

Title of Article : A Step Further on the Combinatorial Number Theoretic Aspect of *Ayo* Game

Author(s): **Ibidapo O. Akinyemi**, Ezekiel F. Adebisi, Oludayo O. Olugbara & Harrison O. D. Longe (2014)

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Abstract: In this paper, we present an analysis of *Ayo* game with some interesting combinatorial number theoretic from an overview of results on a class of endgame strategy in the game called Completely Determined Game (CDG). We propose an efficient CDG play algorithm based on soft computing metaphor to implement the concept, and describe the reducibility of the algorithm at each level of play of the game to identify the problem of finding winning positions in the solitaire game. We gave a conjecture that characterize the CDG configuration of *Ayo* game as a configuration that generates integer sequence, and consequently obtain some self-replicating patterns that repeat themselves at different iterations.