INFORMATICS INSTITUTE OF TECHNOLOGY

UNIVERSITY OF WESTMINSTER

Informatics Institute of Technology

Department of Computing

(B.Sc.) in Software Engineering

Algorithm

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Data structure & Algorithm

Breadth First Search (BFS) is the data structure and the Ford-Fulkerson is the algorithm which is used to implement the code. BFS is used because of it is a traversal algorithm that starts traversing the graph from the root node and explores all the neighboring nodes. Then it chooses the closest node and explores all the nodes that have to be discovered. The algorithm repeats the loop for each closest node until it reaches the target. The maximum possible flow between a source and a sink in a network is computed using the Ford-Fulkerson algorithm. The Ford-Fulkerson algorithm make use of residual graphs which are an extension of the nave greedy approach that allows undoing operations.

Finding the flow value with Ford-Fulkerson algorithm is shown in below (Figure1). Finding the maximum flow value is shown in below (Figure 2).

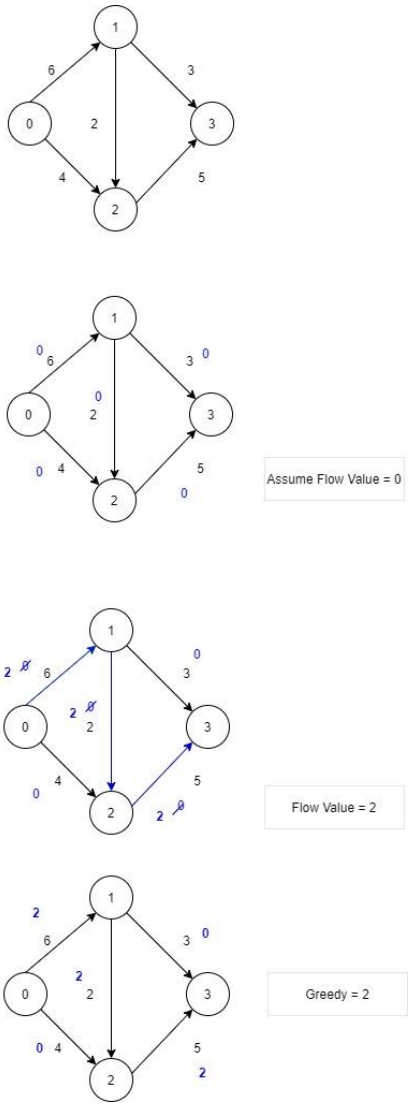

Figure 2 Flow Value

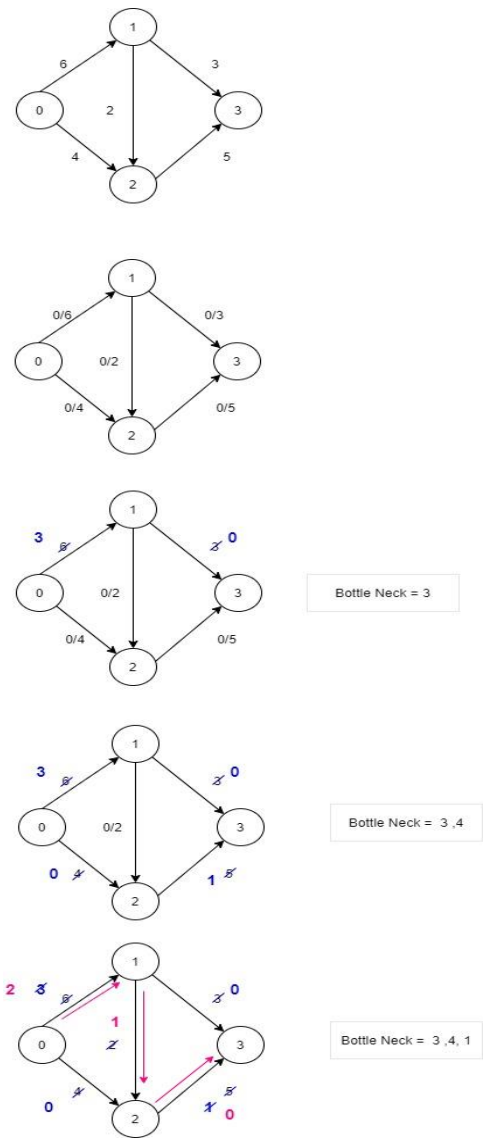

Figure 1 Maximum Flow Value

The final Bottle neck values should be added to find the maximum flow from figure 2. So, according to the diagram the maximum flow value should be eight (8).

