

Algorithmic problem solving

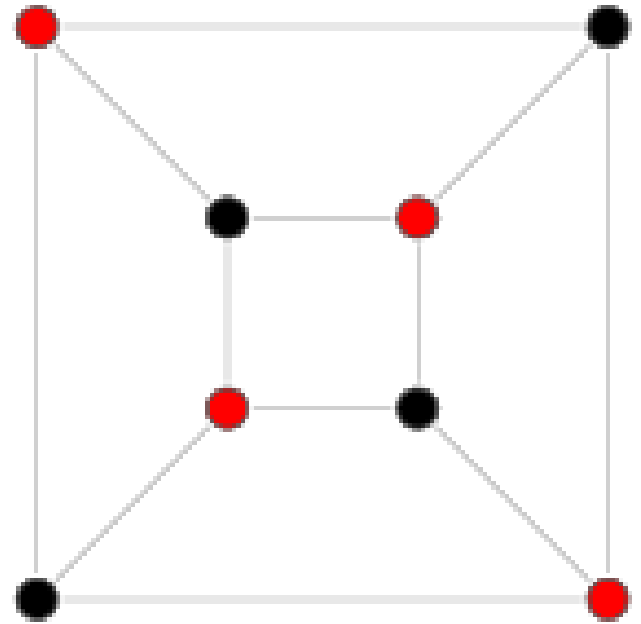
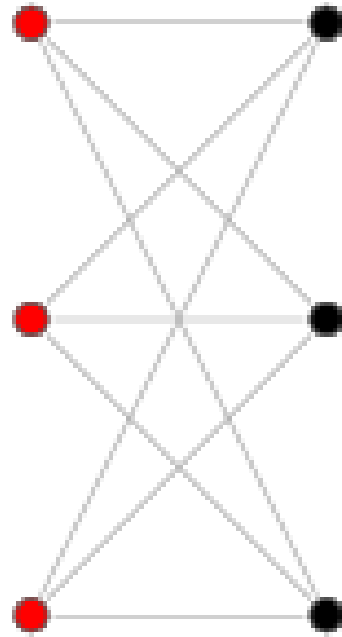
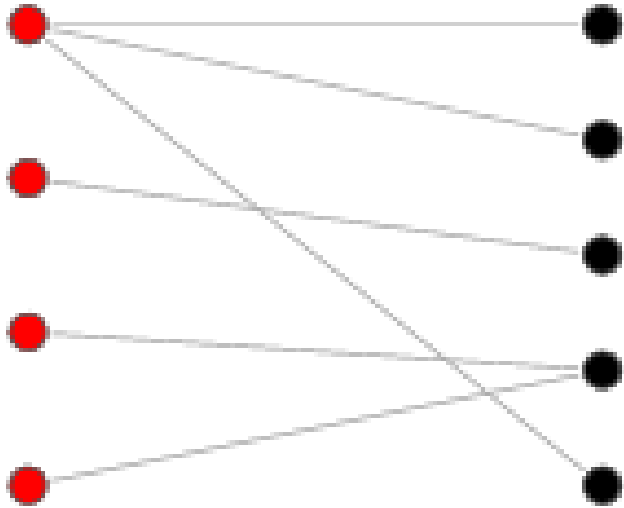
BIPARTITE GRAPH

by:

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What is Bipartite graph?

A bipartite graph, also called a bigraph, is a set of graph vertices decomposed into two disjoint sets such that no two graph vertices within the same set are adjacent. A bipartite graph is a special case of a k -partite graph with $k=2$. The illustration in the next slide shows some bipartite graphs, with vertices in each graph colored based on to which of the two disjoint sets they belong.



Properties

- A graph is bipartite if and only if it does not contain an odd cycle.

Additional applications

- In real world : scheduling the Advertisements.
- Scheduling the trains on the tracks.

Examples

- Every tree is bipartite.
- Cycle graphs with an even number of vertices are bipartite.

References

Mathworld, <http://mathworld.wolfram.com/BipartiteGraph.html>