

Documentation

Graph: directed graph that has the following structure:

- nodes: list of integers

- edges: list of edges(the vertices the current one goes to)

Algorithm: begins to build path from vertex 0

search - recursive function that has as input the current node and a path and,

based on the nodes the current one is linked to, adds each one of them and

builds a new thread that calls the search with the new node and new path

if the path has length equal to nr of vertices and the current node can go to the starting node, then it is a cycle

if the path has length equal to nr of vertices, then it is not a cycle

Performance:

- 4 threads -

Graph size: 13

Time: 19.6791459s

Graph with Hamiltonian cycle size: 5

Time: 0.0026447s

Graph without Hamiltonian cycle size: 5

Time: 0.0019713s

Graph size: 14

Time: 43.0986991s

Graph with Hamiltonian cycle size: 5

Time: 0.0022854s

Graph without Hamiltonian cycle size: 5

Time: 0.0018102s

- 8 threads

Graph size: 13

Time: 5.8293698s

Graph with Hamiltonian cycle size: 5

Time: 0.0024135s

Graph without Hamiltonian cycle size: 5

Time: 0.0023317s

Graph size: 14

Time: 18.3372468s

Graph with Hamiltonian cycle size: 5

Time: 0.0028724s

Graph without Hamiltonian cycle size: 5

Time: 0.0025679s