Performance of the Algorithm

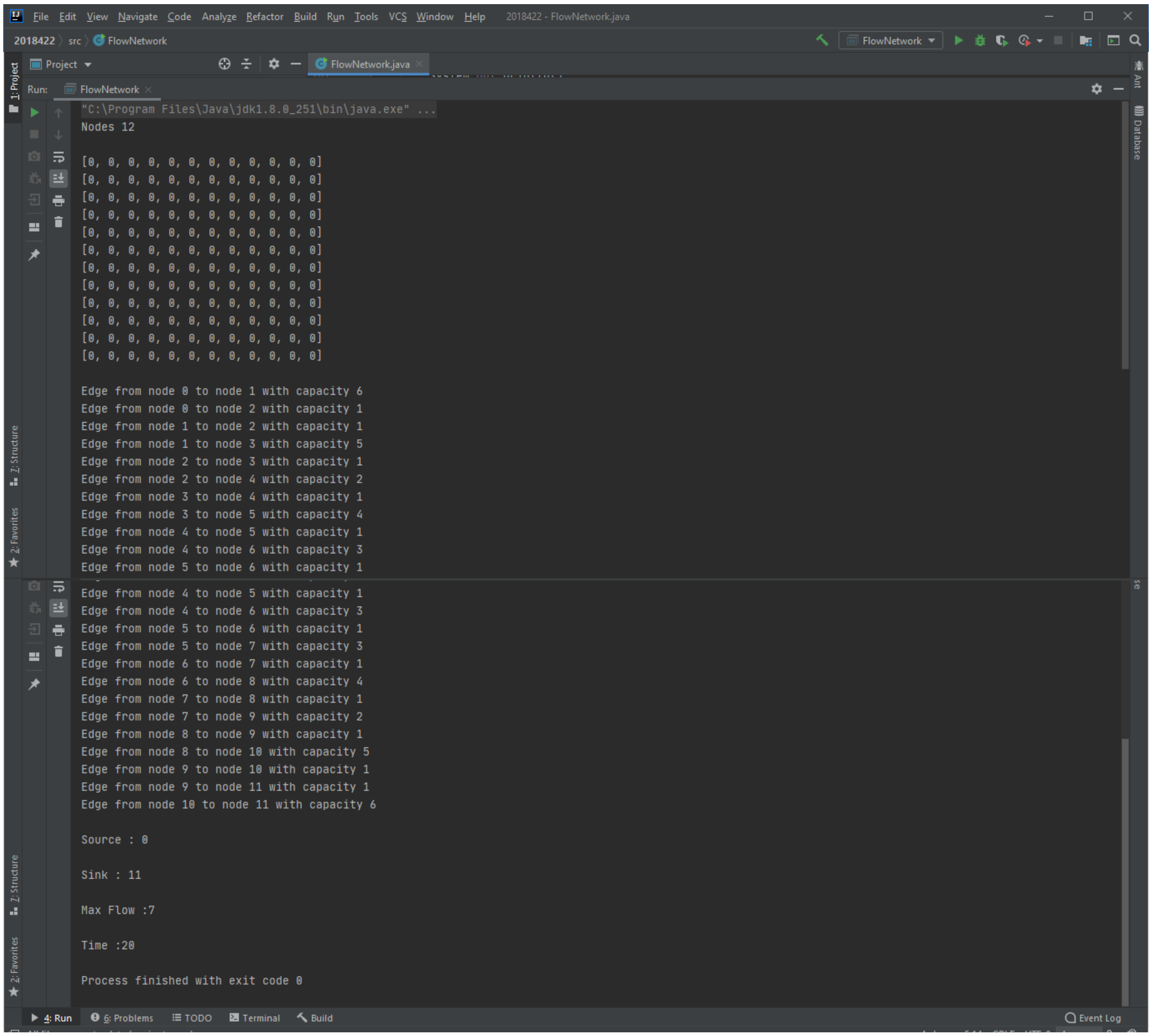

Figure 4 Coding Output