

# Handout for the Workshop on Combinatorial Choreography

Tom Verhoeff



Department of Mathematics & Computer Science  
Netherlands

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## Definitions

**Permutation** (of a multiset) A linear arrangement containing all elements of a multiset, in some order from left to right.

**Neighbor swap** An operation on a permutation where two adjacent elements trade places.

**Graph** A structure consisting of a set of **nodes** and a set of **edges**, where each edge connects a pair of nodes.

**Hamilton path** A path that follows the edges of the graph and visits every node exactly once.

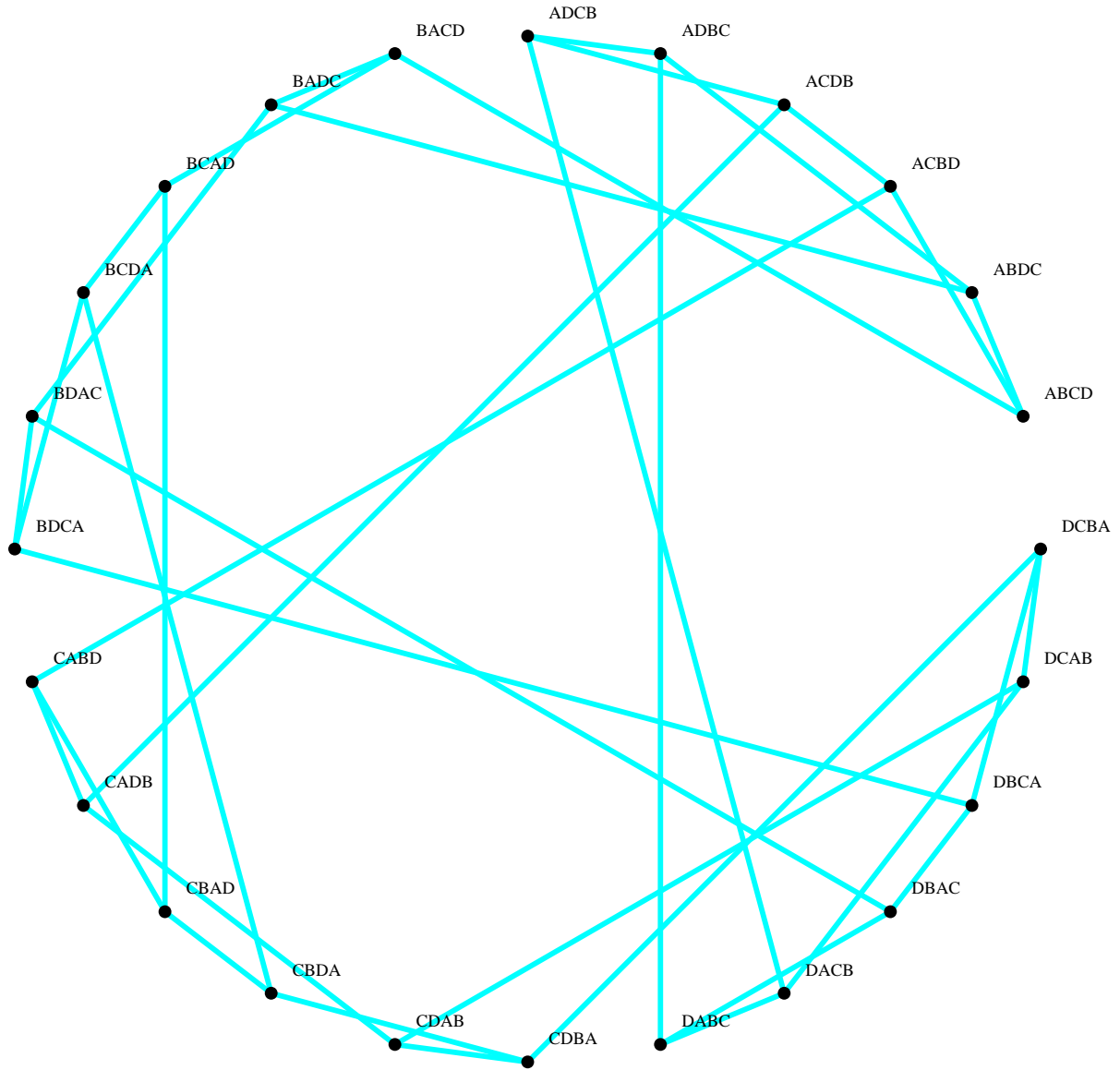


