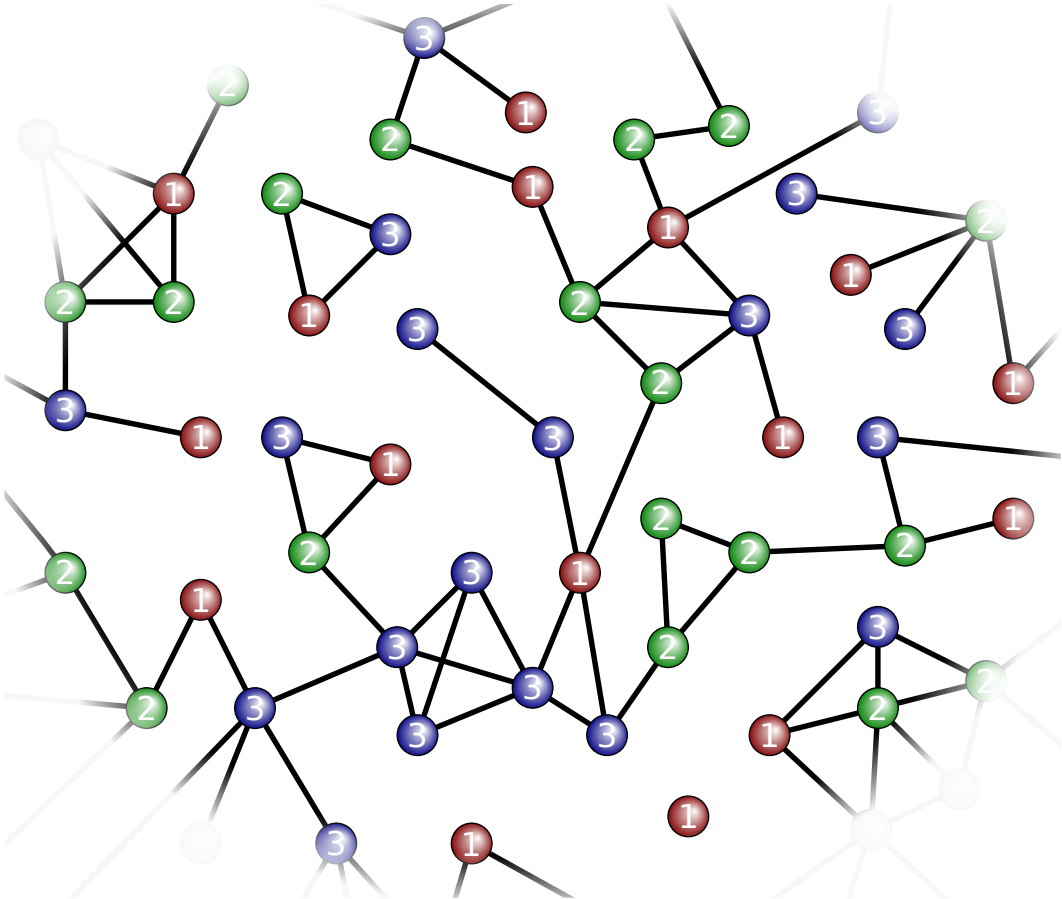


General *stub matching* scheme

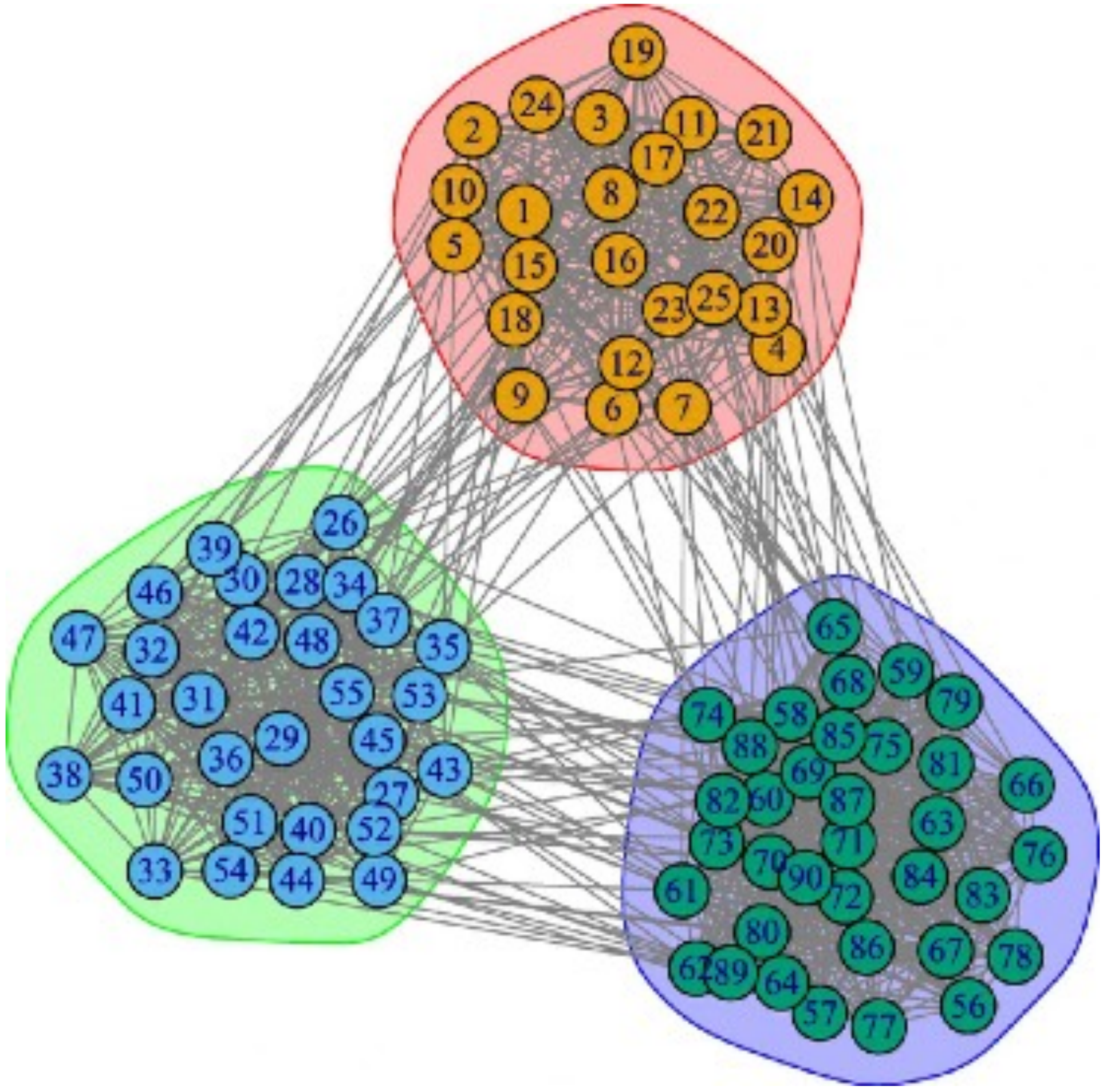
Many network models can be seen as a *stub matching* scheme with

- node types
- stub types
- rules governing how stubs are matched

This perspective facilitates the mathematical description of the dynamical processes on networks

- probability generating functions (ex.: percolation, robustness)
- ordinary differential equations (ex.: epidemic spreading, opinion dynamics)

