Documentation Practical Work No. 1

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The programming language I have used for this practical work is Python.

I chose to represent the directed graph using two dictionaries for my edges, neighbours\_in, neighbours\_out for keeping the target and origin of an edge and one dictionary for the edge costs, cost.

One of them is memorizing the origin of the edge e.g.{1:[0, 2]} so there is an edge (0,1) and (2,1), and another one is keeping my target verteces.

For costs of the edges I use a dictionary as well, with key represented as a tuple as edges. e.g.{(0,1):4} (edge (0,1) has cost 4)

For example we have the directed graph:

9 14

0 1 12

7 6 3

0 2 4

2 3 1

2 4 10

3 5 2

3 7 5

3 6 5

4 6 7

6 4 2

4 8 3

7 8 4

4 5 5

5 6 0, will be repersented as : neighbours\_in{0:[], 1:[0], 2:[0], 3:[2], 4[2, 6], 5:[3, 4], 6[7, 3, 4], 7:[3], 8[4, 7]}

neighbours\_out{0:[1, 2], 1:[], 2:[3, 4], 3:[5, 6, 7], 4:[6, 8], 5:[], 6:[4], 7:[6, 8], 8:[]}

costs = {(0,1):12, (7,6):3, (0,2):4, (2,3):1,(2,4):10,(3,5):2,(3,7):5,(3,6):5,(4,6):7,(6,4):2,(4,8):3,(7,8):4,(4,5):5}