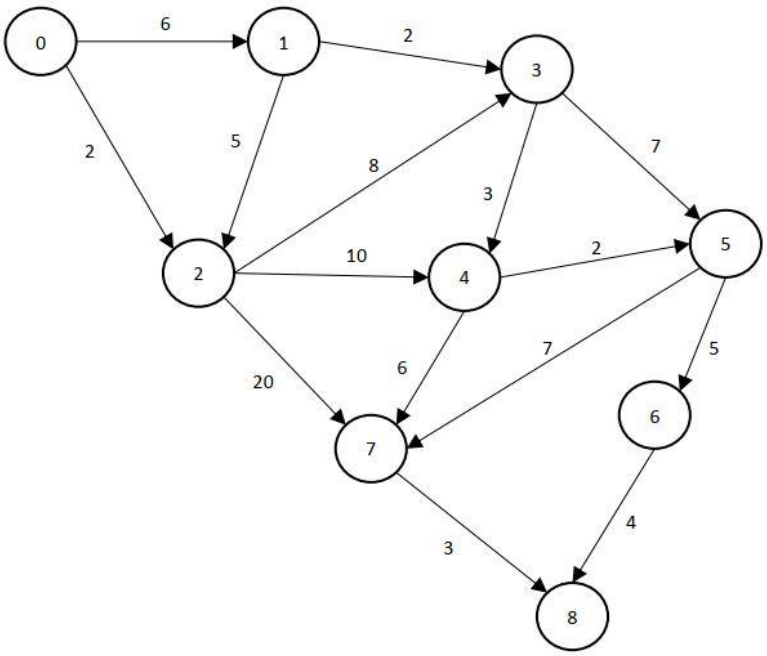
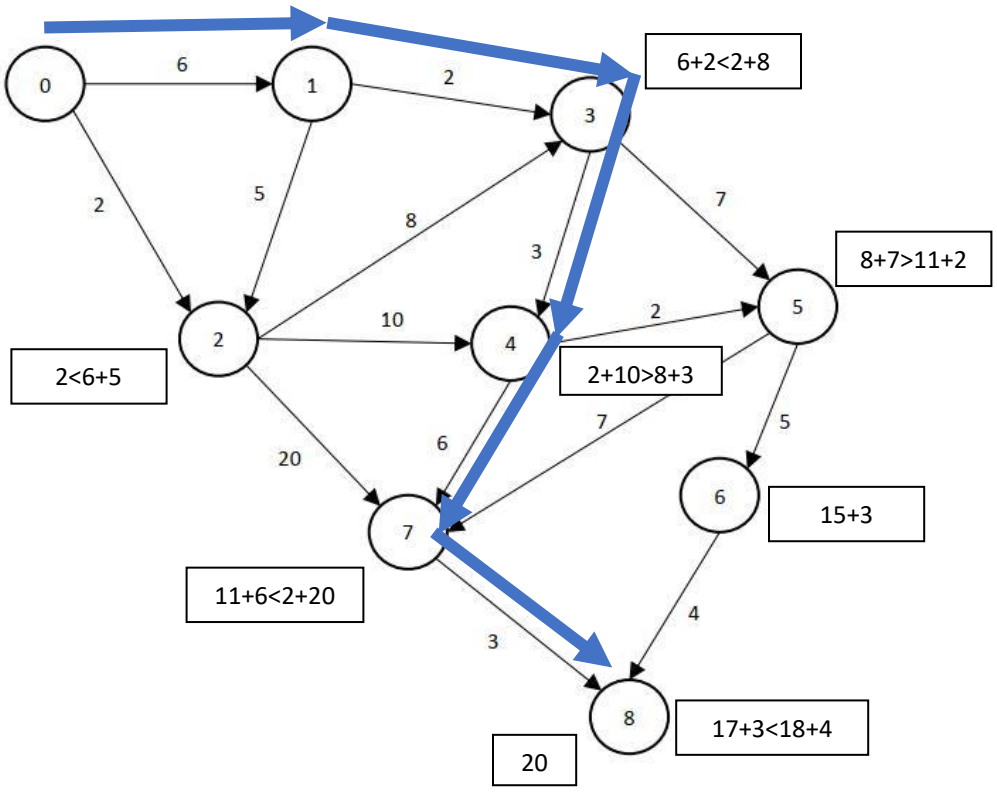
Tassio B. Magassy

1. For the following problem, the shortest path is determined manually by label correcting algorithm:





Finally, the label has been corrected with respect to label 6 and the destination label has been found. The total cost is 20.