Most of these approaches use stub types to enforce *local* connection patterns.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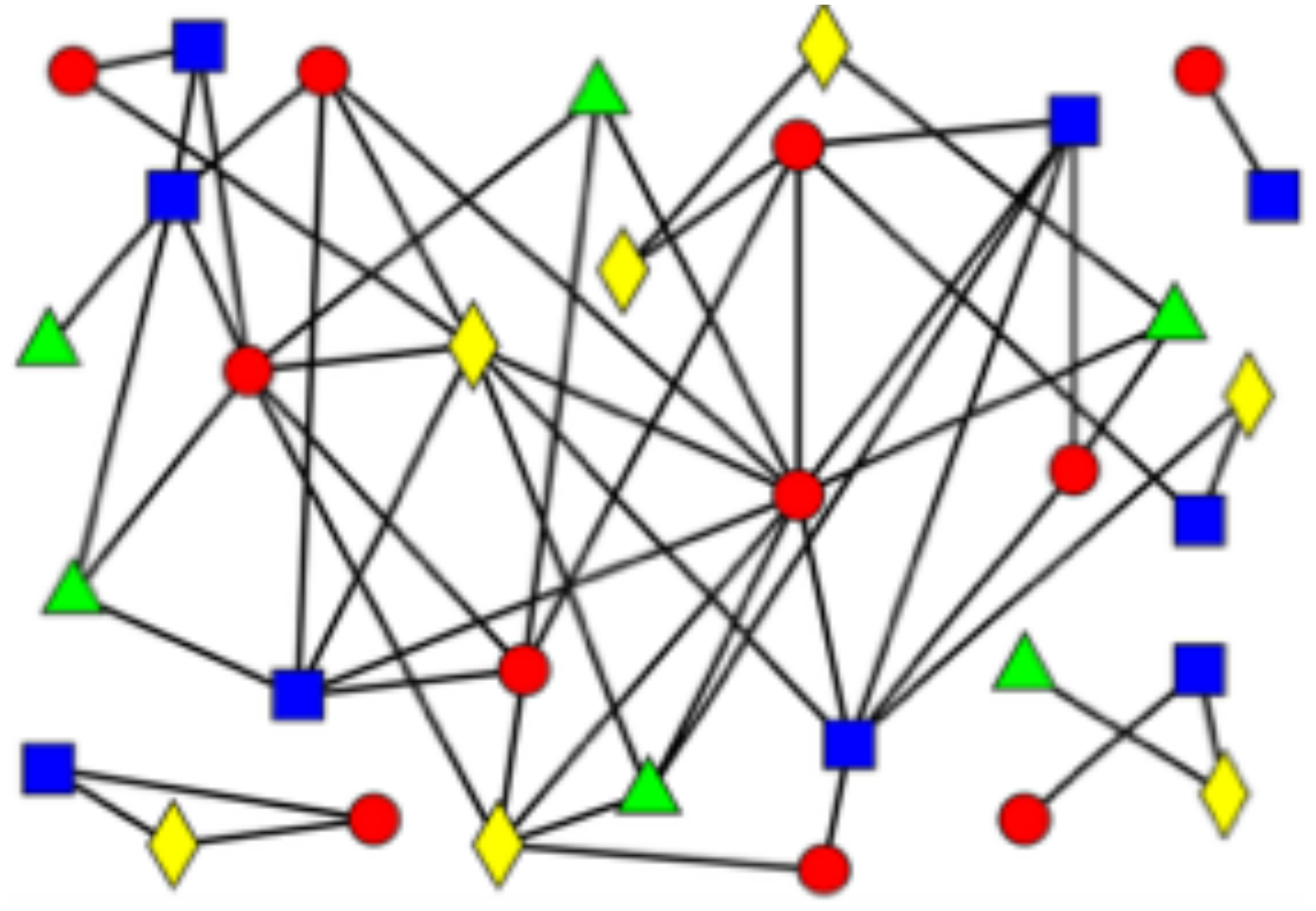

