TP4 report

Anthony AGNEL / Aurélien SCHILTZ

Depth-first search algorithm

- DFS visiting order, starting from node 1 : [1, 2, 3, 4, 5, 6, 7].
- DFS visiting order, starting from node 5 : [5, 2, 1, 3, 4, 6, 7].
- The graph has only one component, therefore, it is connected.

Breadth-first search algorithm

- BFS visiting order, starting from node 5 : [5, 2, 6, 1, 3, 7, 4]

Breadth Search First (BFS) for shortest paths in unweighted (di)graphs

- By computing the list of all shortest paths, we can deduce the eccentricity of each node :
  - e(0) = 5
  - e(1) = 4
  - e(2) = 3
  - e(3) = 4
  - e(4) = 3
  - e(5) = 4
  - e(6) = 5
  - e(7) = 4
- Diameter of the graph : 5
- Radius of the graph : 3

Dijkstra algorithm for weighted digraphs

- Shortest distance from 1 to 2 : 9.0
  Path to node is : [1, 2]
- Shortest distance from 1 to 3 : 32.0
  Path to node is : [1, 6, 3]
- Shortest distance from 1 to 4 : 45.0
  Path to node is : [1, 6, 3, 5, 4]
- Shortest distance from 1 to 5 : 34.0
  Path to node is : [1, 6, 3, 5]
- Shortest distance from 1 to 6 : 14.0
  Path to node is : [1, 6]
- Shortest distance from 1 to 7 : 15.0
  Path to node is : [1, 7]
- Shortest distance from 1 to 8 : 50.0
  Path to node is : [1, 6, 3, 5, 8]