BLG336E, Analysis of Algorithms II, Spring 2017 Project Report 3

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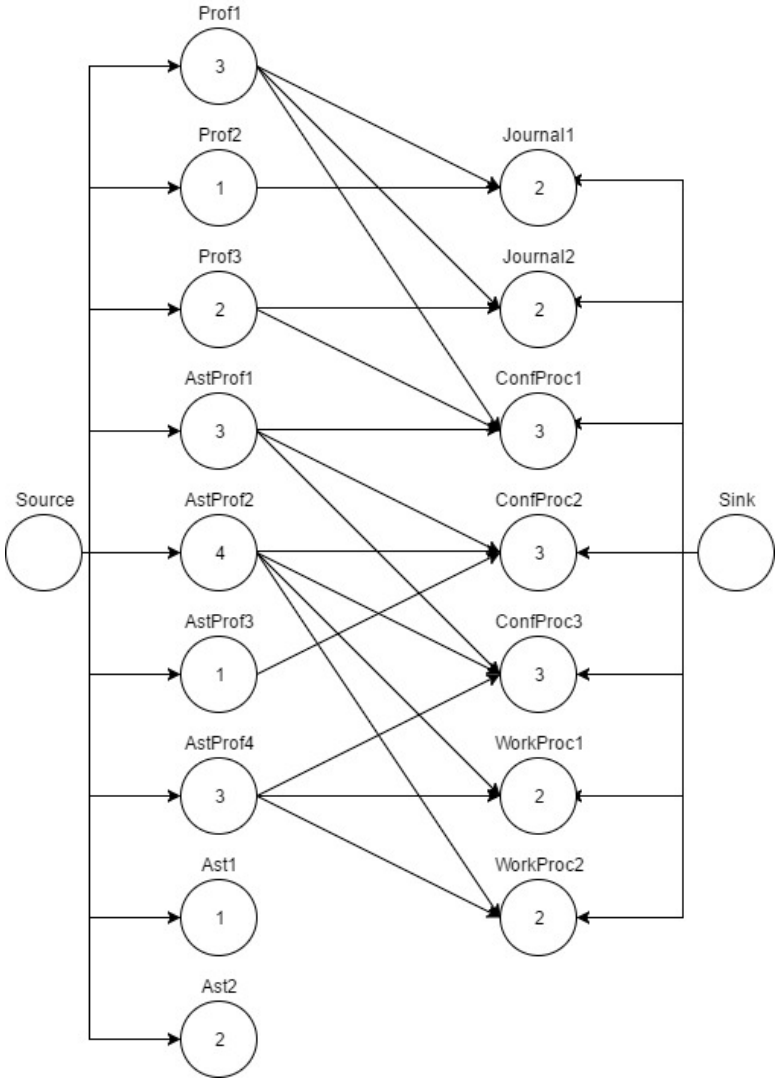
Compilation: g++ *.cpp

Execution: ./a.out reviewer.txt publications.txt

Formulate the problem properly as a Network Flow problem. Visualize your network by stating flow values. (20 points)

The reviewer - publications problem can be solved by using a network flow approach. Reviewers connect to source node. Publications connect to sink node. This algorithm flow from source to sink. Figure represent input.



Describe the method that you implemented for the task allocation problem in detail and give the complexity of the algorithm in big O notation. (20 points)

This problem is network flow problem, therefore; I used Ford-Fulkerson Algorithm which include BFS. This algorithm also called Edmonds-Karp Algorithm because of using BFS. The algorithm runs by finding all possible path from the source to sink.

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Ford-Fulkerson Algorithm
The following is simple idea of Ford-Fulkerson algorithm:
1) Start with initial flow as 0.
2) While there is a augmenting path from source to sink.
           Add this path-flow to flow.
3) Return flow.
```

Basic description of Ford-Fulkerson Algorithm

Total Node = 1(Source) + m(Reviewers) + n(Publications) + 1(Sink)

Complexity: O ((Total Node)^2)