

Extended Boolean Petri Nets Generating N-Ary Trees

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Abstract : Petri nets, a mathematical tool, is used for modeling in different areas of computer sciences, biological networks, chemical systems and many other disciplines. A Petri net model of a given system is created by the graphical representation that describes the properties and behavior of the system. While looking for the behavior of any system, 1-safe Petri nets are of particular interest to many in the application part. Boolean Petri nets correspond to those class in 1- safe Petri nets that generate all the binary n-vectors in their reachability analysis. We study the class by changing different parameters like the token counts in the places and how the structure of the tree changes in the reachability analysis. We discuss here an extended class of Boolean Petri nets that generates n-ary trees in their reachability-based analysis.

Keywords : marking vector, n-vector, petri nets, reachability

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