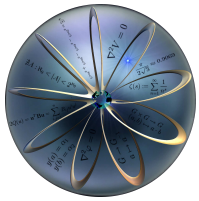

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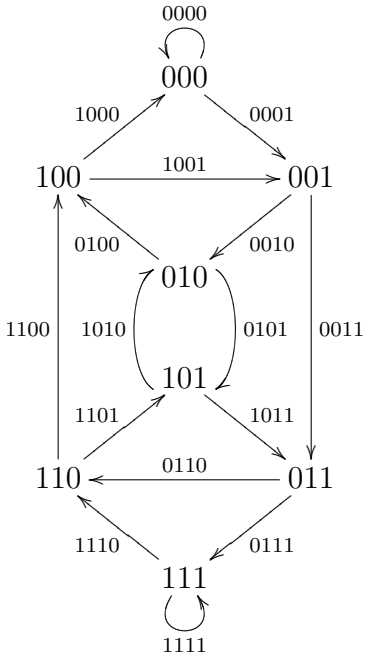
de Bruijn digraph

Canonical name	DeBruijnDigraph
Date of creation	2013-03-22 12:16:11
Last modified on	2013-03-22 12:16:11
Owner	Mathprof (13753)
Last modified by	Mathprof (13753)
Numerical id	8
Author	Mathprof (13753)
Entry type	Definition
Classification	msc 05C20
Related topic	KautzGraph
Related topic	LineGraph

The vertices of the *de Bruijn digraph* $B(n, m)$ are all possible words of length $m - 1$ chosen from an alphabet of size n.

$B(n, m)$ has n^m edges consisting of each possible word of length m from an alphabet of size n. The edge $a_1a_2 \ldots a_n$ connects the vertex $a_1a_2 \ldots a_{n-1}$ to the vertex $a_2a_3 \ldots a_n$.

For example, $B(2, 4)$ could be drawn as:



Notice that an Euler cycle on $B(n, m)$ represents a shortest sequence of characters from an alphabet of size n that includes every possible subsequence of m characters. For example, the sequence 0000111100101010000 includes all 4-bit subsequences. Any de Bruijn digraph must have an Euler cycle, since each vertex has in degree and out degree of n.