# Network Flow: Ford-Fulkerson Algorithm

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FordFulkerson(G=(V,E), s in V, t in V)
    set f(u,v) = 0 for all edges (u,v) in E (initial flow is 0)
    set G_f = G (initially, residual graph is G)
    while there's an s-t path in G_f
        set P = an s-t path in G_f
        set f' = augment(f,P)
        set f = f'
        set G_f = G_f' (update residual graph based on new flow)
    return f
```

```
augment(f,P) (f: a flow in G, P: an augmenting path in G_f)
    set b = minimum edge capacity in P
    for each edge (u,v) in P
        if (u,v) is a forward edge
            in G, set f(u,v) = f(u,v) + b (send more flow)
        else in G, set f(v,u) = f(v,u) - b (push some flow back)
    return f (the updated flow)
```