

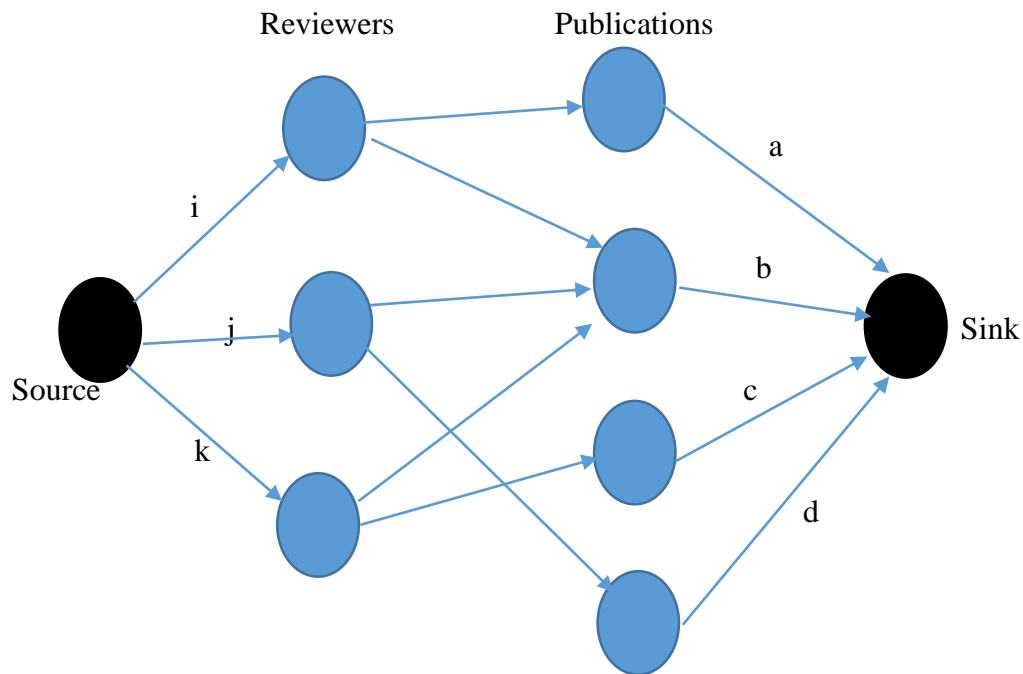


BLG 336E
ANALYSIS OF ALGORITHMS II

PROJECT 3

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In this project, to find an efficient algorithm to assign publications for a group of academicians (reviewers) to review a paper we must use Ford Fulkerson algorithm.



i, j and k are reviewers's capacities and can be more than one. A, b, c and d are number of be reviewed of the publication.

Pseudo Code of Ford Fulkerson Algorithm:

Set flowtotal = 0

Repeat until there is no path from s to t:

Run DFS from s to t to find a flow path

f is the minimum capacity value on the path

Add f to flowtotal

For each edge (u → v) on the path:

Increase $c(u \rightarrow v)$ by f

Decrease $c(v \rightarrow u)$ by f

Moreover, we have implemented **create_graph** function. Create_graph function takes publications name, reviewers name, number of reviewers, number of publications, capacity of reviewers and empty two dimensional array to create desired graph.

Finally, finding a flow path takes $\Theta(n + m)$ time. We send at least 1 unit of flow through the path. If the max-flow is f^* , the time complexity of Ford Fulkerson algorithm is $O((n + m)f^*)$.