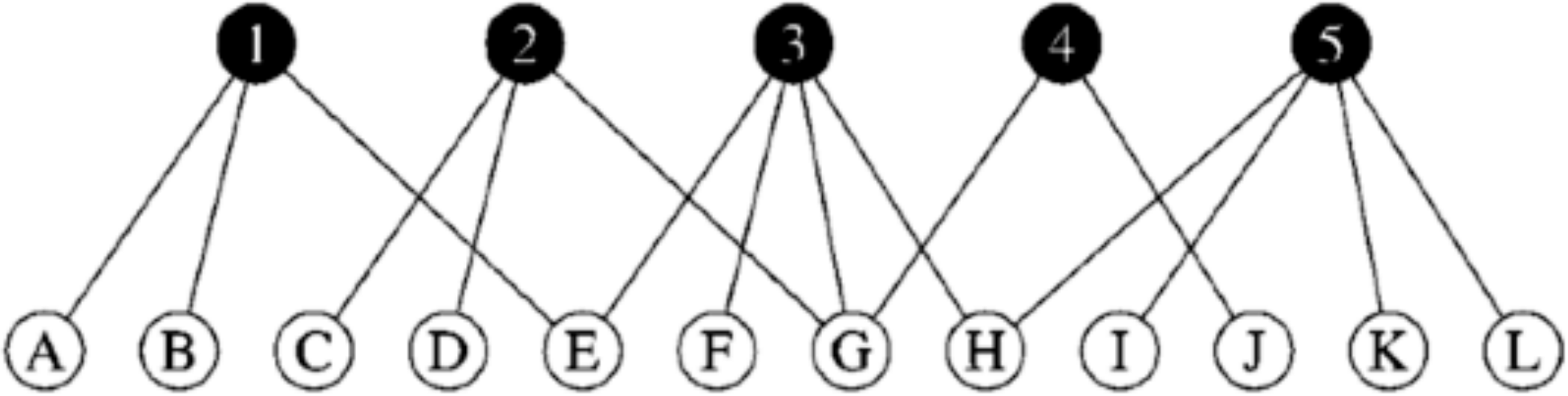
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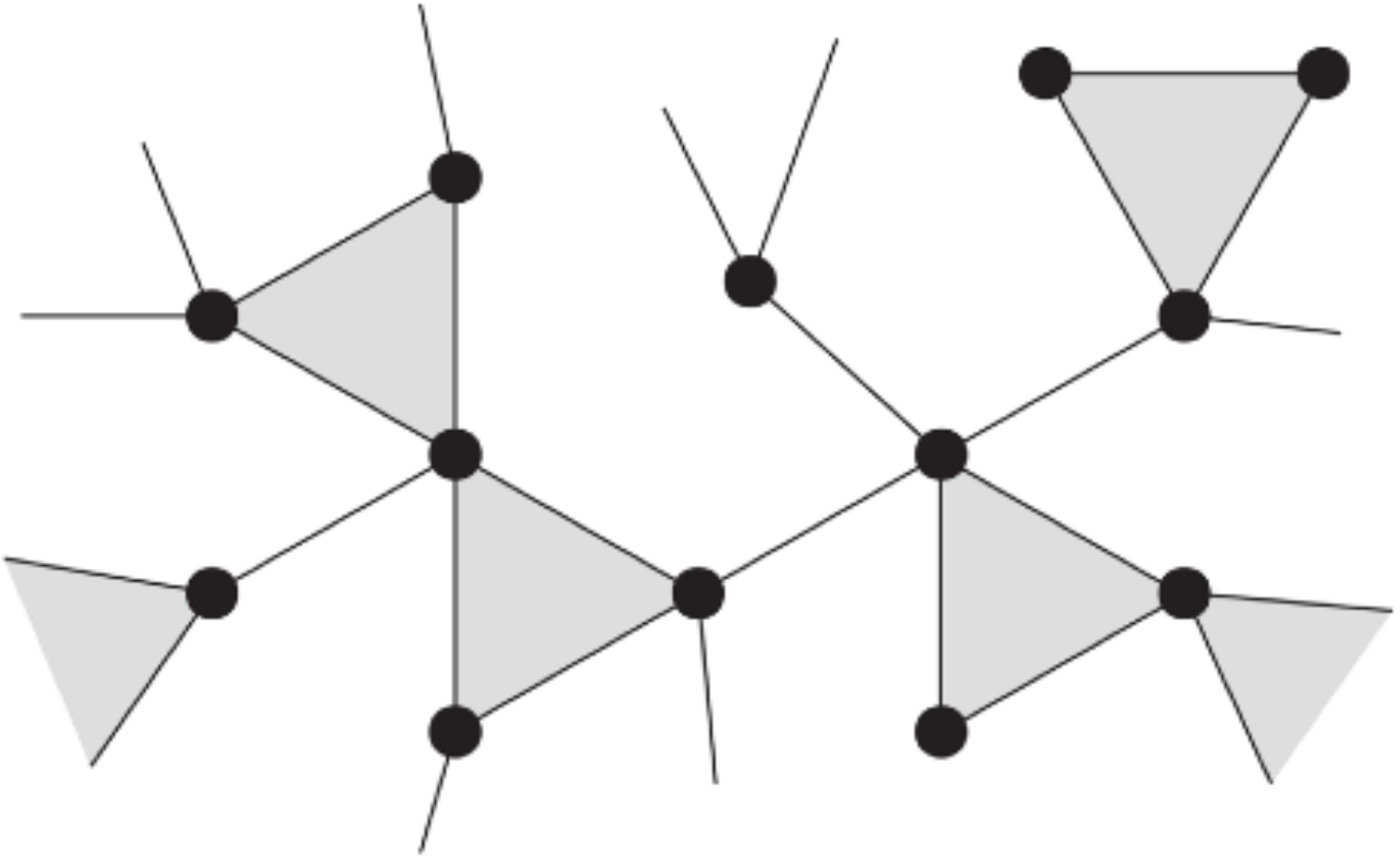

