Nim Value and Mex Rule: Additional Slides

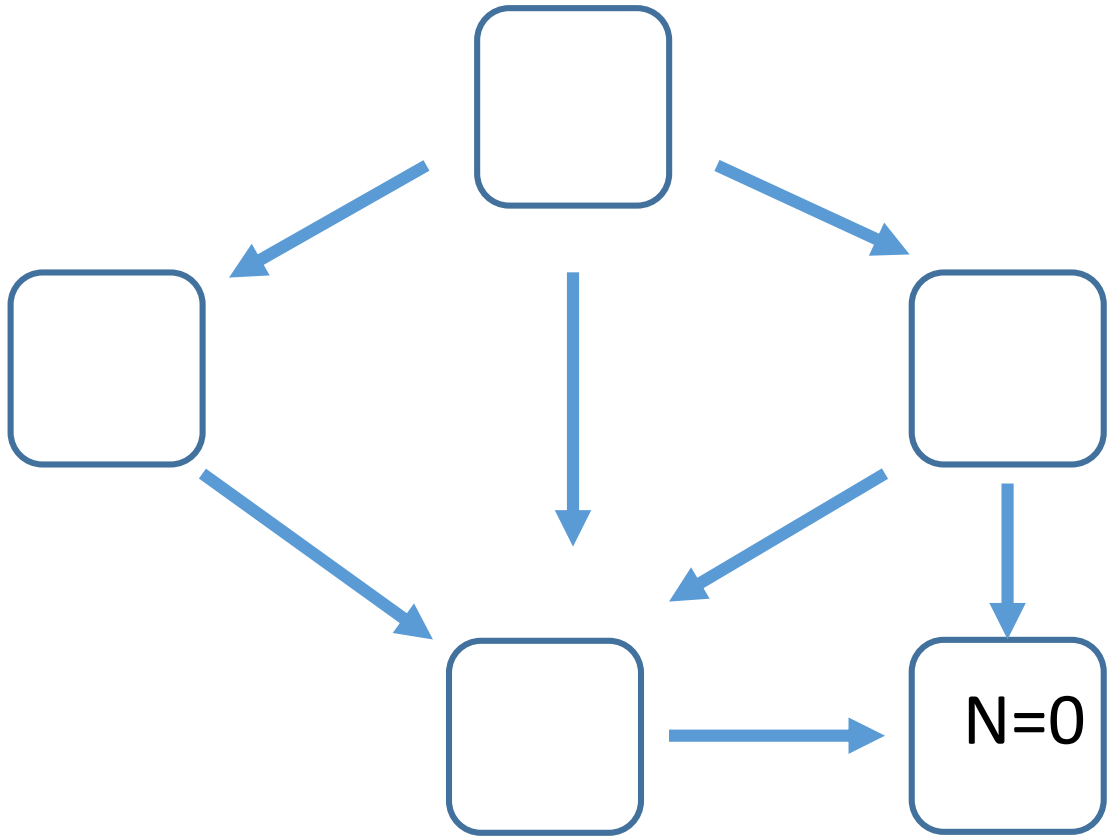
If G≡ *(n), a single heap of n chips, then we say it has nim value n, denoted N(G)=n.

If G has no options, it is equivalent to a pile of no chips, so N(G)=0.

If N(G)>0 then W(G)=1 (it is a winning game- the option witn N=0 is losing)
If N(G)=0 then W(G)=0 (it is a losing game)

If G has options G1, G2, …, Gm, then
N(G)= mex(N(G1), N(G2),…,N(Gm)). The nim value of a game is the mex of the nim values of its options.