Figure 1: Draw a Hamilton path on this graph

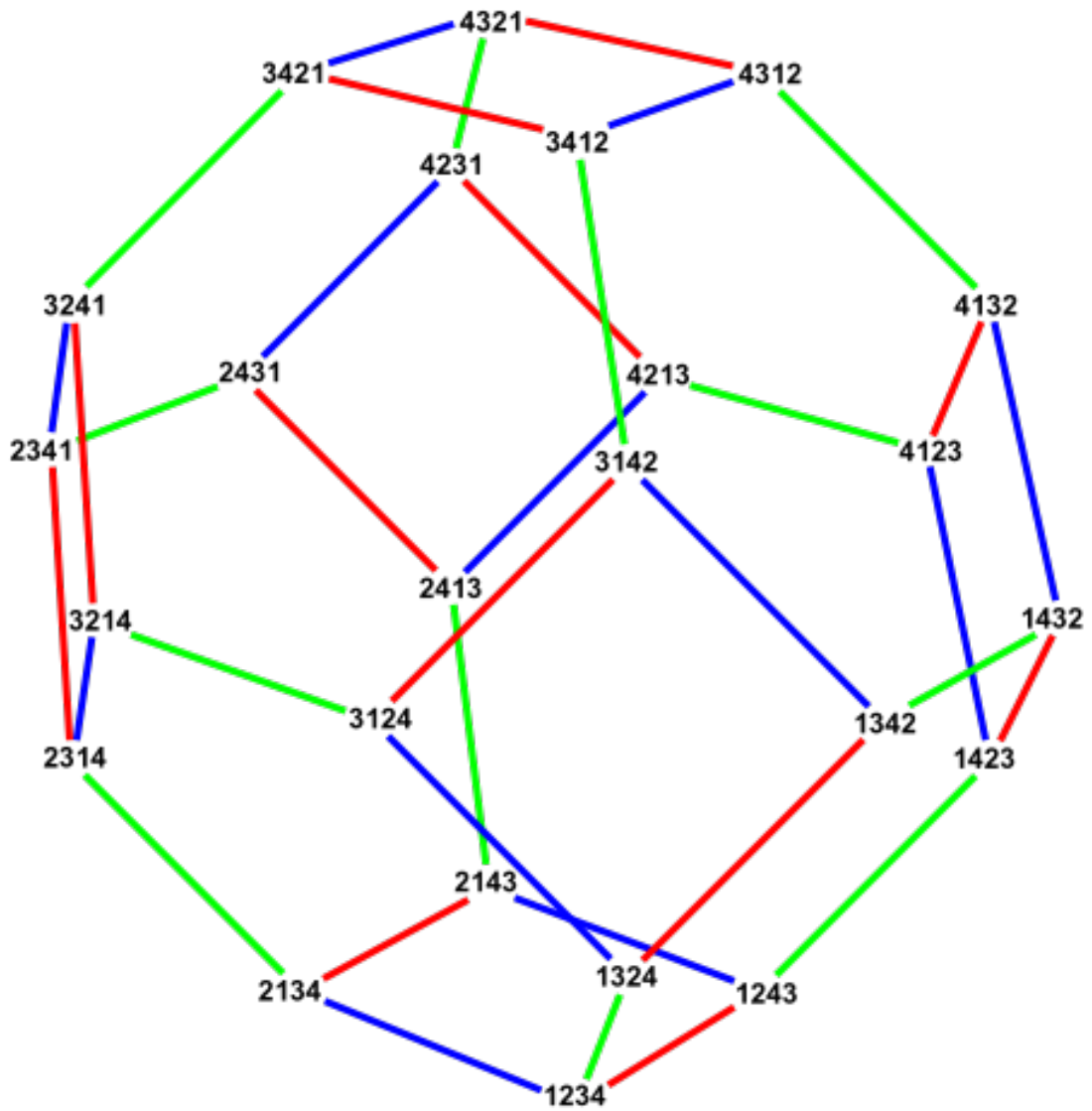


Figure 2: Draw a Hamilton path on this graph

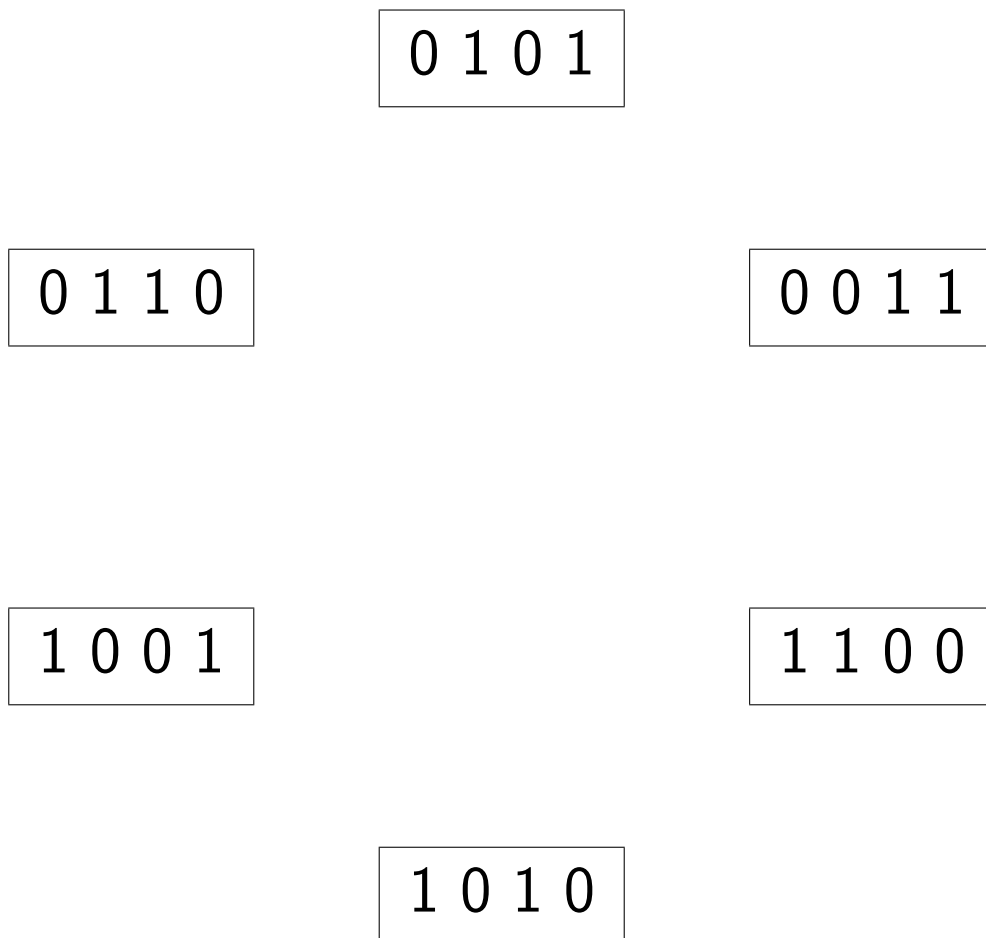


Figure 3: Connect these bit strings by a path, such that each pair of adjacent strings differs by a neighbor swap