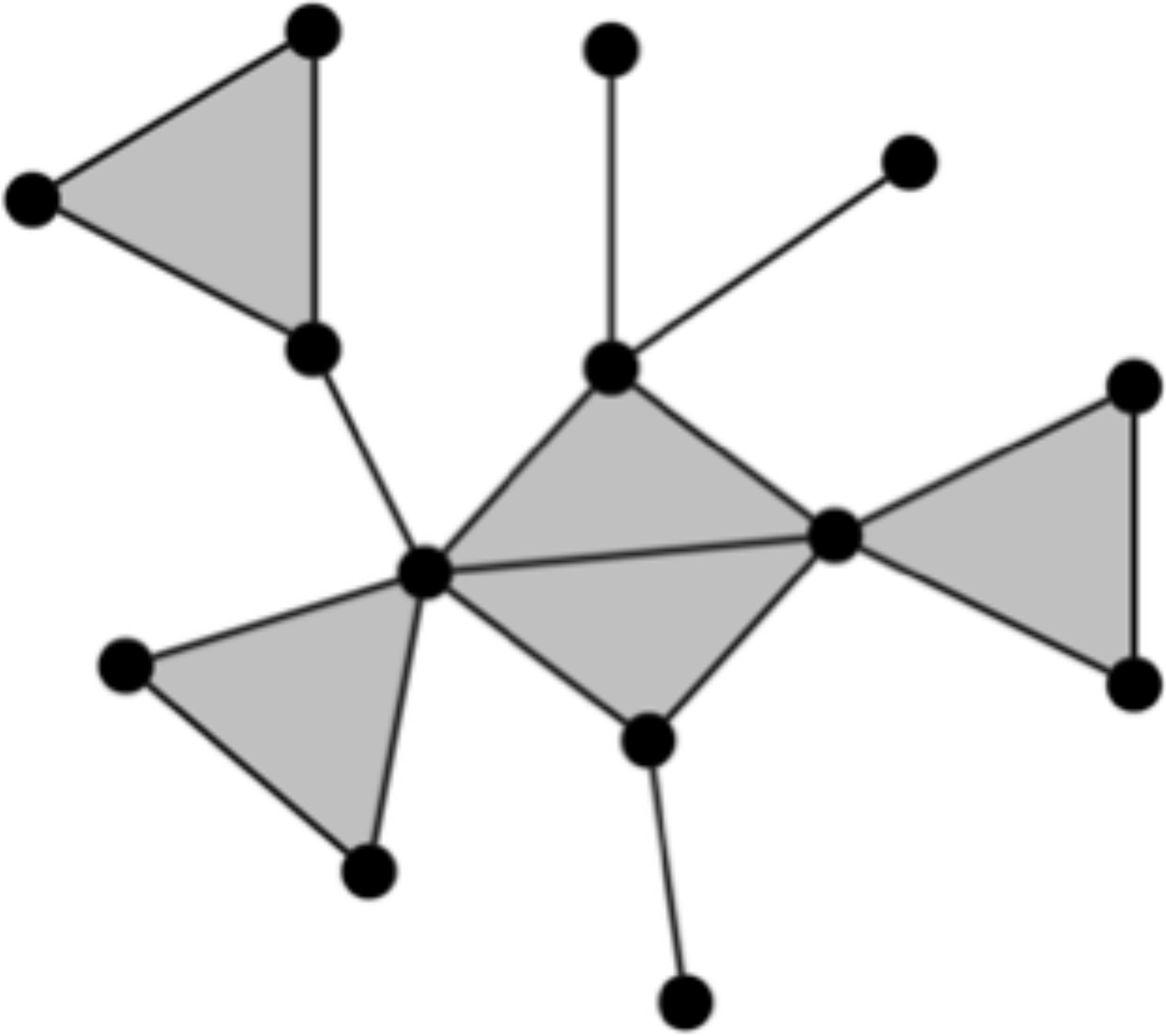

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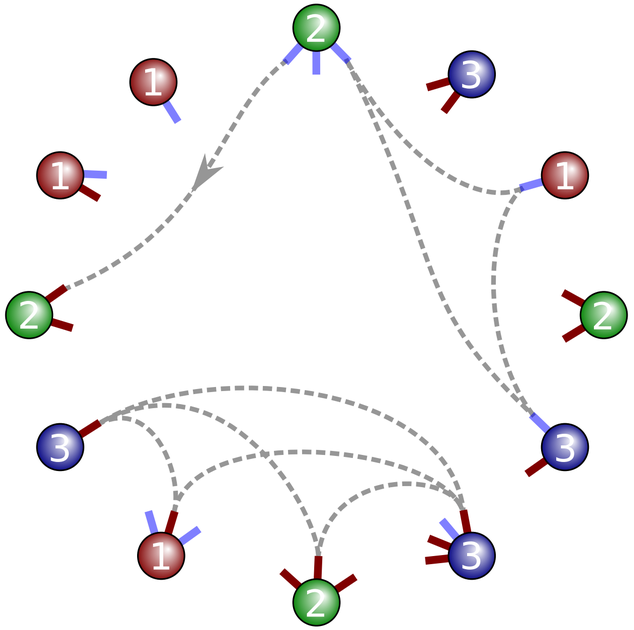

