

Recognition of labyrinths with automata

Biljana Stamatovic, Prirodno Matematički Fakultet, Podgorica, Yugoslavia.

ABSTRACT

We investigate recognition of mosaic labyrinths with finite automata. We consider mosaic labyrinths as a subgraph of integral grid. Elements of input alphabet A of automata $\mathbf{A} = (A, Q, B, \varphi, \psi)$ is a neighborhood of point in which automata is stand, and output alphabet $\mathbf{B} = \{e, n, w, s\} \cup \{0\}$ (e, n, w, s -basic directions). Finite automata moves through labyrinth. We investigate recognition of classes of labyrinths that have got digits semantics. We obtain that digits without hole (1, 2, 3, 5, 7) we can recognize on this way, and other digits (0, 4, 6, 8, 9) we can't recognize. We establish that collective automata type of (1, 1) is sufficient for recognition of digits with hole. We implement the simulation of automata movement. We obtain running time of automata behavior.

Keywords: *Automata, labyrinth, digits*

Mathematics Subject Classification: *68R10*

Contact Address: `sins@rc.pmf.cg.ac.yu`