Manually, the shortest path can be calculated as:

$$0 \rightarrow 6 \rightarrow 8 \rightarrow 11 \rightarrow 17 \rightarrow 20$$

This problem has been solved using python and the output csv file is shown below, the python code is shown in GitHub

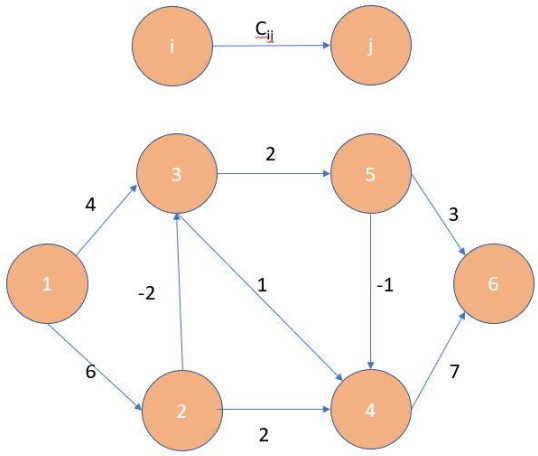
agent_id	from_node	to_node	shortest_path_cost	shortest_path_node_seq
1	0	8	20	0;1;3;4;7;8;

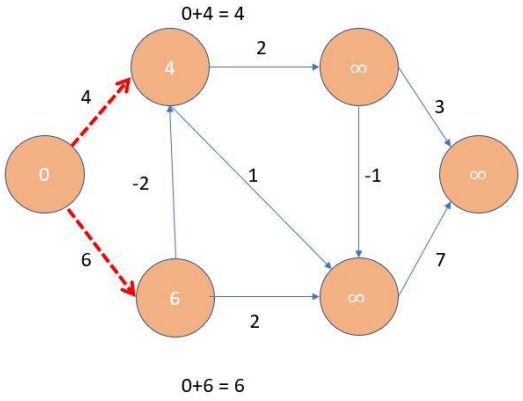
Using python code, the shortest path is calculated as:

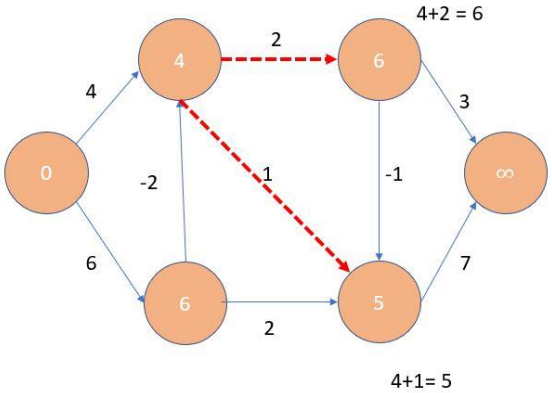
$$0 \rightarrow 1 \rightarrow 3 \rightarrow 4 \rightarrow 7 \rightarrow 8$$

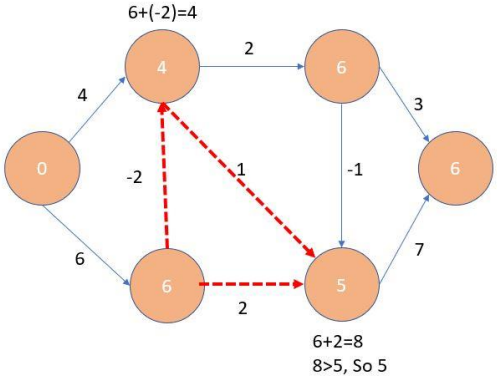
And the cost is 20 which is equal to the one obtained by doing manually using label correcting algorithm.

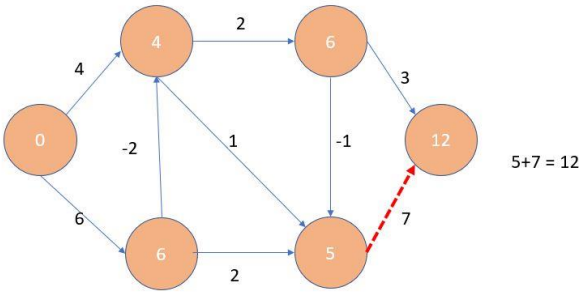
2. The created network is shown below:

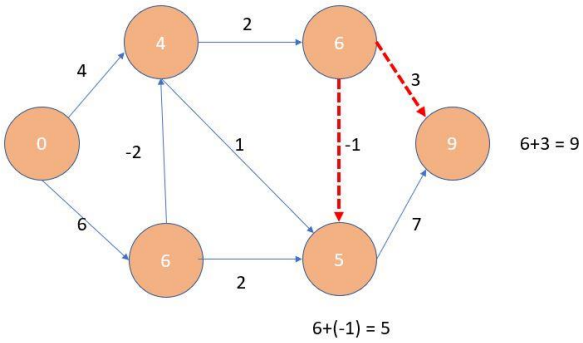


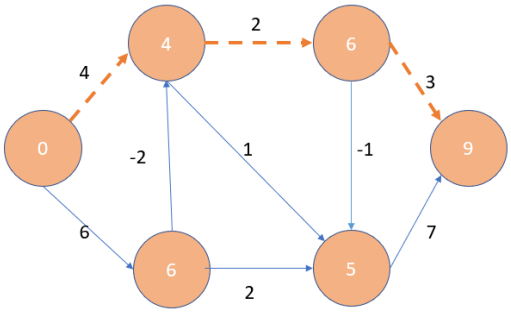












Manually, the shortest path can be calculated as:

0 → 4 → 6 → 9 (total cost =9)

Using the python code, the output is shown below, and the code is similar to that of previous question.

agent_id	from_node	to_node	shortest_path_cost	shortest_path_node_seq
1	1	6	9	1;3;5;6;