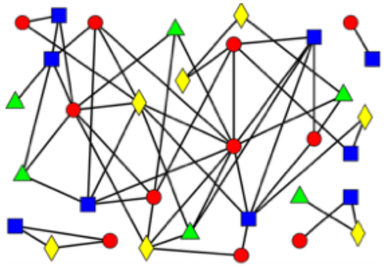

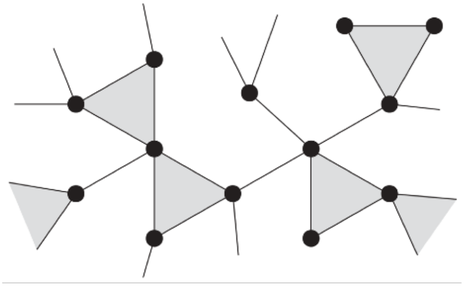

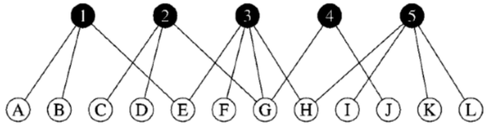

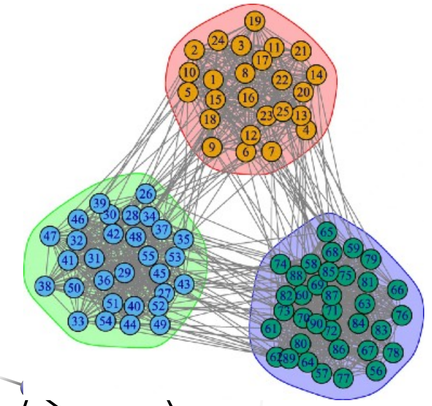

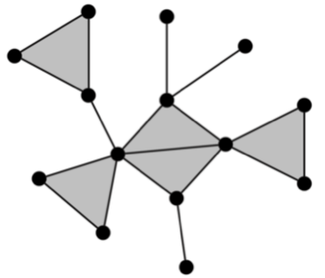

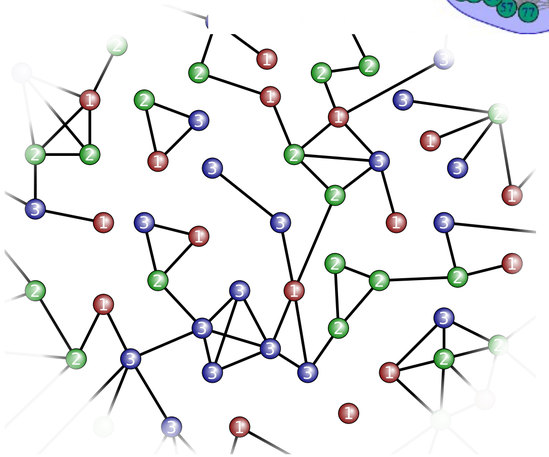

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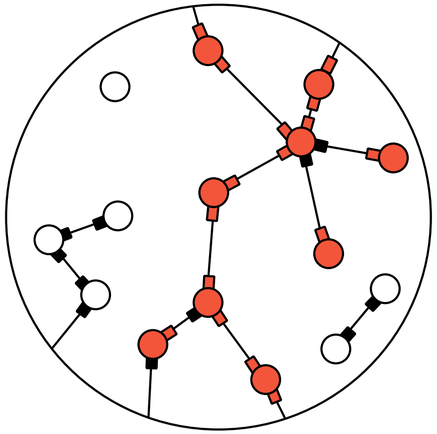
Macroscopic level: Connectivity

Preprocessing: Identify links that lead to the largest connected component and tag them as red; all remaining stubs are tags as black.

Stub matching scheme

- One type of nodes
- Two types of stubs (red, black)
- Rules:

1. Allowed links: red-red, red–black
2. Black stubs connect to any other stubs, but only towards nodes with excess red degree 0.
3. Red stubs connect to any other stubs, but only towards nodes with excess red degree at least 1.