

# FORD-FULKERSON METHOD

*Analysis and implementation of algorithm*

The project aims at implementing the existing algorithms and the analysis of complexity of the same. Also, we are intended in improving the existing algorithms.

Ajaydeep : cse170001003@iiti.ac.in

Rahul Anand Yadav : cse170001038@iiti.ac.in

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# Ford-Fulkerson method, Edmonds–Karp Algorithm

*Analysis and implementation of algorithm*

## Introduction:

We have taken a problem to maximize water flow in water distribution pipeline network implementing the Ford–Fulkerson method using Edmonds–Karp the analysis of complexity of the same. Also, we are intended in improving the existing Algorithms.

The **Ford–Fulkerson method** or **Ford–Fulkerson algorithm (FFA)** is a greedy algorithm that computes the maximum flow in a flow network. **Edmonds–Karp** algorithm is an implementation of the Ford–Fulkerson method for computing the maximum flow in a flow network in  $O(V E^2)$  time

## Other Applications:

1. Network Flow problems
2. Traffic distribution.
3. Airline scheduling
4. Baseball elimination
5. Circulation problem

## Project Outline

### Objective 1:

We are to analyse the Edmonds–Karp Algorithm in the basis of Time and Space Complexity. This would involve the application of the algorithm using the asymptotic analysis. Also, we would perform a run time analysis of the algorithm. We would also be evaluating the run-time Complexity of the given algorithm.

### Objective 2:

We are intended to implement the Edmonds–Karp Algorithm to maximize the water distribution pipeline network.

### Objective 3:

We are intending to try to improve the available algorithm for better efficiency and lesser complexity.