Calculating Nim Values: Abstract Directed Acyclic Graph Game



because game has no options

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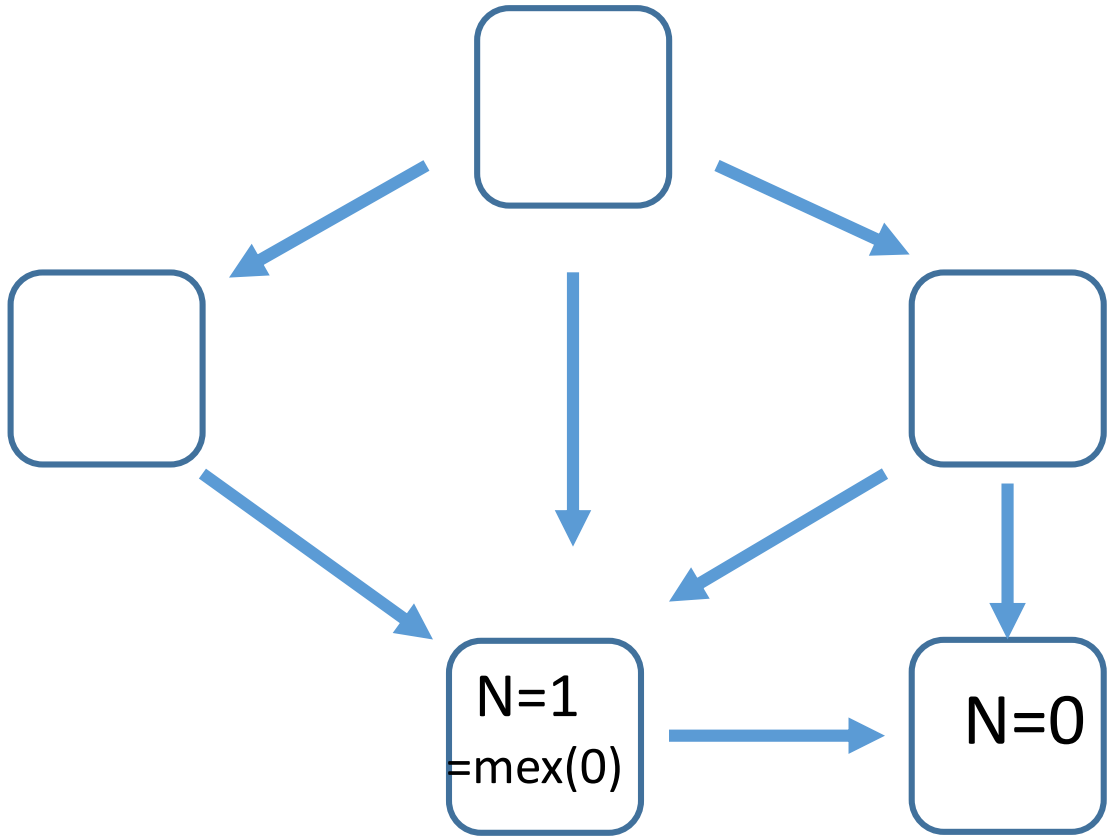

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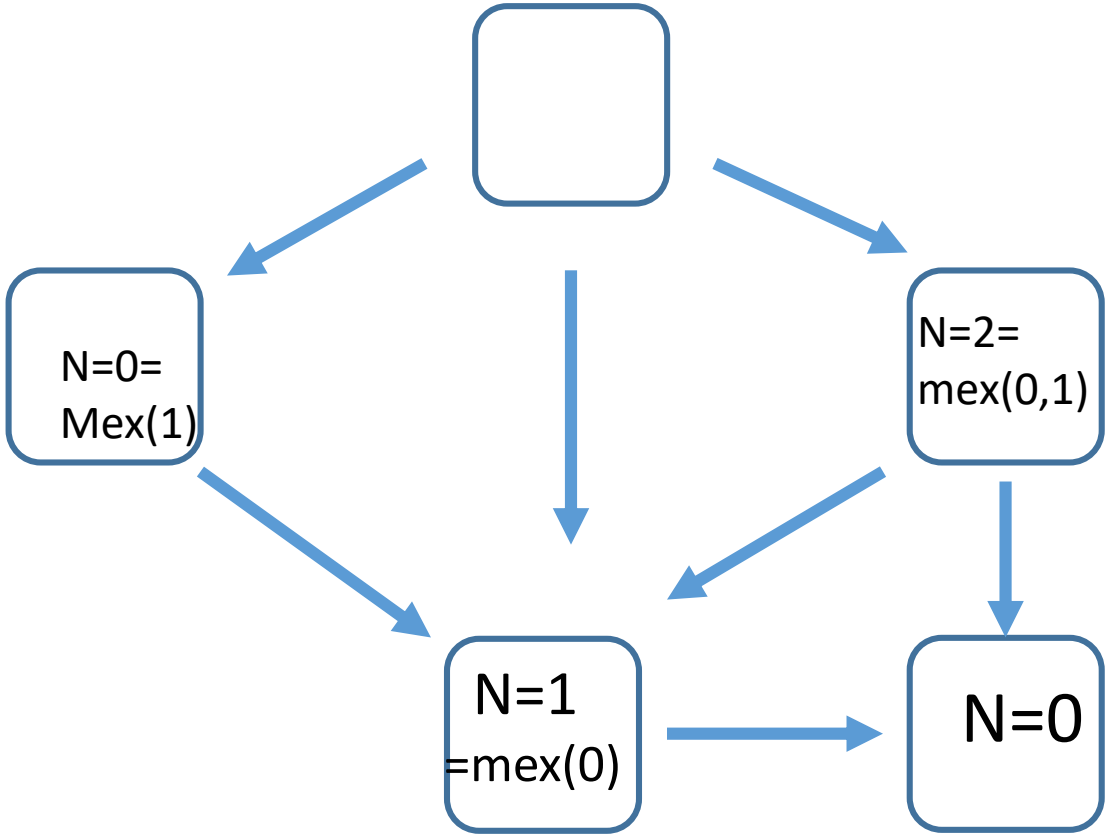