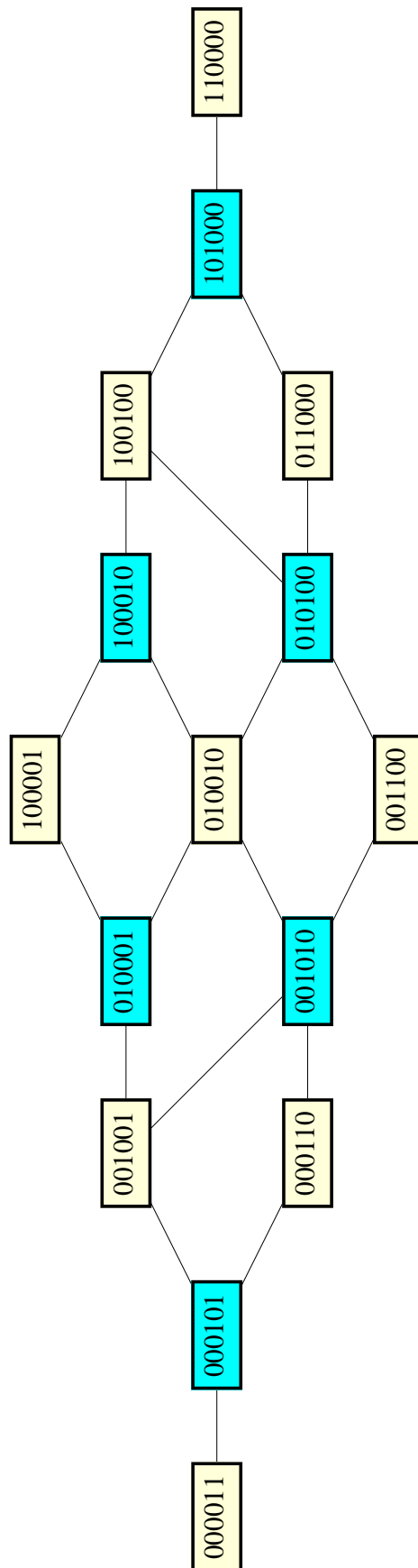


Figure 4: Draw a Hamilton path on this graph

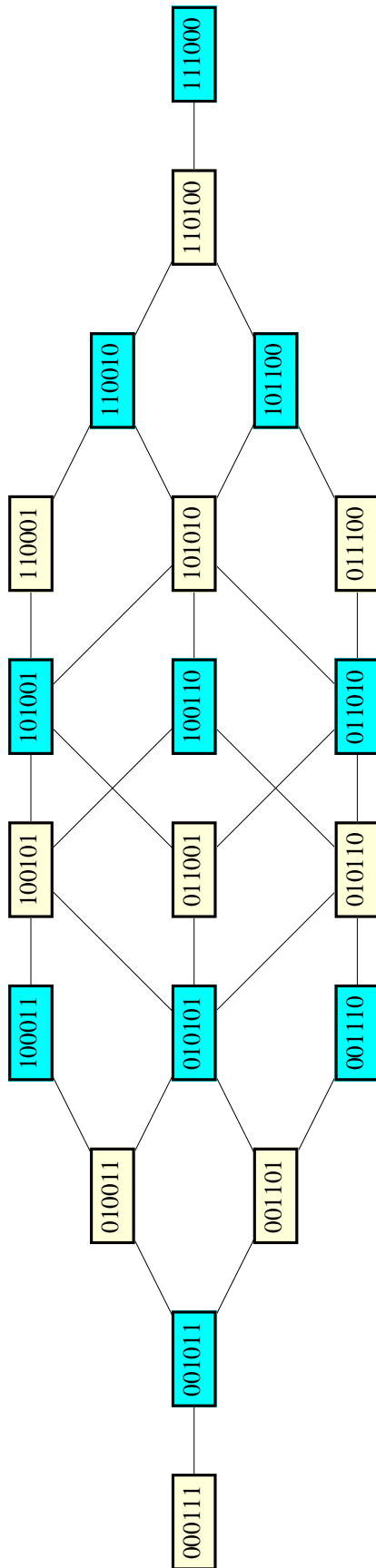


Figure 5: Draw a Hamilton path on this graph