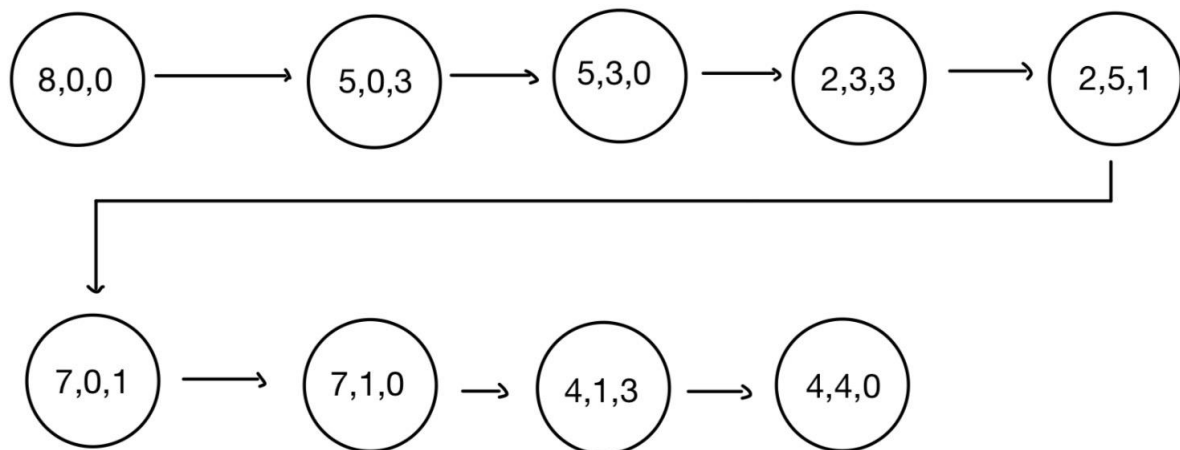


QUESTION 10/10 SOLUTION (Cantele Alberto/Cancelliere Biagio)

We can define a graph where each arc has cost 1 (Another approach define arcs' weight as the number of liters of water poured from a bottle to another).

Each node memorize the state of all the bottles. Using a graph with all the possible moves(in term of pouring water following the given constraints) where with the Dijkstra algorithm we can find the shortest path.

Example of one possible path:



Mathematically...

Set: $S \in \{\text{Number of nodes}\}$

Variables: $i \in S, j \in S, C_{i,j}$ we can define C as the cost of each move from the node i to node j

Object Function: $\min \sum_{i,j \in S} C_{i,j}$