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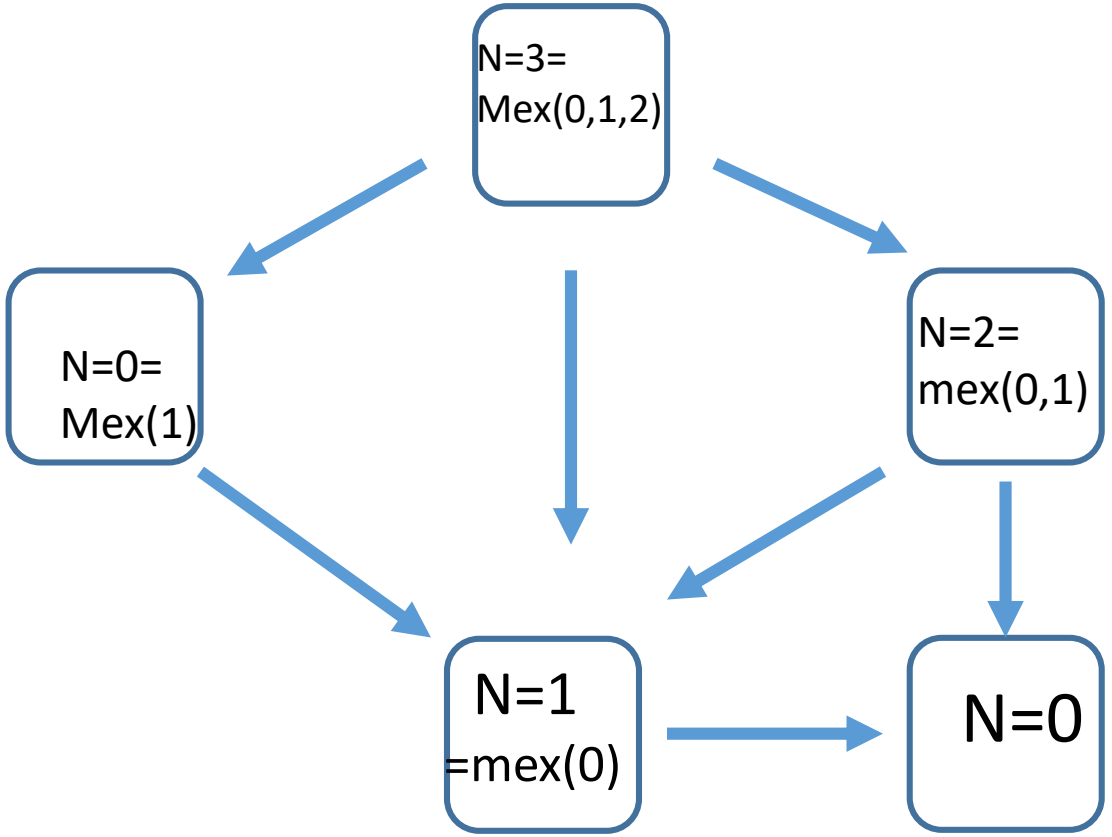

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